

Dissemination
1-year report

New and Innovative Courses for Precision Agriculture



TASHKENT UNIVERSITY OF INFORMATION TECHNOLOGIES NAMED
AFTER MUHAMMAD AL-KHWARIZMI,
FACULTY OF COMPUTER ENGINEERING

PhD. Temurbek Kuchkorov

Joint Project: Capacity Building in the Field
of Higher Education ERASMUS+ 2018

Co-funded by the
Erasmus+ Programme
of the European Union



Dissemination plan

ERASMUS PLUS
HIGHER EDUCATION CAPACITY BUILDING



Co-funded by the
Erasmus+ Programme
of the European Union



Erasmus+ Project
New and Innovative Courses for Precision Agriculture
(NICOPA)

WP4 – Dissemination and Exploitation

NICOPA strategy - plan
for Dissemination, Sustainability and exploitation

Prepared by: ECM Space Technologies GmbH

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«Approved»
Rectory of TUIT named after
Muhammad al-Khwarizmi
T. Teshabaev
« 26 » 12 2019 y

Dissemination plan

for result of European Program Erasmus+ Project by
597985-EPP-1-2018-1-KZ-EPPKA2-CBHE-JP
New and Innovative Courses for Precision Agriculture (NICOPA) in TUIT

№	Dissemination event	Implementation date
1	Project announcement in web site of university (tuit.uz)	January, 2019 y.
2	Disseminating results of Kick-off Meeting in Berlin	March, 2019 y.
3	Publication project related thesis in Republican scientific and technical conference "The importance of information and communication technology in the innovative development of the sectors of the economy"	14-15 March, 2019 y.
4	Project dissemination in Educational-methodological council of TUIT	April, 2019 y.
5	Methodical seminar for teachers according to the result of trainings in Berlin	September- October, 2019 y.
6	Information about project achievements in journal "Xabar" and publication paper (thesis) in conference	November, 2019 y.
7	Explore the NICOPA project activities through social network	Regularly
8	Providing meetings and roundtable discussions with students, teachers and administrative staffs	Regularly

Local project coordinator

T. Kuchkorov



Schedule of dissemination events

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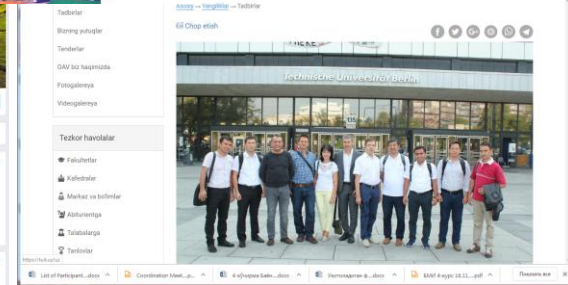
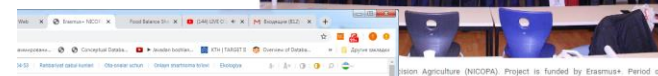
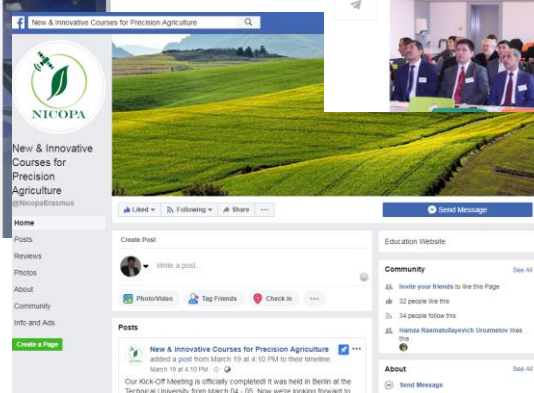
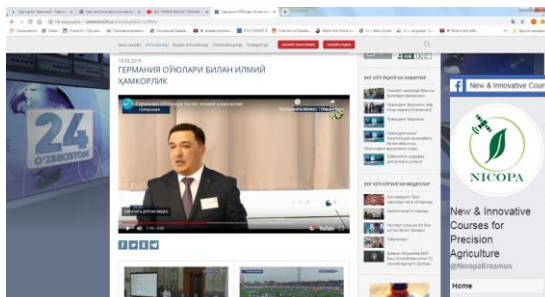
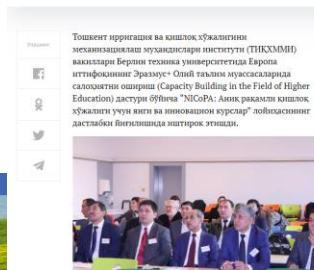


Dissemination (internet links and newspaper)

1. <https://tuit.uz/en/new-and-innovative-courses-for-precision-agriculture-nicopa>
2. <http://tiame.uz/oz/article/deuch>
3. <http://uzbekistan24.uz/uzk/yangiliklar/11/8904/>
4. <https://kun.uz/news/2019/03/09/ozbekiston-otm-germaniya-universitetlari-bilan-hamkorlikni-kuchaytirmoqda>
5. <https://www.facebook.com/NicopaErasmus/>
6. <https://tuit.uz/uz/post/nicopa>



Ўзбекистон ОТМ Германия университетлари билан ҳамкорликни кучайтирмоқда



Dissemination (internet links and newspaper)

АХБОРОТ ТЕХНОЛОГИЯЛАРИ ЁРДАМИДА МЎЛ ҲОСИЛ ВА ДАРОМАД ОЛИШ МҮМКИНМИ?

Ҳозир ҳеч бир соҳа тараққиётини ахборот-коммуникация технологияларисиз тасаввур қилиш қийин. Масалан, қишлоқ ҳўжалигини олайлик. Замоनावий қишлоқ ҳўжалигида деярли барча жараёнлар автоматлашган, қўл меҳнати мумкин қадар камайтирилган, ернинг ва етиштириладиган ҳўслининг ҳолати доимий кузатувада (тупроқ намлиги, сугориш, сувни тежаш кабилар) бўлиши шартки, буларсиз мўл ҳўсил ва юқори даромад олиш шунчаки орзулигича қолаверади.

2022 йилгача бўлган даврда бутун дунё бўйлаб “ақли” қишлоқ ҳўжалигига йўналтирилган тизимлар ва технологияларнинг оммалашши кутилмоқда. Хусусан, қишлоқ ҳўжалигига VRT (Узғарувчан теликдаги технология) тизими, GPS (глобал жойлашувни аниқлаш тизими) қурилмалари, симсиз сенсорлар тармоғи, геоахборот технологиялари (ГАТ) шитоб билан кириб келляпти. Ер, сув ва бошқа табиий ресурслардан оқилона фойдаланиш имконини берувчи “Ақли қишлоқ ҳўжалиги” концепциясига асосланган замонавий ва синалган усулларни

жорий этиш, максимал даражада автоматлаштириш, ҳўсилдорликни кескин ошириш, озиқ-овқат хавфсизлигини таъминлаш — барча ривожланган ва ривожланаётган мамлакатларнинг олдида турган энг муҳим масалалардан ҳисобланади.

Ўзбекистоннинг қишлоқ ҳўжалиги маҳсулотларини қайта ишлаш салоҳиятини ошириш, замон талабига тўлиқ жавоб берадиган ишлаб чиқариш, қайта ишлаш, стандартлаш ҳамда агробизнес йўналишида консалтинг, маркетинг хизматларини ривожлантириш ва илмий тадқиқотларга асосланган интенсив агросаноат тизимини ташкил қилиш, озиқ-овқат саноатини ривожлантириш, соҳанинг инвестициявий жозибадорлигини ошириш ва замонавий технологияларни жорий қилиш мақсадларини кўлаб 2019 йилнинг 1 августида мамлакатимиз президентининг қарори қабул қилинганди.

Муҳаммад ал-Хоразмий номидаги Тошкент ахборот технологиялари университетида ҳам мақсуд йўналишида илмий-тадқиқот ишлари олиб борилляпти. Хусусан, университет мутахассислари томонидан қишлоқ ҳўжалигига рақамли технологияларни жорий қилишида қишлоқ ҳўжалиги учун янги ва инновацион курс-

2018 2019 2020 2021

New and Innovative Courses for Precision Agriculture

www.nicopa.eu

Co-funded by the Erasmus+ Programme of the European Union

Capacity Building in Higher Education | Joint Project Curricula Reform

лар тайёрлаш (NICOPA) лойиҳаси амалга оширилмоқда. Лойиҳа Erasmus+ томонидан амалга оширилиши режалаштирилган. Айни вақтда лойиҳага ҳамкор 16 ташкилот ва 4 ассоциация иштирокида NICOPA консорциуми ташкил этилди.

NICOPA — қишлоқ ҳўжалигида илгор технологиялардан фойдаланган ҳолда ўқув дастурларини модернизация қилишга қаратилган. Бу ўқув курслари географик ахборот тизими, катта маълумотлар билан ишлаш, масофадан бошқариш тизимларини ўз ичига олган. Шунингдек, ўқув курсларида янги ва инновацион

таълим дастурларини ишлаб чиқиш орқали олий таълим сифатини ошириш ва бугунги меҳнат бозори ҳамда жамият учун катта аҳамият касб этадиган олий таълим муассасаларида тахсил олаётган талабаларнинг билим ва кўникмалари даражасини ошириш ҳисобланади. Лойиҳани Қозоғистон ва Россия Федерацияси университетлари билан икки босқичли даврий ўқув дастурлари орқали қўллаб-қувватлаш кўзда тутилган.

Бугунги кунда NICOPA лойиҳаси давомида қуйидаги йўналишларда изланиш олиб борилмоқда:

- лойиҳа Erasmus+ томонидан молиялаштирилади;

- амалга ошириш муддати — 2018-2021 йиллар;
- ахборот ва мониторинг тизимларини яратишда веб-технологиялардан фойдаланиш;
- ҳудудни тезкор ва масштабли кузатиш учун учур қурилма (дронлардан фойдаланиш);
- масофадан бошқариш жараёнида мобил иловалардан фойдаланиш;
- геоахборот технологиялардан (GIS) фойдаланиш;
- нарзалар интернет (IoT) технологиясидан фойдаланиш.

Асосан GPS тизими, симсиз сенсорлар тармоғи, геоахборот технологияларини қишлоқ ҳўжалигидagi ишлаб чиқариш жараёнларига интеграция қилиш орқали фермерлар ва мутахассислар ернинг ҳар бир қисми учун зарур сув, ўғит ва ҳўказоларнинг аниқ микдорини билиб бориш орқали яқунда ҳўсилни максимал даражада ошириш имконига эга буладилар. Қолаверса, “ақли” қишлоқ ҳўжалиги тизими билан сув, энергетика, ўғит, кимёвий моддалар ва бошқа воситалар учун харажатларни анча қисқартиришга эришиш мумкин.

Темурубек ҚУЧҚОРОВ,
ТАТУ “Компютер тизимлари” кафедраси доценти

Dissemination (in Educational and Methodological Council, Computer system department)



Co-funded by the
Erasmus+ Programme
of the European Union



KA2 ERASMUS+ PROJECT: 597985-EPP-1-2018-1-KZ-EPPKA2-CBHE-JP

“Ақли кишлоқ хўжалиги учун янги ва инновацион
курслар”
(New and Innovative Courses for Precision Agriculture)

Европа иттифокнинг Эрасмус+ дастури доирасида олиб
борилаётган лойиҳа

ТАТУда лойиҳа координатор: Темурбек Кучкоров

timanet4u@gmail.com

23/04/2019



ТАСДИҚЛАЙМАН

Ўзбекистон раиси
Ф.Азизов
2019 йил 23 апрель

Мухаммад ал-Хоразмий номидаги Тошкент ахборот-технологиялари университети
Илмий-услубий кенгаши йўналиши 4 -сонли байномасидан
К У Ч И Р М А

Тошкент ш.

2019 йил 23 апрель

КАТНАШДИЛАР: Илмий-услубий кенгашнинг 30 та аъзоси, 42 та профессор-
ўқитувчилар

КУН ТАРТИБИ:

3. Таълим жараёнини ташкиллаштириш ва таълим сифатини оширишда
халқаро бўлим томонидан оширилаётган чора-тадбирлар тўғрисида

3.2. Европа Иттифокнинг Erasmus+ дастури доирасида 2019-2021 йилларда амалга
оширилаётган “Ақли кишлоқ хўжалиги учун янги ва инновацион курслар” (597985 -New
and Innovative Courses for Precision Agriculture - NICOPA) лойиҳа
ахборот.

ТИНГЛАНДИ:

Ўзбекистон университетлари



Activities (Training in Berlin)

- GIS Internet, Mobile, and Distributed GIS), (GIS Advanced Methods for Geospatial Analysis;
- Deep learning in Computer vision;
- GIS Data processing and adjustment, Spatial databases and Infrastructures;
- Using of SENTINEL1-2-3 imagery;
- Space Geodetic Techniques;
- Remote sensing and Space Sensor Systems;
- Global Navigation Satellite Systems (NAVSTAR, GLONASS, GALILEO and etc.);
- Soft skills for Engineers, Start-up initiatives for future farmers;
- Management Marketing and Decision Making in PA;
- Big Data for PA;
- Precision Agriculture – characteristics, technologies, economic efficiency, optimal use of resources.



Erasmus+ Information day in Tashkent (October, 2019)



Meeting minutes

EXCERPT
FROM THE 4TH PROTOCOLS
DEPARTMENT OF COMPUTING SYSTEMS
TASHKENT UNIVERSITY OF INFORMATIONAL TECHNOLOGIES NAMED AFTER
MUHAMMAD AL-KHWARIZMI

Tashkent city September 17, 2019

- PRESENT:**
- 1- Djumanov J.X., Prof. (DSc.), Head of Department
 - 2- Musae M.M., Prof. (DSc.)
 - 3- Qahhorov A., Associate professor (Csc.)
 - 4- Miryusupov, Associate professor (Csc.)
 - 5- Akbarudjaev Sh.N., Associate professor (Csc.)
 - 6- Nazarov A.I., Associate professor (Csc.)
 - 7- Yakubov A.B., Associate professor (Csc.)
 - 8- Raxmatov F.A., Associate professor (Csc.)
 - 9- Yakubov A.B., Associate professor (Csc.)
 - 10- Abdurashidova K.T., Associate professor
 - 11- Kuchkarov T.A., Ph.D., Associate professor
 - 12- Raximov M., Ph.D., Senior lecturer
 - 13- Yusupov R.A., Senior lecturer
 - 14- Sayfullaeva N.A., Senior lecturer
 - 15- Mirzaxalilov S.S., Senior lecturer
 - 16- Shukurov K.E., Senior lecturer
 - 17- Rajabov F.F., Senior lecturer
 - 18- Nasimov R., Senior lecturer
 - 19- Atadjanova N.S., Teacher assistant
 - 20- Dovletova S.B., Teacher assistant
 - 21- Axralov Sh.S., Teacher assistant
 - 22- Maxamadiyev M.M., Teacher assistant
 - 23- Ochilov M., Teacher assistant

AGENDA:

1. Applying digital technologies in the agricultural (NICOPA) project scope

OPENING REMARKS OF THE HEAD OF DEPARTMENT, Prof. Djumanov J.X.,

1. It was stated by the head of the department the ongoing projects planning in the scope of NICO and that active projects related to the innovativ curricula design covering subjects such as Geospatial Analysis, Deep learning in Computer Big Data for PA, plays a socially, educati academically important role.

REMARKS by initiators of the project:

1. The initiators of the project are conducting research in cooperation with several foreign universities. In particular, the training was organized by the Technical University of Berlin on August 19-30 with participation of all project participants and partners, and the teaching staff of our university, including project coordinator Kuchkarov T.A. and members of the project took an active part in this training.



2. During the training, the following lectures were conducted:
 - GIS Internet, Mobile, and Distributed (GIS), (GIS Advanced Methods for Geospatial Analysis;
 - Deep learning in Computer vision;
 - GIS Data processing and adjustment, Spatial databases and Infrastructures;
 - Using of SENTINEL1-2-3 imagery;
 - Space Geodetic Techniques;
 - Remote sensing and Space Sensor Systems;
 - Global Navigation Satellite Systems (NAVSTAR, GLONASS, GALILEO and etc.);
 - Soft skills for Engineers, Start-up initiatives for future farmers;
 - Management Marketing and Decision Making in PA;
 - Big Data for PA;

- Precision Agriculture – characteristics, technologies, economic efficiency, optimal use of resources.

DECISIONS MADE: 1. Adopting the NICOPA Project for the Development of New and Innovative Agriculture Courses (NICOPA) in the field of digital technologies in agriculture for project training at the Technical University of Berlin.

Chairman of the meeting:

Secretary:



Prof. Djumanov J.X.

N.S.Atadjanova

List of participants of the meetings

No	Present	Signature
1.	Djumanov J.X., Prof. (DSc.), Head of Department	<i>[Signature]</i>
2.	Musae M.M., Prof. (DSc.)	<i>[Signature]</i>
3.	Qahhorov A., Associate professor (Csc.)	<i>[Signature]</i>
4.	Miryusupov, Associate professor (Csc.)	<i>[Signature]</i>
5.	Akbarudjaev Sh.N., Associate professor (Csc.)	<i>[Signature]</i>
6.	Nazarov A.I., Associate professor (Csc.)	<i>[Signature]</i>
7.	Yakubov A.B., Associate professor (Csc.)	<i>[Signature]</i>
8.	Raxmatov F.A., Associate professor (Csc.)	<i>[Signature]</i>
9.	Abdurashidova K.T., Associate professor	<i>[Signature]</i>
10.	Kuchkarov T.A., Ph.D., Associate professor	<i>[Signature]</i>
11.	Raximov M., Ph.D., Senior lecturer	<i>[Signature]</i>
12.	Yakubov A.B., Associate professor	<i>[Signature]</i>
13.	Yusupov R.A., Senior lecturer	<i>[Signature]</i>
14.	Sayfullaeva N.A., Senior lecturer	<i>[Signature]</i>
15.	Mirzaxalilov S.S., Senior lecturer	<i>[Signature]</i>
16.	Shukurov K.E., Senior lecturer	<i>[Signature]</i>
17.	Rajabov F.F., Senior lecturer	<i>[Signature]</i>
18.	Nasimov R., Senior lecturer	<i>[Signature]</i>
19.	Atadjanova N.S., Teacher assistant	<i>[Signature]</i>
20.	Dovletova S.B., Teacher assistant	<i>[Signature]</i>
21.	Axralov Sh.S., Teacher assistant	<i>[Signature]</i>
22.	Maxamadiyev M.M., Teacher assistant	<i>[Signature]</i>





NICOPA

Thank you for you attention!



Co-funded by the
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of the European Union

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