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# MAPPING TROPICAL COASTAL SOCIAL-ECOLOGICAL SYSTEMS USING UNMANNED AIRBORNE VEHICLE (UAV)

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## Why?

Coastal risks increase with

- cyclone/storm intensification,
- sea-level rise,
- population densification and,
- natural barrier degradation.

Can an UAV map the structural complexity of intertwined coastal socio-ecosystems?

Figure 1. Example of a coastal fringe provided with natural-based adaptation, exposure and vulnerability.



## Where?

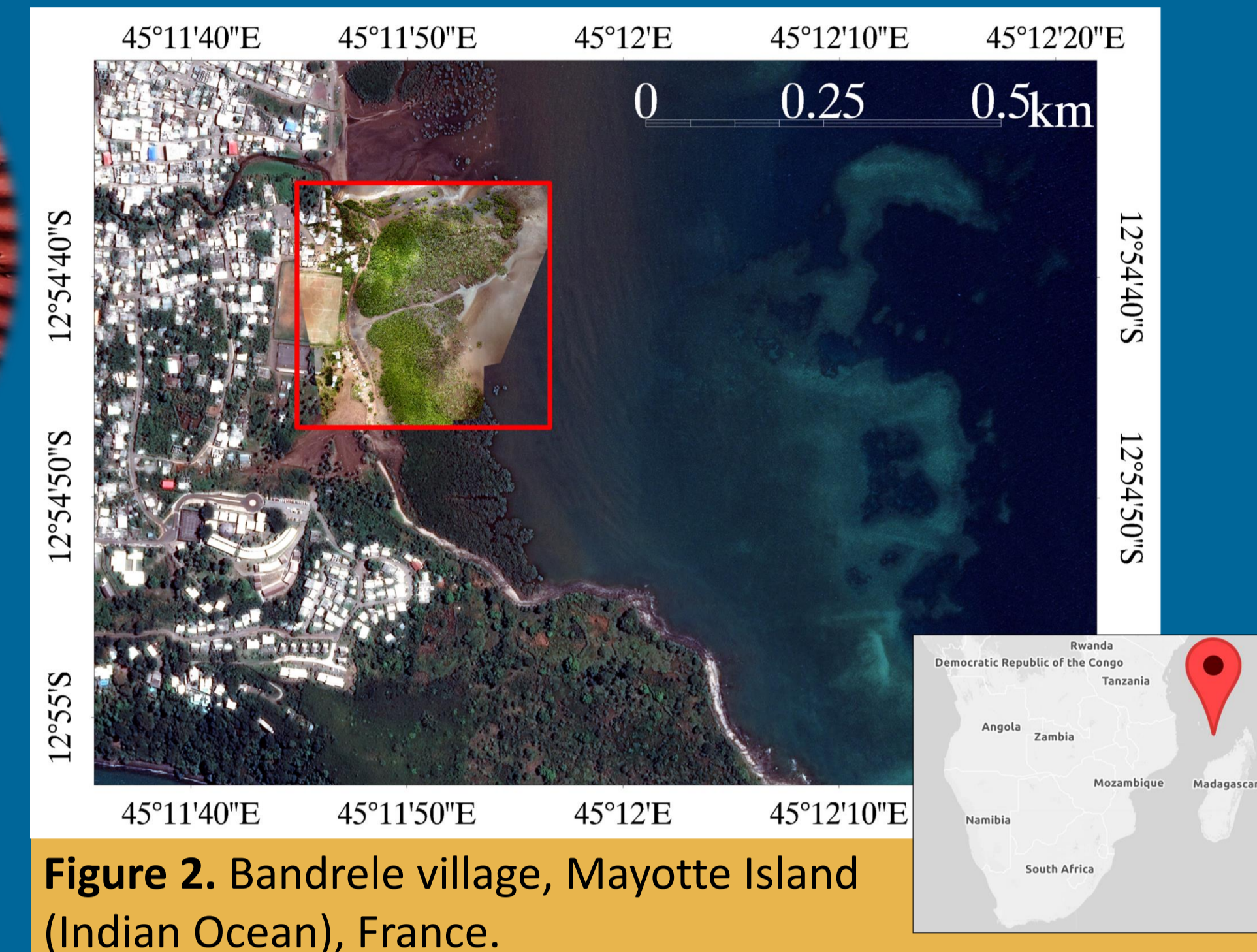


Figure 2. Bandrele village, Mayotte Island (Indian Ocean), France.

## How?

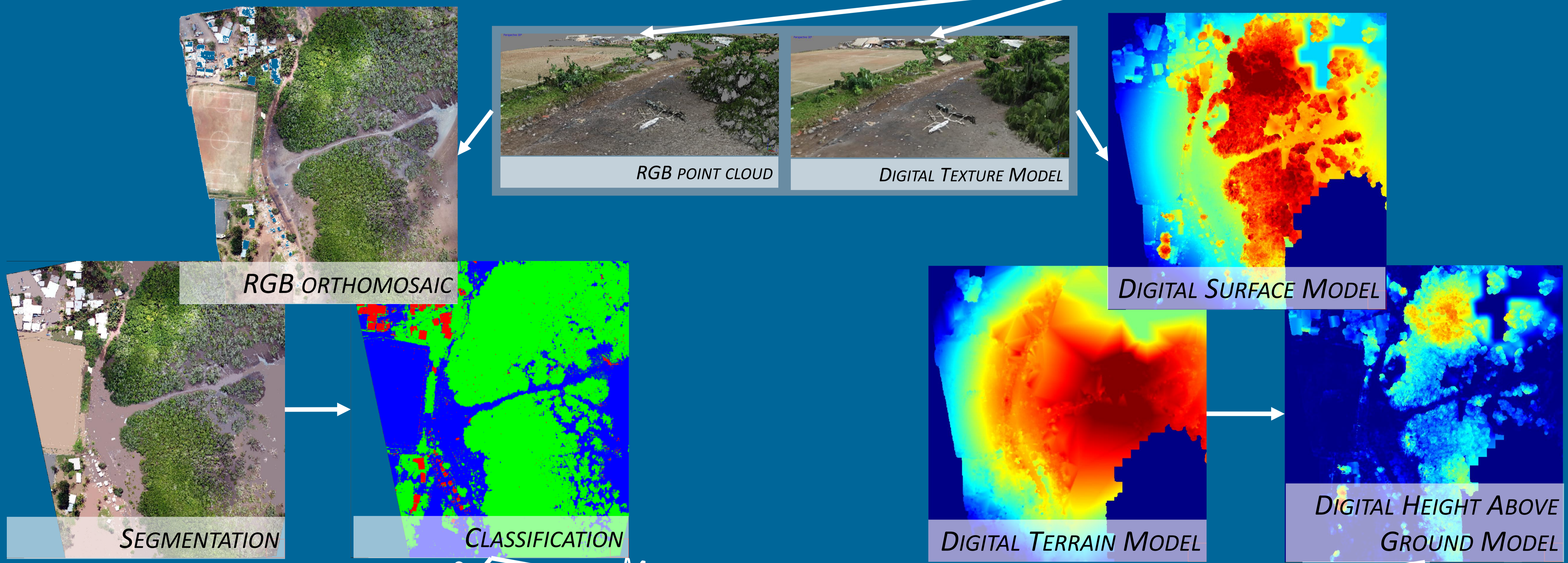


Unmanned Airborne Vehicle (UAV) DJI Mavic Pro:

- 25 red-green-blue (RGB) provided with
- 4000 × 3000 (4K) pixels, namely
- 0.1 m spatial resolution

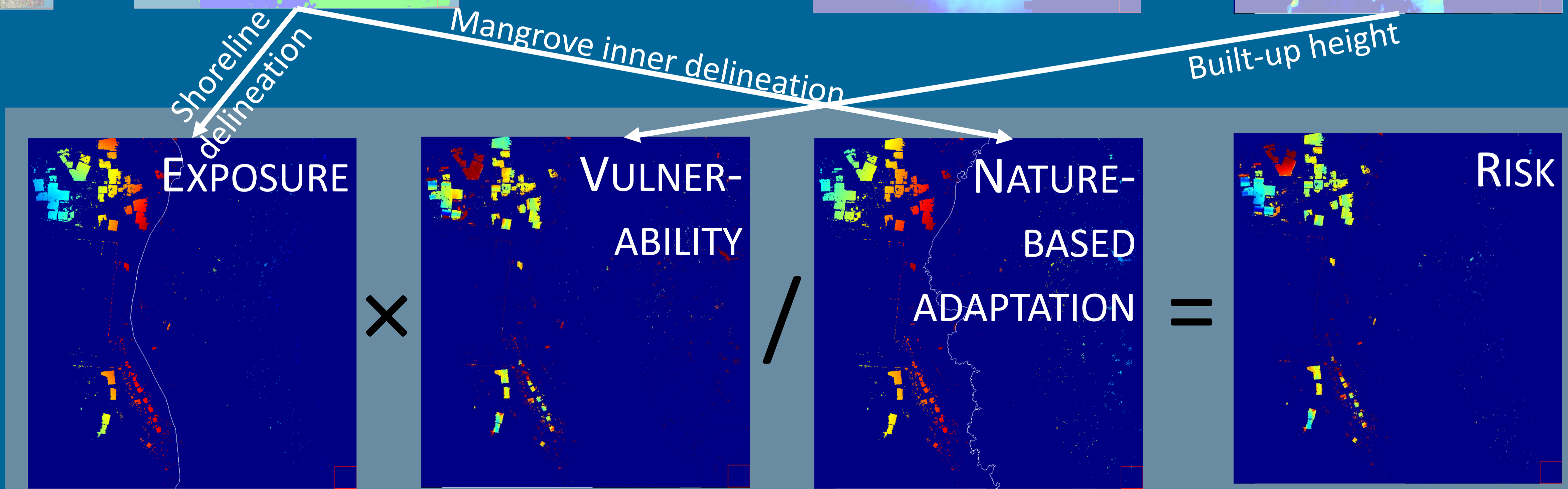


Figure 3. Geolocations of RGB collection and resulting alignment.



## What?

UAV-based drone imagery can predict exposure, vulnerability and adaptation indicators using photogrammetric and GIS techniques.



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