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, CGIAR / Alliance of Bioversity International and CIAT, CGIAR/IWMI.

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.

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/
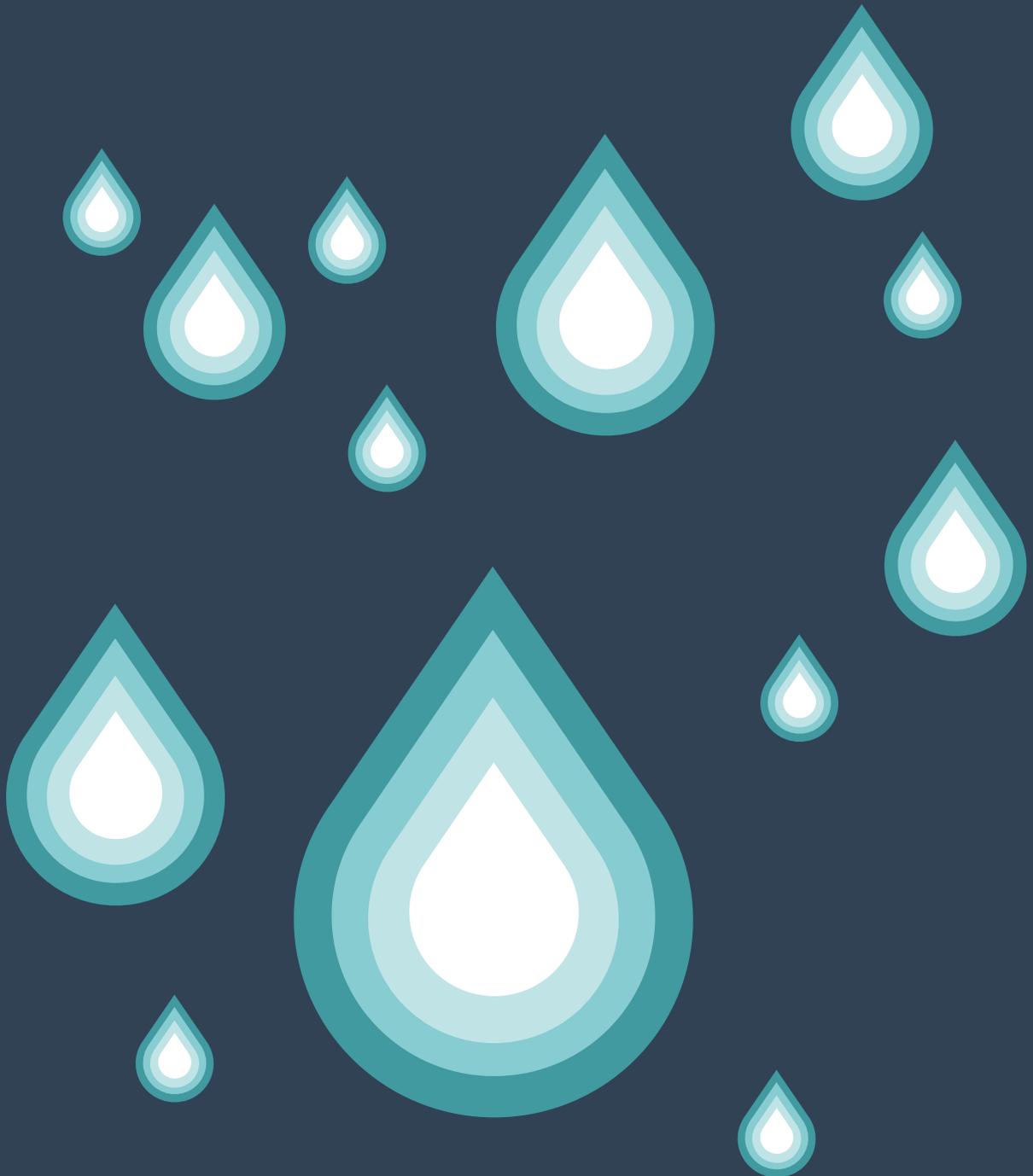
THE PROGRAMME

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
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.

Climate change and the hydrological cycle – Effects on agriculture
CGIAR/IWMI

Food production and food security are highly vulnerable to water-related risks, including those associated with access to safe, high quality and sufficient water, and sustainable water (re)use levels. Climate change is compounding these challenges. The session will showcase approaches on how actor across sectors - from agricultural production to value addition to consumers - come together with aim to strengthen water policies, investments and agricultural markets which can address inequalities and promote inclusion, accelerate water storage, support non-conventional water use and renewable energy whilst addressing sustainability issues within our food system.
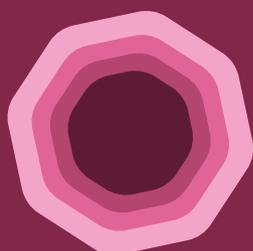
SAVE THE DATE

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6 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.

7 SEPTEMBER Wednesday

SESSION 3
Field visit to Acqua Campus, and Decision support systems

Aqua Campus is a demonstration and research site maintained by Canale Emiliano Romagnolo (CER) in collaboration with ANBI (Associazione Nazionale Bonifiche Irrigazioni Miglioramenti Fondiari). The campus is dedicated to innovation transfer in irrigation and water management in agriculture.

8 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
Food and Agriculture Organization (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

Friday

SESSION 5

Water harvesting, research, and implementation
University of Florence - DAGRI

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
CGIAR/IWMI

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.

SESSION 7

Collaborative Innovation in Agrometeorology: Tools and Applications to improve crop production sustainability (Precision Farming)
CGIAR/Alliance of Bioversity International and CIAT

The importance of scientific innovation has never been greater to resolve complex, interconnected, and urgent challenges related to agriculture – such as food and nutrition security, climate change, biodiversity loss, and deforestation. The Technology Executive Committee of the UNFCCC indicates that technology, entrepreneurship, and innovation will play a vital role in tackling these challenges and delivering on the Sustainable Development Goals. The session will provide the participants with an overview with the market opportunities and growing interest for scientific ventures.

SESSION 8

The potential role of neglected species in water scarce production systems
CGIAR/Alliance of Bioversity International and CIAT

As the world is facing multiple crisis, including a nutrition crisis, degradation crisis, biodiversity crisis, degradation crisis, climate change crisis, partly linked to agriculture, one relevant question is how and whether they can be addressed simultaneously. One approach to address them is through the so called neglected and underutilized species (NUS) which have the potential, among others, to be more drought prone and more efficient in water use. The aim of this module is to elaborate on existing knowledge around water and NUS and explore its potential for more resilient production systems.

WRAP-UP SESSION AND CLOSING REMARKS

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

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

REGIONE SICILIA

CGIAR

IWMI
International Water
Management Institute

Alliance

Bioversity
International

CIAT
International Center for Tropical Agriculture
Since 1967 Science to cultivate change

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