Periodical Report
12 Months of project
implementation

New and Innovative Courses for Precision Agriculture



Sh.Ualikhanov Kokshetau State University, S. Sadvakassov Agrarian-Economic Institute



Work plan

Approve

Approve

Rector of Shokan Ualikhanov

Kokshedau State University

M.K.Syrlybaev

75 41 2018

Project implementation plan 597985-EPP-1-2018-1-KZ-EPPKA2-CBHE-JP «New and Innovative Courses for Precision Agriculture (NICOPA)» Sh.Ualikhanov KSU

	Activities	Start	End	Responsible
Ref.nr/ Sub-ref nr	Title	-,13-11	1=1	
1.1 Prep.	Review of the current curricula for BA/MSc in target area in PC HEIs.	15.11.2018	30.04.2019	A.Belgibayeva, M.Auzhanova, N.Kakabayev
1.2 Prep.	Agreement on instructional strategy and guidelines for BA/MSc curricula design including the use of new Educational Technologies	15.11.2018	31.03.2019	M.Syrlybaev, A.Kakabayev, A.Belgibayeva
2.1 Prep.	a) Prepare a set of new core curricula and transferable modules inclusive innovative teaching/ learning facilities; develop syllabi; b) adopt on institutional level c) accredit on national level	a)01.12.2018 b)01.10.2019 c)01.10.2020	a) 30.03.2020 b) 30.09.2020 c) 31.08.2021	a) A.Belgibayeva, M.Auzhanova, N.Kakabayev b),c) M.Syrlybaev, A.Kakabayev, A.Belgibayeva, M.Auzhanova, N.Kakabayev

	evaluation/reports according to Q Plan			N.Kakabayev
4.1 Diss.	Project DISS& EXP /communication plan using a Set of Promotional Materials; Dissemination Events, Joint WEB based platform, "NICOPA+" Agreement	15.11.2018	14.11.2021	A.Belgibayeva M.Auzhanova, N.Kakabayev, A.Burkitbai
4.2 Diss.	Full media coverage of the project activities inclusive developing and maintenance of Joint WEB based platform	15.11.2018	14.11.2021	A.Belgibayeva M.Auzhanova, N.Kakabayev, A.Burkitbai
4.3 Diss.	Develop a set documentation on PASO with stakeholders support /purchase /install equipment /establish	01.02.2019	30.04.2020	A.Kakabayev
4.4 Diss.	Staff training for PASO, establishing Regional /International PASO network, pilot operation	01.04.2020	30.09.2021	M.Auzhanova, N.Kakabayev, A.Belgibayeva
4.5 Diss.	Refresh training courses for graduates in PASO	01.10.2020	31.08.2021	M.Auzhanova, N.Kakabayev, A.Belgibayeva
4.6. Diss.	International BA/ MSc Summer Schools 1-st.09-10.2020 2- nd.04_08.2021	01.04.2020	31.08.2021	A.Belgibayeva N.Kakabayev
5.1. Manag.	Management of the project including Project management online, daily project administration and coordination	15.11.2018	14.11.2021	A.Belgibayeva N.Kakabayev
5.2. Manag.	Coordination meetings	15.11.2018	14.11.2021	A.Belgibayeva N.Kakabayev

The local coordinator of the project





Work group

Rector of history fullkanov Kokshelu grote history W. Syrishicv W. Syrishicv St. 199

Job responsibilities of the project working group members 597985-EPP-1-2018-1-KZ-EPPKA2-CBHE-JP «New and Innovative Courses for Precision Agriculture (NICoPA)» Sh. Ualikhanov Kokshetau State University (KokSU)

No.	Full name	The position in the project	Official duties
1	Marat Syrlybaev	Head of the project, manager, Rector	Responsible for the coordination and implementation of the project NICoPA in Sh. Ualikhanov KokSU
2	Anargul Belgibayeva	Local coordinator, teacher of the project	Internal communication on the implementation of the project at the University. Periodic presentation of training reports and presentations on project implementation, as well as participation in coordination meetings and Skype coordination meetings. Development of recommendations for the modernization of training modules. Analysis and processing of questionnaires.
3	Anuarbek Kakabayev	Administrative coordinator, teacher of the project	External communication with project management and other consortium organizations. Periodic financial reporting, as well as participation in coordination meetings and Skype coordination meetings, purchase of equipersent. Responsibility for dissernination & exploitation of the project results.
4	Maria Auzhanova	Teacher of the project	Analysis, updating and development of maining modules at the University; organization and conduct of master classes; implementation of the project results at the University, testing at industrial enterprises and educational institutions of Akmola region; preparation of questionnaires for students, undergraduates, graduates and employers.

5	Nurbol Kakabayev	Teacher of the project	Analysis, updating and development of training modules at the University; organization and conduct of master classes; media presentations; preparation of publications on the project and handouts, information stands.
6	Aislu Burkitbay	Master's student	Explanatory work on the goals and objectives of the project for students and undergraduates; evaluation of the quality of mastering the studied material. Responsibility for dissemination & exploitation of the project results.
7	Sayakhat Bekbulatov	The regional representative of the company "Bayer Kaz"	Practical testing of the results of the project, a qualitative assessment of the educational-methodical documentation on the relevance, novelty and practical significance. Responsibility for dissemination & exploitation of the project results.

Rector"s Advisor on International Projects Management



Anuarbek Kakabayev



Work group

No	Name, Surname, email	Position	Responsibility (WP, tasks according to the work plan)
1	Marat Syrlybaev	Head of the project	Quality
2	Anargul Belgibayeva	Local coordinator	Manag. Quality
3	Anuarbek Kakabayev	administrative coordinator	Manag
4	Maria Auzhanova	teacher of the project	Prep, Dev.
5	Nurbol Kakabayev	teacher of the project	Prep, Dev.
6	Aislu Burkitbay	1st year master's student	Diss.
7	Sayakhat Bekbulatov	the regional representative of the company "Bayer Kaz", 3st year PhD student	Diss.



Coordination meeting, Berlin

From 4 to 5 March 2019, the first meeting of Erasmus + project partners " New and innovative courses for precision agriculture" was held at the Technical University of Berlin (Germany) "(NICoPA).

04.03.2019

10:00 - 10:30

10:30 - 12:00

Consortium members

S. Seifullin Kazakh Agro Technical University (KZ)

Technische Universität Berlin (DE)

The Agricultural University Ploydiv (BG)

Czech University of Life Sciences (CZ)

ECM space technologies GmbH (DE)

Shokan Ualikhanov Kokshetau State University (KZ)

North Kazakhstan State University Named After Manash Kozybayev (KZ)

Turkmen Agricultural University Named after S.A. Nivazov (TM)

The Turkmen state architecture and construction Institute (TM)

Turkmen Agricultural Institute (TM)

National University of Uzbekistan (UZ)

Tashkent University of Information Technologies (UZ)

Tashkent Institute of Irrigation and Agricultural Mechanization Engineers (UZ)

Ministry of Education and Science (KZ)

State Inspection for supervision of quality in Education (UZ)

Ministry of Education of Turkmenistan (TM)





Kick-off Meeting 4 – 5 March 2019 Berlin, Germany

Venue: Technische Universität Berlin Main building, Room H3007 Straße des 17. Juni 135 10623 Berlin NICOPA Kick-Off Meeting 4-5 March 2019 Venue: Technische Universität Berlin Main building, Room H3007

Conference Program

09:00 – 09:30 Registration of the conference participants

99:30 – 9:45 Opening of the conference - Flena Evr

 Opening of the conference - Elena Eyngorn, TU Berlin Welcome of the conference participants -

Prof Dr. Hans-Ulrich Heiß, TU Berlin
 Keynote Speeches – Embassy Representatives

9:45 – 10:00 Welcome by Head of the International Relation Office – Evelina Skurski

Presentation of European partners (Info about the organization, role in the project, academic content/ curricula for the target universities)

The Agricultural University Ploydiy, Bulgaria

Czech University of Life Sciences, Czech Republic
 ECM space technologies GmbH, Germany

Presentation of the scientific experience - GFZ Potsdam

10-Minute-Presentations of Partner Universities (report of analysis and review of existing curricula in target area and plan for updating existing and developing the new curricula NICOPA)

S.Seifullin Kazakh Agro Technical University, Kazakhstan

Shokan Ualikhanov Kokshetau State University, Kazakhstan
 North Kazakhstan State University Named After Manash Kozybayev,
Kazakhstan

Turkmen Agricultural University Named after S.A. Niyazov, Turkmenistan

The Turkmen state architecture and construction Institute, Turkmenistan

Turkmen Agricultural Institute, Turkmenistan
 National University of Uzbekistan, Uzbekistan

Tashkent University of Information Technologies, Uzbekistan

Tashkent Institute of Irrigation and Agricultural Mechanization Engineers
 Uzbekistan

12:00 – 13:00 Lunch

14:30 - 18:45 Presentation of the NICOPA project; Information management package

NICOPA Kick-Off Meeting 4-5 March 2019 Venue: Technische Universität Berlin Main building. Room H3007

Conference Program

09:00 – 12:00 Continuation of the workshop on information mgmt, package:

Discussion of the project plan implementation (Work Packages) incl.

• Master-classes and trainings schedule

Purchase and installation of Equipment

 Milestones of 2019 (assigning responsible persons of each partner to the work plan tasks);
 Moderator, Arnold Sterenharz

Budget & Reporting:

05 03 2019

Regulations for all budget headings expenditures;

Regulations for all buoget fleatings expenditures,
 Reporting on project activities and contract amendments:

Financial management of the grant:

. Mobility report; staff costs (joint declaration, time sheets)

Moderator: Elena Eyngorn

12:00 – 13:00 Lunch

Continuation of the workshop on budget & reporting. Summary meeting: discussion and adoption of the working protocol to ensure the implementation of the project work plan; formation of the project member board, discussion of the venue and dates of the next

project meeting;

15:00 - 15:30 Coffee break

15:30 - 17:30

Quality assurance system according to the ECTS User Guide 2015, Standards, and Guidelines for Quality Assurance in the European Higher Education Area 2015 (ESG) – Arnold Sterenharz





Coordination meeting, Berlin



Working group of Sh. Ualikhanov KSU was headed by Rector of the University M. K. Syrlybaev. In the working group of the Sh. Ualikhanov KSU, Rector's advisor to the rector for international project management Kakabaev A. A. and head of the Department of Economics and Accounting Belgibaeva A. S., the local coordinator of the NICoPA project from Sh. Ualikhanov KSU.





Coordination meeting, Berlin

On behalf of Sh. Ualikhanov KSU with presentation and brief report on the achievements of University and existing educational programs in agronomy and agricultural technology and technology, the possibility of updating courses and modules with directions on precision agriculture at the kick-off meeting was made by A. A. Kakabaev.







Workshop on precision agriculture at the Technical University of Berlin,

Members of the working group of the University Maria Auzhanova, Nurbol Kakabayev and Sayahat Bekbulatov took part in a training seminar at the Technical University of Berlin from 19 to 30 August 2019 (http://www.kgu.kz/index.php/node/2521)











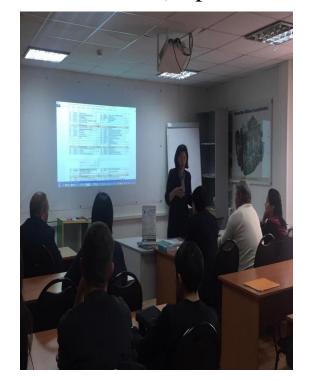
Members of the NICoPA project working group held a number of events in October to disseminate information about the project itself and information about the training held at the Technical University (Berlin).

Participants of the training Nurbol Kalkabayev, Maria Auzhanova and Sayahat Bekbulatov posted information about the training on the University's website (http://www.kgu.kz/en/node/2521).





They also held a seminar for employees of the company "Eurasia Group Kazakhstan" LLP, for students and teachers of the agrarian and economic Institute.S. Sadvakasova (https://web.facebook.com/shualikhanovksu.nicopa)











October 11, 2019 at Sh. Ualikhanov KSU held an Erasmus day event. An exhibition of the results of Erasmus + KA1 and KA2 projects was organized and a round table was held, which was attended by the University management, employers, graduates, etc. during the round table, the results of all projects at the University, including the NICoPA project, were highlighted (https://web.facebook.com/shualikhanovksu.nicopa, http://www.kgu.kz/node/2602,

http://www.kgu.kz/node/2601)



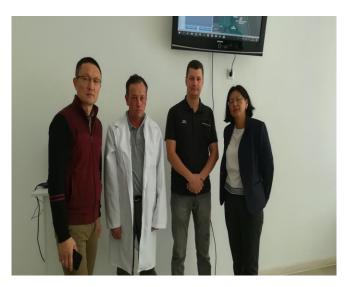




Maria Auzhanova and Sayahat Bekbulatov presented information about NICoPA project and about training held in Germany for participants of the seminar "Prospects and problems of precision agriculture in Northern Kazakhstan", which was organized and conducted by the scientific and production center of grain farming. A. I. Baraeva September 18, 2019. The program of the seminar discussed practical issues of introduction of precision agriculture in Kazakhstan, foreign experience (http://www.kgu.kz/index.php/node/2551).









Sayahat Bekbulatov visited the exhibition KazAgro&KazFarm (Nur-Sultan, 25.10.2019) and during negotiations with representatives of international and domestic companies shared information about the NICoPA project itself and about the training held at The Berlin technical University (https://web.facebook.com/shualikhanovksu.nicopa)







November 29, 2019 at Sh. Ualikhanov KSU held a conference dedicated to the 40th anniversary of the agrarian and economic Institute.S. Sadvakasova. Maria Auzhanova and Nurbol Kalkabayev made a report on the topic "New innovative courses on precision agriculture" at the breakout session (http://www.kgu.kz/node/2769)



Литература

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- 2. Борин, К. В. Производство хвойной муки в условиях лесосеки / К. В. Бория, Н. А. Петрушева // Материалы научно-практической конференции с международным участием. 2018. С. 18-20.
- Ботенкова, В. П. Устройство для заготовки квойной лапки / В. П. Ботенкова // Хъойказе бореальной зоны. – 2013. – № 1-2. – С. 138–42.
 Вторичные материальные ресурсы десной и деревооблабатывающей
- Вторичные материальные ресурсы леской и деревообрабатывающей промышленности: справ. / под ред. А. Е. Юрченко. – Москва: Экономика, 2004. – 226 с.
- Зайцева, М. И. Откоды переработки хвои сосиы обыкновенной, как материал для теплоколюциюных плит / М. И. Зайцева, Г. Н. Колесников // Вестник Краснолрского государственного аграрного университета. – 2014. – № 10. – С. 155–159.

НОВЫЕ ИННОВАЦИОННЫЕ КУРСЫ ПО ТОЧНОМУ ЗЕМЛЕЛЕЛИЮ

Аужанова М.А.к.с-х наук, ст.преп. Белгибаева А.С. к.э.н., доцент Какабаев Н.А. доктор PhD

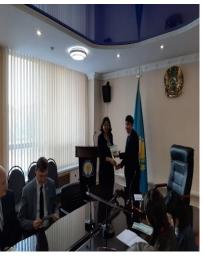
Кокшетауский государственный университет им. Ш. Уалиманова,г. Кокшетау auzhanovam@bk.ru

В послании главы государства народу Казахстана «Конструктивный общественный диалог — основа стабильности и процветания Казахстана» отмечалось о роли повышения качества высшего образования и внедрения цифоовых технологий в АПК(1).

На сегопакциой дель с покалением на ранке Калахстана современной зарубежной сельскоголийственной теопили, инколационной теопологии и изменились требования будущим специалистам. Необходимо обнознение и модериизмика образовательных программ по сельскоголёйственным специальностим для повышения комитечении выпускников данного

В сакии с этим, КТУ им. Ш.Уписанова участвует международном проекте Егалинат-Ројест-Мем мий Інполитие Социе бо Рисскію Адгісціние NICOPA «Новаве и циковационные курсы для точного сельского хозяйства». Основной інелью кнучного проект NICOPA по точному сельскому хозяйству княсення ка модеринанцию учебных планов с использованнем повых технологий совершенняествование и выекренне образовательных повых технологий совершенествование и выекренне образовательных по







All participants of the training: Maria Auzhanova, Nurbol Kakabayev, Sayahat Bekbulatov wrote a review of the training material that was received during the training in Berlin (August 2019).

Отзыв

на учебные материалы обучающего семинара «New and Innovative Courses for Precision Agriculture -NICOPA»

Аужанова М.А к.с-х наук, ст.преп.

Кокшетауский государственный университет им. Ш. Уалиханова, г. Кокшетау auzhanoyam@bk.ru

В рамках проекта Erasmus+ Project NICOPA «Новые и инновационные курсы для точного сельского хозяйства» в период с 18 по 31 августа 2019 года прошел обучающий семинар «New and Innovative Courses for Precision Agriculture -NICOPA», в котором приняли участие преподаватели КГУ им. III. Уалиханова.

Семинар проходил в Техническом университете (Германия, г.Берлин), целью которого является совершенствование и внедрение образовательных программ с использованием лучшего опыта европейских университетов в области точного сельского хозяйства.

Были представлены презентации ученых Германии, Чехии, Болгарии по темам применения интеллектуальных технологий на основе ГИС, данных дистанционного зондирования Земли, глобальных навигационных спутниковых систем. др.

Основной целью обучающего семинара представление учебных материалов по проекту NICOPA точному сельскому хозяйству и нацелена на модернизацию учебных планов с использованием новых технологий совершенствование и внедрение образовательных программ.

В рамках семинара в своем докладе профессор О.Алипеки отметил, что

Отзыв

на семинар – тренинг NICOPA Новые и инновационные курсы для точного сельского хозяйства

С 19 по 30 августа 2019 года в Берлинском техническом университете г. Берлин (Германия) прошел семинар — тренинг в рамках программы Erasmus+ Progect 597985-EPP-1-2018-1-KZ-EPPKA2-CBHE-JP (New and Innovative Courses for Precision for Agriculture) Новые и инновационные курсы для точного сельского хозяйства.

Целью семинара — тренинга является совершенствование и внедрение образовательных программ с использованием <u>лучшего</u> опыта европейских университетов в области точного сельского хозяйства.

В мероприятий среди 9 стран участников проекта, участие приняли представители рабочей группы NICOPA КГУ им. <u>III.Уалиханова</u> к.с.-х.н. Аужанова М.А., доктор PhD Какабаев Н.А., Бекбулатов С.К.

В ходе семинара-тренинга ведущие ученые из Германии, Чехии, Болгарии, Казахстана, Узбекистана, Туркмении Dr. Prof. Klaus Briess (профессор кафедры космических технологий, Берлинская космическая школа), Dr. Jitka Kumhálová, Prof. Kumhála František, Dr. Jan Chyba (Чешский аграрный университет г.Прага), Prof. Dr. Dr. h.c. Harald Schuh (директор «Геодезии» в Центре Гельмгольца в Потсдаме, Немецкий исследовательский центр геофизических исследований GFZ, Президент Международной ассоциации геодезии (IAG) г. Потсдам), Prof. Dr. Dr. h.c. Harald Schuh, Prof. Kada, Prof. Dimo Atanasov, Prof. Krum Hristov, Prof. Julieta Arnaudova (Пловдивский аграрный университет г. Пловдив), Dr. Prof. Alipbeki Ongarbek Alipbekuly (КАТУ им.С.Сейфуллина г.Астана), Dr. Abror Gafurov, Prof. Tarmo Soomere. Dr. Arnold Sterenharz, полелились опытами и знаниями в области

Sayakhat Bekbulatov

In the 21st century, one of the effective ways to increase work productivity and reduce production costs at the same time is precision farming, in recent years this term has gained a more expanded meaning - precision agriculture. Nowadays, the relevance of this topic is enhanced by an acute shortage of highly qualified specialists in precision agriculture. The development of digital technologies in this industry involves the training of engineers, agronomists and other specialities knowledge of the best practices in the digitalization of agriculture, experience in introducing advanced technologies into production, including precision farming technologies, precision livestock breeding, artificial intelligence, systematization of big databases and their mutual integration.

In this regard, the transfer of any advanced European experience in this area will be very useful, for which the reform of the joint educational program was launched under the NICOPA project, with the participation of European (Germany, Czech Republic, Bulgaria) and Central Asian (Kazakhstan, Uzbekistan, Turkmenistan) countries. The project was funded by the European Union's Erasmus + program and designed for the period 2018-2021.

Within the NICOPA project framework for the period from August 19 to 30, 2019, The first training "New and Innovative Courses in Precision Agriculture" was held on the basis of Berlin Technical University, where as students were studying some representatives of universities of Central Asian countries participating in the project and their associated partners. Among the lecturers were both the faculty of the Technical University itself, and other European partner universities of the project, as well as ECM Space Technologies GmbH (Germany).

During ten days of training in English, presentations on various topics were



Teaching materials. The curricula update

Table 1 provides information about which existing courses at the University will be updated, which training materials will be used for these courses, how these training materials will improve existing courses, and the responsible teachers.

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Appendix

Table 1. Teaching materials and existing courses to update

Title of the existing course to update	Name of the person(s) responsible for update + email	ECTS and hours for lecture/practical work	Teaching materials that will be used	How will the teaching materials improve the existing course? What will be new in the course due to the teaching materials?	% of readi ness of the cours e
Educational program:6B080 101 Agronomy Training period 2018-2022 academic year Основы землеустройств а и кадастр/ Bases of land organization and cadaster	Maria Auzhanova auzhanovam@ bk.ru	5 credits, total 135h. 30h lectures, 15h. pract. IWST-22, IWS-68 of which 6 h lectures on precision agriculture	Begüm Demir ML in RS Prof. Kada GIS Geovisualization GIS Internet, Mobile, and Distributed GIS GIS Advanced Methods for Geospatial Analysis GIS. Data processing and adjustment Processing of remote sensing data obtained from satellites Spatial Databases and Infrastructures	20% improve the existing rate. The ability to master digital technologies: satellite images, differential field processing algorithms, high-tech sensors, mobile applications and GPS systems.	50%

			Information Systems		
Агрометеороло гия/Agrometeor ology	Maria Auzhanova auzhanovam@ bk.ru	5 credits, total 135h. 30h lectures, 15h. pract IWST-15, IWS-75 6 hours of lectures	Dr. Abror Gafurov Time series extraction and analysis of satellite data Application of satellite data for early warning of natural hazards	Introduction to spatial data analysis using satellite data, satellite data Processing. Use of satellite data for early warning of natural disasters.	50%
Введение цифровизации в агрономию/The introduction of digitalization in agronomy	Maria Auzhanova auzhanovam@ bk.ru	5 credits, total 135h. 30h lectures, 15h. pract. IWST-22, IWS-68	Prof. Klaus Briess Prof. Krum Hristov Global Navigation Satellite Systems (NAVSTAR, GLONASS, GALILEO)	Mobile apps and GPS systems. Develop and implement a system of weed control measures; To be able to use the online application to	70%



New curricula

Table 2 shows the new disciplines that will be included in the educational program. It indicates which training materials will be used to create new disciplines, and the responsible teachers

Table 2. Teaching materials and new curricula

Title of the possible new course	Name of the person(s) responsible for developing + email	ECTS and hours for lecture/practical work	Teaching materials that will be used
Основы точного земледелия/ Basics of the Precision agriculture	Maria Auzhanova auzhanovam@bk.ru	5 credits, total 150 h. 30h lectures, 30h. pract. IWST-15, IWS-75	Prof. Martin Kada GIS Geovisualization GIS Internet, Mobile, and Distributed GIS GIS Advanced Methods for Geospatial Analysis Prof. Julieta Arnaudova Using GIS and SENTINEL1-2-3 imagery for agricultural field monitoring Онарбек Алишеки Основы точного земледелия
Физические свойства почвы и ее измерение/Physical properties of the soil and its measurement	Maria <u>Auzhanova</u> Senior teacher <u>c.a.s</u> ; <u>auzhanovam@bk.ru</u>	6 credits total 180 h 30 h. lectures, 30 h. pract. IWST-30, IWS-90	Dr. Jitka Kumhálová/ Prof. Kumhála František Soil physical properties and its measurement Изучает информация о наиболее важных физических свойствах почвы и ее взаимосвязи является приводятся вместе с принципами его измерения.
Применение точного земледелия для выращивания	Maria Auzhanova auzhanovam@bk.ru	6 credits total 180 h 30 h. lectures,	Dr. Jan Chyba Application of Precision Agriculture for crops

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			MODSNOW-Tool – a
			remote sensing based
			instrument to monitor
			water resources
Датчики урожайности	Maria Auzhanova	5 credits	Dr. Jitka Kumhálová /
для точного	auzhanovam@bk.ru	total 150 h.	Prof. Kumhála František
земледелия/Yield		30 h. lectures,	Yield sensors for
sensors for Precision		30 h. pract.	Precision Agriculture
Agriculture		IWST -15,	 Prof. Klaus Briess -
		IWS -75	Crop mapping
			irrigation, water
			supply planning, pest
			control, etc.
"Management and	Belgibaeva Anargul	5 credits	Elena Evngorn
decision making in	anargul.belgibayeva@mail.ru	total 150 h.	 Soft Skills for Engineers
precision agriculture"		30 h. lectures.	•Start-up initiatives for
exploring the basics of		30 h. pract.	future farmers
precision agriculture.		IWST -15.	•Management Marketing
F		IWS -75	and Decision Making in
			Precision Agriculture
			Prof. Dimo Atanasov
			Precision agriculture –
			characteristics,
			technologies, economic
			efficiency, optimal use of
			resources
Основы системы	Kakabayey Nurbol	5	Basics of precision
точного земледелия /	nurbol.ka@mail.ru	150 /30/30/15/75	agriculture -
Fundamentals of the	noroonagomanna	150750550715775	characteristics.
precision farming			technologies, economic
system			efficiency, optimal use of
system			resources: manning fields
•	•	•	



Accreditation

Future procedure for accreditation (certification) of academic disciplines (educational program) at the institutional level:

Stage 1.

November-December 2019-discussion of educational programs to update existing and develop new educational programs with the participation of the educational and methodological Committee of the Academic Council of the University (a Protocol of discussion of educational programs)



Stage 2.

December 2019-January 2020-meeting of the educational and methodological Committee under the Academic Council of the University on coordination and examination of educational programs (minutes of discussion).

In case of a positive decision of the Committee, the educational program is allowed to be defended at a meeting of the Academic Council of the University. In case of a negative decision of the Committee, the educational program is returned for revision.



Accreditation

Stage 3.

The 3rd decade of January, 2020-protection of educational programs by heads of groups of directions of preparation (deans of faculties) at a meeting of the Academic Council of the University.

At the meeting of the Academic Council of the University, Certificates of examination of educational programs from employers who were present at the discussion of educational programs in November-December 2019 should be submitted. The academic Council decides whether or not to include educational programs in the register of educational programs (protection Protocol).



Stage 4.

Since February 2020, educational programs that have received a positive decision of the Academic Council are included in the Register of educational programs for independent external examination by experts of the center of the Bologna process of the MES of Kazakhstan.

The examination of educational programs will continue until June 2020.

On the website of the EES (unified system of higher education management), you can observe the change in the status of the educational program: under review; under revision; approved.

In the case of a positive expert opinion, the educational program will be approved and included in the register of educational programs. If there are any comments, the educational program will be returned for revision.



Accreditation

Stage 5.

Also, from February 2020, the preparation of Educational and methodological complexes (EMCD) of all disciplines of the first year of study (syllabuses, lecture theses, control and measurement materials, etc.) will begin. These teaching materials should be developed prior to the beginning of the school year.



Quality assurance

List of indicators for assessing the quality of the developed (updated) training courses / modules/training programs:

- relevance of the course;
- compliance of the discipline description with the training results;
- compliance of the expected learning outcomes with the objectives of the discipline;
- the presence of original author's developments in the content, program and methodology of the discipline, including adapted materials;
- provision of the discipline with modern educational and methodical literature, including in a foreign language;
- availability of assessment tools for the discipline (task, tests, control questions, etc.);
- expert opinion from employers;
- positive feedback from students who have studied the discipline (survey results).



Quality assurance

Potential reviewers of new / modified curricula (academic disciplines):

- LLP " Eurasia Group Kazakhstan»;
- LLP " Navistar Asia»;
- Research and production center of grain economy. A.I. Baraeva;
- Akmola regional Department of agriculture.

 Appendix presents the work Plan of the quality group.



Work Plan of the quality group

«Approve»
Acting Rector
Sh Ualikhanov Kokshetau
State University

F.N.Zharkinbekov

9 9 01 20 19

Quality Assuarance Plan of the European program Erasmus+ 597985-EPP-1-2018-1-KZ-EPPKA2-CBHE-JP "New and Innovative Courses for Precision Agriculture" (NICOPA) at Sh.Ualikhanov Kokshetau State University

_	Activity	Deadlines	Responsible
1	workshops, meetings with participation of stakeholders (employees, students, master students, graduates, teachers) to determine necessary competences of future graduates of educational program (Agronomy, Agrarian Engineering and Technology)	December	
2	Introduction of disciplines in these educational programs that will cover these competencies	March 2019	M. Auzhanova, N. Kakabayev
3	Evaluation of developed educational programs and disciplines in the field of Precision Agriculture	October 2020	A.Belgibayeva
4	PASO Performance Assessment	December, annually	A.Belgibayeva
5	Conformity assessment of purchased equipment to educational program objectives	January, 2020	A. Kakabayev M. Syrlybayev
6	Evaluation of the results of the implementation of educational programs of undergraduate and postgraduate programs	January, June 2021	M. Auzhanova, N. Kakabayev



Report on implementation of activities concerning dissemination and sustainability of the project results.

List of non-academic partners and organizations outside the project that may be interested in the results of the project:

- LLP " Eurasia Group Kazakhstan»;
- LLP " Navistar Asia»:
- Research and production center of grain economy. A. I. Baraeva;
- Akmola regional Department of agriculture;
- НемАЦ.

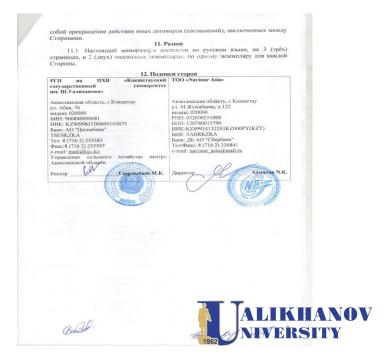


Report on implementation of activities concerning dissemination and sustainability of the project results.

The report is accompanied by a Plan of activities to disseminate information to interested parties and a scan of the bilateral agreement between the University and the non-academic partner (Navistar Asia LLP)







Report on implementation of activities concerning dissemination and sustainability of the project results.

Кокшетауский государственный университет им.Ш.Уалиханова План будущих мероприятий по распространению информации о проекте NICoPa

в средствах массовой информации

№ пп	Публикация о проекте в средствах массовой информации: журналах, газетах, ТВ, интернете и т.д.	Дата публикации	Ответственные
1	Публикация статьи. «Точное земледелие: вызов или неизбежность» Материалы Международной научнопрактической конференции «Современные достижения в экологии, почвоведении и земледелии», г.Кокшетау	Декабрь 2019 г.	Бекбулатов С.
2	Публицистическая статья в СМИ	Апрель-май 2020 г.	Бельгибаева А.С.
3	Круглый стол на тему «Зарубежный опыт развития точного земледелия»	Май 2020 г.	Аужанова М.А., Какабаев Н.А., Бельгибаева А.С.
4	Подготовка и издание буклета о результатах проекта	Май-июнь 2020 г.	Буркитбай А.
5	Публицистическая статья в СМИ	Август 2020 г.	Какабаев А.А.
6	Публицистическая статья в СМИ	Октябрь 2020 г.	Аужанова М.А.
7	Публикация в социальных сетях	систематически	Буркитбай А.





Dissemination plan

«Утверждаю» И.о.ректора КГУ им П.Уалиханова Жаркинбеков Т.Н.

План распространения
результатов проекта Европейской программы Frasmus +
597985-EPP-1-2018-1-КZ-ЕРРКА2-СВНЕ-JP
«New and Innovative Courses for Precision Agriculture» (NICOPA)
в КГУ им.Ш.Уалиханова

№ п/п	Мероприятия по распространению	Сроки реализации
1	Публикация статьи в Сборнике трудов Международной научно-практической конференции «Валихановские чтения»	Апрель 2019 г.
2	Участие в выставке «День Поля», п.Чаглинка, НемАЦ	Июль 2019 г.
3	Методический семинар для преподавателей по итогам обучающего тренинга в Германии	Сентябрь- октябрь 2019 г.
4	Публикация статьи в сборнике материалов конференции, посвященной 40-летию Аграрно- экономического института им.С.Садвакасова	Ноябрь 2019 г.
5	Публикация о проекте в средствах массовой информации	В течение года
6	Размещение информации о ходе реализации проекта на сайте университета, в социальных сетях	В течение года
7	Проведение встреч, круглых столов для студентов, преподавателей и административного персонала университета	В течение года

Локальный координатор проекта



Бельгибаева А.С.

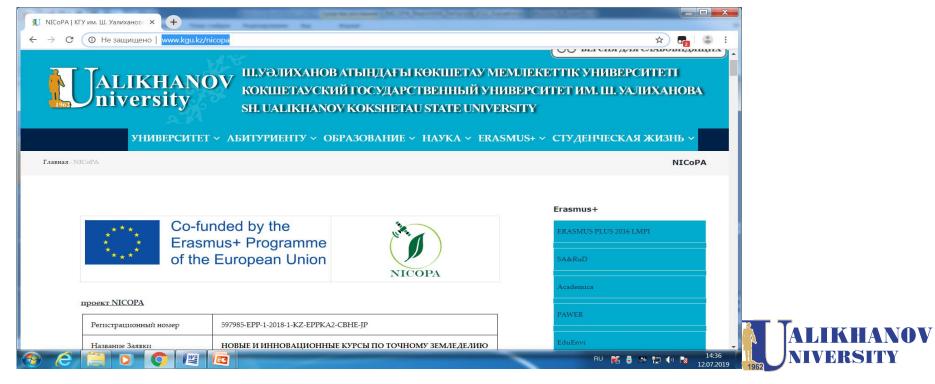


Schedule of dissemination events

Nº	Dissemination activities	Term of realization
1	Publication of the article in the Proceedings of the International scientific and practical conference "Valikhanov readings" on "Sowing machine for precision agriculture» http://www.kgu.kz/sites/default/files/Documents/nauka/konf/Shoqan%20oqulary%2019/5%20Tom_23.pdf	April 2019
2	Participation in the exhibition "field Day", p. Chaglinka, NemAc	July 2019
3	Methodical seminar for teachers on the results of training in Germany	September-October 2019
4	Publication of the article in the proceedings of the conference dedicated to the 40th anniversary of the S. Sadvakasova Agrarian and economic Institute.	November 2019
5	Publications about the project in mass media	During the year
6	Placement of information on the implementation of the project on the University website, in social networks	During the year
7	Meetings, round tables for students, teachers and administrative staff of the University	During e year

Implemented dissemination activities

Information about the project is available on the University website http://www.kgu.kz/nicopa



Meeting in German agricultural center, Chaglinka

In May 2019, members of the working group of the Erasmus + KA2 NICOPA project discussed the prospects of possible cooperation within the project with the Director of the German agricultural center in Kazakhstan (HemAII) Kobzeva Olesya (https://www.facebook.com/shualikhanovksu.nicopa)









Preventive (Advisory) monitoring, Nur-Sultan

On may 16, 2019, a preventive (Advisory) monitoring of the Erasmus + KA2 NICOPA project was held in Nur-Sultan. The monitoring was conducted by the Director of the National Office of Erasmus + in Kazakhstan Tasbulatova Shaizada Umurzakovna.

The monitoring was attended by the project Manager Dr. Arnold Sterengarz (project management Director of ECA Space Technologies, Germany), members of the project working groups from Kazakhstan universities - partners of the project (S. Seifullin KazATU, KSU.Sh. Ualikhanov, M. Kozybaev NKSU)









Chaglinka, Field Day

In July 2019, members of the NICOPA project working group took part in the Field Day, Chaglinka















Regional meeting on the project, Nur-Sultan

October 29, 2019 in S. Seifullin KazATU held a regional meeting on the NICOPA project with the participation of Arnold Sterenharz-project Manager of the EU Erasmus+ Technical University of Berlin. Members of the NICOPA team of M.Kozybayev NKSU., Sh. Ualikhanov KSU exchanged views and defined an action plan for the near future.









Preparing and publishing brochures/leaflets of the project outputs











Meetings of NICOPA project working group members

















Preparation of documentation for a PASO office

Attached to the report is a Regulation on the office for the support and dissemination of services and knowledge on precision agriculture (PASO).

Кокшетауский государственный университет им.Ш.Уалиханова

«Утверждаю»
И.о. ректора
КГУ им. Ш.Уалиханова
ТПОКаркинбеков
« К» ОЭ 20 19 г.

REGULATION ABOUT OFFICE ON SUPPORT AND DISTRIBUTION SERVICES AND KNOWLEDGE OF PROCCESION AGRICULTURE

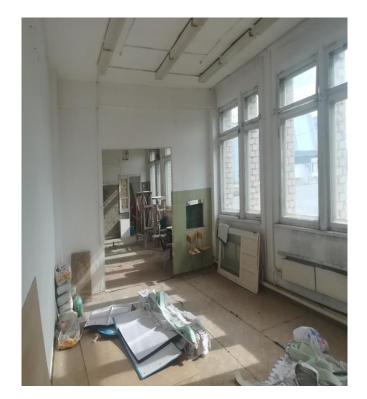
ПОЛОЖЕНИЕ ОБ ОФИСЕ ПО ПОДДЕРЖКЕ И РАСПРОСТРАНЕНИЮ УСЛУГ И ЗНАНИЙ ПО ТОЧНОМУ СЕЛЬСКОМУ ХОЗЯЙСТВУ "PRECISION AGRICULTURE SOFT OFFICES" (PASO)

Разработано в рамках реализации проекта Европейской программы Erasmus + 597985-EPP-1-2018-1-KZ-EPPKA2-CBHE-JP «New and Innovative Courses for Precision Agriculture (NICOPA)»



Rooms for equipment

In September 2019, a room was allocated for equipment at the S. Sadvakassov Agrarian-Economic Institute (AUD. 107). This auditorium is currently being renovated.



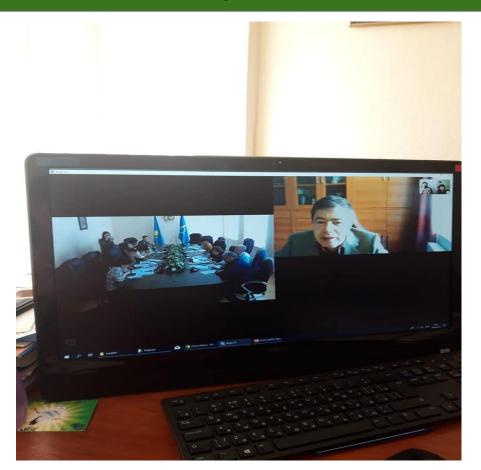








Communication process



The following means of communication are used to communicate with other universities, EU partners, the coordinator and other project participants:

- Skype;
- e-mail;
- WhatsApp









Thank you for your attention!



Anargul Belgibayeva, Local coordinator email: anargul.belgibayeva@maul.ru