SUPPORTING MATERIALS

Table S1. Spatial datasets used for mapping Maputo Bay (MB) mangrove forests, seagrass meadows and protected areas.

Dataset	*Global Distribution of Mangroves USGS*	*Global Mangrove Watch*	*Seagrass Meadows in MB*	*Maputo Special Reserve and Ponta do Ouro Partial Marine Reserve*
Id	WCMC-010	GMW-001	-	-
Description	Global distribution of mangrove forests derived from earth observation satellite imagery, composed of one set of polygon occurrence data	Global baseline map of mangroves using satellite imagery, composed of one set of polygon occurrence data	Distribution of seagrasses in the MB, adapted from the map provided in Bandeira *et al.* (2014), composed of one set of polygon occurrence data	Cover of the protected areas, each one composed of one polygon
Temporal Range	1997-2000	1996, 2007 - 2010, 2015, 2016	-	-
Reference System	WGS 1984	WGS 1984	-	-
Version	1.4 – March 2021	2.0	-	-
Source	United Nations Environmental World Conservation Centre, at https://data.unep-wcmc.org	United Nations Environmental World Conservation Centre, at https://data.unep-wcmc.org	Manually obtained from (Bandeira et al. 2014)	Foundation for the Conservation of Biodiversity (BIOFUND) at https://www.biofund.org.mz

Table S2. Selected indicators to assess the quantification and future trends of ecosystem services (ES) provided by the marine macroinvertebrates (MMI) present in MB´s mangrove forests and seagrass meadows; (*) indicators originated through the analysis of the dataset (DOI: doi.org/10.5281/zenodo.7074686). SR – species richness.

ES Section	Indicators	Data Source
Provisioning	Artisanal fishery production (tons/ year)	Sousa (1989), Ministério das Pescas (2012), António et al. (2017)
	Semi-industrial fishery (shrimp) production (tons/ year)	
Regulation and maintenance	*Score calculated through SR reflecting MMI's contribution to "maintaining nursery populations and habitats (including gene pool protection)" ES by promoting food web stability, habitat modification and nutrient cycle	Dataset (DOI: doi.org/10.5281/zenodo.7074686)
	*Score calculated through SR reflecting MMI's contribution to "decomposition and fixing processes and their effect on substrate quality" ES by promoting sediment quality	Dataset (DOI: doi.org/10.5281/zenodo.7074686)
	*Score calculated through SR reflecting MMI's contribution to "hydrological cycle and water flow regulation" ES by promoting hydrological flux	Dataset (DOI: doi.org/10.5281/zenodo.7074686)
	*Score calculated through SR reflecting MMI's contribution to "regulation and chemical condition of salt water by living processes" ES by promoting water quality	Dataset (DOI: doi.org/10.5281/zenodo.7074686)
	*Score calculated through SR reflecting MMI's contribution to "filtration/sequestration/storage/accumulation by micro-organisms, algae, plants, and animals" by promoting wastes filtration	Dataset (DOI: doi.org/10.5281/zenodo.7074686)
Cultural	Diversity of life from which to learn (SR)	Dataset (DOI: doi.org/10.5281/zenodo.7074686)
	Licenses for recreation and sport fishing (number)	António et al. (2017)

Table S3. Determination of the marine macroinvertebrate (MMI) functional groups associated with the trophic guild (TG) and the corresponding ecosystem service (ES - identified in bold). Here, "nutrient cycle" and "food web stability" ES were not included, as they were considered common to all groups. (-) means no additional functional groups were determined.

TG	Chain of Events and Resulting MMI ES
Chemosymbiosis	(1) participation in the sulphur cycle (2) **nutrient cycle** contribution
Deposit feeder *Surface deposit feeder*	(1) sediment movement and alteration, and burrowing; (2) **bioturbation**; (3) **habitat modification**; (3) soil oxygenation, contributing to the **nutrient cycle** and the **sediment quality**; (3) organic matter breakdown and transportation leading to better **water quality.**
Microphage	(1) consumption of sunk POM; (2) less POM reduces the likelihood of a eutrophication event and consequent algae bloom; more light penetrating the **water column**; (3) water quality control and **habitat modification**.
Suspension feeder *Filter feeder*	(1) consumption of sunk POM; (2) less POM reduces the likelihood of a eutrophication event and consequent algae bloom; more light penetrating the water column; (3) **water quality** control and **habitat modification.**
Epifauna feeder	-
Infauna feeder	(1) sediment movement and alteration, and burrowing; (2) **bioturbation**.
Predator	-
Zooplanktivore	(1) consumption of zooplankton; (2) more light to penetrate the water column; (3) **habitat modification**.
Scavenger	-
Parasite	-
Grazer *Phytoplantkivore*	(1) Ingestion of biofilm and algae or phytoplankton; (2) prevention of algae blooms / high concentrations of phytoplankton; (3) **habitat modification** and **water quality** control.

Table S4. Correspondence between different marine macroinvertebrate (MMI) functional groups related to trophic guild (TG) and regulation and maintenance ecosystem services provided by MMI of Maputo Bay mangrove forests and seagrass meadows.

	Trophic Guild													
MMI Regulation Services	Chemosymbiosis	Deposit Feeder	Surface Deposit Feeder	Microphage	Suspension Feeder	Filter Feeder	Epifauna Feeder	Infauna Feeder	Predator	Zooplanktivore	Scavenger	Parasite	Grazer	Phytoplanktivore
Habitat modification		X	X	X	X	X		X		X			X	X
Nutrient cycling	X	X	X	X				X						
Sediment quality		X	X	X				X						
Water quality		X	X	X	X	X		X					X	X
Hydrological flux		X	X	X				X						
Food web stability	X	X	X	X	X	X	X	X	X	X	X	X	X	X

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