

EO 4 Ecosystem Accounting 2022



ASSESSING THE CONDITION OF BCE THROUGH EO – AN OVERVIEW

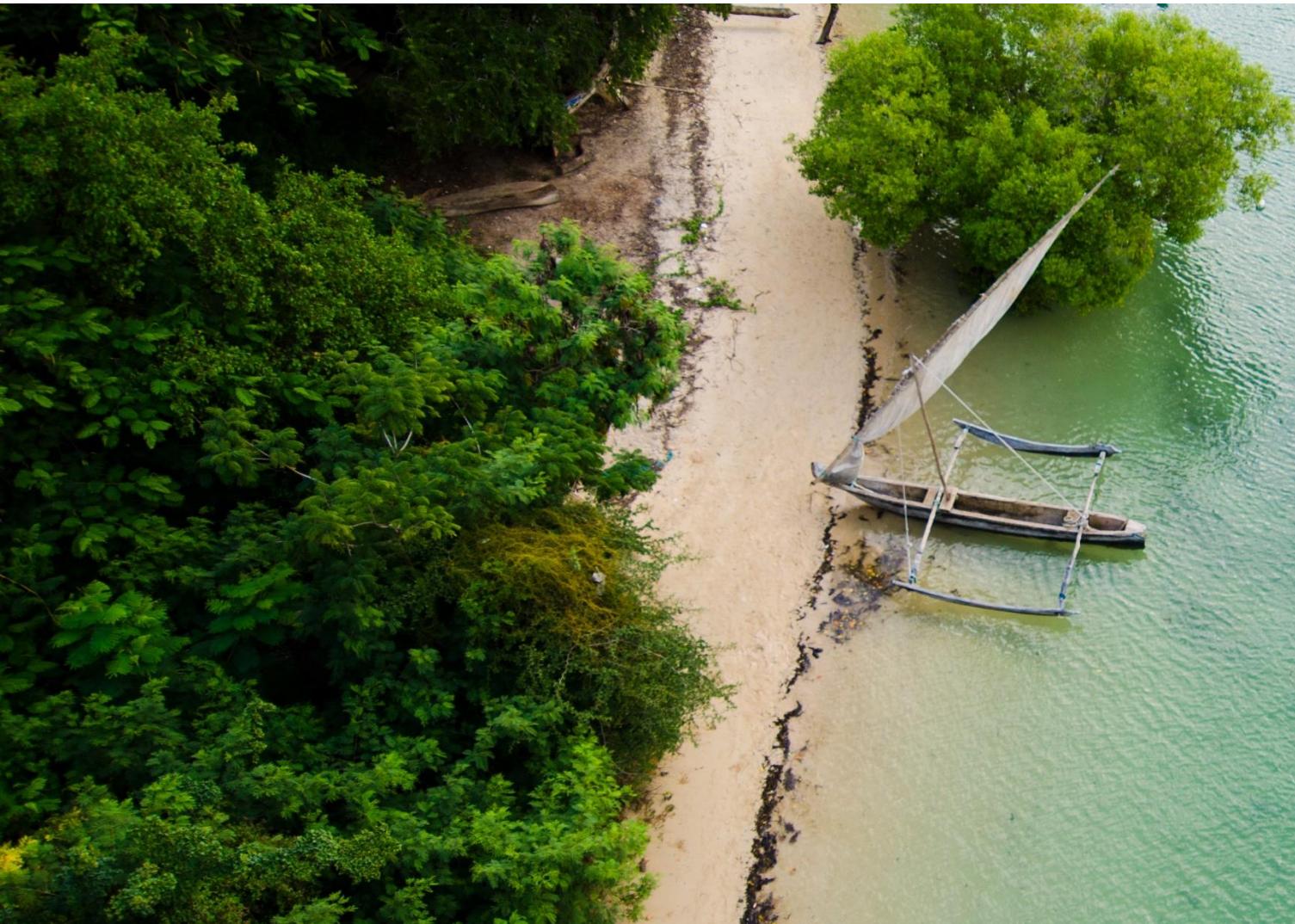


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→ THE EUROPEAN SPACE AGENCY



- Mangrove forests
- Seagrass meadows
- Tidal marshes

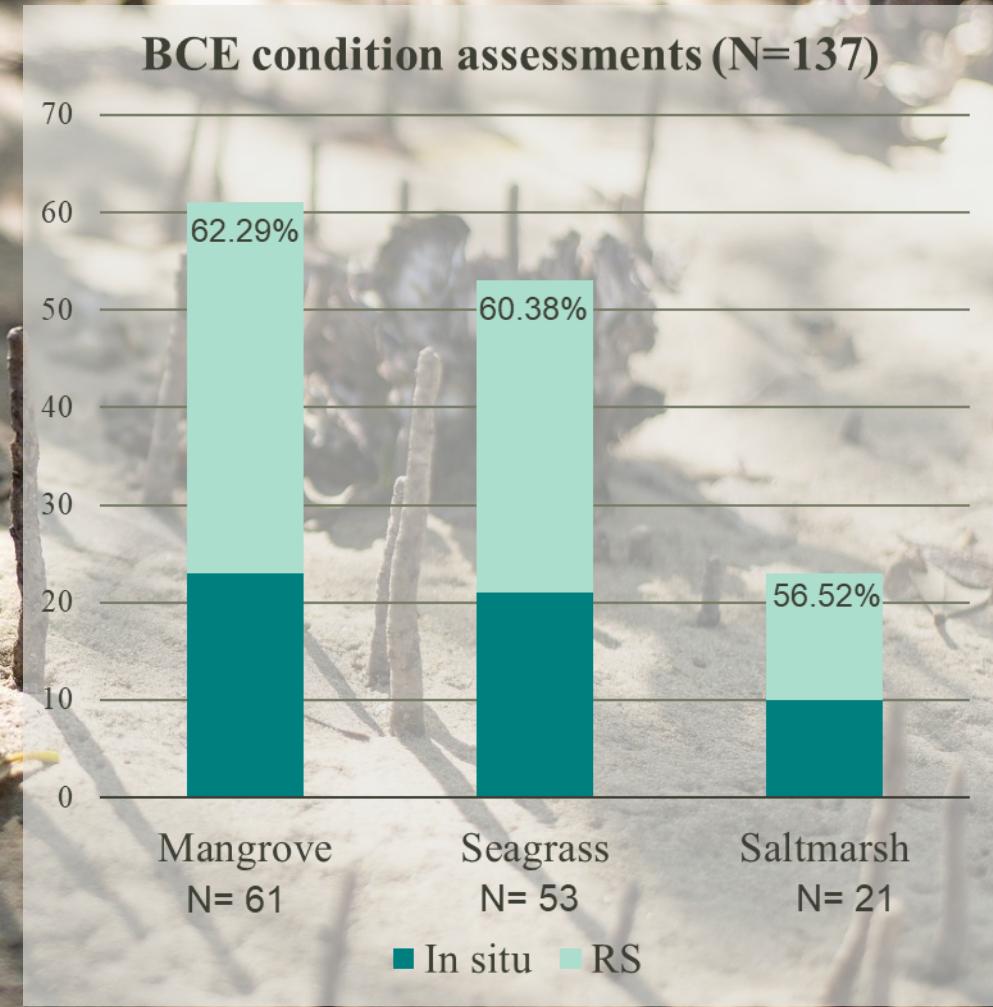
- Link to ES
- Pressure
- Nature-based solutions
- Blue carbon market



Ecosystem condition accounts

- Standard methods
- Cost-effective and simple
- Spatial explicit metrics

- Literature review
- Published papers and grey literature



Variables and the need for integrated assessments

Category	Variable
Biological structure	Plant richness
Biological structure	Plant diversity
Biological structure	Macroalgae diversity
Biological structure	Epiphyte and Macro-algae Abundance
Biological structure	Phytoplankton diversity
Biological structure	Benthic species diversity
Biological structure	Crab abundance
Biological structure	Crab burrow counts
Biological structure	Fish abundance
Biological structure	Fish diversity
Functional structure	Net Primary Productivity (NPP)
Functional structure	Vegetation percentage cover
Functional structure	Macroalgae Percentage Cover
Functional structure	Vegetation activity
Functional structure	Plant biomass
Functional structure	Macroalgae Biomass
Functional structure	Leaf Area Index (LAI)
Functional structure	Canopy height
Functional structure	Tree height
Functional structure	Photosynthesis rate
Functional structure	Seedling regeneration
Functional structure	Shoot Biomass
Functional structure	Shoot Density
Functional structure	Leaf growth
Functional structure	Leaf length
Functional structure	Leaf necrosis
Functional structure	Vegetation density
Functional structure	Internode Distance
Functional structure	Leaf biomass
Functional structure	Basal-area weighted height
Functional structure	Diameter at Breast Height (DBH)
Physicochemical structure	Water temperature
Physicochemical structure	Water salinity
Physicochemical structure	Water pH
Physicochemical structure	Water alkalinity
Physicochemical structure	Turbidity
Physicochemical structure	Soil salinity
Physicochemical structure	Dissolved oxygen
Physicochemical structure	Biochemical Oxygen Demand (DOB)
Physicochemical structure	Chlorophyll a
Physicochemical structure	Phosphorous concentration in water
Physicochemical structure	Phosphorous concentration in soil
Physicochemical structure	Nitrogen concentration in water
Physicochemical structure	Nitrogen concentration in soil
Physicochemical structure	Metal in water
Physicochemical structure	Metal in fish
Physicochemical structure	Metal in soil
Physicochemical structure	Microplastic concentration in water

Remote sensing and condition variables

Category	Variable
Biological Structure	Plant richness
	Plant diversity
Functional structure	Net Primary Productivity (NPP)
	Vegetation percentage cover
	Macroalgae Percentage Cover
	Vegetation activity
	Vegetation biomass
	Macroalgae Biomass
	Leaf Area Index (LAI)
	Canopy height
	Photosynthesis rate
Physicochemical structure	Water surface temp.
	Water salinity



- Fragmentation and connectivity
(R-package ecochange – Lara et al.2022)
- Integrated assessments
- Define headline variables
- Develop guidelines, and decision rules
(including the pre-processing stage)

Acknowledgements



Thank you

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