



**Closing seminar**  
Tiaret on October 03 and 04, 2022  
final report

**New Curricula in Precision  
Agriculture Using GIS Technologies  
and Sensing Data**

N°: 597962-EPP-1-2018-1-EE-EPPKA2-CBHE-JP

**IBN KHALDOUN TIARET UNIVERSITY UIK**



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

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

**Prepared by UIK Team**

# Cupagis final event , reports restitution Tiaret :

## October 03 and 04, 2022

- CUPAGIS is an Erasmus CBHE project: *New Curricula in Precision Agriculture Using GIS Technologies and Sensing Data* (<https://cupagis.eu>) , which aims to modernize precision agriculture teaching programs using new technologies such (Geographic Information System / GIS, sensors, remote sensing...)
- Updating existing programs according to educational needs and developing new certified programs according to new achievements in the region, labor market requirements and the Bologna process



National School of Agronomy



Ibn Khaldoun Tiaret University



University of Djillali Liabe SBA



University of Oran 1 Ahmed ben Bella



Abdelhamid Ben Badis Mostaganem University



Tallinn University of Technology  
Estonia.....Coordinator



Engineering Consulting and Management for Espace  
Technologie



Technische Universität Berlin







Czech University of Life Sciences



Agricultural university of Plovdiv

# University of Tiaret UIK Team

Work Package	Title	Responsible	
<b>WP01</b>	Review of the current curricula for BA/MSc	Dr, Benaichata Lazrag	
<b>WP02</b>	Prepare a set of new core curricula	Prof. Tayeb ALLAOUI	
<b>WP03</b>	Strategy assurance quality / quality plan (QP)	Dr. El Hadj BEKI Dr. BEBHABEL El Hadj	
<b>WP04</b>	Project dissemination and communication plan	Dr. Bouacha Mohamed islem	
<b>WP05</b>	Management project	Prof. Mhamed MAATOUG	
	Academic Responsible	Prof. AEK DELLAL	



# Cupagis Project

## 1-Department concerned by the project

No	Department	Faculties
1	Department of Agronomic Sciences	Natural and Life Sciences
2	Department of Natural and Life Sciences Department of	
3	Department of Computer Sciences	Informatics and Mathematics
4	Department of Electrical Engineering	Applied Sciences

## 2- Start of the Cupagis project :

- The Cupagis project was started on 18 – 19 February 2019 in Tallinn, Estonia as the coordinating university. In this meeting, two professors from the University of Tiaret participated (Prof Maatoug and Prof Dellal). During the start-up conference of the cupagis project, the main axes were discussed in the presence of representatives of Algerian universities: the progress of the project, the teaching programs, quality and insurance, financing, the budget.



# Curricula: Updated and New Courses

Cours e №	Title of the course	Type of course	Number of ECTS	Name of the person(s) responsible for development + email
01	Remote Sensing and Application of Earth and Environment related PA	New	08	Dr. Kaddar Bachir
02	Yield sensors for Precision Agriculture	New	03	Dr, Ghellab Abdelkader
03	Basics of the Precision Agriculture	New	05	Pr. Dellal Abdelkader
04	Agricultural statistics and experimentation	Upd	04	Pr. Maatoug M
05	Plant ecophysiology	Upd	04	Dr.Maamar Benchohra
06	General agriculture	Upd	03	Dr,Bouacha Mohamed islem
07	Intensive course to leverage acceptance of the new technologies	New	03	Dr.Bouacha Mohamed Islem
08	Soil physical properties and its measurement	New	04	Pr.dellal Abdelkader
09	Algorithmic and data structure.	Upd	05	Dr, Mansouri Dou el Kifl
10	Electrical and electronic measurements	Upd	05	Dr, Ouared Rahal
11	Global Navigation Satellite System (GNSS)	New	3.5	Dr,Ottman Abdelkader
12	signal processing	Upd	03	Pr.Allaoui Tayeb
13	Artificial Intelligence	Upd	03	Dr. Si abdelhadi Hamida
14	Agrometeorology	Upd	04	Pr, Rezzoug Wafa
15	Start-up initiatives for future farmers	New	2.5	Dr, Ounes Mohamed
16	Using of SENTINEL1-2-3 imagery for agricultural field monitoring	New	04	Dr. Bouacha Med Islem
17	Optimizing computer vision algorithms and real-time implementations.	Upd	04	Dr. Mansouri Dou El kifl
18	Web technology	Upd	03	Dr.Siabdelhadi Hamida
19	Application of precision agriculture for culture growth	Upd	04	Pr, Rezzoug Wafa
20	Geographics informations systems	Upd	04	Dr.Bouacha Med islem
21	Geographics data bases	Upd	04	Dr. Kaddar Bachir
22	Agricultural legislation	Upd	02	Dr.Bouacha Med islem

# Program Expertise

## 1- European Expertise

The proposed programs have been appraised by experts from European partners:

- Czech: University of life Sciences Prague, Faculty of engineering (Prof Frantisek Kumhala dated 07/01/2020).

- Agricultural University, Plovdiv, Bulgaria (Assoc.Prof. Dr. Zhulieta Arnaudova dated 08/2020)

- Economic faculty, Agricultural University, Plovdiv, Bulgaria (Assoc.Prof. Dr. Krum Hristov dated 18/08/2020), and Dean. Prof. Dr. Dimo Atanasov dated 08/22/2020

*The Master program "Precision agriculture" at Ibn Khaldoun Tiaret University is well developed. The overall concept is professional. It follows a clear academic logic. Potential students will benefit from studying in this course. They would improve options for professional realization, and would contribute to modernization of Algerian and World agriculture.*

*The program has potential to develop continually. Professors, students and all stakeholders should cooperate in order to optimize education. After each cycle, the quality of teaching-learning will improve.*

Comments to Curricula Description of the Algerian universities, created in the framework of the CUPAGIS project from Czech University of life Sciences Prague, Faculty of engineering.

Frantisek Kumhala

### **Ibn Khaldoun Tiaret University UIK – Precision Agriculture training**

*The new curricula are well and logically designed. I appreciate the inclusion of the chapters as Electrical and electronic measurement, Web technology, Star-up initiatives for future farmers, Signal processing – these chapters differ from the curricula of other universities and I find it as very useful. Especially robotics and autonomous systems in agriculture is very challenging topic.*



New curricula in Precision Agriculture using GIS technologies and sensing data (CUPAGIS)

## **PEER REVIEW**

on the Curricula of "Precision Agriculture" Master Training University UIK

Assoc.Prof. Dr. Zhulieta Arnaudova  
Agricultural University, Plovdiv, Bulgaria  
Lecturer



New curricula in Precision Agriculture using GIS technologies and sensing data (CUPAGIS)

## **PEER REVIEW**

on the Curricula of "Precision Agriculture" Master Training  
Ibn Khaldoun Tiaret University UIK

Prof. Dr. Dimo Atanasov

DEAN of the Economic Faculty, Agricultural University – Plovdiv, Bulgaria  
Local coordinator of the CUPAGIS project



New curricula in Precision Agriculture using GIS technologies and sensing data (CUPAGIS)

## **PEER REVIEW**

on the Curricula of "Precision Agriculture" Master Training  
Ibn-Khaldoun University Tiaret (UIK)

Assist. Prof. Dr. Krum Hristov

Economic Faculty, Agricultural University – Plovdiv, Bulgaria  
Teacher/researcher, CUPAGIS project

# Program Expertise

## 1- Algerian Expertise

### Conclusion

The “Precision agriculture” program was also appraised by the national pedagogical commission for the field of natural and life sciences on 12/07/2021. A ministerial decree was subsequently established on 21/09/2021.

République Algérienne Démocratique et Populaire  
Ministère de l'Enseignement Supérieur et de la Recherche Scientifique  
CONFERENCE REGIONALE DES UNIVERSITES DE L'OUEST - UNIVERSITE ORAN2 "MOHAMED BEN AHMED"

Offres de formation de Licence et Master retenues par le CPND SNV après expertise et levée des réserves  
au titre de l'année universitaire 2021-2022. Région Ouest  
(Annexe 2)

Présidente de la Commission  
Pédagogique Nationale de  
domaine ( SNV )  
Dr. BAOUÏZARROUJ

N°	Etablissement	Cycle	Type	Domaine	Filière	Spécialité	Observation	Avis du CPND
01	U-GRAN 1	Licence	Professionnalisant	SNV	Sciences Agronomiques	Agriculture de précision	Nouvelle formation	Avis favorable
02	U-MOSTA	Master	Professionnalisant	SNV	Sciences Agronomiques	Technologies Avancées en Agriculture de Précision	Nouvelle formation	Avis favorable
03	U-SBA	Master	Professionnalisant	SNV	Sciences Agronomiques	Agriculture de précision	Nouvelle formation	Avis favorable
04	U-TARBOU	Master	Professionnalisant	SNV	Sciences Agronomiques	Agriculture de précision	Nouvelle formation	Avis favorable

ملحق رقم 39 للقرار رقم 992 المؤرخ في 21 سبتمبر 2021  
المتضمن تأهيل مؤسسات التعليم العالي لضمان التكوين لنيل شهادات الليسانس و الماستر  
باعتوان السنة الجامعية 2022-2021 بجامعة تيارت

Annexe n° 39 de l'arrêté n° 992 du 21 SEP. 2021  
portant habilitation les établissements de l'enseignement supérieur à la formation en vue de l'obtention du diplôme  
de Licence et Master au titre de l'année universitaire 2021-2022 à l'Université de Tiaret

Domaine	Filière	Spécialité	Type (A/P)	Cycle de formation	طور التكوين	طبعة (م/م)	التخصص	الشعبة	الميدان
Sciences de la Nature et de la Vie	Sciences agronomiques	Agriculture de précision	P	Mas	م	م	الزراعة الدقيقة	علوم فلاحية	علوم الطبيعة و الحياة





# Students of the master of precision agriculture

- Registration for a master's degree in precision agriculture was opened in the 2021/2022 academic year. 28 students (08M and 20 F) out of 45 applications were selected on the basis of a ranking of the averages of students with a bachelor's degree. The number of teachers involved in the pilot teaching is 06 teachers in the 1st semester / 07 teachers in the 2nd semester.



**Exam N°01 of semester 01 for my Precision Agriculture Master class (2021/2022). Unity: Intensive course to leverage acceptance of the new technologies**



Applicants with Bachelor degree in : Ecology sciences , Agro-Ecology , Water & soil sciences and Vegetable production from the university of TIARET and nearest universities , can follow a master degree in precision agriculture.



# Master Class

Emploi du temps [Cours/TD/TP, en Présentiel] du 20 février au 03 mars 2022						
Lieu: Salle 1 [Pavillon B]						
	8h.30' à 09h.30'	09h.30' à 10h.30'	10h.30' à 11h.30'	11h.30' à 12h.30'	13h.30' à 14h.30'	14h.30' à 15h.30'
Dimanche	Soil physical properties and its measurement Dellal	Soil physical properties and its measurement Dellal	TP Algorithmic and data structure Mansouri		Algorithmic and data structure Mansouri	TD Algorithmic and data structure Mansouri
			TP Soil physical properties and its measurement Dellal		Start-up initiatives for futur farmers Ounes	TD Start-up initiatives for futur farmers Ounes
Lundi						
Mardi	Electrical and electronic measurements Allaoui	signal processing Allaoui		Global Navigation Satellite System (GNSS) Othmane	TD Global Navigation Satellite System (GNSS) Othmane	
Mercredi	signal processing Allaoui	Artificial Intelligence Si Abdelhadi	TD Artificial Intelligence Si Abdelhadi		TP Electrical and electronic measurements Allaoui	
Jeudi	Agrometeorology Rezoug	TP Agrometeorology Rezoug				



# Master Class

Responsable de la spécialité: BOUACHA					
Emploi du temps [Cours/TD/TP , en Présentiel ] à partir du 13 septembre 2022					
2 <sup>ème</sup> année master "Agriculture de précision" [3 <sup>ème</sup> semestre]					
Lieu: Salle 1 [Ex Bibliothèque]					
	8h.00' à 09h.30'	09h.30' à 11h.00'	11h.00' à 12h.30'	13h.30' à 15h.00'	15h.00' à 16h.30'
DIMANCHE	Web technology	[TP] Using of SENTINEL1-2-3 imagery for agricultural field monitoring		[TP] Web technology	
LUNDI	Optimizing computer vision algorithms and real-time implementations.	Optimizing computer vision algorithms and real-time implementations.		[TP] Optimizing computer vision algorithms and real-time implementations.	
	Mansouri	Mansouri		Mansouri	
MARDI	Using of SENTINEL1-2-3 imagery for agricultural field monitoring	Geographics informations systems	[TP] Geographics informations systems	Management Marketing and Decision Making in Precision Agriculture	[TD] Management Marketing and Decision Making in Precision Agriculture
	Bouacha			Ounes	Ounes
MERCREDI	Agricultural legislation	Informations & communications technologies	Bibliographic research	[TD] Application of precision agriculture for culture growth	
	Miara	Miara	Safa	Rezzoug	
JEUDI	Application of precision agriculture for culture growth	Application of precision agriculture for culture growth	Geographics data bases	[TP] Geographics data bases	
	Rezzoug	Rezzoug	Kaddar	Kaddar	



# Quality Assurance Plan

## Objectif:

1. Periodical reports are to be done to assure the quality, reports conclusion are driven from questionnaire dedicated to the project understanding and the level of commitment, problems encountered, means needed...etc.
2. It is essential to accompany members of the project and propose internal/external Quality evaluation/reports according to Q Plan
3. Update of UIT quality assurance plan
4. Development of recommendations for quality indicators for peer review of new curricula/courses
5. Periodical survey of students (preparation of a questionnaire) in order to assess quality of master classes; lectures during the pilot teaching
6. External quality evaluation



**Quality Assurance Activity**



# Quality Assurance Activity

## WP3 Quality Control:

- Assess visibility, clarity and attractiveness of training
- Assess adequacy of access conditions with the objectives of the training
- Collection and analysis of data
- Internal review of the curricula
- Meeting with the members of the University QA Unit
- Developpement of quality indicators for curricula
- Curricula Evaluation
- updating of the group's work schedule

## Paragraph to insert into the report:

Due to the current pandemic, several QA actions have not been carried out until now.

The group activities are limited to:

- Participation in meetings;
- Establishing of Quality indicators for courses/modules/curricula;
- Preparation for future actions.

The remaining actions will be started as soon as possible depending on the lifting of containment.



# Quality Assurance Activity

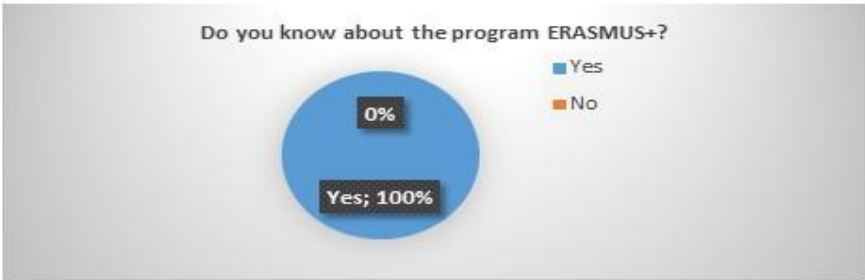
CUPAGISSTUDENT QUESTIONNAIRE / draft

Indicative Questions to determine the level of awareness about the CUPAGIS project among students and teachers of PC universities

**Number of participants:**

- Students: 30
- Teachers: 12



No	The questionnaire
1	<p>Do you know about the program ERASMUS+?</p> 
2	Do you know about the project CUPAGIS?

CUPAGIS STUDENT QUESTIONNAIRE / draft

Indicative Questions to determine the level of awareness about the CUPAGIS project among students and teachers of PC universities

Questions indicatives pour déterminer le niveau de connaissance du projet CUPAGIS parmi les étudiants et les enseignants des universités PC

Nom et prénoms : .....

Qualité : Enseignant/Etudiant : spécialité : .....

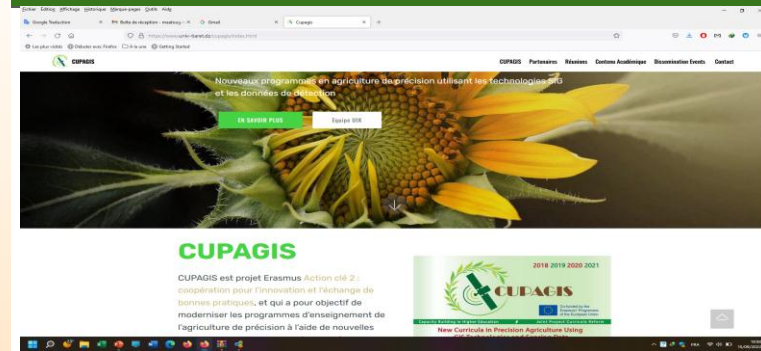
No	The questionnaire
1	<p>Do you know about the program ERASMUS+?</p> <p>Connaissiez-vous le programme ERASMUS +?</p>
2	Do you know about the project CUPAGIS?





# Dissemination plan: Pasenso

- Creation of a web page for the CUPAGIS program on the Ibn khaldoun university platform: <http://www.univ-tiaret.dz/cupagis/index.html>
- Minutes meeting with students targeted by this new curricula.
- CUPAGIS day to be hold at the LANZA laboratory level with socio-economic partners.
- Within the framework of the activities of dissemination of information and presentation of the ERASMUS + Cupagis project, initiated at the University IBN KHALDOUN DE TIARET, a good number of activities were programmed and carried out during the last period
- Facilitation of meetings Cupagis team / social partners: discussions and exchanges on the objectives of the program and perspectives of implementation.
- Extension and sensitization for the benefit of the student community: presentation of the cupagis program for the target populations
- development of a web platform on the university's website
- Radio program animation, on the regional channel to sensitize potential socio-economic partners and other actors in the agricultural sector.



<http://www.univ-tiaret.dz/cupagis/index.html>



Information day on Cupagis, presented by local coordinator Prof Maatoug M. Date: January 07, 2020



# Dissemination

- Information and communication day on the ERASMUS + programme, particularly the Cupagis project at the central library of the Faculty.
- Creation and distribution of a Cupagis brochure on the moodle eLearning platform of the University IBN KHALDOUN DE TIARET.
- Within the framework of the activities of dissemination of information and presentation of the ERASMUS + Cupagis project, initiated at the University IBN KHALDOUN DE TIARET, a good number of activities were programmed and carried out during the last period
- Facilitation of meetings Cupagis team / social partners: discussions and exchanges on the objectives of the program and perspectives of implementation.
- Extension and sensitization for the benefit of the student community: presentation of the cupagis program for the target populations
- development of a web platform on the university's website
- Radio program animation, on the regional channel to sensitize potential socio-economic partners and other actors in the agricultural sector.
- Information and communication day on the ERASMUS + programme, particularly the Cupagis project at the central library of the Faculty.
- Creation and distribution of a Cupagis brochure on the moodle eLearning platform of the University IBN KHALDOUN DE TIARET.



Photos of the students with Dr Bouacha I. (Pasenso) in the classroom. He explains the objectives of the Cupagis project. Date: February, 2020



# Dissemination



Photos of the students with Dr Bouacha I. (Pasenso) in the classroom. He explains the objectives of the Cupagis project.

Date: February, 2020



Photos taken on Tiaret local radio on the Cupagis project. In the middle, journalist Dilia Nadia, on the left, Dr Bouacha Islem (Pasenso) and on the right the Local coordinator Prof Maatoug M. Date: : January, 2020



# Dissemination



Article from the newspaper "Le Courrier d'Algérie" on the Cupagis Project, objectives, European partners and socioeconomic partners. Date: February 2020

<http://lecourrier-dalgerie.com/universite-ibn-khladoun-de-tiaret-un-master-international-sur-lagriculture-de-precision-lannee-prochaine/>



Photos of the students with Prof. Maatoug M ( Local Manger).  
February, 2020





# Dissemination



Awareness session for 3rd year bachelor students on the Cupagis project.



Article from the Arabic newspaper "Maghreb Orient" on the Cupagis Project, a master's degree in precision agriculture will be opened at the University of Tiaret next year. An Erasmus + project between Algeria and 05 European universities. Date: January 08 2020.



# Webinar "CUPAGIS Project: Women in Agricultural Science and Technology"

## 07 April 2021

This webinar addressed the important gender question in science, the role of the women in agriculture in Algeria.

the University of Tiaret participated with a conference presented by Dr Maamar Benchohra, on Precision agriculture and cereal sector in the Wilaya of Tiaret,

10h.15 - 10h.30

**Conference 1.3 : 'Precision agriculture and cereal sector in the Wilaya of Tiaret'**

**Dr. Maamar Benchohra,**  
University of Tiaret, Algeria.

10h.30 - 10h.45

### Partners



EXOLAUNCH

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



WEBINAR ON :

CUPAGIS PROJECT :

**WOMEN  
IN  
AGRICULTURAL  
SCIENCE  
AND  
TECHNOLOGY**

### STEERING COMMITTEE

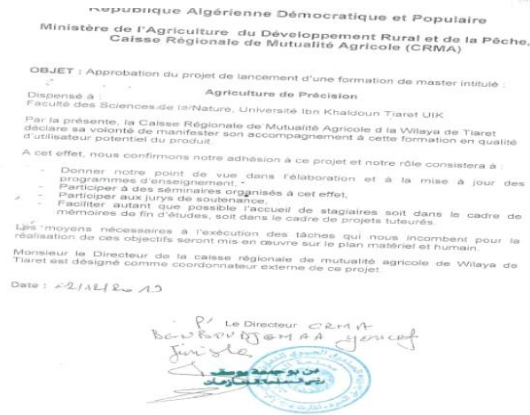
PROF. TARMO SOOMERE  
MBA. ELENA EYNGORN  
SVETLANA JASIC  
ASSOS. PROF. D. ATANASOV  
PROF. HRISTINA YANCHEVA  
PROF. F. KUMHALA  
DR. A. STERENHARZ  
PROF. A. KADOUN  
PROF. S. BALASKA  
PROF. Y. LEBBAH  
PROF. M. MAATOUG  
PROF. H. BENOUDNINE  
PROF. LARIBI ABDELKADER  
MR. KHECHENI KARIM

<https://www.univ-mosta.dz/>  
<https://www.cupagis.eu/>

# Socio economic Partner

## Socio-economic partners who have signed the agreements

- 1 National Institute of Agronomic Research INRA, SABAIN Tiaret.
- 2 Regional fund of agricultural mutuality Directorates of agricultural services of the wilaya of Tiaret CRMA
- 3 Directorate of Agricultural Services of the Wilaya of Tiaret DSA



### 8. Signatures and information of the PARTIES

University	Partner
Occupation, full name of the legal representative: Rector, P. Dr. MINAQUNI Abdenbi (signature, stamp, date) 23 MARS 2020	Occupation, full name of the legal representative: Laboratory Director, Mr. ZEBAR Ahmed (signature, stamp, date) 18 MARS 2020

### signatures and information of the PARTIES

University	Partner
Occupation, full name of the legal representative: Rector, P. Dr. MINAQUNI Abdenbi (signature, stamp, date) 23 MARS 2020	Occupation, full name of the legal representative: Head of agricultural statistics department, Mr. YAHIA Mohamed (signature, stamp, date) 17 MARS 2020

9. On behalf of the European participants of the NICOPA project consortium, this agreement is signed by EXOLAUNCH GmbH: EXOLAUNCH GmbH, Reuchlinstrasse 10, 10553, Berlin, Germany

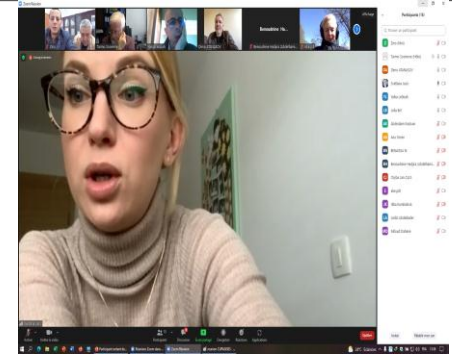
Awareness day for socio-economic partners on the Cupagis project



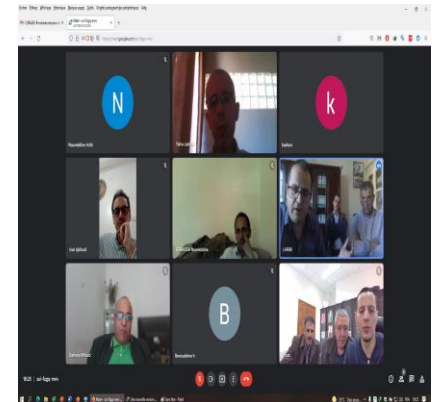
# Management project

- Meeting minute with the partners Cupagis of Tiaret each Tuesday : 26 November 2019; 10
- December 2019; 7 and 21 January 2020; 4 and 25 February 2020; 10 and 24 March 2020; 7 April 2020 : development and creation of coordination programs
- Training course on 19-30 August 2019 in Technik University Berlin (Germany) : GIS, Precision Agriculture and Remote sensing
- Cupagis student questionnaire/Draft about the program ERASMUS and CUPAGIS 25 November 2019
- Cupagis equipment/ Draft: soil sampling instruments, multi-sensors humidity, station work of measuring and the rooms equipment in SNV of university of Tiaret : 18 February 2020
- 21 st November 2019 cluster meeting on CBHE projects: University of Mostaganem

-



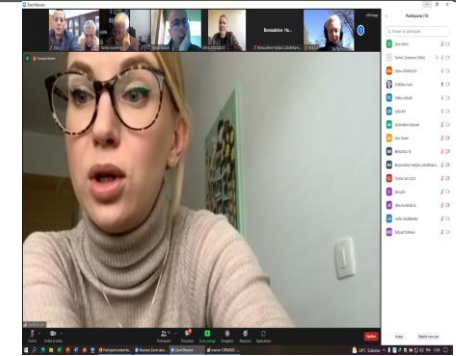
Meeting with European Partner



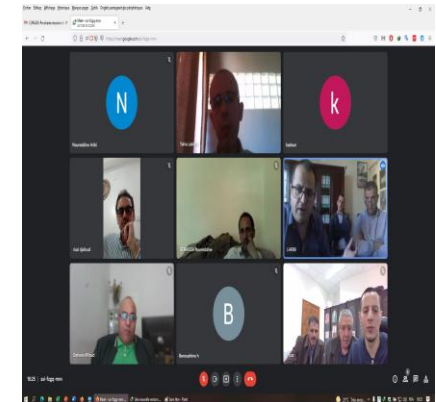
Local meeting with Algerian Partner

## Management project

- Knick off Meeting minute with the stakeholders: DSA, INRA, ITGC, INSID, chamber agriculture of Tiaret and CRMA, 22 December 2019 : approbation of the Master of Precision agriculture
- Cupagis meeting zoom with Algerian-partners (April 2020 ).
- Cupagis meeting zoom with European-partners ( March-2020).
- Coordination Meeting 22.12.2020 , Online Coordination Meeting
- Coordination Meeting 29.06.2020, Online Coordination Meeting
- Online Coordination Meeting 23.11.2021 Online Coordination Meeting
- CUPAGIS science day: “Perspective for the Development of Precision Agriculture in AI Management” 29 June 2022
- Online Coordination Meeting, Online Coordination Meeting 04.05.2022
- CUPAGIS national coordination meeting . Local coordination meetings on 02 July 2022



## Meeting with European Partner



## al meeting with Algerian Partner

# Teacher and students training

## Berlin training: 19/08/2019- 30/08/2019

- The first training in precision agriculture was held, as part of the Cupagis project, in Berlin (Germany) from 08/19/2019 to 08/30/2019. 03 professors from the University of Tiaret participated.



# Teacher and students training

## Activity after Berlin training

Mardi 10/09/19	Conference 01: - Methods of geoinformation Sciences GIS -GIS and spatial Databases
Mardi 24/09/19	Conference 02: -Yield sensor for precision agriculture
Mardi 08/10/19	Conference 03: Basics and methods of soil physical properties and its evaluation
Mardi 22/10/19	Conference 04: GNSS radio-occultations: Processing at GFZ and applications for weather and climate researches
Mardi 05/11/19	Conference 05: Precisions agricultures -Characteristics technologies; economic efficiency, Optimal use for resources -Development of the academic content and methodology



## Online Master Classes: November 2020 - April 2021

The master classes are provided by Technische Universität Berlin (Berlin, Germany), Agricultural University Plovdiv (Plovdiv, Bulgaria), and Czech University of Life Sciences (Prague, Czech Republic). Below you can find the agenda (November 2020 - April 2021)



EXOLAUNCH



## Summer School 2022 – CUPAGIS training in Prague 25 - 29 July 2022

- The second major training event of CUPAGIS was taking place at the Czech University of Life Sciences in Prague under leadership of Prof František Kumhala and Prof Jitka Kumhalova and with participation of 14 professors and teachers from Algerian partner universities.
- 02 Professors from Tiaret university: Prof Dellal AEK et Dr. Kaddar Bachir



Prepare drone for hop farm monitoring.





# Cupagis final event , master classes and report restitution , TIARET from 25<sup>th</sup> September to 04<sup>th</sup> October 2022..

The sequence of events at the University of TIARET includes training sessions for students enrolled in the master studies of precision agriculture in Algerian universities, master classes and the final seminar. The main target of students' training is improvement of communication skills. The themes focus on the use of new technologies in precision agriculture. The final seminar contributes to periodic meetings of partner universities for the evaluation of projects of new training offers in Algeria, in precision agriculture. It is also about restituting the reports of the member teams and the different work packages.

### Training program

<b>Sunday 25<sup>th</sup> September</b>
09h30-10h30 : Opening ceremony
10h30-12h00 : Basics and principles of Precision Agriculture
12h00-13h30 Lunch
13h30-15h00 : L'Agriculture de précision : une alternative pour la réhabilitation du système agricole en Algérie
15h00-16h30 : Techniques d'informations et de communication
<b>Monday 26<sup>th</sup> September</b>
8h30-10h00 : Introduction aux systèmes d'information géographique
10h00-13h30 Coffee break
10h30-12h00 : General laws of telluric radiation
13h30-15h00 : Méthodes de cartographie de l'occupation des sols agricoles, se basant sur le calendrier culturel de la région.
15h00-16h30 : Techniques de communication pour le développement de l'agriculture en Algérie.
<b>Tuesday 27<sup>th</sup> September</b>
8h30-10h00 : Plant physiology: Secondary metabolites
10h00-13h30 Coffee break
10h30-12h00 : Crowdsourcing of Environmental Noise Maps using Smartphones: processing and creating a cartographic display using GIS tools (Part 01).
12h00-13h30 Lunch
13h30-15h00 : Crowdsourcing of Environmental Noise Maps using Smartphones: processing and creating a cartographic display using GIS tools (Part02).
15h00-16h30 : Crowdsourcing of Environmental Noise Maps using Smartphones: processing and creating a cartographic display using GIS tools (practical field session).
<b>Wednesday 28<sup>th</sup> September</b>
08h30-10h00 : Overview of GNSS: General characteristics of GNSS (Master class)
10h00-13h30 coffee break
10h30-12h00 : Global and regional navigational satellite systems (Master class)
12h00-13h30 Lunch
13h30-15h00 : GNSS in favour of small farmers (Master class)
15h00-16h30

### Thursday 29<sup>th</sup> September

08h30-10h00 : <b>Conference title unknown</b>
10h00-13h30 coffee break
10h30-12h00 : <b>Conference title unknown</b>
12h00-13h30 Lunch
13h30-15h00 : Basics of communication in marketing (part 01)
15h00-16h30 : Introduction to the use of satellite information (part 01)
<b>Saturday 1<sup>st</sup> October</b>
08h30-10h00 : Basics of communication in marketing (part 02)
10h00-13h30 coffee break
10h30-12h00: Cooking an appealing presentation for wide public (Master class)
12h00-13h30 Lunch
13h30-15h00 : Introduction to the use of satellite information (part 02)
15h00-16h30 : Science communication: a serious entertainment? (Examples from the experience of the Estonian Academy of Sciences)
<b>Sunday 2<sup>nd</sup> October</b>
08h30-10h00 : Scientific writing for publication (Master class, part 01)
10h00-13h30 coffee break
10h30-12h00 : Scientific writing for publication (Master class, part 02)
12h00-13h30 Lunch
13h30-15h00 : <b>Mostaganem second lecturer,</b>
15h00-16h30 : Scientific writing for publication (Master class, part 03)
<b>Monday 3<sup>rd</sup> October</b>
08h30-10h00 : Crops mapping using SAR & optical remote sensing data
10h00-13h30 coffee break
10h30-12h00 : <b>Conference title unknown</b>
12h00-13h30 Lunch
13h30-15h00 : <b>Conference title unknown</b>
15h00-16h30 : Three Minute Lectures: Students' competition in scientific writing and oral presentation

### Main themes

- 1- Precision Agriculture: basics and principles
- 2- Geographic information systems
- 3- Remote sensing and its applications in agriculture (crop mapping and monitoring)
- 4- Communication skills and information technologies regarding marketing and sustainability of precision agriculture

**Honorary president**  
Pr. BELGOUANE Samoung

**Organizing committee**  
Pr. MAATTOUS Mohamed (President)  
Dr. BOUACHA Mohamed Ilem (coordinator)  
Pr. DELAL Abdelhak  
Dr. CHAFAI Idriss  
Dr. SOUDANI Leila  
Dr. SIFA Omar  
Dr. KOUADRA Mustapha  
Dr. BENEGUEBA Mourad  
Pr. AMRAT Mokhtar  
Mr. TOUM Zinedine  
Mr. MAROUF Abdel  
Mr. DELAL Abdel

**Seretary**  
Dr. BOUACHA Mohamed Ilem  
Email: mohamed.ilm.bouacha@univ-tiaret.dz  
Cupagis (univ-tiaret.dz)

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

### CUPAGIS

is a CBHE ERASMUS+ project involving 10 Algerian and European partners. The aim is to create and modernize curricula in precision agriculture using new technologies in physical sciences, such as Geographic Information System (GIS), big data, remote sensing.

The sequence of events at the University of TIARET includes training sessions for students enrolled in the master studies of precision agriculture in Algerian universities, master classes and the final seminar. The main target of students' training is improvement of communication skills. The themes focus on the use of new technologies in precision agriculture. The final seminar contributes to periodic meetings of partner universities for the evaluation of projects of new training offers in Algeria, in precision agriculture. It is also about restituting the reports of

**Students training, Master classes, final conference & report restitution**  
**"New Curricula in Precision Agriculture Using GIS Technologies and Sensing Data"**

10/09/22 - 04/10/22

Leaflet and flyer of the event

# Cupagis final event , master classes and report restitution , TIARET from 25<sup>th</sup> September to 04<sup>th</sup> October 2022.

- In the framework of the CUPAGIS project , the university of TIARET organized a master classes for 51 students coming from the five Algerian universities ( 28 students from University of TIARET , 06 students from Oran 1 , 06 students from ENSA , 05 students from university of Sidi Belabess and 05 students from university of Mostaganem. Courses were provided by Algerian teachers and also Europeans from European partners.
- 04 topics were developed during the Master classes :
- Basics of precision agriculture.
- Gis.
- Remote sensing and it's applications for crop monitoring.
- Communications skills and marketing.



Cupagis final event , master classes and report restitution , TIARET from 25<sup>th</sup> September to 04<sup>th</sup> October 2022.



Students with Mrs, Kerdu Lenear



Students during the opening ceremony



# Cupagis final event , master classes and report restitution , TIARET from 25<sup>th</sup> September to 04<sup>th</sup> October 2022.



Students with colleagues from Plovdiv



Mrs Ebe Pilt giving lecture to students

# Cupagis final event , master classes and report restitution , TIARET from 25<sup>th</sup> September to 04<sup>th</sup> October 2022.



## Laboratories and equipment

### Laboratory name and works :

Within the framework of the activities of the Cupagis project, a pedagogical laboratory has been created under the name of "*Precision Agriculture*". The laboratory houses the pedagogical and practical activities of the students enrolled in the master.

During the first semester of the pilot phase, the students were able to carry out practical sessions on the use of the **Green seeker** for the estimation of biomass production and fertilization management in the module: intensive courses for leverage acceptance of new technologies.

They also had to consult the **raspberry pi joy** kit within the framework of the same module to explain the interest of the new technologies in the field of agriculture. however, the use and the realization of practical sessions on the use of the received raspberry cards, **the diviner2000** and the installation of the **weather station** will be done during the second year in accordance with the planning of the modules, in particular the courses of physics of the ground, electronic measurements and agrometeorology





# Laboratories and equipment

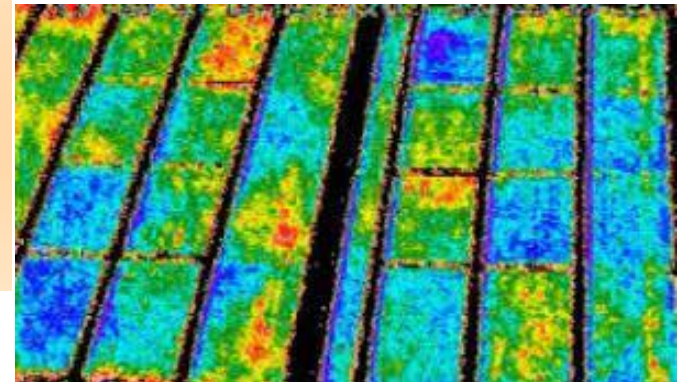
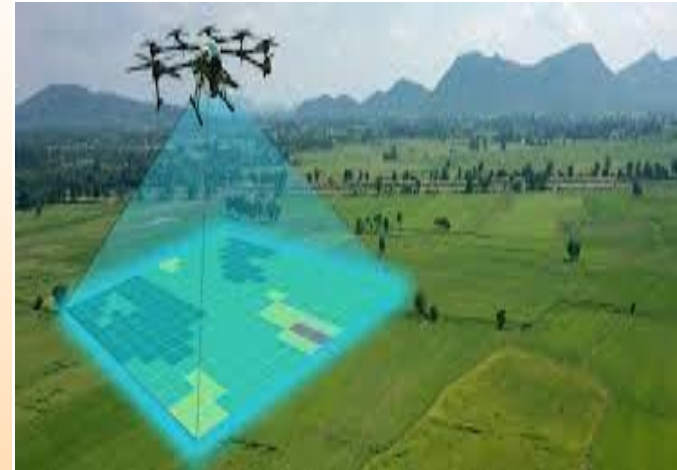


**Photos of the received equipment**



# Perspectives and recommendations

1. The establishment of a final list of project equipment was difficult: some equipment essential to the project was eliminated by the Algerian partners, which are classified as sensitive equipment (the administrative procedures to acquire this equipment are complicated). We hope in the future, that it will be easy to acquire this kind of equipment.
2. When the diploma is issued by the university, we hope that, exceptionally for this master class, that the diplomas will bear the Cupagis project logo which belongs to the Bologna process. if not, at least a certificate of participation in the Erasmus CBHE project.



# Perspectives and recommendations

3. To relaunch and accelerate the project of creation of a national school of precision agriculture in Sougueur (TIARET). The CUPAGIS team has already submitted a file to the Ministry of Higher Education and Scientific Research (2021).
4. to develop national research projects between Algerian partners (University of TIARET with the University of Oran 1: creation of a mixed team in the framework of the call for projects).
- 5.





# Thank you for you attention!

**IBN KHALDOUN TIARET UNIVERSITY UIK**



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