



Faculty of Agricultural  
and Food Sciences  
Department of Agriculture



# FRENCH-LEBANESE SUMMER SCHOOL ON REMOTE SENSING

## AMERICAN UNIVERSITY OF BEIRUT MAY 30<sup>TH</sup> TO JUNE 3<sup>RD</sup>, 2022

### Objective

Thanks to the FPACUP<sup>1</sup> European program aiming to support the exploitation of Copernicus data and services, the French Land Data Center Theia organizes in Beirut a French-Lebanese Summer School on Remote Sensing techniques, data and products. The objective of this Summer School is to promote the use of Copernicus as well as Theia data and value-added products.

**Dissemination and capacity-building using Copernicus as well as Theia data and value-added products.**

Experts from different French Institutes (INRAE, CNRS, ESRI, IRD, University of Strasbourg) will attend this Remote Sensing Summer School aiming to encourage European-Lebanese cooperation on the use of Earth Observation data for continental surfaces, to exchange experiences, and to train Lebanese participants in this expertise.

The scientific community and the public stakeholders are the main targeted audience of the action, but the private sector can also benefit from synergies and pooling effects. Beside the offered training, some research works using Copernicus data and products will be presented. The use of Sentinel remote sensing data (in particular Sen-

inel-1 and Sentinel-2) and the training of new users in remote sensing will be important points of this summer school.

### Four goals

1. Promoting Sentinel remote sensing data and training of new users in remote sensing: downloading data, preprocessing, etc.
2. Teaching to use the remote sensing image processing software OrfeoToolBox (OTB) and QGIS (Open Source softwares for the processing of remote sensing images). OTB and QGIS facilitate the use of remote sensing data: Feature extraction, Calibration, Classification, Segmentation, etc.
3. Promoting Copernicus value-added products and services such as urban maps.
4. Sharing lessons learned on added-value products, developed and produced within Theia such as Building Mapping, Soil Moisture at Very High Spatial Resolution, Disaster Rapid Mapping or Drought Mapping. Theia products and algorithms are complementary to Copernicus products. ■

### Organizers

- » **Dr. Nicolas BAGHDADI**  
INRAE, TETIS, Theia, France
- » **Dr. Hadi JAAFAR**  
Department of Agriculture, AgHive,  
American University of Beirut, Lebanon

<sup>1</sup> FPACUP: Framework Partnership Agreement on Copernicus User Uptake

## Programme

**Day 1 >> Workshop** on 'Application of Remote Sensing for Water, Environment and Land'.

**Day 2-4 >> Parallel tutorial sessions.** each focusing on a given theme: Building mapping, Estimation of soil moisture in agricultural areas using Sentinel-1/2 images, Disaster Rapid Mapping, or Drought mapping. In addition, an initiation session to Remote Sensing Image Processing will be proposed.

## Targeted Audience

60 to 80 people ideally distributed as following: 50% of academics (professors and students), 25% of public actors (managers or engineers from ministries) and 25% of private actors.

The summer school organized will furthermore be open to neighboring countries.

## French Presenters

- » **Dr. Nicolas BAGHDADI, Dr. Hassan BAZZI, Rémi CRESSON & Dr. Ibrahim FAYAD**, French National Research Institute for Agriculture, Food and Environment (INRAE)
- » **Dr. Hervé YÉSOU**, Rapid Mapping Service of ICube Laboratory, University of Strasbourg
- » **Dr. Mehrez ZRIBI**, French National Center for Scientific Research (CNRS).
- » **Dr. Michel LE PAGE**, French Institute of Research for Development (IRD)

## Sponsors



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**Copernicus User Uptake** under grant agreement N° FPA 275/G/GRO/COPE/17/10042, project FPCUP (Framework Partnership Agreement on Copernicus User Uptake), Action 2019-1-40 «Dissemination and capacity-building using Copernicus data and the algorithms and value-added products from the French Land data center Theia».

**The FPCUP European program** supports this initiative as pursuing the six following Copernicus objectives:

1. Increase socio-economic benefits by promoting the use of Earth observation in applications and services;
2. Foster the development of a competitive European space and services industry;
3. Increase demand for Copernicus data and Copernicus information;
4. Promote the use of Copernicus data and Copernicus information by institutions and bodies, international organisations and European, national, regional or local authorities;
5. Increase market penetration, including the expansion of the existing markets and creation of new markets and competitiveness of the European downstream operators;
6. Demonstrate European added value.

[www.copernicus.eu](http://www.copernicus.eu)



**The American University of Beirut (AUB)** is a top-ranked institution in the Middle East and North Africa (MENA) region that prides itself on cutting-edge research and interdisciplinary innovation to advance knowledge on a wide range of issues such as the development of renewable energy resources, strategies for a sustainable environment in arid climates, peace mediation and dialogue, and treatments for human diseases.

[www.aub.edu.lb](http://www.aub.edu.lb)

## AqHive

**The Faculty of Agricultural and Food Science (FAFS)** at AUB is one of the oldest and most established

faculties of agriculture in the MENA region. Through research, education, and community engagement, FAFS inspires minds, trains future leaders, and promotes sustainable environment, water, livelihoods, and food systems in Lebanon, the region, and beyond. The Department of Agriculture trains future agricultural engineers to optimize crop production only after securing the requirements of sound policy in terms of water, energy, and renewable resources. This summer school is co-organized by AqHive, the unit for the Remote Sensing and Geospatial Lab and the Smart Irrigation Lab at the Department of Agriculture at AUB.

[sites.aub.edu.lb/aghive/](http://sites.aub.edu.lb/aghive/)



Created in 2012 and supported by 10 French research organizations, **Theia**, the French consortium for continental surfaces data, pursues

four main objectives:

1. Promoting and facilitating access to spatial Earth observation data;
2. Developing value-added products for the scientific community and public stakeholders;
3. Networking scientists and users;
4. Promoting French research on a European and international scale.

[www.theia-land.fr](http://www.theia-land.fr)