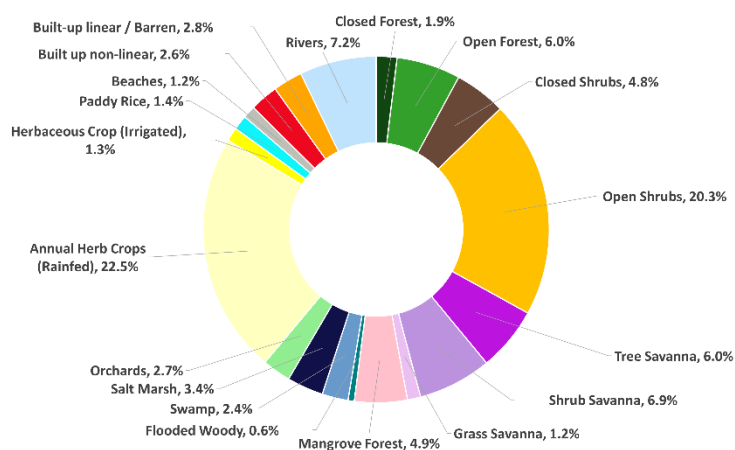
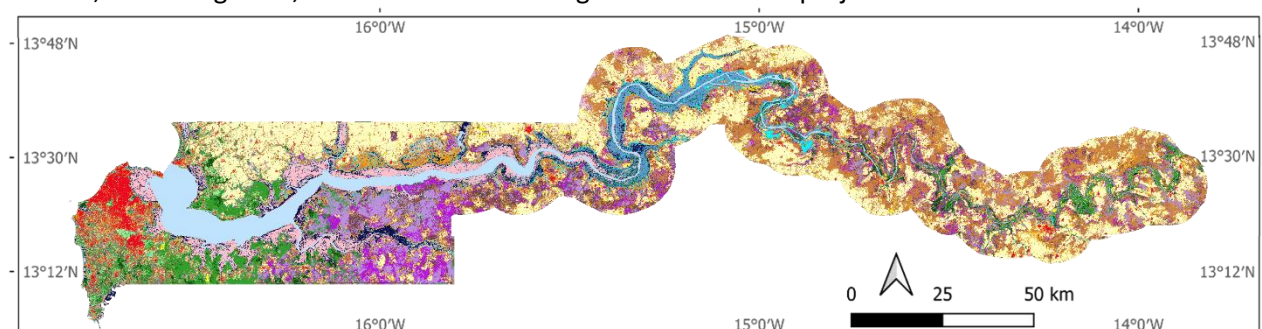




The 2023 land cover map of Gambia has been developed as part of the Geospatial Technical Assistance to the International Fund for Agricultural Development (IFAD)'s project: Resilience of Organizations for Transformative Smallholder Agriculture (ROOTS).

Land Cover (LC) legend classes were prepared using the West Africa Land Cover Reference System and LCHS software. A stratified random sampling by land cover class was used for training data collection in Sepal and QGIS. Sentinel-2 dry and wet season composites, Sentinel-1 texture features and spatiotemporal metrics, and the Shuttle Radar Topography Mission (SRTM) topographic features were derived in GEE to obtain the best separability between the selected LC classes. Finally, a random forest classifier was used to convert image information into a thematic map representing the selected classes, including Paddy Rice, Irrigated Crops, Orchards, and Mangroves, which are the main targets of the ROOTS project.



Key Findings

Dominant land cover classes observed in 2023 (top three) are:

1. Rainfed Annual Crops (22.5%),
2. Open Shrubs (20.3%),
3. Shrub Savanna (6.9%).

Project targeted classes are:

1. Mangroves (4.9%)
2. Orchards (2.7%),
3. Paddy Rice (1.4%),
4. Other irrigated Crops (1.3%).

Figure 1: 2023 land cover map of Gambia

The map has an overall accuracy of 94%. The user accuracies for the project's targeted classes are as follows:

1. Mangroves: 91%
2. Orchards: 97%
3. Paddy Rice: 100%
4. Other Irrigated Crops: 87%

The working bench utilized to produce this map is available on GEE. The two modules are accessible at the following links:

- 1- Preparation of the feature sets for best LC class separability:
<https://code.earthengine.google.com/9883e7f602f63b3f0d3ed9770c237e06>
- 2- Random Forest Classification + Validation:
<https://code.earthengine.google.com/6ebbf4460904ce7b56c9f34797b1b9b9>