

## INTRODUCTION

Mozambique is characterised by an unaltered coastal area with

- Huge offshore natural resources
- Unique coastal landscapes

Geomorphological characterization linked to meteo-oceanographic processes has not been yet performed

High relevance in:

- Land use planning
- Coastal risk prevention

Vital to identify present and future alterations, being a fundamental tool for coastal management

## OBJECTIVES

- Analysis of the **geomorphological** features jointly with the **hydrodynamic** characterization
- Assessment of the **longshore sediment transport**



Figure 2. Low-cost sediment trap with three streamers placed at different depths

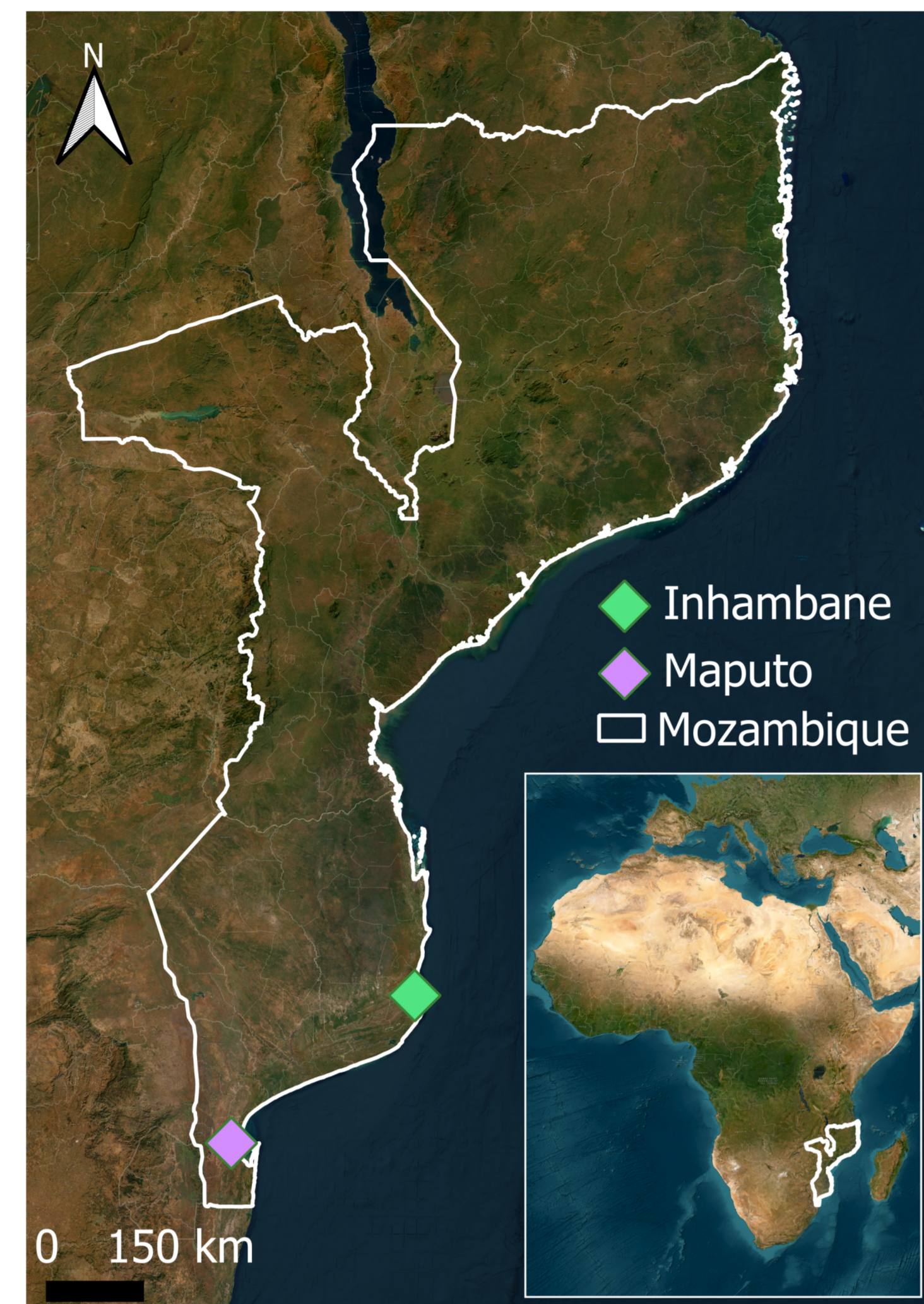


Figure 1. Location map

## METHODOLOGY

Field campaign 27-28/02/2023 in Barra beach (Inhambane)

- Low-cost lagrangian buoy used to measure speed and direction of the current
- Low-cost sediment trap to quantify solid runoff in surf zone (42 m, 42 m, 50 m, 62 m)
- ERA5 data to analyse hydrodynamics in the study area
- ESRI satellite imagery to geomorphologically characterise the Mozambican coast
- Garmin GPS to obtain the shoreline

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## RESULTS

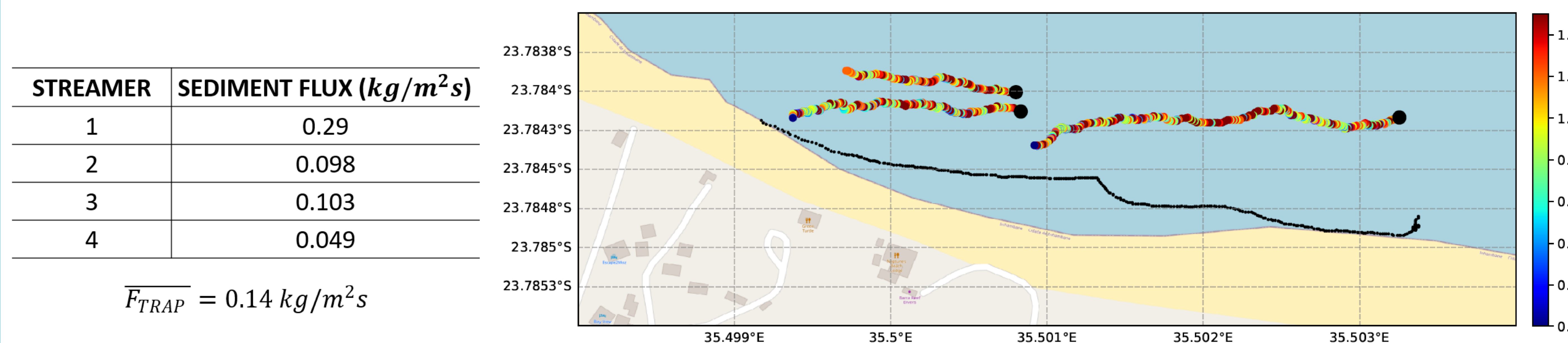
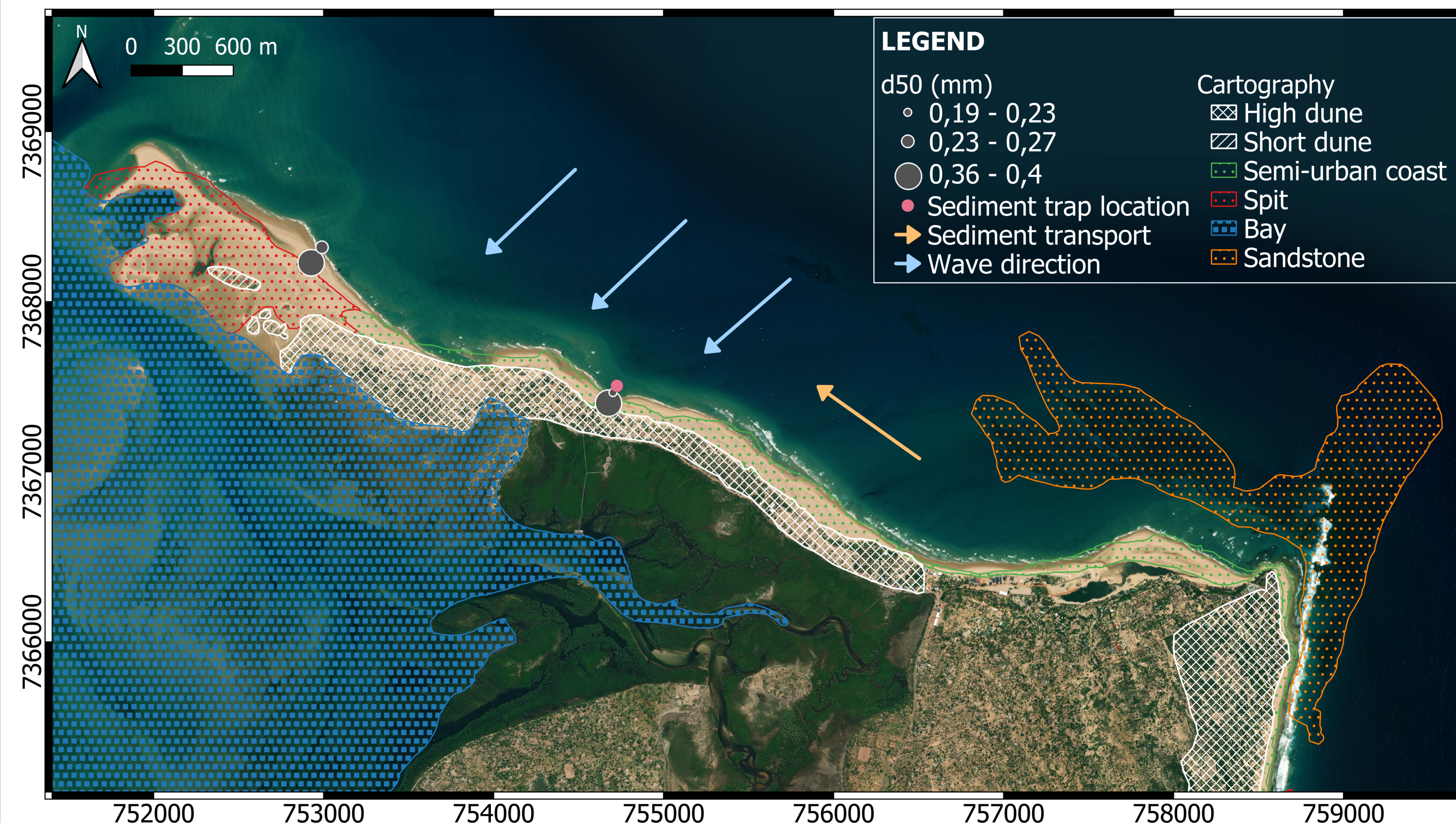


Figure 3. (Top) Geomorphological cartography of the study area at scale 1:10.000 (Bottom left) Sand flux of the bottom streamers in the study area of the four samples taken at 42 m (twice), 50 m and 62 m. FTRAP is the mean sand flux in the area (Bottom right) Three speed lagrangian buoy tracks in the study area (coloured lines). The black line indicates the shoreline

## CONCLUSION

Current and sediment data showed that Barra beach is a highly energetic beach from a longshore transport point of view. These dynamic environments present a high risk at the coastline due to the actions on the coast, as it is potentially developable

## REFERENCES

- Viola, C.N. *et al.* (2014) "Sea wave propagation from offshore to Maputo's coast. application to longshore sediment transport assessment," *Water Science and Technology*, 69(12), pp. 2438–2445
- Rosati, J.D. (1990) *Superduck Surf Zone Sand Transport Experiment*. tech. Washington, DC: USAEWES, pp. 1–76

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