

Space-Enabled Modeling of the Niger River to Enhance Regional Water Resources Management (SEMOR)

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The project

Sustainable space-based ICT solution - 2-D flood inundation model, river monitoring network for the Niger River Basin + EO-based drought and flood risk mapping:

- Open-access satellite Earth Observation (EO) data -Sentinel-2, Sentinel-3 for drought patterns and drought risks estimation
- Affordable LiDAR river sensors water levels
- Drone technologies river and floodplain topography for DEM & validation
- Capacity training workshops EO, model, and sensors usage

The project **longevity** is ensured with additional **funding** and the transfer of model + knowledge to the local partner in Niger



Geospatial Technologies

Open-access satellite EO: SAR, optical, thermal (ESA Sentinel)



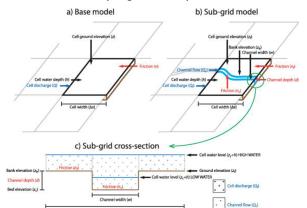
Telemetry based LiDARenabled water sensors (Riverlabs Ltd)



High-resolution **modular drones** (RSS-Hydro)



University of Bristol's **LISFLOOD-FP model** (subgrid version)



Impact

- **SDGs**: 1, 4, 6, 9, 11, 13, 17
- Support the fight against floods, droughts
- Improvement of regional predictions of hydrological extremes
- Positive regional economic and environmental impacts
- Increase of communities' resilience
- Monitoring equipment provision
- Local job creation, trainings
- Regional/national working groups meteorological, hydrological, crops, pastures conditions monitoring

Partners









