



INTERNATIONAL ADVANCED
SCHOOL IN AGRICULTURAL
METEOROLOGY

SECOND EDITION

Bologna
5-9 September 2022



AGRICULTURAL METEOROLOGY

FOR SUSTAINABLE
WATER MANAGEMENT
IN AGROECOSYSTEMS



Associazione
Italiana
di Agrometeorologia

ORGANIZED BY



WORLD
METEOROLOGICAL
ORGANIZATION

IN COLLABORATION WITH



Food and Agriculture
Organization of the
United Nations

WITH THE TECHNICAL COOPERATION OF



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In line with its mission, AIAM, in collaboration with CNR-IBE, designated as WMO Regional Training Center in Italy, [WMO-RTC](#), and with the technical support of the UN Food and Agriculture Organization, [FAO](#) is proud to announce the **Second Edition of the International Advanced School in Agricul-**

tural Meteorology, “Agricultural Meteorology for a Sustainable Water Management in Agroecosystems”, aiming to provide young researchers and professionals with up-to-date knowledge on the most advanced methods and technologies applied to agricultural water management under climate change.

COURSE CONTENT

In order to facilitate participants to increase their knowledge of scientific results, and advanced technologies for the agrometeorological analysis and monitoring applied to agricultural water management under present and future climates, the school will include theoretical activity and practical sessions to

allow the direct application of theory through the use of advanced tools, and the analysis of case studies. The active participation of the trainees will facilitate the realization of interdisciplinary networking among experts and attendees.

COURSE TOPICS

- Relations between hydrological cycle, agriculture, and climate change
- Water harvesting, research, and implementation
- Modelling of crop yield response to water under conditions in which water is a key limiting factor
- in crop production – the AquaCrop system
- Satellite products and tools for sustainable water management
- Field visit to Acqua Campus (CER), and Decision support systems (DSSs)

COURSE FORMAT

One-week classroom school, which includes lectures, group discussions, case studies, and practical training sessions. Students and teachers of the course will benefit from the Moodle platform through which educational material will be shared and assessment procedures conducted.

TRAINERS

Trainers are world-class experts from University of Florence (DAGRI), University of Milan, Council for Agricultural Research and Economics (CREA), Sicily Region, National Research Council of Italy, and International Agencies: Food and Agriculture Organization of United Nations - FAO, Alliance-Bioversity – CIAT.



ITALIAN ASSOCIATION OF AGROMETEOROLOGY

The mission of AIAM (www.agrometeorologia.it/), the Italian Association of Agrometeorology, is the promotion of agrometeorological research through conferences, seminars, and training. AIAM also acts as a link between the services and research activities, and this connection favours the promotion of research on relevant agrometeorological themes, internationally disseminated through the Italian Journal of Agrometeorology, published by the Association.

DATE

From Monday 5 September 2022
h 9:00 am
To Friday 9 September 2022
h 5:00 pm

VENUE

The school is hosted by the Alma Mater Studiorum [University in Bologna \(I\)](#)
Please note: depending on COVID-19, the course could move online, if necessary.

SCIENTIFIC COORDINATORS FOR AIAM

Filiberto Altobelli, CREA-PB
Anna Dalla Marta, University of Florence-DAGRI
Federica Rossi, CNR-IBE
Francesca Ventura, University of Bologna

SCIENTIFIC COMMITTEE OF THE SCHOOL

Filiberto Altobelli, CREA-PB
Anna Dalla Marta, University of Florence-DAGRI
Federica Rossi, CNR-IBE
Marina Baldi, WMO-RTC and CNR-IBE
Federica Matteoli, FAO

SELECTION OF PARTICIPANTS

The selection will be carried out by the members of the scientific committee.
The Commission will evaluate, for each candidate, the application, the motivation, and profile.
The Course is open to max 30 participants.

REGISTRATION

Candidates can apply by June 15, 2022 online at: <https://forms.gle/Bp9Eh31kjSRHbSS89>
Since there are only 30 places, candidates are encouraged to submit applications as early as possible to avoid any disappointment.

COSTS

A registration fee of 400€ will be charged to all selected participants, to be paid before the beginning of the School via Internet banking.
Details will be provided to the selected participants.

TUITION FEE INCLUDES

Access to the School, Course material, Coffee breaks, Visit to Acqua Campus - CER.

Participants will cover the costs of their travel, accommodation, and daily subsistence.

FEE WAIVER

Tuition fee waivers will be available for a maximum of 5 participants coming from Developing Countries if endorsed by their National Permanent Representative to WMO. The tuition fee waiver will not be paid to the student. Selected participants will be informed on how to proceed.

ADDITIONAL INFORMATION

For further information, please contact the school secretariat by email: AgroMetSchool@gmail.com.



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SEPTEMBER

Monday

OPENING

9:00 am

Welcome

Course introduction and overview

Introductory Speech, FAO (TbC)

KEYNOTE

Climate change, Agriculture and water: the Sicilian experience

Dr Drago, Department of Agriculture of Sicily Region

Presentation of the Agro-Topoclimatic Atlas of Sicily and the IRRISIAS model

The Atlas offers the Agro-climatological characterization of Sicily at the toposcale for farm-scale operational applications. The IRRISIAS is a water balance and irrigation scheduling model that permits to improve irrigation efficiency at the farm-scale in Sicily.

SESSION 1

Relations between hydrological cycle, agriculture and climate change

Prof Acutis, University of Milan

Climate change is challenging for agricultural activities, which have to offer not only food security but several ecological services too. Agriculture has to face changes in rain amount and intensity, as well as prolonged spells of dry and excess water. Agricultural systems need to be adapted to new conditions and instruments to analyze the system itself, in a what-if context, are needed. The lecture focuses on the approach used in cropping system models to assess the hydrological cycle at the field and small catchment scale and on the practical application of a cropping system model to practically show the effects of future climatic trends on crops growth, drainage/leaching, and runoff/erosion.

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SEPTEMBER

Tuesday

SESSION 2

Satellite products for sustainable water management

Freshwater is vital to life – but a growing global population, economic development, and the effects of climate change are putting mounting pressure on this precious finite resource. Globally, agriculture accounts for 70% of all freshwater consumed, so efficient water management is essential. Satellite data and products from different missions can provide estimates of evapotranspiration, which is not only key for sustainable agriculture, but also important for water resource management and for a number of the United Nations' Sustainable Development Goals.

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SEPTEMBER

Wednesday

SESSION 3

Field visit to Acqua Campus (CER), and Decision support systems (DSSs)

Visit to Acqua Campus outside Bologna (<https://consorziocer.it/it/>)

The Canale Emiliano Romagnolo (CER) is a hydraulic infrastructure for multiple water uses (irrigation, potable and industrial uses). It is a 133 km long canal that supplies water for irrigation purposes from the Po River to Provinces in Emilia Romagna. The tools used for the purpose are the IRRINET management DSS and the SIC2 (Simulation and Integration of Control for Canals) hydraulic software.

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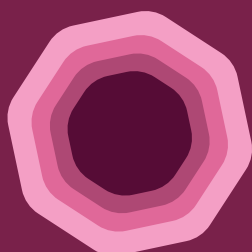
SEPTEMBER

Thursday

SESSION 4

Modelling of crop yield response to water under conditions in which water is a key limiting factor in crop production – the AquaCrop system FAO

AquaCrop is a crop water productivity model developed by the Land and Water Division of FAO. It simulates yield response to water of herbaceous crops, and it particularly addresses conditions where water is a limiting factor in crop production. Nevertheless, as water availability is becoming a critical issue in many regions due to climate change and natural resource overexploitation, AquaCrop is becoming a reference model used for guiding irrigation management in agriculture. The aim of this module is to make students familiar with AquaCrop, through practical training on database management, input creation, model run, and output analysis.



SAVE THE DATE

Apply by June 15, 2022 online

<https://forms.gle/Bp9Eh31kjSRHbSS89>

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SEPTEMBER

Friday

SESSION 5

Water harvesting, research, and implementation

In the agricultural field, with Water Harvesting we identify the techniques of collecting and conserving water, both rain, and runoff, aimed at increasing the soil moisture. These techniques may support agricultural production even in periods of limited water availability, and represent a possible strategy for adapting to climate change, as well as increasing the overall resilience of crop systems in arid and semi-arid areas.

SESSION 6

Water quality for agriculture and the use of non-conventional waters

State and prospects of the use of non-conventional waters: reclaimed waters, untreated wastewater, Marginal quality water for agriculture: risk for crops, health, and the environment. Good practices and policies for managing marginal quality water.

CLOSING OF THE SCHOOL



IMPORTANT DATES

- Closing date for applications
15 June 2022
- Decisions on acceptance will be announced by email on
27 June 2022
- Closing date registration fee payment
15 July 2022

USEFUL LINKS

- Italian Association of Agrometeorology, AIAM,
- Institute of BioEconomy, CNR-IBE
- WMO Regional Training Center, WMO-RTC
- Food and Agriculture Organization, FAO,
<http://www.fao.org/home/en/>



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Consiglio per la ricerca in agricoltura
e l'analisi dell'economia agraria



UNIVERSITÀ
DEGLI STUDI
FIRENZE
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DIPARTIMENTO DI SCIENZE
E TECNOLOGIE AGRARIE,
ALIMENTARI, AMBIENTALI E FOR



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA



REGIONE SICILIA



Canale
Emiliano
Romagnolo

Alliance



International Center for Tropical Agriculture
Since 1967 Science to cultivate change

IWM
International Water
Management Institute



ACCADEMIA DEI GEORGOFILII