

DEMO



UN
environment
programme

 Sweden
Sverige

Swedish Agency
for Marine and
Water Management

WIO Symphony tool



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Swedish Agency
for Marine and
Water Management



Western Indian Ocean SYMPHONY

Username

Password

LOG IN

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Areas

Areas of interest



Search for area



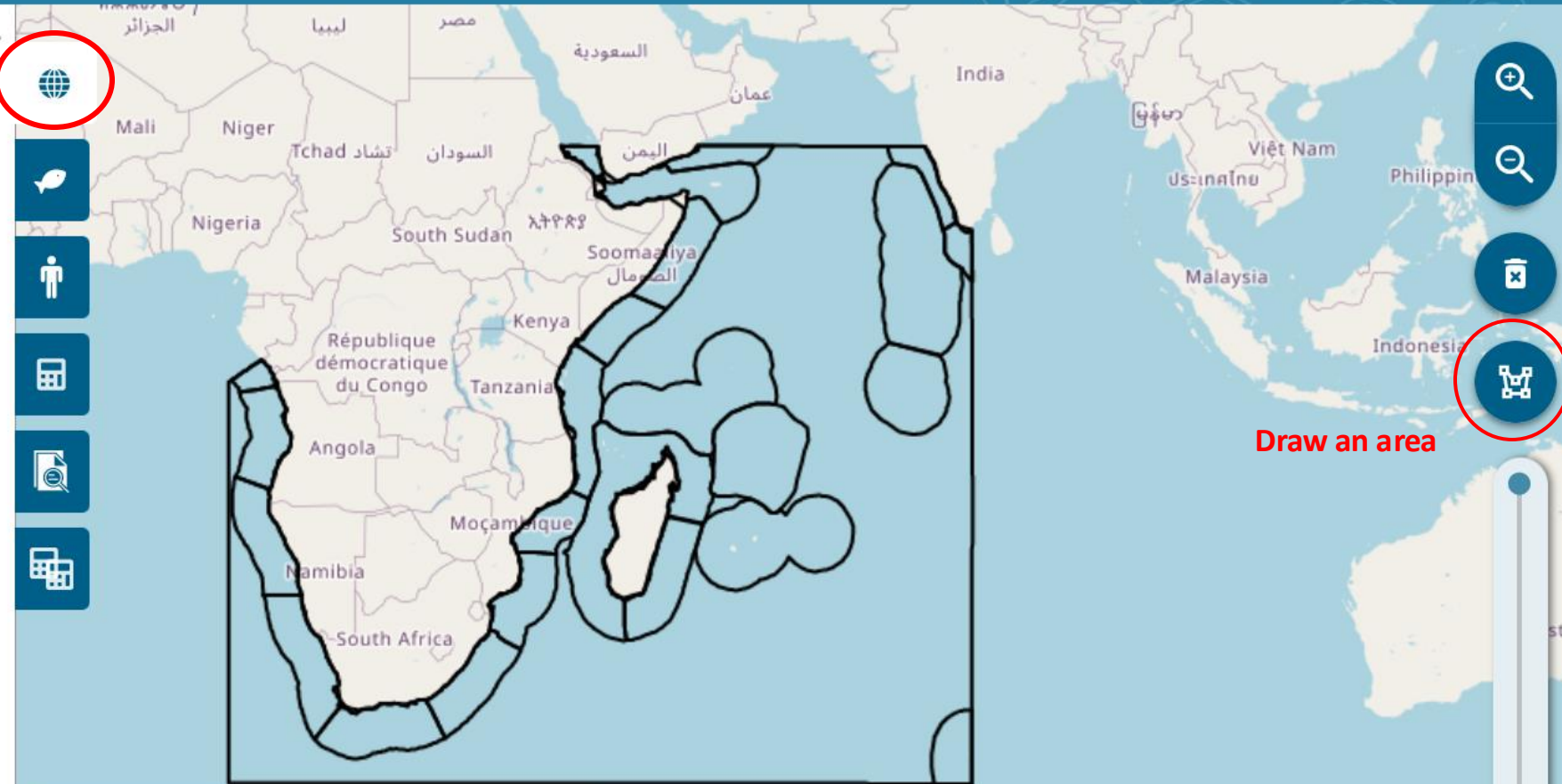
- ADIVJ
- Climate zones
- Coastal waters
- LME
- To view**
Marine ecoregions
- National waters
- Protected Areas Marine

User-created Areas



To upload your polygon: GeoPackage

No areas



Draw an area

Cumulative impact

1% 5% 10% 15% 20% 25% 30% 35% 70% 90% 100%



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Ecosystem Components

To reset or clear your selection

No area selected

RESET



Search for nature value



Habitat Oceanic pelagic

Deep pelagic **Metadata** 

Midwater pelagic

Photic pelagic

Upwelling pelagic

Habitat Oceanic seafloor

Metadata regarding ecosystem: Deep pelagic

Method summary

Proportion of abyssal deep waters in relation to full ocean depth based on GEBCO 2022 bathymetry grid.

Known limitations

Metadatum missing.

Value range

0-84

Data processing

Kagesten G, Queste B 2022. Swedish WIO Symphony Team. Software: R. Script: eco_ocean_reg_s01_v01.1.Rmd

Data sources

- Global Monitoring and Forecasting Center (2018) Global Ocean NRRS, BBP, CDM, KD, ZSD, SPM (Copernicus-GlobColour) from Satellite Observations: Monthly and Daily-Interpolated (Reprocessed from 1997), E.U. Copernicus Marine Service Information [Data set]. Available at: https://resources.marine.copernicus.eu/?option=com_csw&view=details&product_id=OCEANCOLOUR_GLO_OPTICS_L4_REP_OBSERVATIONS_009_081 (Accessed: 31th May 2021).
- GEBCO Compilation Group (2022) GEBCO 2022 Grid (doi:10.5285/e0f0bb80-ab44-2739-e053-6c86abc0289c)
- Jarvis A., H.I. Reuter, A. Nelson, E. Guevara, 2008, Hole-filled seamless SRTM data V4, International Centre for Tropical Agriculture (CIAT), available from <https://srtm.csi.cgiar.org>

CLOSE

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Pressures

No area selected

RESET

To view pressures

Search for pressure



Aquaculture



Algae farming



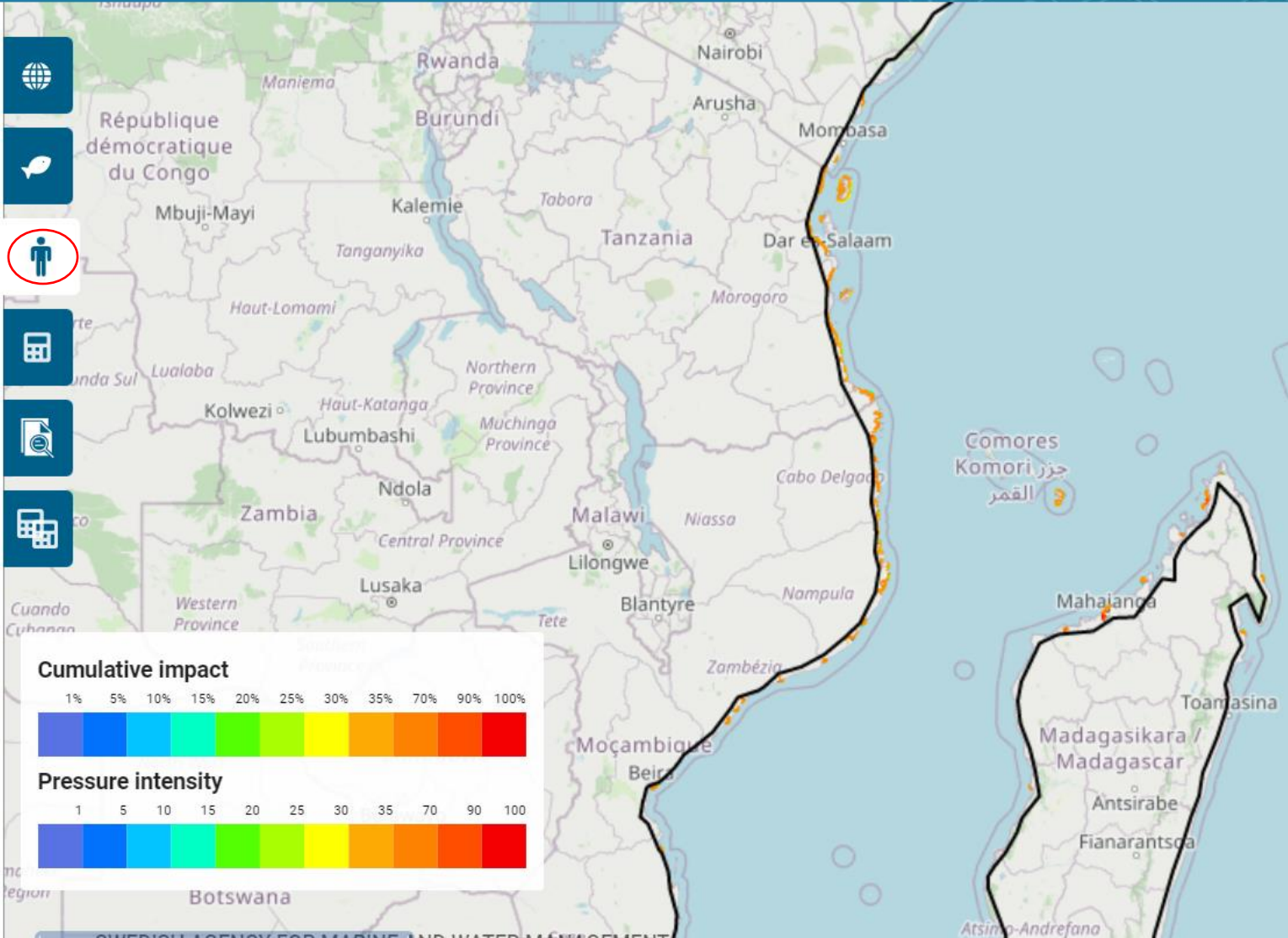
Mariculture



Biological disturbance



Invasive species



Analyzing cumulative impact



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Areas

Search for area



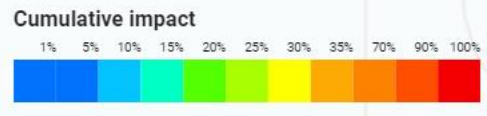
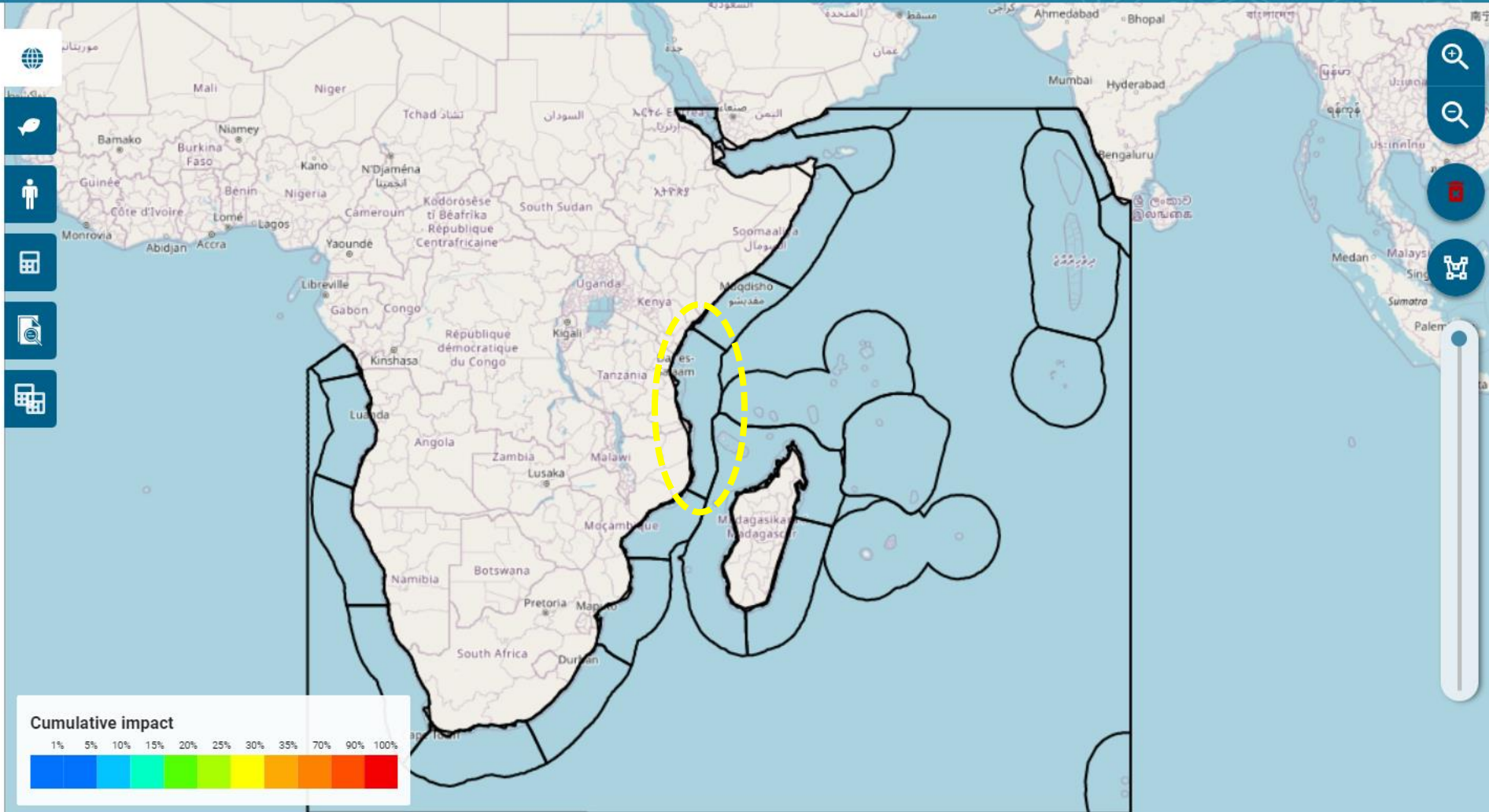
Area

Whole grid

Layer list

- ABNJ
- Climate zones
- Coastal waters
- LME
- Marine ecoregions
- National waters
- Protected Areas Marine

User created areas



2000 km

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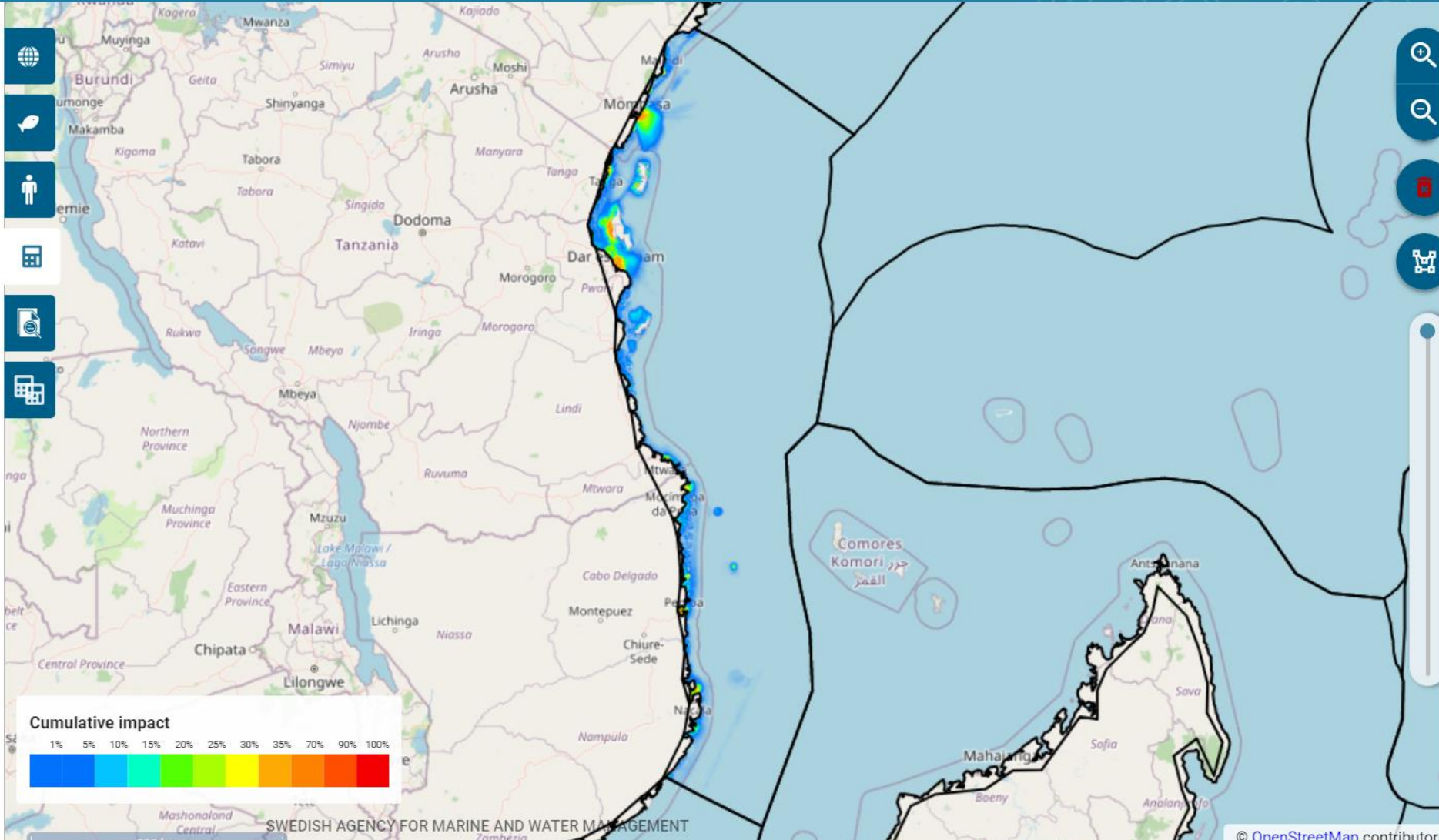
Scenarios

No area selected

User scenarios



Baseline East African Coral Coast (200...
2022-10-11 09:35



DEMO

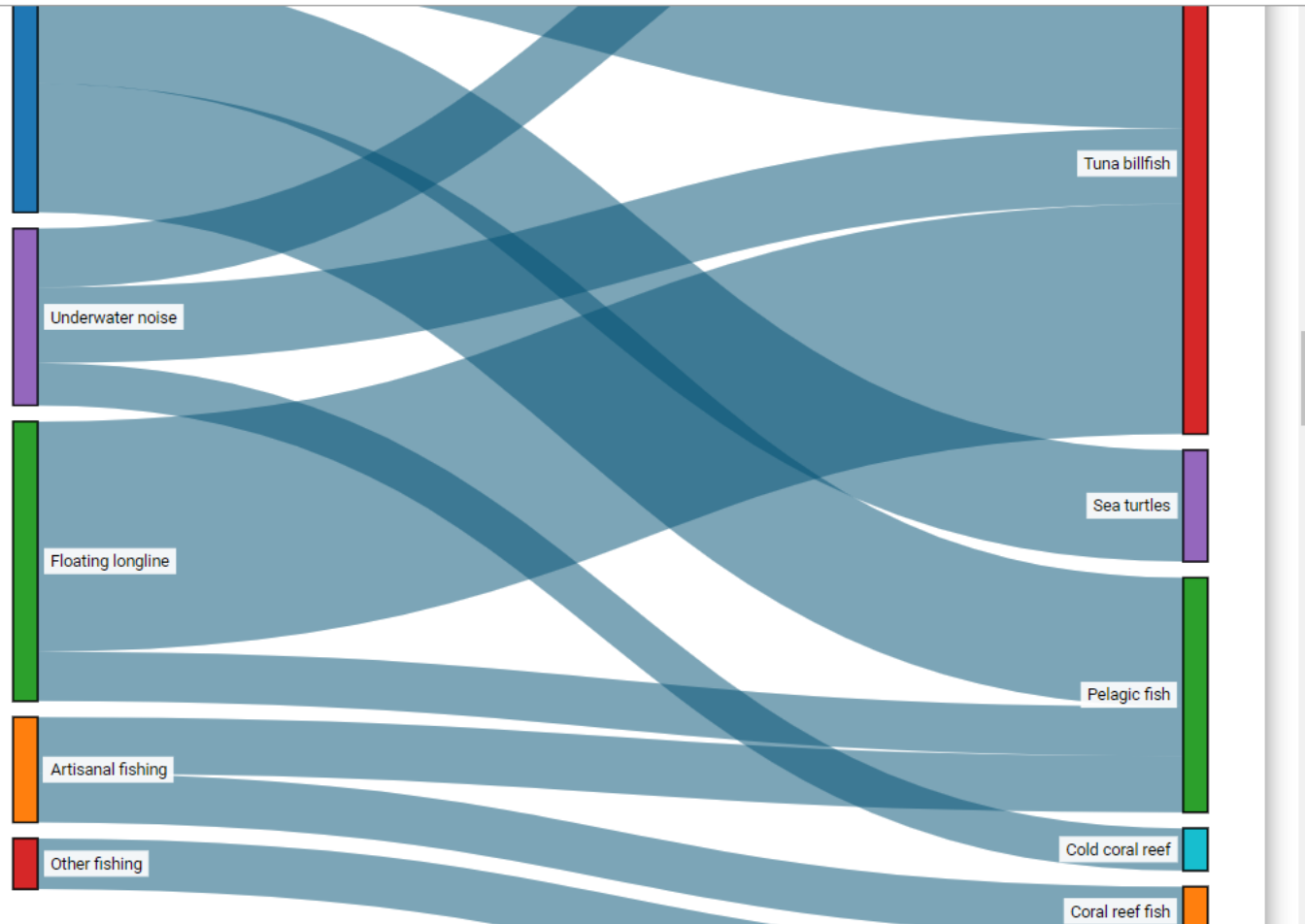


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Calculation Report



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DELETE

CALCULATE

Rarity adjusted cumulative impact



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Rarity East African Coral Coast

Algorithm

Rarity-adjusted cumulative impact

Calculate rarity indices based on:

- Data grid extent
- Calculated area extent

Scenario Changes

East African Coral Coast (20095)

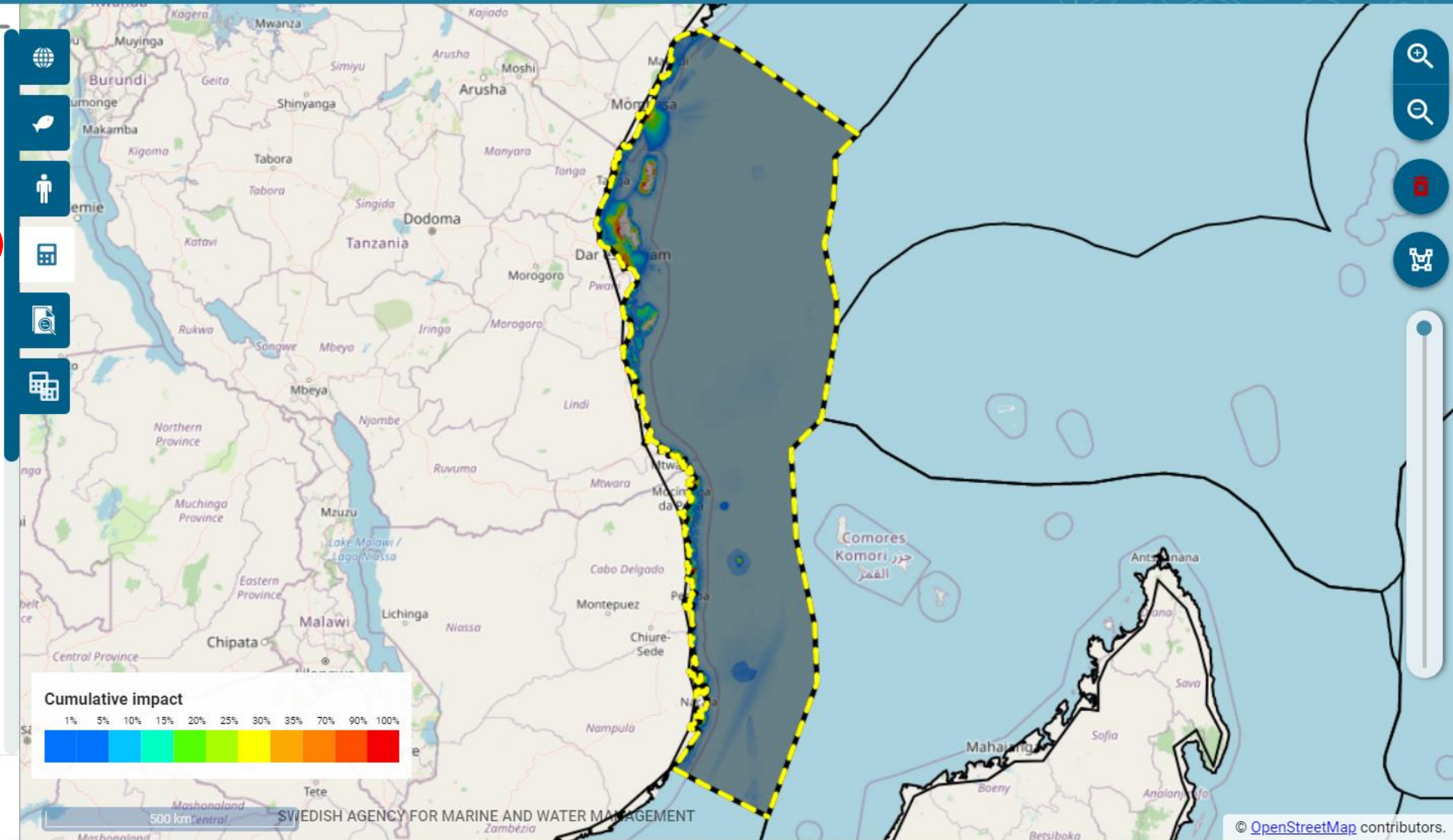
Sensitivity Matrix

- Default matrix (Western Indian Ocean)
- User-defined matrix



DELETE

CALCULATE



Rarity adjusted cumulative impact

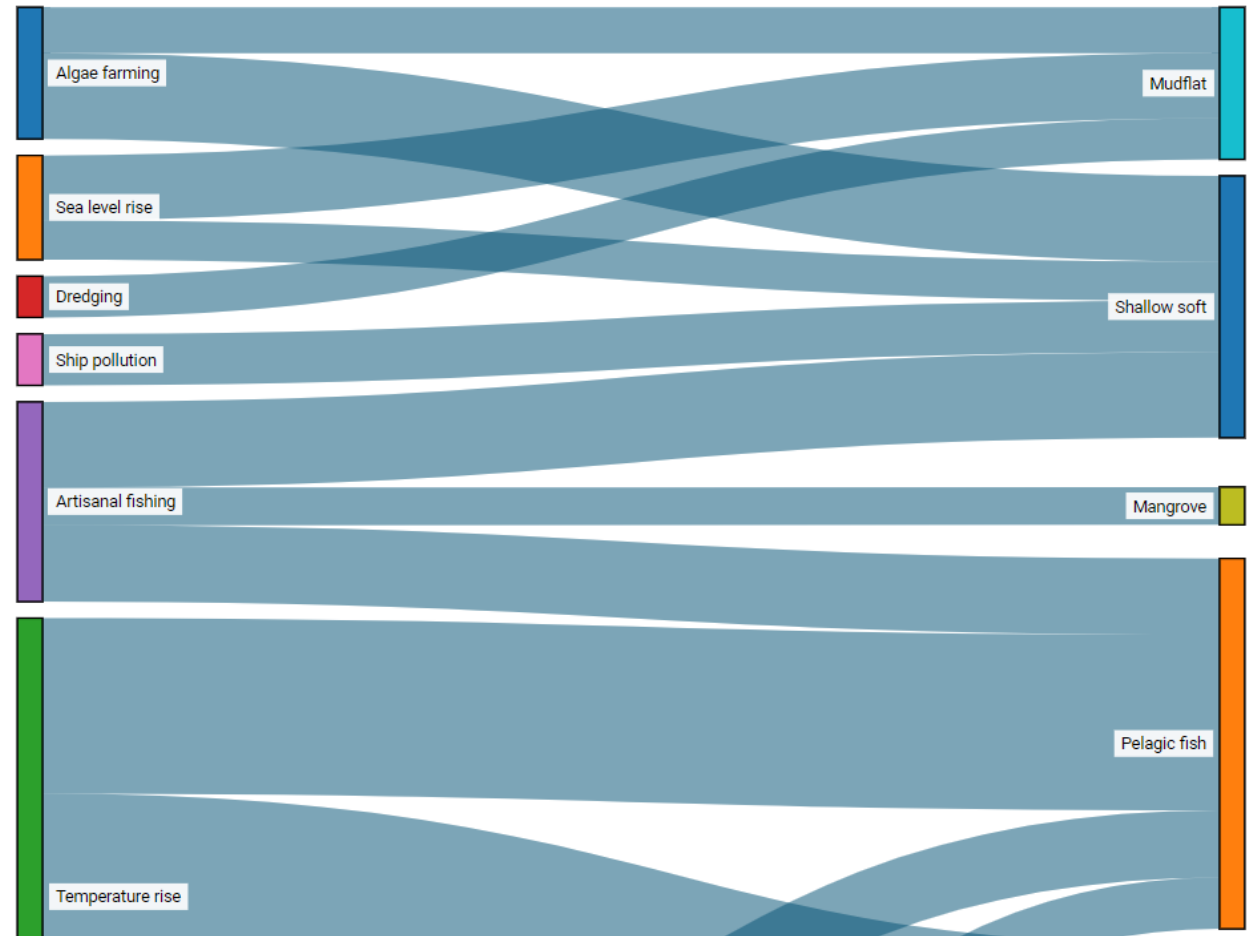


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Calculation Report



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Scenarios

No area selected

User scenarios

Rarity East African Coral Coast
2022-10-11 09:57

Scenario East African Coral Coast (20...
2022-10-11 09:51

Baseline East African Coral Coast
2022-10-11 09:41

Baseline East African Coral Coast (200...
2022-10-11 09:35

Create a planning scenario and compare with baseline



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Areas

Search for area



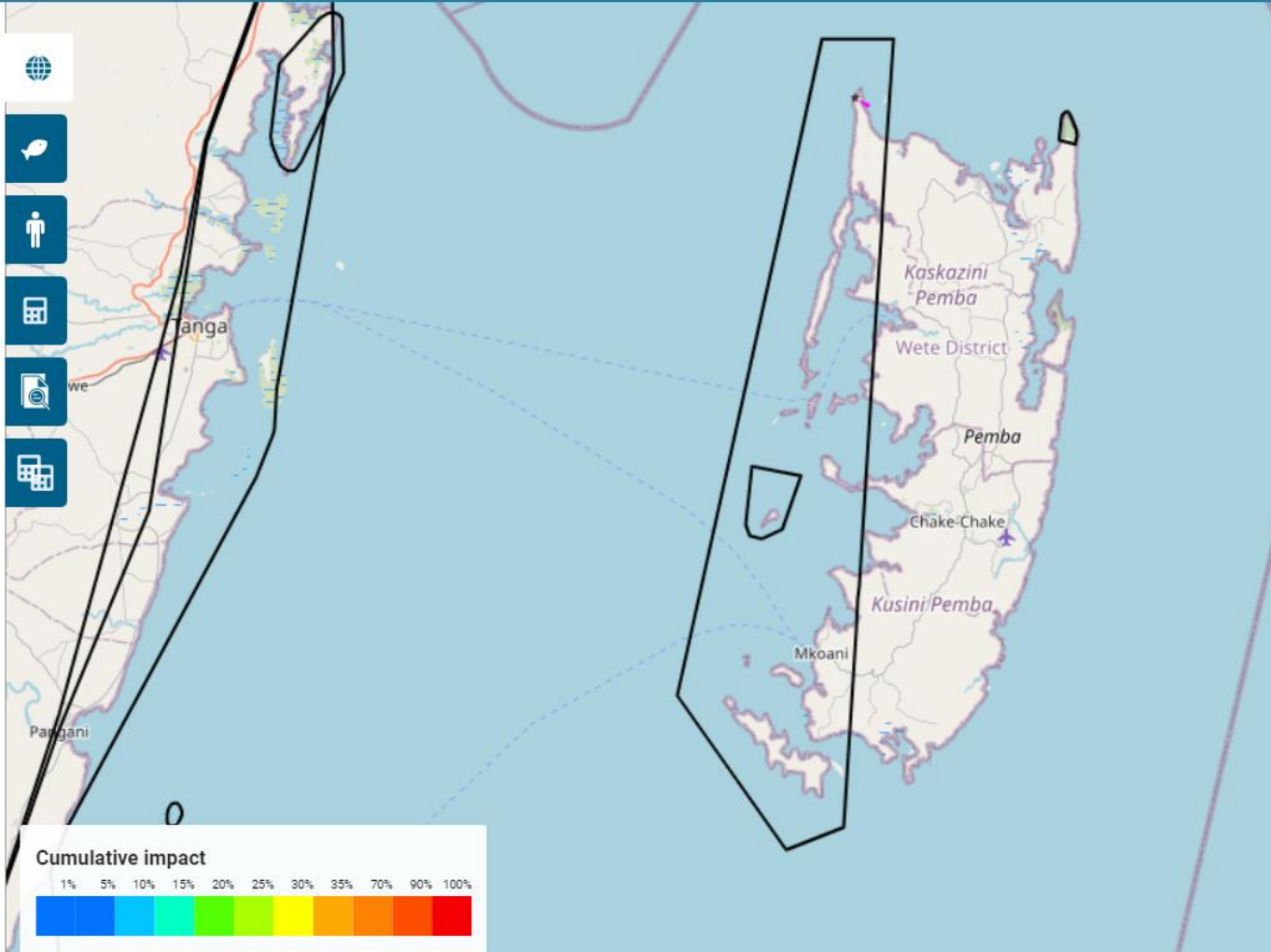
Area

Whole grid

Layer list

- ABNJ
- Climate zones
- Coastal waters
- LME
- Marine ecoregions
- National waters
- Protected Areas Marine

User created areas



Create a planning scenario and compare with baseline



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Baseline Pemba Channel Conservation Area

Algorithm

Cumulative impact

Scenario Changes

Pemba Channel Conservation Area (Not Reported)

Sensitivity Matrix

Default matrix (Western Indian Ocean)

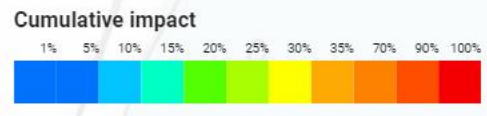
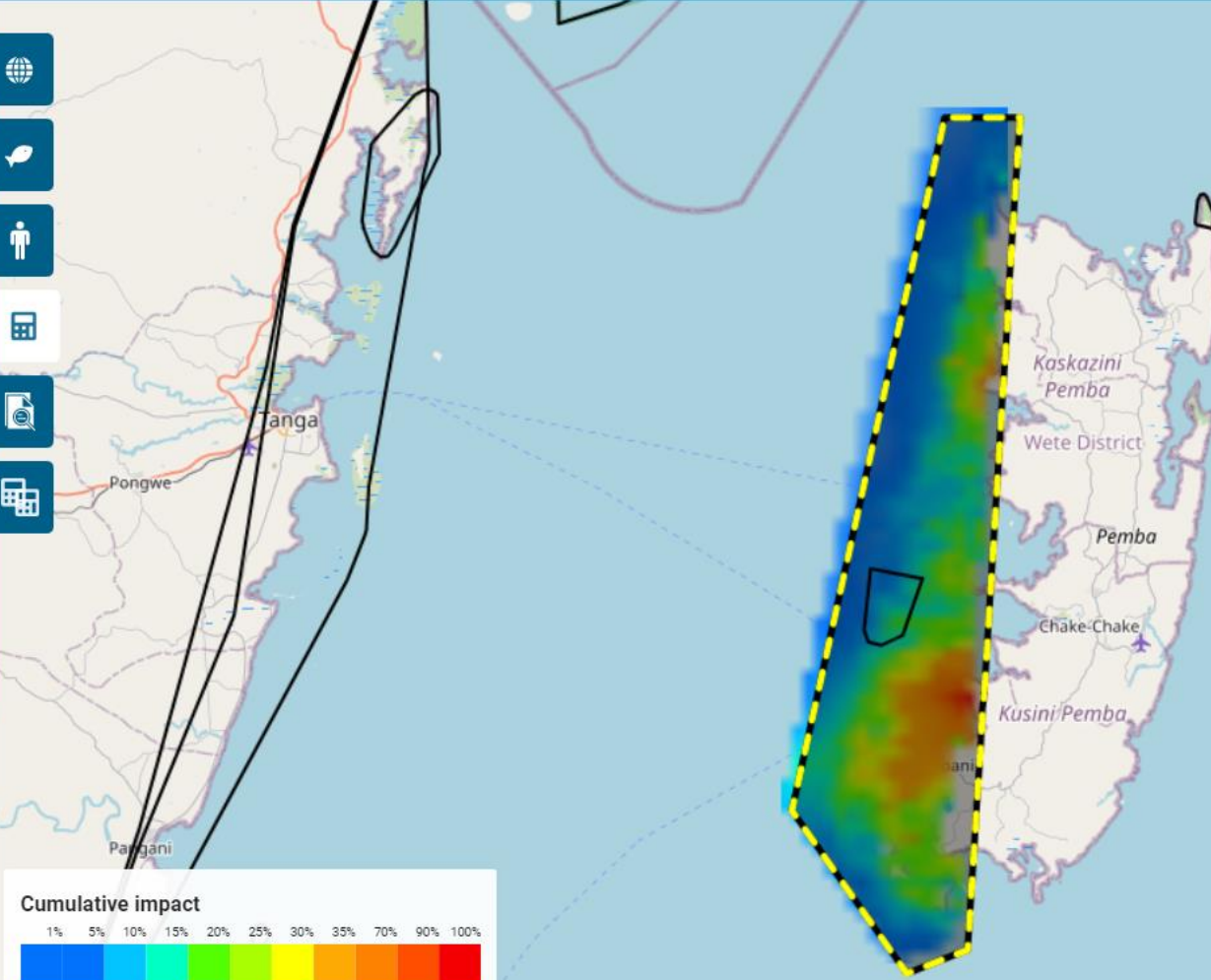
User-defined matrix

Välj matris

EDIT MATRIX

DELETE

CALCULATE



Create a planning scenario and compare with baseline



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Baseline Pemba Channel Conservation Area

Algorithm

Cumulative impact

Scenario Changes

Pemba Channel Conservation Area (Not Reported)

Sensitivity Matrix

Default matrix (Western Indian Ocean)

User-defined matrix

Välj matrix

EDIT MATRIX

DELETE

CALCULATE

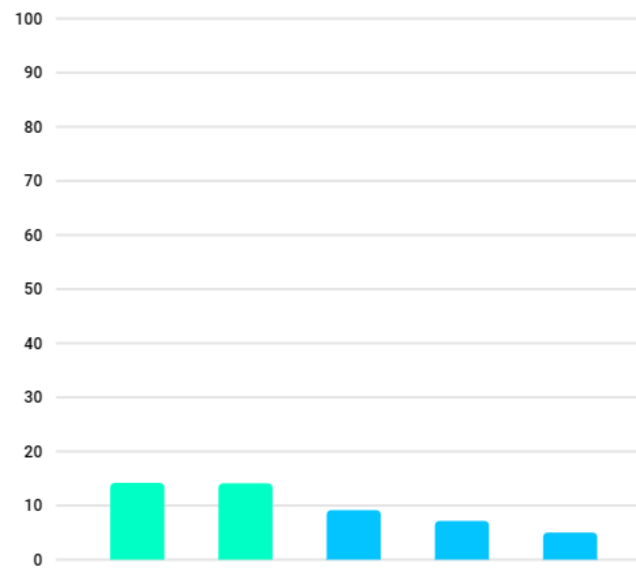
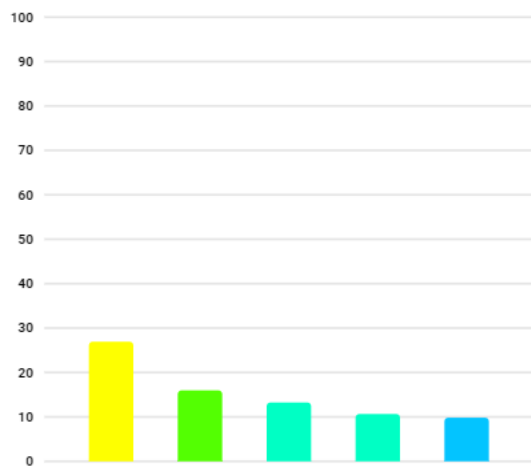
Calculation Report

Pressures with highest impact

Artisanal fishing	26.93%
Algae farming	15.97%
Underwater noise	13.24%
Ship pollution	10.65%
Temperature rise	9.82%

Nature values with highest impact

Coral reef fish	14.18%
Coral reef	14.11%
Seagrass bed	9.15%
Shallow soft	7.16%
Dolphins	5.01%



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Create a planning scenario and compare with baseline



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Pressures

Pemba Channel Conservation Area (Not Reported)

Search for pressure



Aquaculture



Algae farming



Edit intensity

Percentage +11% Constant



0

Mariculture



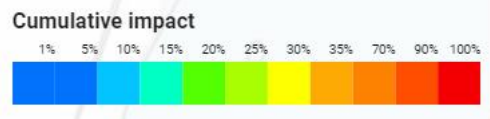
Edit intensity

Percentage +13% Constant



0

Biological disturbance



50 km SWEDISH AGENCY FOR MARINE AND WATER MANAGEMENT



Create a planning scenario and compare with baseline



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Calculation Report

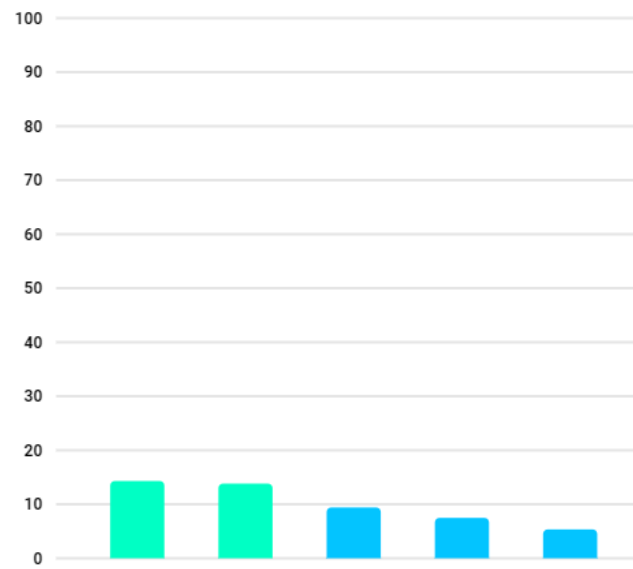
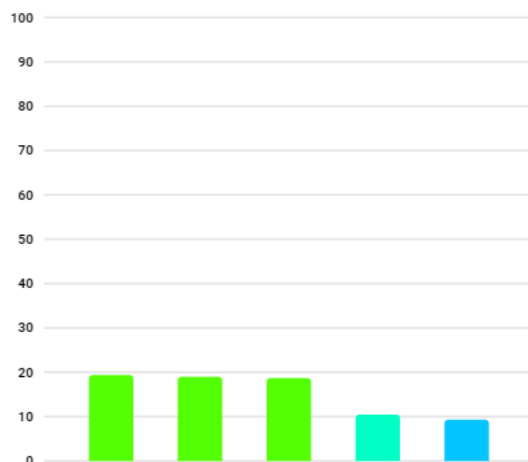


Pressures with highest impact

Artisanal fishing	19.38%
Boating	18.98%
Algae farming	18.69%
Temperature rise	10.45%
Underwater noise	9.32%

Nature values with highest impact

Coral reef	14.31%
Coral reef fish	13.83%
Seagrass bed	9.41%
Shallow soft	7.48%
Dolphins	5.35%



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Scenario Changes

Pemba Channel Conservation Area (Not Reported)

Sensitivity Matrix

Default matrix (Western Indian Ocean)

User-defined matrix

Välj matris

EDIT MATRIX

Result Colormap

Set maximum value based on:

Maximum value in MSP area

Maximum value in computed area

User-defined value



DELETE

CALCULATE

Create a planning scenario and compare with baseline



Calculation Comparison Report



Baseline Pemba Channel Conservation Area and MSP Scenario
Pemba Channel Conservation Area

Havs
och Vatten
myndigheten



-15% -5% -1% 0% 1% 5% 25%



Baseline version: BASELINE2022-v5
Algorithm: Cumulative impact

Cumulative effect

	Baseline Pemba Channel Conservation Area	MSP Scenario Pemba Channel Conservation Area	Relative change
Total:	15,646,293	29,421,176	+88.04%
Average:	9,902.7171	9,310.4987	-5.98%
Min:	0	0	0%
Max:	111,926	94,743	-15.35%
Std. Dev:	14,608.5369	13,499.1685	-7.59%
Calculated area:	98.75 km ²		

* The image shows the relative difference in total cumulative impact between the base and what-if scenario.

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Compare calculations

Calculation A

Baseline Pemba Channel Conservation Area

Calculation B

MSP Scenario Pemba Channel Conservation Area

COMPARE CALCULATIONS

Find a location for blue economy development



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Offshore Comoro DEV

Algorithm

Cumulative impact

Scenario Changes

Comoro DEV

Sensitivity Matrix

Default matrix (Western Indian Ocean)

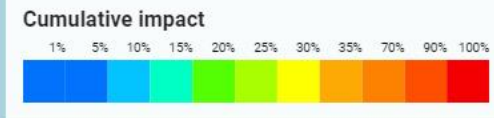
User-defined matrix

Välj matrix

EDIT MATRIX

DELETE

CALCULATE



50 km

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Scenarios

No area selected

User scenarios



Scenario Whole Grid

2022-10-11 10:35



Scenario Whole Grid

2022-10-11 10:30



MSP Scenario Pemba Channel Cons...

2022-10-11 10:19



Baseline Pemba Channel Conservati...

2022-10-11 10:15



Rarity East African Coral Coast

2022-10-11 09:57



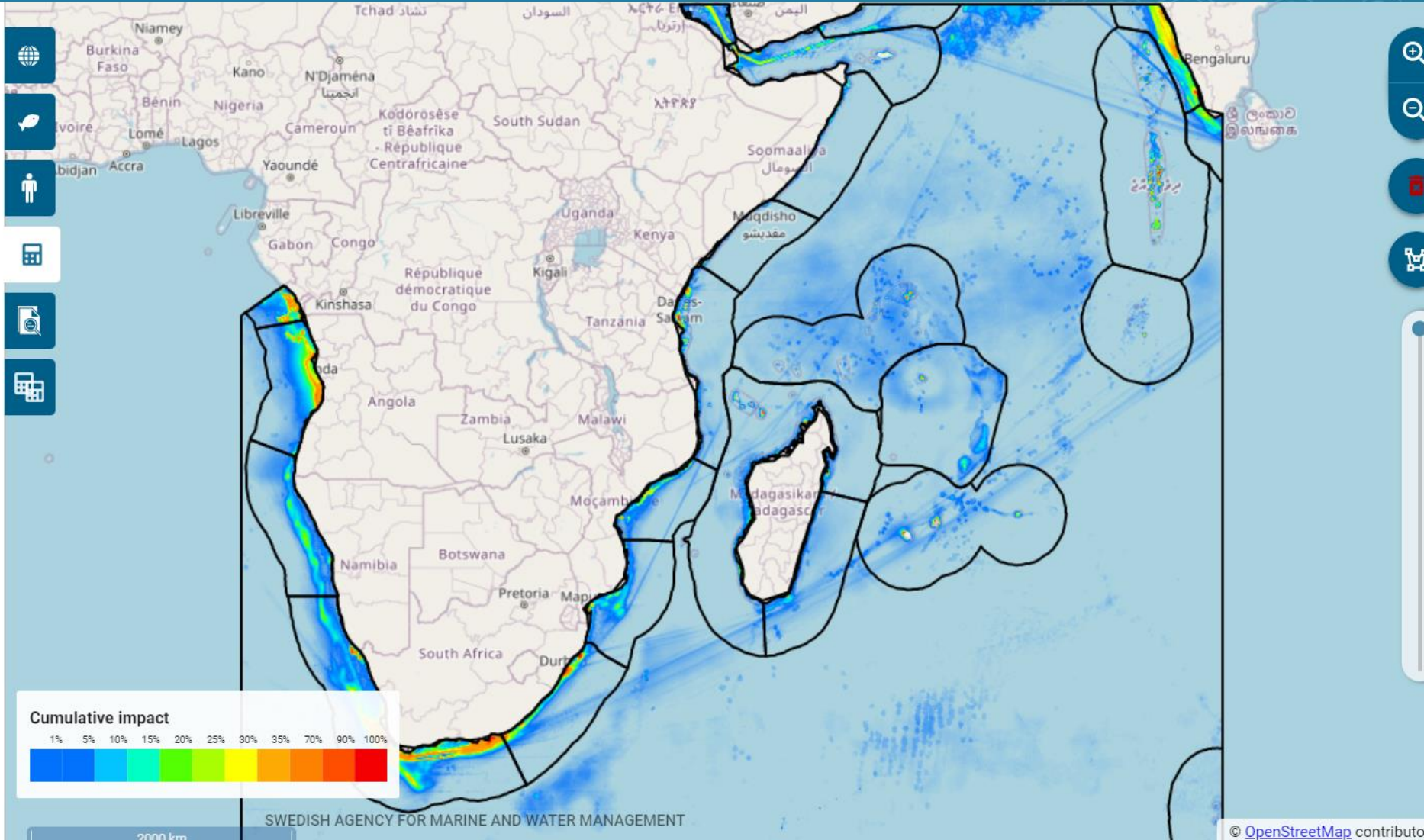
Scenario East African Coral Coast (2...

2022-10-11 09:51



Baseline East African Coral Coast

2022-10-11 09:41



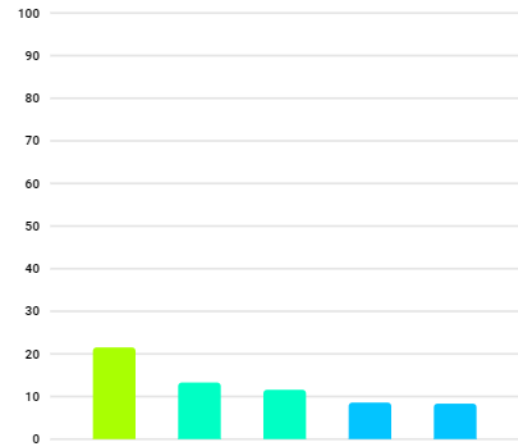
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Calculation Report ✕

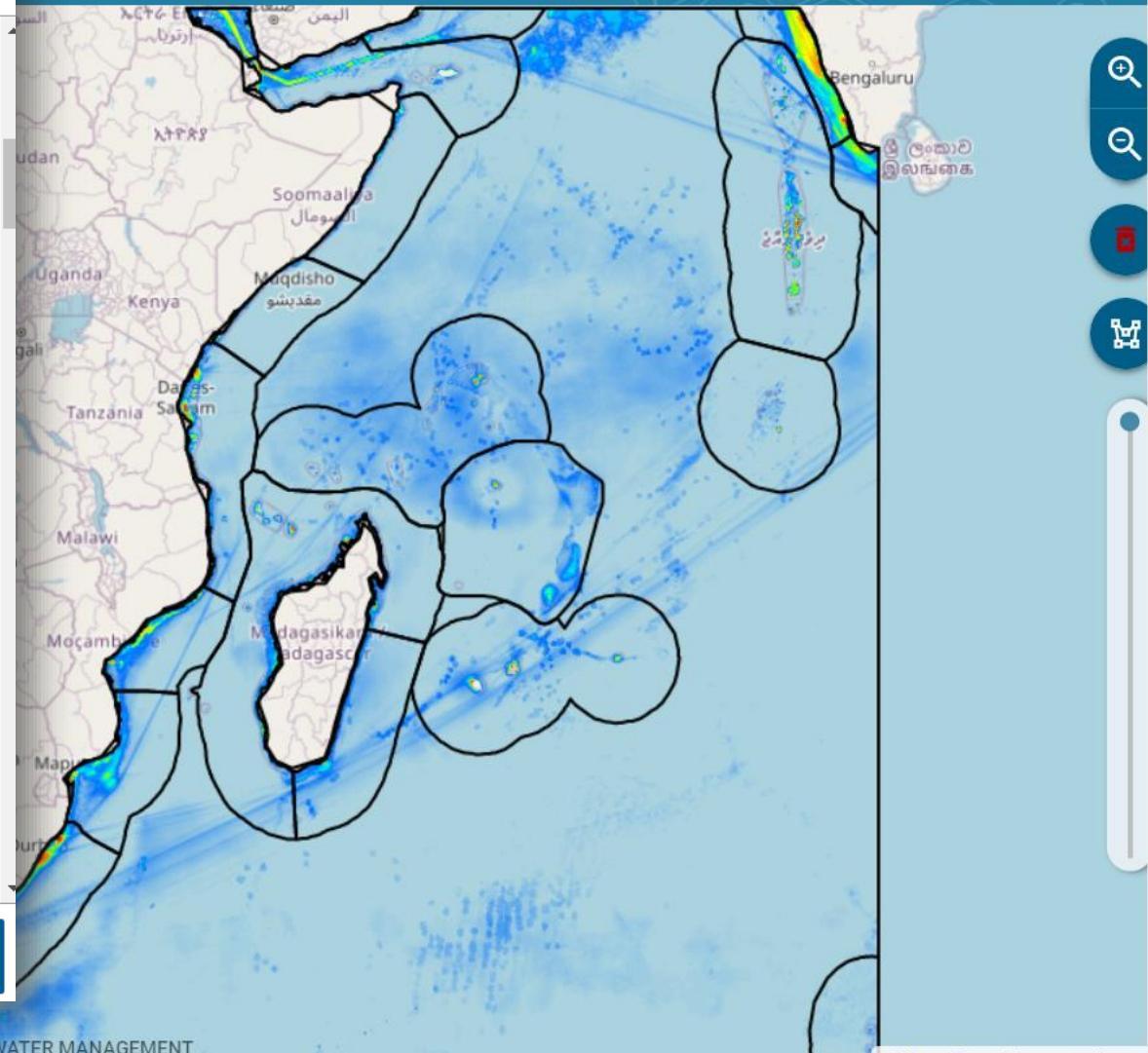
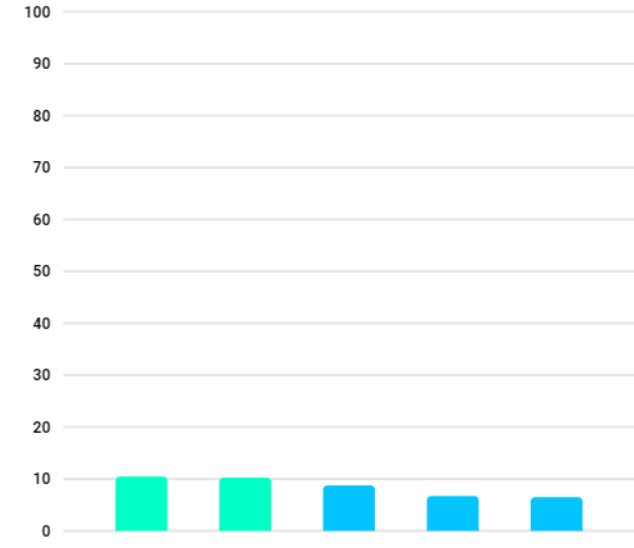
Pressures with highest impact

Floating longline	21.52%
Temperature rise	13.29%
Other fishing	11.58%
Pelagic seine	8.58%
Underwater noise	8.33%



Nature values with highest impact

Tuna billfish	10.46%
Pelagic fish	10.24%
Abyss soft	8.75%
Dolphins	6.71%
Rays skates	6.49%



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