Towards Sustainable Port Development in Western Indian Ocean

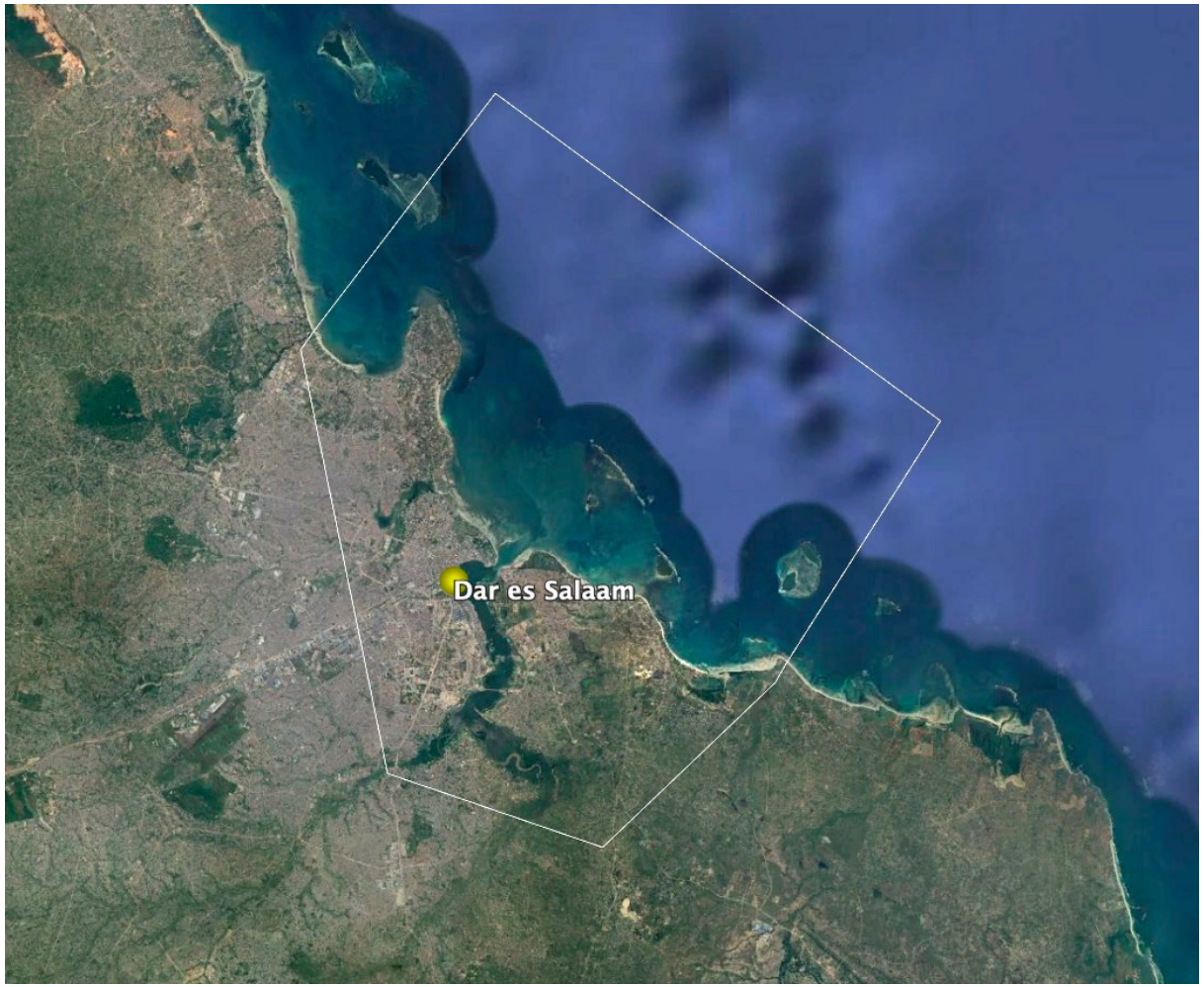
Day 1: Exploring sound ecological geo-referenced data acquisition techniques

Context

Situation Assessment found that:

- **Spatial assessment at port scale requires finer resolution that that typically applied in regional or global data bases**
- **For strategic port planning resolution of 5 x 5 m can probably suffice**
- **Detailed port planning and design, ideally requires sub-meter resolution**
- **Investment needed in sound ecological geo-referenced data acquisition techniques to assist in ground truthing remote sensing spatial assessments, but also alternative methods where remote sensing may be less suitable, e.g., deeper coral reefs and seagrass beds**

Areas of Interest



Key Habitat Types for Consideration

Seagrass

Coral reefs

Mangroves

Seagrasses

- **Errors of inclusion**
- **Coverage**

Coral reefs

- **Difficulty to verify without local wisdom**

Mangroves

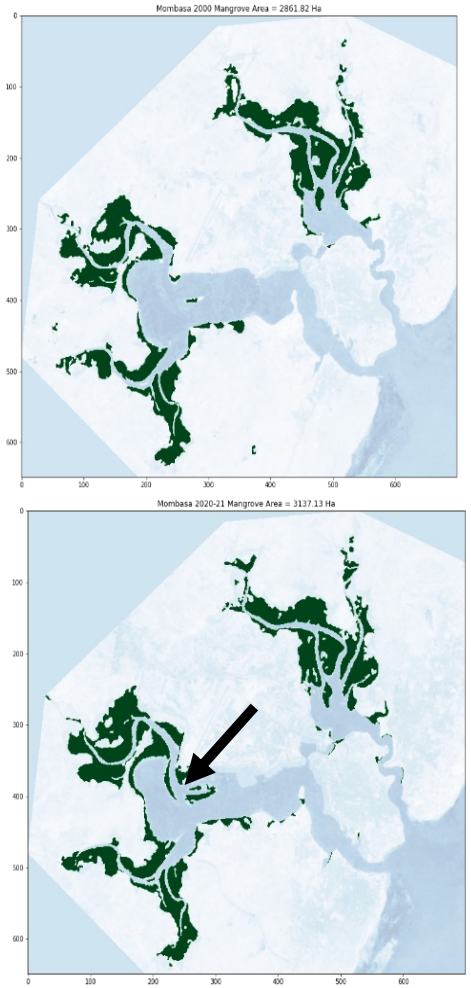
- **Errors of omission**
- **Coverage**

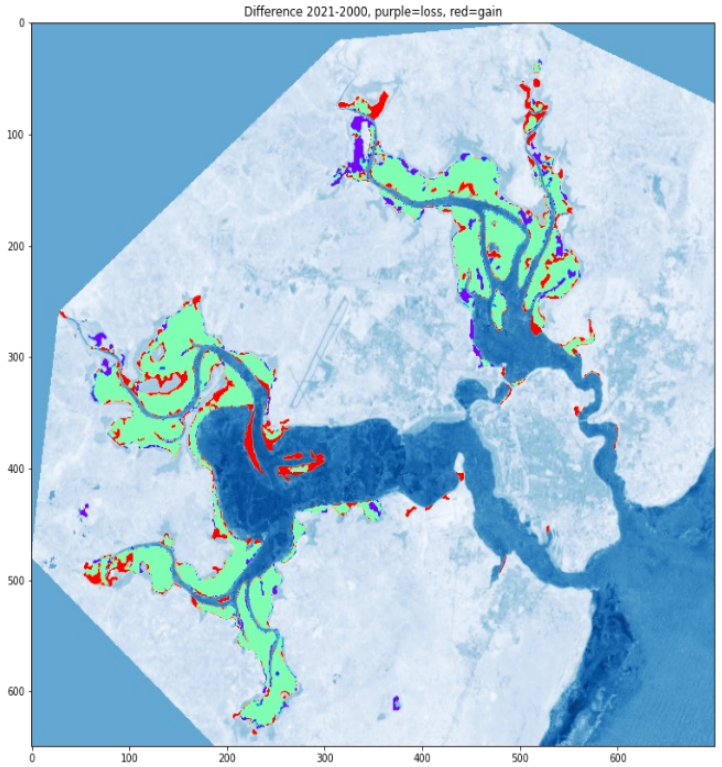
Mangroves

- Patchiness
- Classification

Mangroves

- **Remote sensing – Google Earth Engine (Landsat and SRTM datasets)**



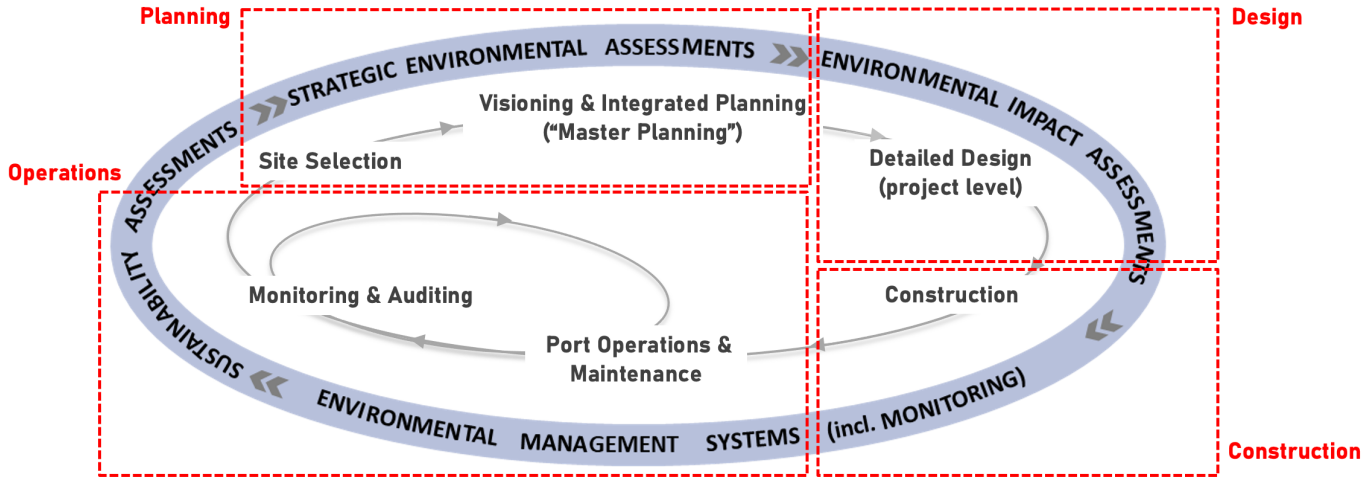


Purple = Loss; Red = Gain

- **Remote sensing potential to exponentially improve spatial databases**
- **“Off the shelf” products are useful, but need to be wielded with caution at port scale, especially (sub 5m resolution)**
- **Classification algorithms need to be calibrated for use locally**
- **Local expertise critical for ground truthing**

Geospatial data on natural habitats for port development

- Hindcasting / Forecasting
- Scale
- Planning
- Design
- Operations (monitoring losses/gains)
- Development of remote sensing technologies (and capabilities)
  - Classification algorithms need to be calibrated for use locally
  - Local expertise critical for ground truthing



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