

**Smart farming systems for a sustainable Saharan agriculture**

# Scientific and Technical Research Center on Arid Regions (CRSTRA)

The CRSTRA is organized in divisions interconnected in networks responding to research programs by objectives and by thematic and spatial priority

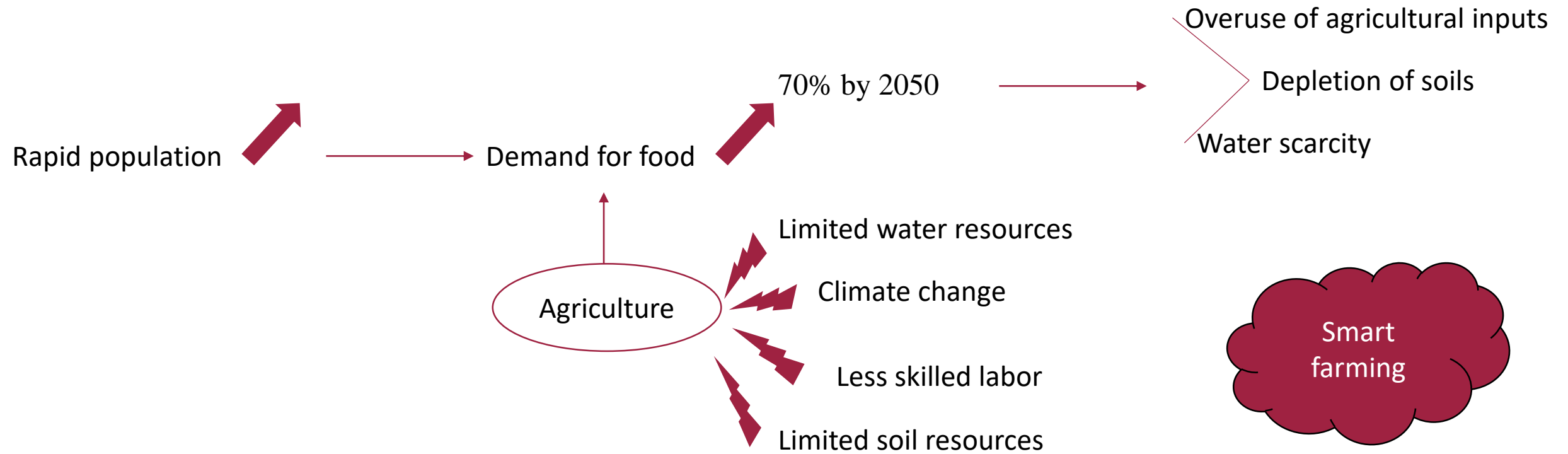
## Main Objectives:

- Contribution to the preservation and rational management of bio-resources
- Development of tools for the quantitative and qualitative management of soil and water resources
- Maintain an ecological surveillance in the steppic regions and oasis spaces by developing early warning systems
- Study the mode of socio-economic and cultural development in arid zones

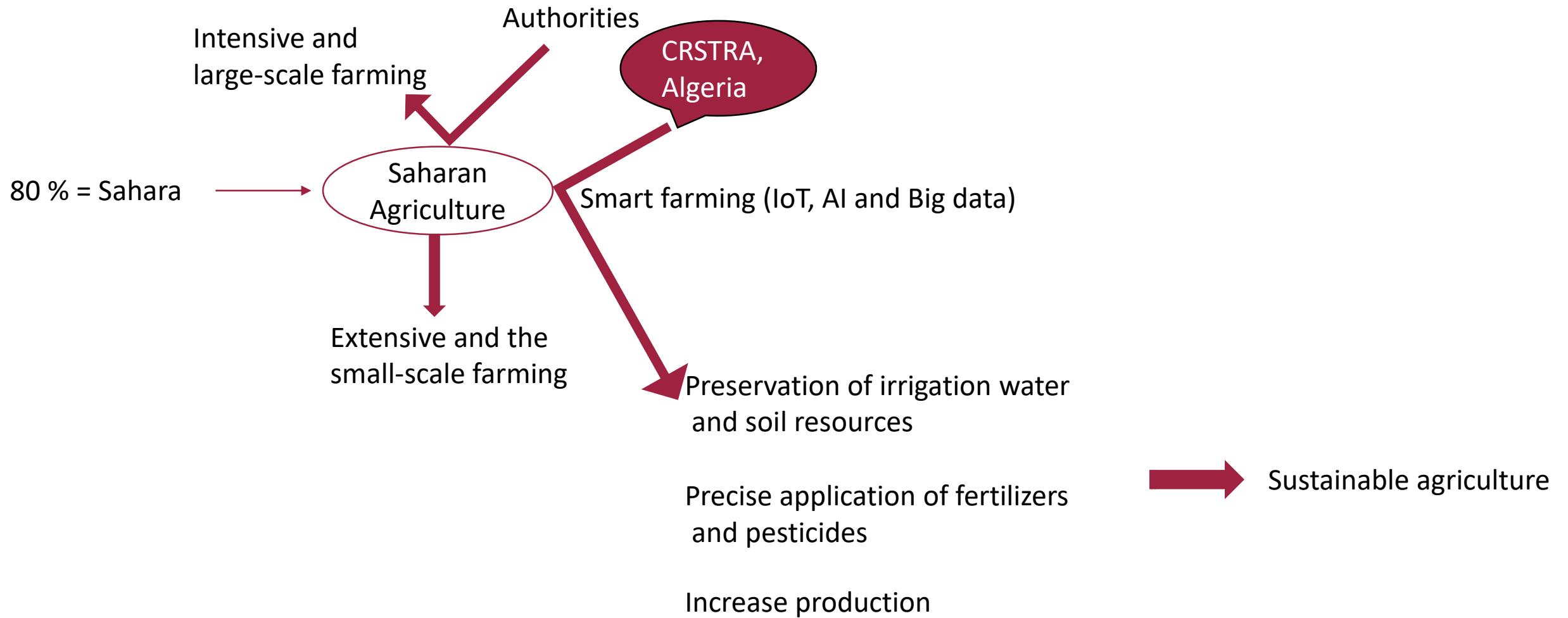


[www.crstra.dz](http://www.crstra.dz)

# Smart farming is crucial in Africa!

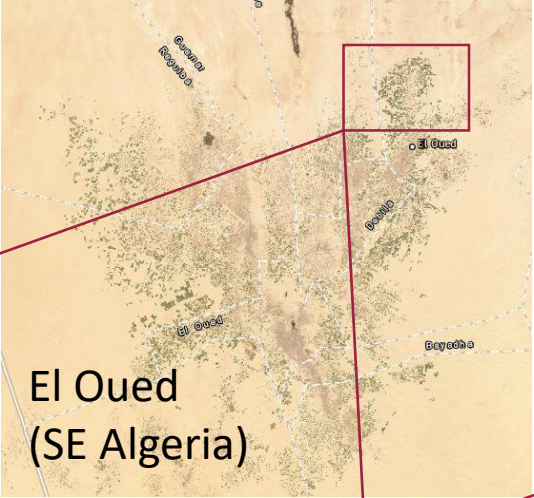


# Saharan agriculture in Algeria!



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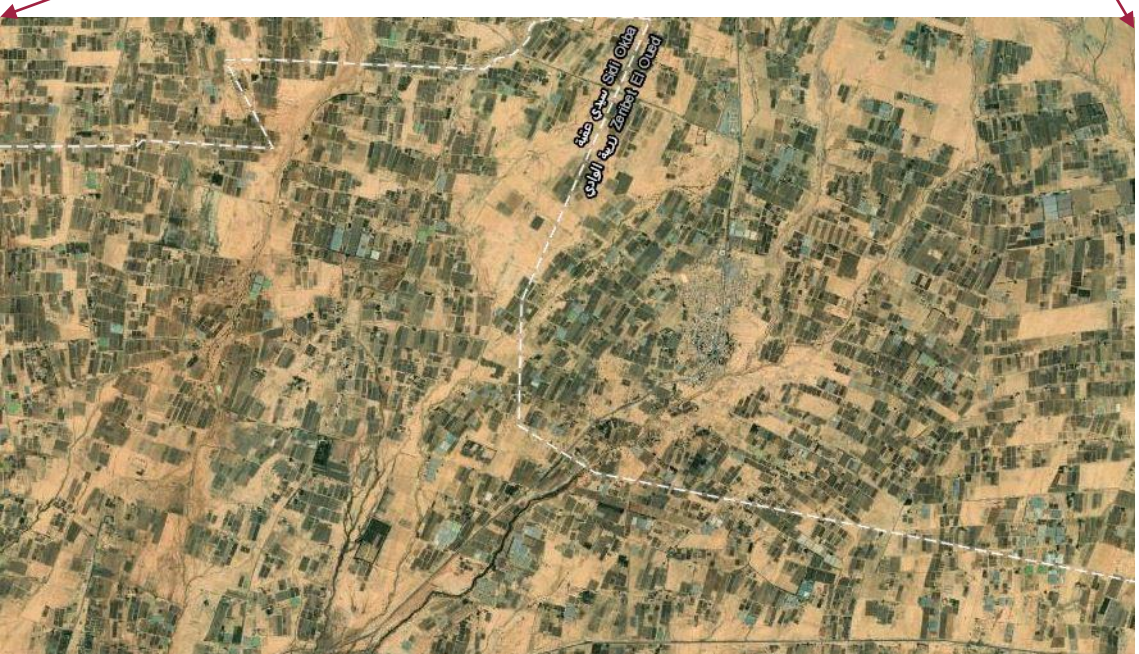
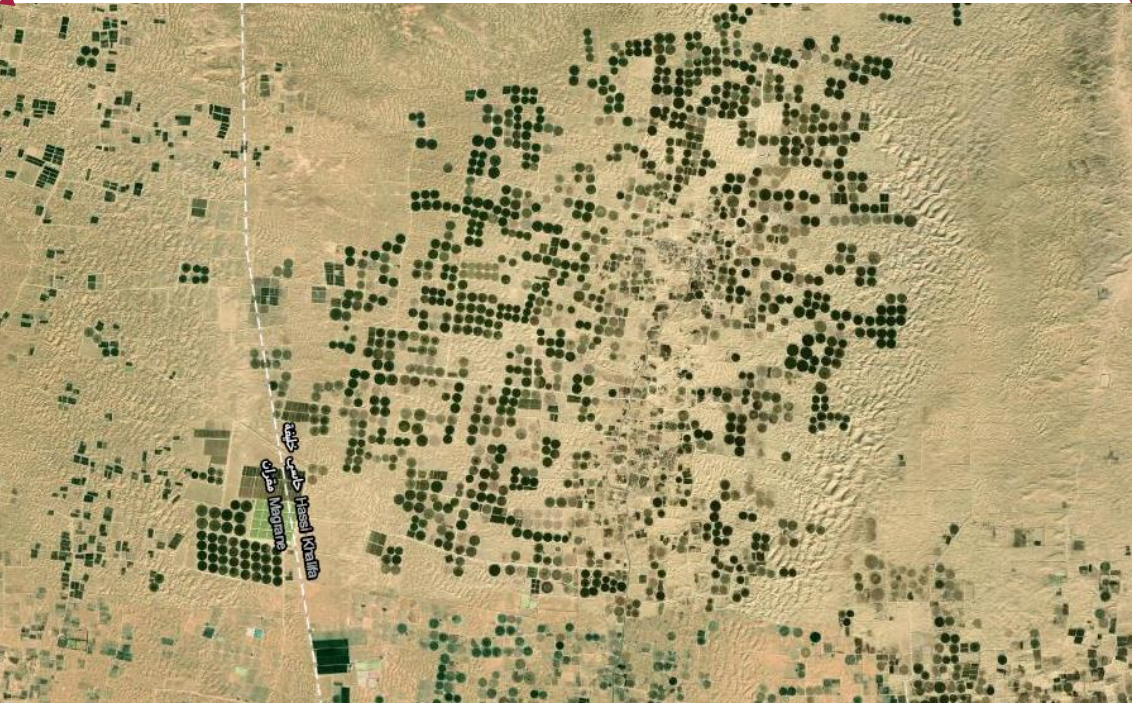
Is this agriculture sustainable?



El Oued  
(SE Algeria)



Biskra  
(SE Algeria)

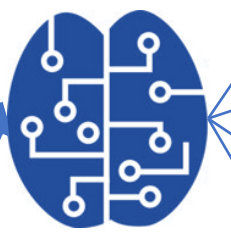


# Smart and autonomous irrigation system based on environmental and edaphic factors influencing crops growth and agricultural production

Inputs and collected data

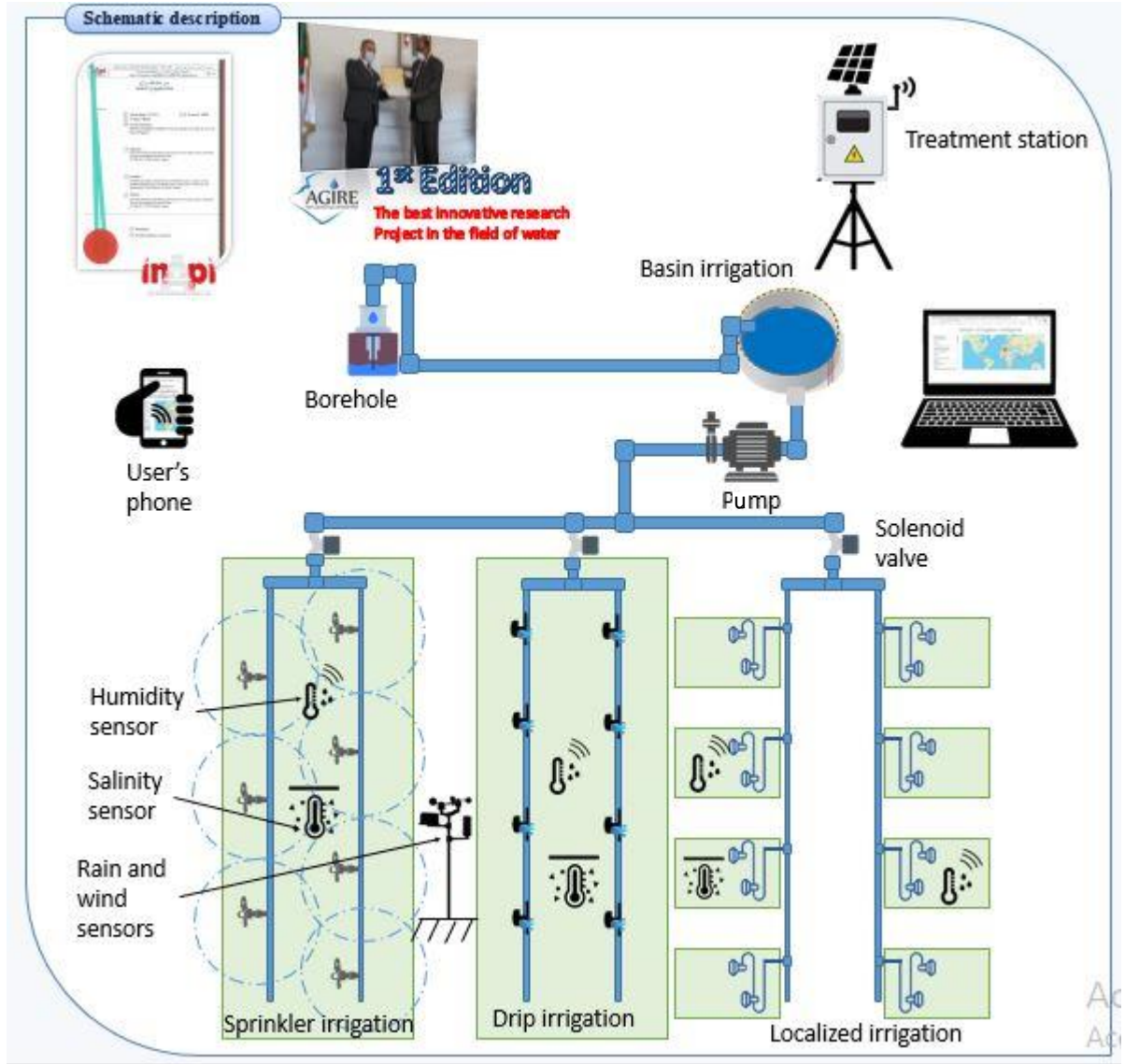
- Soil salinity
- Water salinity
- Soil texture
- Soil moisture
- Wind speed
- Rainfall
- Type of crop
- Type of irrigation

Treatment



Decision

- Start irrigation
- Turn-on the drilling pump
- Leaching fraction
- Send data (website, user's phone)





Dr Samir Boudibi

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Research Center on Arid  
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Researcher and Innovator

Dr. Boudibi Samir holds a doctorate (PhD) in hydrogeology in arid regions from the University of Mohamed Khider of Biskra, Algeria in 2021. He is actually a researcher at the Scientific and Technical Research Center on Arid Regions (CRSTRA), Biskra, Algeria. His research interest includes smart irrigation and drainage systems, groundwater quality, soil salinity, remote sensing, spatial analysis and kriging as well as the application of machine learning in water and soil-related systems. He is a member of different national and international research projects including 3 PRIMA projects and 1 ERANET project.

He contributed to 6 research publications in national and international journals, 1 book, 1 book chapter and 4 scientific papers. He has an invention registered at the Algerian National Industrial Property Institute (INAPI) on smart irrigation systems, which he would be presenting at the dialogue.



# THANK YOU!

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