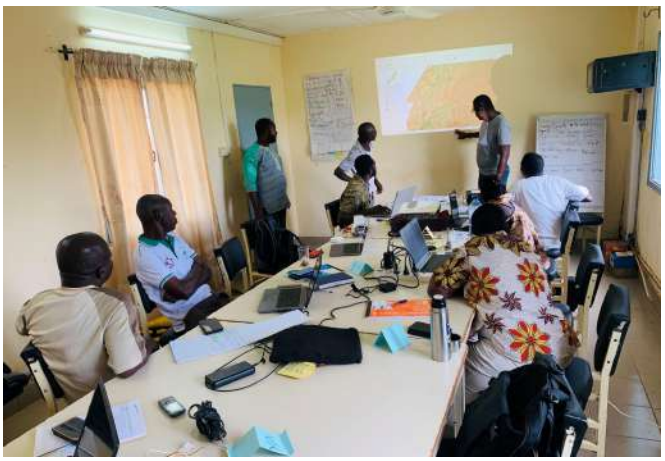
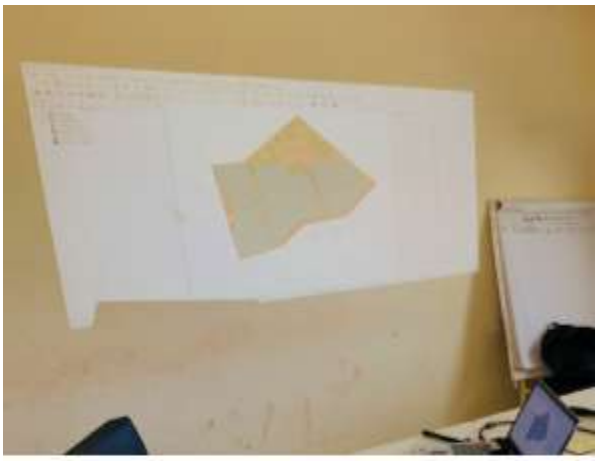
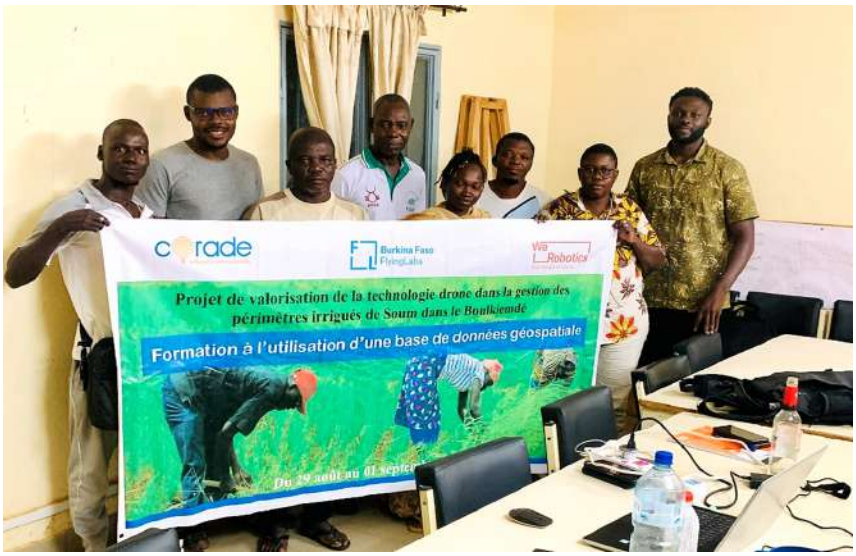
Training on Irrigation Scheme Spatial Database Creation and Management



Hands-on session to digitize irrigated plots



Spatial database attribute identification phase



Participants posing for group photo

OVERVIEW	
Flying Labs	Burkina Faso Flying Labs
Location	Village of Soum, Burkina Faso
Date	28th August to 1st September, 2023

Length (number of days)	Four (4) days
Sector program (optional)	EcoRobotics
Format	In-Person
Co-organizer if applicable	Not applicable
SDGs	GOAL 2: Zero Hunger GOAL 13: Climate Action

SCOPE & OUTCOMES	
Type of training	Technical training of professionals.
Goal of the training	This training was part of a pilot project implemented under the Turning Data Into Action (TDIA) microgrant from WeRobotics. It aimed to assess the potential of drone technology as a tool to help in the management of large irrigated areas. During the training, Burkina Faso Flying Labs supported agricultural advisors from Projet de Développement Hydro Agricole Soum (PDHS) responsible for monitoring and advising on the development of agricultural plots to create a spatial database. Combined with aerial drone mapping, this tool should improve the advisory support process for producers working on the perimeters. In terms of specific objectives, we sought to: 1. Create drone awareness 2. Develop data literacy/interaction skills 3. Develop spatial database management skills 4. Create a spatial database
Expected outcome for participants	By the end of the training, the participants expected to: ● Understand how drone technology can be useful for farm advisory systems. ● Develop GIS platform administration skills oriented towards the development of analysis tools and management aids for the valorization of agricultural plots. ● Create thematic maps.
Confirmed outcome after	At the end of the course, the agricultural advisors understood

training	the benefits of using a high-resolution orthomosaic as a basemap. Participants were able to create different vector layers, georeference them and edit them so that they overlapped the drone basemap. With our support, they were able to identify the attributes to be attached to the different vector layers in order to take the analysis to the next level. For example, the attributes of soil type and type of speculation and Irrigation canal flow rate attached to the agricultural parcel entity were used to produce a thematic map providing information on the irrigation time required for each parcel. The high resolution basemap allowed the stakeholders to identify all the plots of land close to the water outlets, declared as flood plots in the database, which lend themselves well to the cultivation of specific crops such as rice.
Eventual next steps	Due to the unavailability of actors, this training was divided into two sessions, the first focusing on the elaboration of vector layers and the identification and creation of relevant attributes to be attached to vector entities. The next training session will focus on the symbology of the layers, leading to the creation of thematic maps, which the PDHS will present to the various donors, notably the Islamic Development Bank (ISDB) and West African Development Bank (WABD).

PARTICIPANTS	
Profiles and number of participants	Staff from Government service; ● 5 farm advisors ● 1 water manager ● 1 project manager
Name of participants' organizations	Projet de Développement Hydro Agricole Soum (PDHS)
Gender ratio	88% Male : 12% Female
Who paid for the training?	WeRobotics through the TDIA microgrant.
Participant fee rate (if applicable)	Not applicable

Scholarships offered?	Not applicable

CONTENT	
Training components	**I. Training kick-off** ▪ Introduction of participants ▪ Gathering of participants' expectations ▪ Presentation of training objectives **II. Introduction to Geographic Information Systems** ▪ Main GIS functions ▪ Coordinate systems ▪ Geographic data storage formats: raster and vector ▪ Vector geometry ▪ Vector attribute table and symbology III. **Practical digitizing** ▪ Raster loading ▪ Vector entity creation and SCR assignment ▪ Attribute creation ▪ Handling vector layer styles IV. **Creation of the spatial database of the Soum managed perimeters** ▪ Brainstorming: Identification of vector entities to be created and attributes ▪ Creation of the database ▪ Digitizing of developed plots and irrigation canals on the orthomosaic provided by drone
Training resources used	● Projection material ● Flipchart, post-its, and cardboard sheet ● QGIS
Approaches and methods used	The course turned out to be more of a facilitation process. We began by demystifying drone technology, then introduced participants to the key concepts of Geographic Information Systems through presentations, simple real-life examples and a few tutorials. With this foundation in hand, the participants became fully aware of the tool's potential, and went on to develop a product that met their needs in the field. They also created the vector layers and filled in the spatial database.