



Dorra Bellil

EDUCATION AND TRAINING

[15/02/2024 – Current]

Assegno di ricerca

IREA-CNR

City: Bari

Country: Italy

[10/2020 – 18/04/2024]

PhD in Sustainable Land Management

Università degli studi di Bari Aldo Moro and Politecnico di Bari

City: Bari

Country: Italy

[13/09/2023 – 15/09/2023]

IEEE Geoscience and Remote Sensing Society Second IADF School on Computer Vision for Earth Observation

The university of Sannio, IEEE GRSS and IADF <https://iadf-school.org/>

Country: Italy

[21/06/2023 – 06/09/2023]

ESTATE GIS 2023 | Master in GIScience e SPR, Unipd GIS and Science per il clima, la società e il territorio

**Centre of Excellence Jean Monnet/ GIShub/ 'Cambiamenti climatici, territori,
diversità' (Unipd).**

City: Padova

Country: Italy

[01/09/2022 – 28/02/2023]

PhD Visiting researcher

The university of Sydney

City: Sydney

Country: Australia

[16/06/2022 – 20/06/2022]

ISRIC Spring School Hands-on Digital Soil Mapping

ISRIC : World Soil Information

City: Wageningen

Country: Netherlands

[14/02/2022 – 25/02/2022]

Winter School on Sustainable land management and Earth Critical Zone (ECZ): a journey from ECZ characterization, modelling and Geospatial Decision Support Systems

University of Napoli www.landsupport.eu

City: Napoli

Country: Italy

[10/2019 – 11/2020]

The degree of Master of Science in Land and Water resources management (120ECTS) CUM MAXIMA LAUDE (2nd year)

Mediterranean Agronomic Institute of Bari CIHEAM-BARI

City: Bari

Country: Italy

[2017 – 2019]

The postgraduate specialization diploma (60ECTS) CUM MAXIMA LAUDE (1st year)

Mediterranean Agronomic Institute of Bari CIHEAM-BARI

City: Bari

Country: Italy

[2016 – 2018]

Professional Masters (M2): Irrigation and drainage

National Agronomic Institute of Tunisia (INAT)

City: Tunis

Country: Tunisia

[2013 – 2017]

National Agronomic Engineering Diploma : Genie rural

National Institute of Agronomic Sciences of chatt mariem

City: Sousse

Country: Tunisia

[2006 – 2011]

Baccalaureate of experimental sciences

High school Ahmed Amine

City: Tunis

Country: Tunisia

[2010 – 2014]

National diploma of the national competition for entry to schools engineers

Higher Institute of Preparatory Studies in Biology Geology La Soukra

City: Tunis

Country: Tunisia

WORK EXPERIENCE

[01/09/2022 – Current]

Visiting researcher

The University of Sydney

City: Sydney

Country: Australia

The use of machine learning (deep learning) to forecast soil moisture content using the Artificial Neural Network (ANN) and more precisely the Physic Informed Neural Network (PINN) to solve Richard's equation.

[10/2019 – 11/2020]

Internship for Master of sciences diploma

Istituto Agronomico Mediterraneo di Bari IAMB

City: Bari

Country: Italy

Topic: Assessing soil water content evolution during a drainage process using an EMI sensor

The master of Science thesis is conducted in CIHEAM-BARI and the main objective of this thesis was to calibrate an EMI sensor to characterize the soil water storage distribution at field scale.

The study was carried out at the experimental field of MAI-BARI from July to August 2020. The soil profile was firstly saturated by continuous irrigation lasting 3 days; then, the drying process by drainage and evaporation was monitored by an EMI sensor (CMD mini-explorer). The calibration procedure was based on the comparison of apparent electrical conductivity (ECa) readings coming from the EMI and direct measurements of water content at 36 sites and at three different depths (15 cm, 30 cm and 60 cm) taken by Time Domain Reflectometry (TDR) and the thermo-gravimetric method during 7 monitoring campaigns.

A highly significant correlation was obtained, especially after removing noises by a moving average (MA) method. The calibration also allowed to establish differences between water content distributions taken by the EMI sensor along and between the irrigated lines. The results demonstrate that EMI sensors may be effectively used to rapidly characterize water content distributions at large scale, this being crucial for evaluating agro-hydrological model predictions.

[02/2018 – 09/2018]

Internship for the professional master diploma

STUDI international

Country: Tunisia

Topic: Design of an irrigation and drainage system in the Ndurumu marsh Burandi to avoid the mineralization of the soil.

Rice is an important crop of great interest for Burundi because its development could, on the one hand, contribute to reducing the deficit of the domestic supply of cereals. In fact, the production of conventional cereals (wheat, finger millet, maize and sorghum) is declining due to varietal degeneration and the attack of endemic viral and fungal diseases in the country. On the other hand, promoting and increasing domestic rice production would reduce the country's scarce foreign exchange requirements for rice imports to offset the small but structural production gap. To do so and fight against poverty in rural areas, has resorted with the Project of Productivity and Development of Agricultural Markets Additional Financing (PRODEMA-FA in acronym) is a development project initiated by the Government of Burundi in partnership with the International Development Association (IDA / IDA), to support the strategy and activities of the Poverty Reduction Strategy Paper (PRSP) to contribute to economic growth and job creation in rural areas. This project is composed of several components but in our case study we are interested in the part of the development of irrigation and rehabilitation of access tracks. Indeed, this component aims the Development of irrigation, through:

- The design of an adequate marsh irrigation system that meets the needs of the culture water;
- The design of a drainage system to prevent the spreading of runoff and / or irrigation in an uncontrolled manner.

Modeling by HEC-RAS software was also done in order to evaluate and visualize the stream in the channels and their appearance as well as to detect if there is overflow or not.

[02/2017 – 12/2017]

Internship for engineering diploma

National Institute of Agronomic Sciences of Chatt mariem

City: Sousse

Country: Tunisia

Topic: Organic and metallic assessment of the quality of soil and surface water in watershed of Hamdoun, Monastir, Tunisia.

The work was conducted on experimental studies to evaluate the quality of the surface waters and sediments of Oued Hamdoun (Monastir, Tunisia). For this purpose, our study aims was to determine the quality as well as the sources of pollution of the components of Oued Hamdoun (surface water + sediments).

To carry out these analyzes, we chose 6 sampling points for surface water and 4 sampling points for the sediments of Oued Hamdoun on which we carried out a series of analyzes and which are:

- Physicochemical analyzes (temperature, suspended matter, COD, pH, electrical conductivity, dissolved oxygen)
- Chemical analyzes (nitrite, nitrate, cyanide, phenol, sulfate - Determination of heavy metals (lead, zinc, cadmium, chromium, copper, nickel, mercury)
- Determination of PAHs (anthracene, acenaphthylene and acenaphthene);
- Pesticide dosing. In addition, new passive sampler devices were developed and placed at the various sampling points to design a new alternative which adsorb and collect pollutants and to compare their degree of functionality.

The obtained results for the different parameters analyzed show a very bad quality for the surface waters as well as for the sediments of Oued Hamdoun and this through the Water Quality Assessment System "SEQ-water", and that the passive samplers used have served better to adsorb and determine the concentration of the heavy metals than the classic methods used.

[30/06/2016 – 30/07/2016]

Internship

Water Research and Technology Center, Borj Cedria CERT

Country: Tunisia

Sizing of the water distribution network in the region of Soudane –Gombar GDA in order to better supply neighboring regions with their demand for water.

[31/03/2016 – 29/04/2016]

Internship

Institut de l'Oliver

City: Sousse

Country: Tunisia

- Measurement of climatic parameters in situ.
- Estimation of the reference ET evapotranspiration by the different equations.
- Determination and principle of xylem sap flow.
- Measurement of water potential.

[12/11/2015 – 13/11/2015]

Training

Global Water Partnership Mediterranean (GWP-Med) & INGRES

City: Zaghouan

Country: Tunisia

The challenges of sustainable management of water resources under climatic constraints: roles of NGOs, as part of "the youth for water" (La jeunesse pour l'eau) project and the "be water" project.

[13/03/2015 – 24/03/2015]

Study trip

National School of Agriculture of Meknes

City: Meknes

Country: Morocco

Situation and evolution of Moroccan agriculture within the framework of the Green Morocco Plan strategy.

[30/06/2015 – 30/07/2015]

Internship

National Research Institute for Rural Engineering, Water and Forests INERGREF

Country: Tunisia

- Study of the soil aspects in the Sbikha, Kairaouen region.
- Treatment and reuse of gray wastewater in the Soukra region.

[14/06/2015 – 16/06/2015]

Training

ICT international & Monitoring-MENA

City: Tunis

Country: Tunisia

Assembling and operating salinity monitoring system.

PUBLICATIONS

Soil hydraulic properties characterisations methods : assessment of the TDR-2D-Mod method

The use of machine learning to forecast soil hydraulic properties

LANGUAGE SKILLS

Mother tongue(s): Arabic

Other language(s):

French

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

English

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

Italian

LISTENING C2 READING C2 WRITING C1

SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2

Turkish

LISTENING B1 READING B1 WRITING B1

SPOKEN PRODUCTION B1 SPOKEN INTERACTION B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

FLOW-HAGES | GAMS - General Algebraic Modeling System | AKLA | Cropwat | R and RStudio | AutoCAD | EPANET | ArcGIS | QGIS | HEC-RAS | Surfer | Python |

MATLAB | HYDRUS-1D/2D | Remote Sensing Softwares such as ERDAS, ENVI, SNAP..... | Google Earth Engine (GEE) / Google Earth Pro | Soil Water Atmosphere Plant (SWAP)

DRIVING LICENCE

Cars: B

ORGANISATIONAL SKILLS

Organisational skills

- Sense of organization acquired from my normal life, education and leisure activities
- Leadership (thanks to my experience during 2 years as founding president of the Junior club ISA-chatt mariem) and flexibility to work in a team.

COMMUNICATION AND INTERPERSONAL SKILLS

Communication and interpersonal skills

- Good ability to adapt to multicultural environments gained through my living experience abroad
- Team spirit through my Master courses
- Good communication skills gained through seminars