AgriTech Hub - center of innovations in sustainable campus development

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- Kazakhstan is one of the largest counties of the world, and takes 9th place by the territory, has a great potential for the development of agriculture.
- The territory of Kazakhstan is more than 272 million hectares, including 217 million hectares is agricultural land, accounting for 4% of the world's resources.
- The population of Kazakhstan is 17.7 million people. Approximately 7.5 million people live in 6693 villages. These are 43% of the total population of the Republic of Kazakhstan.
- Currently about 185 thousand agro formations produce agricultural products in the country, 96% from them are peasant farms.
- The country has great opportunities to increase the production of organic food based on the development of organic agricultural productions.
Kazakhstan brands

- Grain and flour
- Meat
- Milk products
- Kazakhstan aport
CHALLENGES OF KAZAKHSTAN

– To develop branches with multiplicative effect, therefore agriculture should become the driver of economy

The new governmental Program of Agrarian-Production Complexes Development is adopted for 2017-2021, new laws on “Agricultural Cooperatives” and “On Pastures” are being implemented.

It is planned to unite in cooperatives more than 500 000 private farm households. New measures of state support on agricultural cooperatives are being introduced, particularly financing of family diary farms, feedlots, service procuring centers.
1929 – Almaty Zooveterinary Institute was founded
1930 – Kazakh Agricultural Institute was founded
1996 – Kazakh State Agrarian University was founded on the basis of these two Institutes
2001 – The status of the National University was awarded by the decree of the President of the Republic of Kazakhstan N.Nazarbayev
2010 – The status of the innovation-oriented university was awarded
EDUCATIONAL ACTIVITIES
University staff

- 16 academicians of NAS of the RK
- 112 doctors of sciences, professors
- 279 candidates of sciences
- 33 PhD
- 155 masters of sciences

Attracted foreign scientists

- 44 in 2011
- 68 in 2016

doctor of science
associate professor
master of science
PhD doctor

- Doctor of science
- Associate Professor
- Master of science
- PhD doctor

- 105 in 2011
- 112 in 2016
- 271 in 2011
- 279 in 2016
- 68 in 2011
- 155 in 2016
- 4 in 2011
- 33 in 2016

- «Best staff of University» grant holders
- 80 in 2011-2012
- 94 in 2014-2015

As of 2014-2015, the University attracted foreign scientists.
Number of educational programs

- 41 – Bachelor
- 39 – Master’s
- 16 - Doctoral
At 6 faculties about 10,000 students of 27 nationalities are enrolled. In university created all the conditions for educational activities and scientific research. There are well-developed scientific infrastructure, which makes it possible to carry out research at a high level; 6 research institutes, 31 research laboratories, 8 innovation centers, 10 academic buildings.
Transformation of KazNAU to Research University

• In 2002 adopted the first concept of integration of education, science and production. Studied the world experience of transformation of the universities in the research University.

• In 2010, on the basis of an agreement with the Union of project managers of Kazakhstan (Guild) A. F. with the use of international standards of project management University one of the first began a process of transformation into a national research University.

• On the basis of international experience we have identified 13 international experts from different continents, with them contracts about cooperation.

• Identified points of growth of competitiveness of the University on the main areas of activity. Developed a strategic plan for the development of the University up to 2021, which linked the mission and vision with stated government objectives. Generated a portfolio of projects.

• Identified five key development priorities of the University. Developed steps and milestones of the transformation. With the participation of international experts conducted master classes, seminars, conferences online. Only a trained rector, deans, heads of departments, teachers, undergraduates and doctoral students in the amount of 420 people.
Specialized organizations – operators are created in order to manage the processes of scientific research and the dissemination of their results in practice, combining scientific research, experimental and auxiliary organizations involved in the research process of agrarian profile: national Institute for agricultural research (INRA, France, the second in the world by number of publications and citations); national Institute of agricultural technology (INTA, Argentina); Brazilian agricultural research Corporation (EMBRAPA) and others.
<table>
<thead>
<tr>
<th>Institution/University</th>
<th>International expert</th>
<th>Position/Institute</th>
<th>Country</th>
<th>Expert's Name</th>
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<tr>
<td>Wageningen University, The Netherlands</td>
<td>Eva Wietsma</td>
<td>University of agriculture in Nitra, Slovakia</td>
<td>The Netherlands</td>
<td>Yelena Horska</td>
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<tr>
<td>Ljubljana, Slovenia</td>
<td>The Director of the Institute for sustainable innovative technologies</td>
<td>University Putra, Malaysia</td>
<td>Slovenia</td>
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<tr>
<td>Belastok, Poland</td>
<td>Professor of international research center of pesticides</td>
<td>University Of Eastern Finland</td>
<td>Poland</td>
<td>Bozena Lozowicka</td>
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<tr>
<td>Plovdiv, Bulgaria</td>
<td>Professor at University of food technologies</td>
<td>Moscow Timiryazev Agricultural Academy</td>
<td>Bulgaria</td>
<td>Simon Zelasko lliev</td>
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<tr>
<td>France</td>
<td>President of University LaSalle</td>
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<td>France</td>
<td>Philippe Shock</td>
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<tr>
<td>Moscow, Russia</td>
<td>Director Institute of hydraulic engineering and land reclamation</td>
<td>University Of Basel, Switzerland</td>
<td>Russia</td>
<td>Kizyaev B.M.</td>
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<tr>
<td>Iowa state, USA</td>
<td>Chairman of the Board of the National center for food and Agricultural policy</td>
<td></td>
<td>USA</td>
<td>Stenley Johnson</td>
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Research

Growing market demands new solutions

Demand

Research and development activities

Find a solution to the problem

AgriTech HUB

Structural changes

Innovation changes the structure of the market

implementation

Extension

New knowledge

It brings the knowledge and know-how to the user

The use of new knowledge
Combination with existing buildings

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Model of AgriTech Hub

AgriTech Hub is a platform providing interaction of agrarian science, education and production. In addition, in cooperation with the best foreign partners, AgriTech Hub will ensure the transfer of new technologies and knowledge in the shortest possible time, thereby increasing the competitiveness of the agricultural sector of the republic as a whole.

**Advantages**

- Search and attraction and creation of new technologies in the agro-industrial complex
- Creation of new jobs
- Stimulation of research work in the agro-industrial complex
- Commercialization of the country's scientific potential
- Import replacement of new technologies in the agricultural sector
AgriTech Hub: STRUCTURE

- Fund-investments activity of scientific projects
- Science technology Park - new technologies
- Start-up incubator "Catapult" - development and adaptation of new technologies for agricultural sector
- Research centers and Laboratories - testing, the analysis and certification of production
The Coordination Council for the Extension System

- Farmers' Higher School
- Institutes and Scientific Centers of KazNAU
- Faculties and departments of KazNAU
- Scientific Institutes and Centers AIC
- International organizations and projects
- National and regional farmers' organizations
- The Ministry of Agriculture of the RK, KazAgro, regional akimats
- Industry associations of AIC processors
- Rural and farmers' micro-credit organizations
- Working groups (Councils)

Scheme of Coordinating Council on work with farmers associations and organizations AIC

Farmers’ household and other agricultural producers
LABORATORIES OF KAZAKHSTANI-JAPANESE INNOVATION CENTER

Food and ecological safety

Radio- biological safety

Scientific-diagnostic

Engineering profile «Electronic microscopy»

Water quality assessment
Water Innovation Centre

Water Centre provides monitoring of water objects, conducts research on quality of natural and wastewaters, deals with the design of hydraulic constructions.
The center conducts training sessions for managers and professionals involved in the cultivation of crops in greenhouses, creating modern poultry farms and the introduction of highly productive breeds of birds. Launched "Smart greenhouse", where fully automatic climate control system allows increase yield and quality of crop growing.
INNOVATIVE GREENHOUSE
Demonstration site at KazNAU

Testing area at educational-production facility “Agrouniversity”

Training rooms
Centre of Sustainable Agriculture has been opened recently at the University, which conducts sounding of agricultural land by unmanned vehicles - drones.
The Flyworx Company is engaged in remote sensing of farmlands with use of drones, GreenPoint Marketing - analytics and market researches, UrbanGreen - innovative greenhouses of city type, DragonFly - training of use of drones and their designing. Start-ups are also created: fast veterinary help, aquacultures, ecoprobiotics and others.
Our partners

USDA
United States Department of Agriculture

NASA

Cornell University

Columbia University

UPM
Universiti Putra Malaysia

Michigan State University

University of Eastern Finland

Wageningen UR
For quality of life
The training of practice-oriented experts-auditors and specialists with skills of conducting complex laboratory physical-chemical analysis, phytoexpertise and analytical research of probes for absence of toxical and dangerous substances for domestic agrarian market.
Kazakh National Agrarian University:

• a large scientific and educational agrarian center that meets the international criteria of the research university;

• providing qualitative training and retraining of specialists for all sectors of the AIC of the Republic of Kazakhstan;

• the main integrator of the development of agrarian science, education and production.
All innovative activities of the University are aimed at providing high-quality training of highly qualified specialists, implementation of scientific results in production, which will allow sustainable development and increase of agricultural production; To increase the output of export-oriented, competitive products on the world market, and thereby ensure