

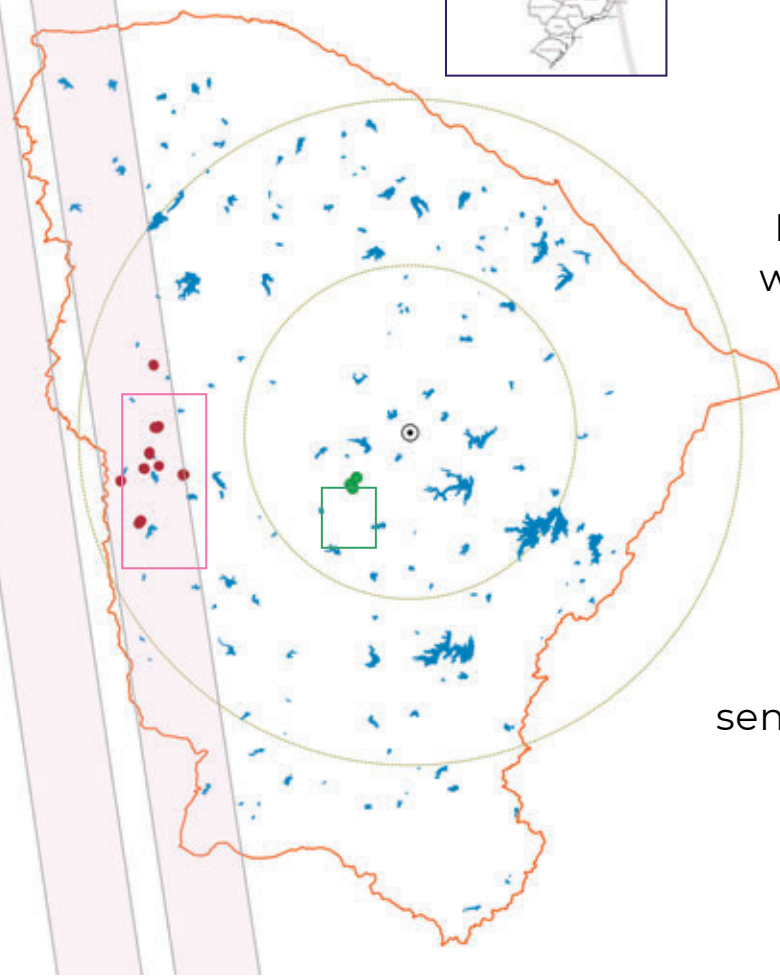
# FIELD PROJECT

# SWOT

## CEARÁ SITE | BRAZIL

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BRAZIL

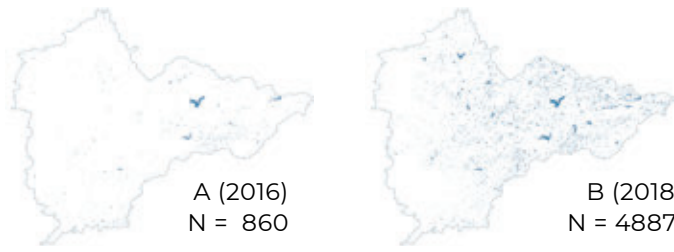
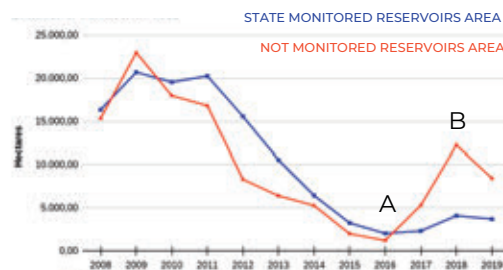


### CONTEXT

In the semiarid region of the Ceará, the water resource is disseminated through several thousands of reservoirs. The significant increase observed in small objects may be a consequence of years of drought, possibly causing hydrological changes in the watershed and making the inventory and monitoring of these waters even more challenging. Therefore, new remote sensing techniques can play a central role.

### GOALS

Produce consistent information about small water bodies, combining field surveys and the potential of orbital sensors, to better understand the hydrology of those reservoirs and support the implementation of a remote monitoring system in the state of Ceará, Brazil.



The two figures show the great inter-annual variability of the mapped reservoirs and their wide distribution across the territory.

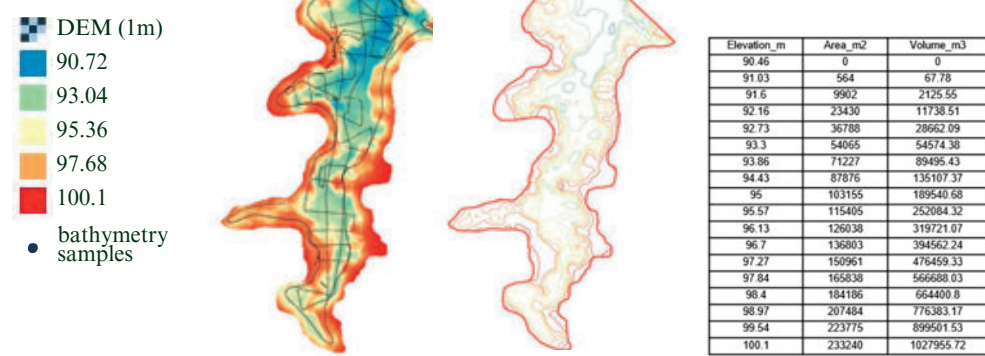
### METHODS

Collect data of water elevation, area and volume in situ from 8 reservoirs in Crateus (1st phase) and 3 in Forquilha (2nd phase), according with methods below. The reservoirs range from 2.7 to 67 ha for SWOT/CE and up to 8242 ha for the state reservoirs.

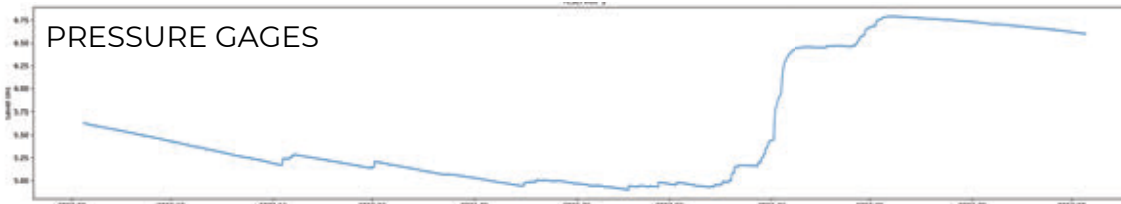
	what?	how?	why?
HEIGHT		Levelloggers Absolute levelling Rules	Time series (30min) GNSS referenced gages Community involment
AREA		Drone surveys	High Resolution DEM from dry an wet area
VOL		Bathymetry	Lake contour and volume

## FIRST RESULTS

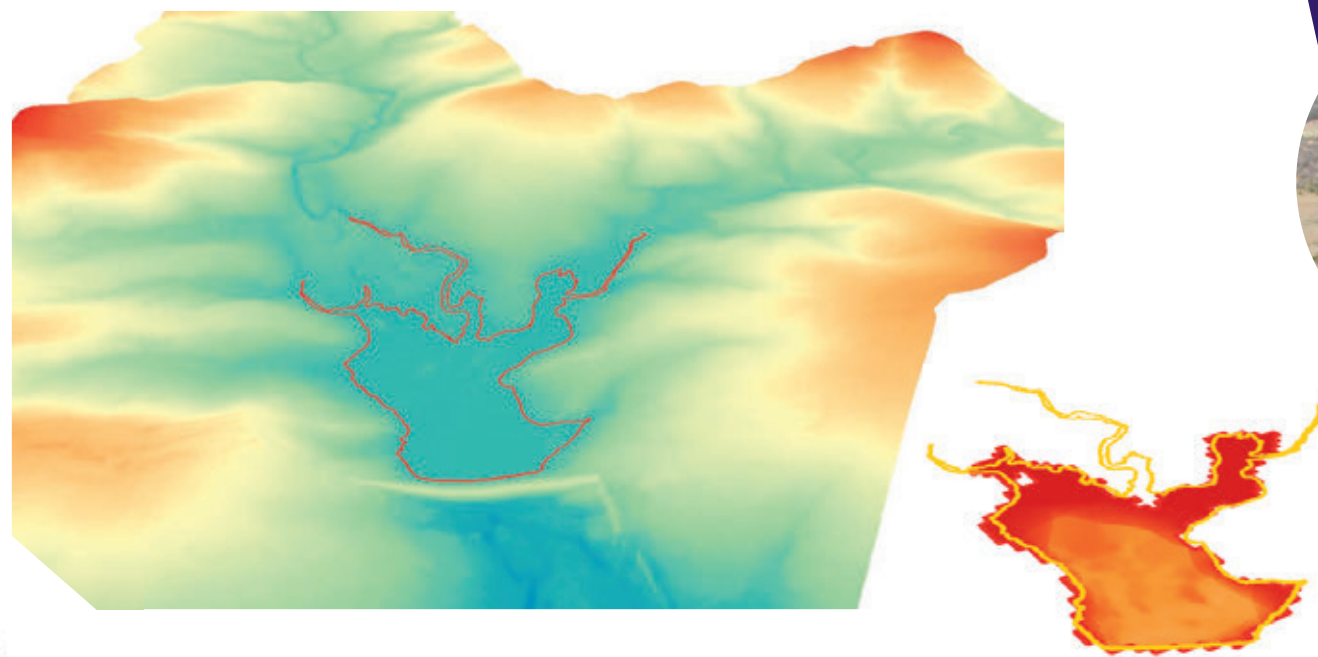
### BATHYMETRY



### LEVEL MONITORING



### DIGITAL ELEVATION MODELS



### FUTURE STEPS

- PROCESS AND ANALYSE HEIGHT, AREA AND VOLUME OF THE RESERVOIRS
- COMPARE RESULTS FROM SATELLITES WITH IN SITU DATA
- INTEGRATE SENTINEL 1, 2 AND SWOT DATA
- PROCESS THE RESERVOIR'S BASSIN WATER BUDGET (WITH RAINMAP FROM FUNCEME RADAR)



TEAM



LEVEL



DRONE SURVEY



BATHYMETRY



LEVELLING



RADAR



MACROPHYTES



Marcelo reservoir

AUG/22



FEB/23



SUPPORTED BY:

