

# Maldives DSS Technology Review

2024-01-30

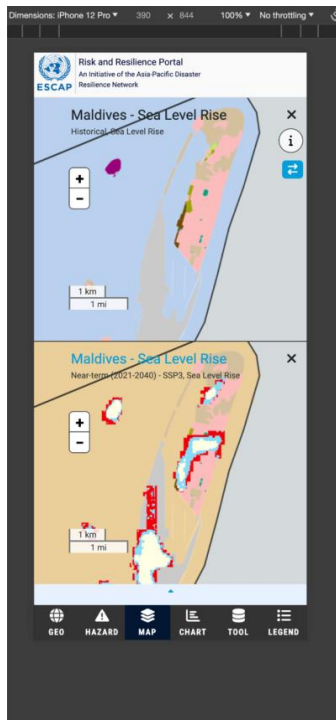
**Dr. Paul Janecek**

*Consultant, ESCAP*

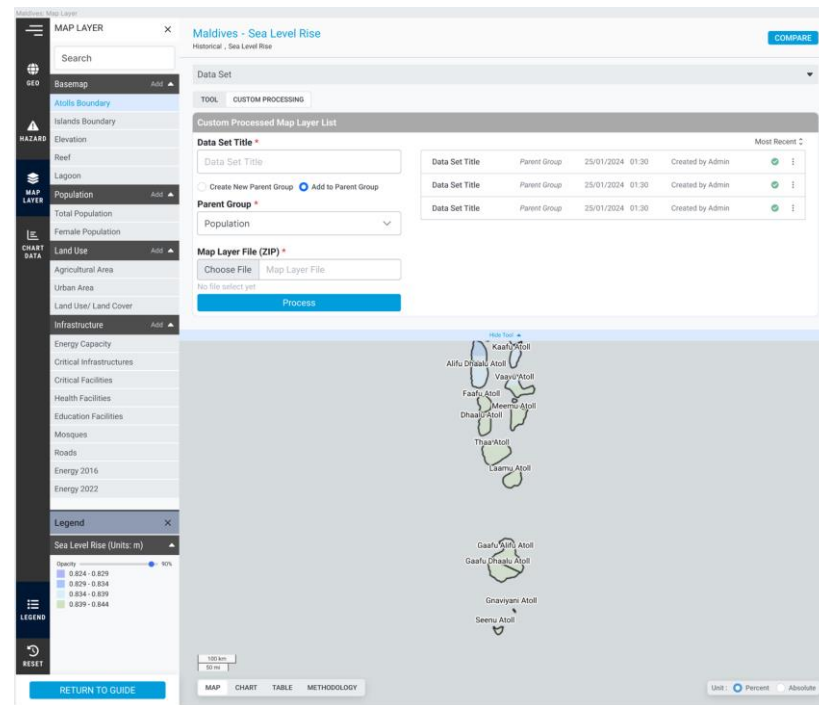
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# Review of new features under development

## 1. Mobile version (On production site)



## 2. Local Data import (Under development)



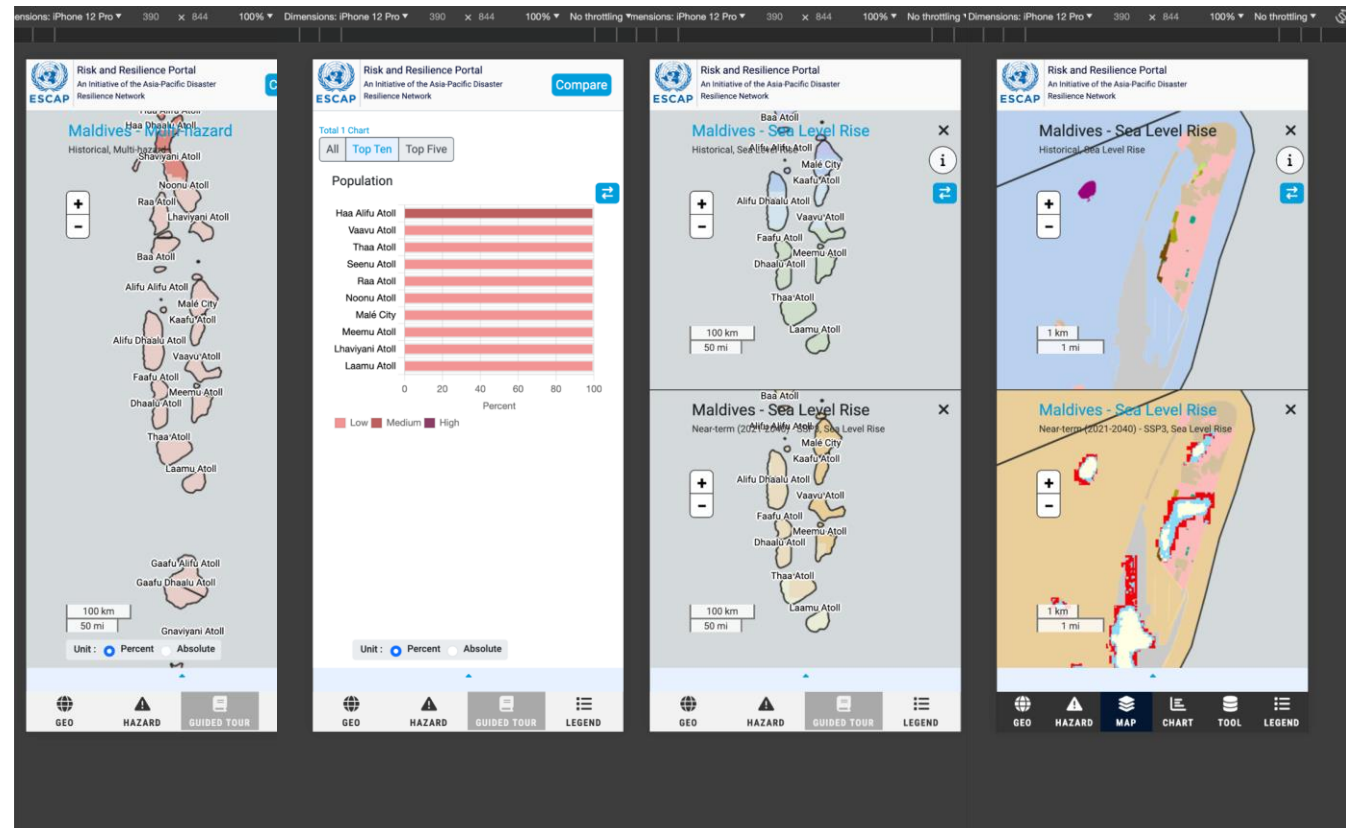
# Mobile Version



# Mobile Version

The full functionality of the site is available for mobile devices

- Guided Tour
- Charts
- Comparison
- Customization





Compare

**Explore Hazard Risks and Analysis**

Search

**Hazard Hotspot**

Hazard exposure and the impacts and vulnerabilities for these hazards and helping in hazard preparedness.

**Hotspots Under Climate Change**

Population Exposure

Infrastructure Exposure

Other Exposure

**Legend**

Multi-hazard score

Opacity 50%

- 6 - 8
- 9 - 12

LEGEND

RESET

**Climate Scenarios**

**Historical - 1981-2000**

- SSP2 - 2021-2040
- SSP3 - 2021-2040
- SSP2 - 2041-2060
- SSP3 - 2041-2060

100 km  
50 mi

MAP CHART TABLE METHODOLOGY

Haa Alifu Atoll  
Haa Dhaalu Atoll  
Shaviyani Atoll  
Noonu Atoll  
Raa Atoll  
Lhaviyani Atoll  
Baa Atoll  
Alifu Alifu Atoll  
Male City  
Kaafu Atoll  
Alifu Dhaalu Atoll  
Vaavu Atoll  
Faafu Atoll  
Meemu Atoll  
Dhaalu Atoll  
Thaa Atoll  
Laamu Atoll  
Gaafu Alifu Atoll  
Gaafu Dhaalu Atoll  
Gnaviyani Atoll  
Seenu Atoll

Customise



Compare

+  
-

GEO HAZARD GUIDED TOUR LEGEND

100 km  
50 mi

Haa Dhaalu Atoll  
Shaviyani Atoll  
Noonu Atoll  
Raa Atoll  
Lhaviyani Atoll  
Baa Atoll  
Alifu Alifu Atoll  
Male City  
Kaafu Atoll  
Alifu Dhaalu Atoll  
Vaavu Atoll  
Faafu Atoll  
Meemu Atoll  
Dhaalu Atoll  
Thaa Atoll  
Laamu Atoll  
Gaafu Alifu Atoll  
Gaafu Dhaalu Atoll  
Gnaviyani Atoll  
Seenu Atoll

# Guided Tour > Hotspots



Compare

Explore Hazard Risks and Analysis

Search

Hazard Hotspot

Hazard exposure and the impacts and vulnerabilities for these hazards and helping in hazard preparedness.

Hotspots Under Climate Change

Population Exposure

Infrastructure Exposure

Other Exposure

- 1. Population
  - Population
  - Female Population
- 2. Climate Scenarios
  - Historical - 1981-2000
  - SSP2 - 2021-2040
  - SSP3 - 2021-2040
  - SSP2 - 2041-2060
  - SSP3 - 2041-2060

Legend

Multi-hazard score

Opacity 50%

6 - 8

9 - 12

Total Population

Opacity 100%

0/No Data

1 - 10

11 - 30

31 - 50

51 - 80

81 - 100

101 - 300

301 - 600

601 - 1000

1000+

RESET

Customise

100 km  
50 mi

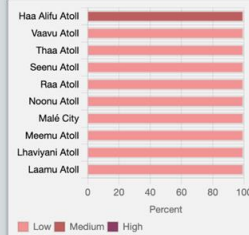
MAP CHART TABLE METHODOLOGY

Unit:  Percent  Absolute

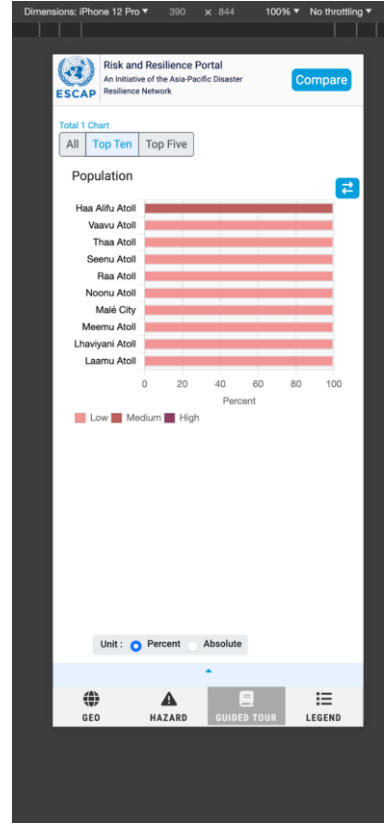
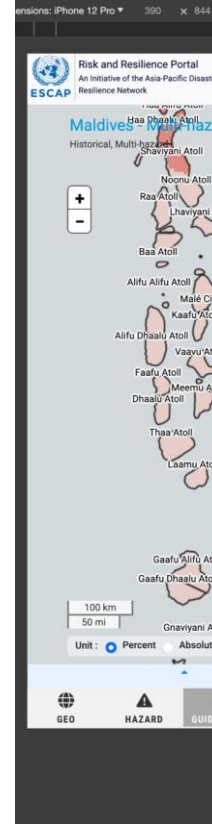
Total 1 Chart

All Top Ten Top Five

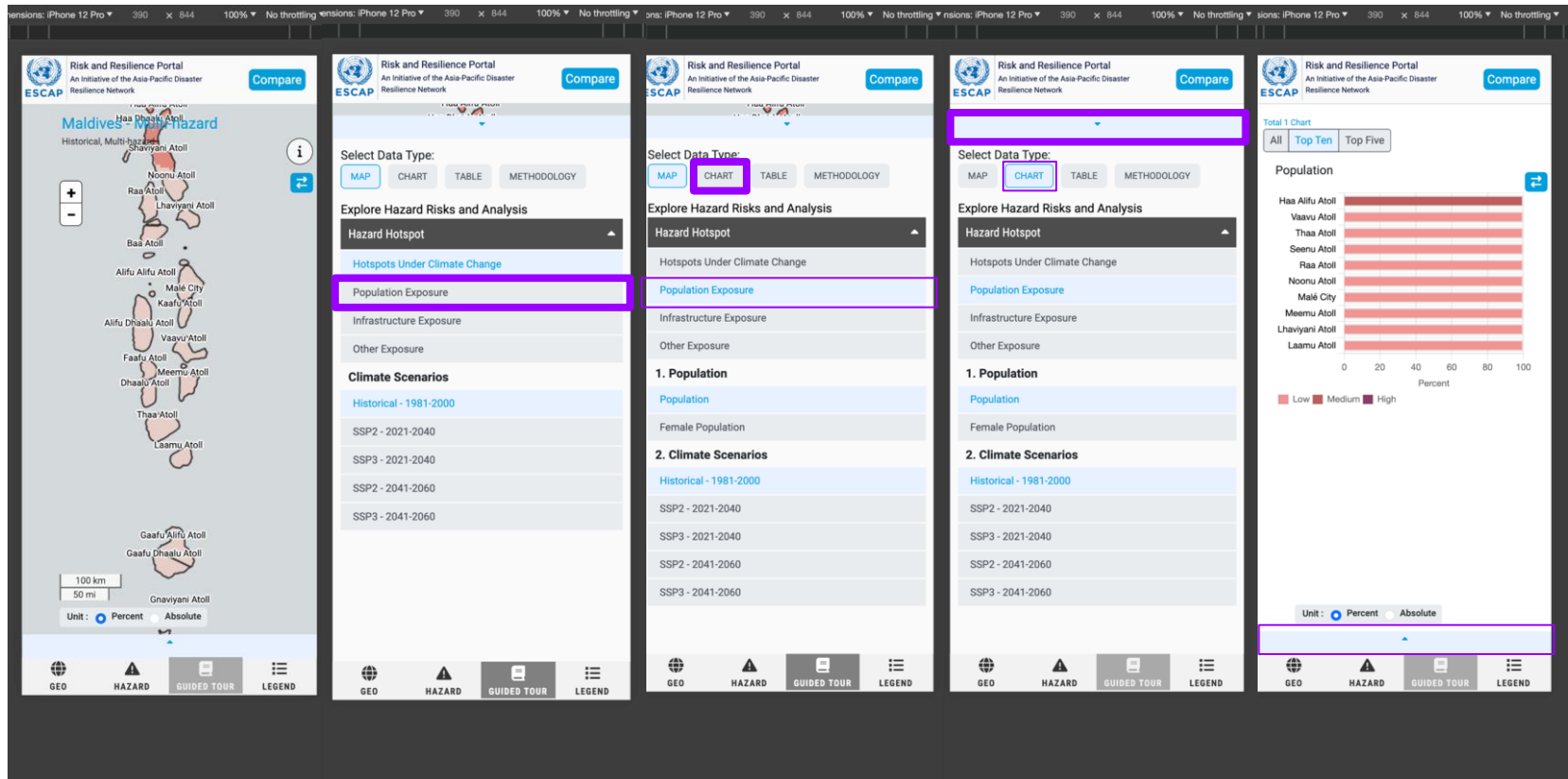
Population



Low Medium High



# Guided Tour > Population Exposure



## Guided Tour > Population Exposure : Mobile access to Charts



Compare

**Explore Hazard Risks and Analysis**

Search

**Hazard Hotspot**  
Hazard exposure and the impacts and vulnerabilities for these hazards and helping in hazard preparedness.

**Hotspots Under Climate Change**

Population Exposure

**Infrastructure Exposure**

Other Exposure

---

**Legend**

Multi-hazard score

Opacity: 50%

- 6 - 8
- 9 - 12

Power Plants 2022 (Units: kilo Watts)

Opacity: 100%

- 0
- 1 - 250
- 251 - 500
- 501 - 1,000
- 1,001 - 2,500
- 2,501 - 5,000
- 5,001 - 10,000

Customise

1. Infrastructure
- Power Plants 2016
  - Power Plants 2022**
  - Education Facilities
  - Health Facilities
  - Critical Facilities
  - Mosques
  - Transportation Facilities
2. Climate Scenarios
- Historical - 1981-2000**
  - SSP2 - 2021-2040
  - SSP3 - 2021-2040
  - SSP2 - 2041-2060
  - SSP3 - 2041-2060



100 km  
50 mi

MAP CHART TABLE METHODOLOGY

Unit: Percent Absolute



Compare



Map view of Maldives with zoom controls (+, -) and a legend icon.

100 km  
50 mi

Unit: Percent Absolute

HAZARD GUIDED TOUR LEGEND

# Guided Tour > Infrastructure Exposure





Compare

Explore Hazard Risks and Analysis

Search

Hazard Hotspot

Hazard exposure and the impacts and vulnerabilities for these hazards and helping in hazard preparedness.

Hotspots Under Climate Change

Population Exposure

Infrastructure Exposure

Other Exposure

- 1. Indicator
  - Agricultural Area
  - Urban Area
  - Land Use/ Land Cover
- 2. Climate Scenarios
  - Historical - 1981-2000
  - SSP2 - 2021-2040
  - SSP3 - 2021-2040
  - SSP2 - 2041-2060
  - SSP3 - 2041-2060

Legend

Multi-hazard score

Opacity 50%

6 - 8  
9 - 12

Land Use/Land Cover

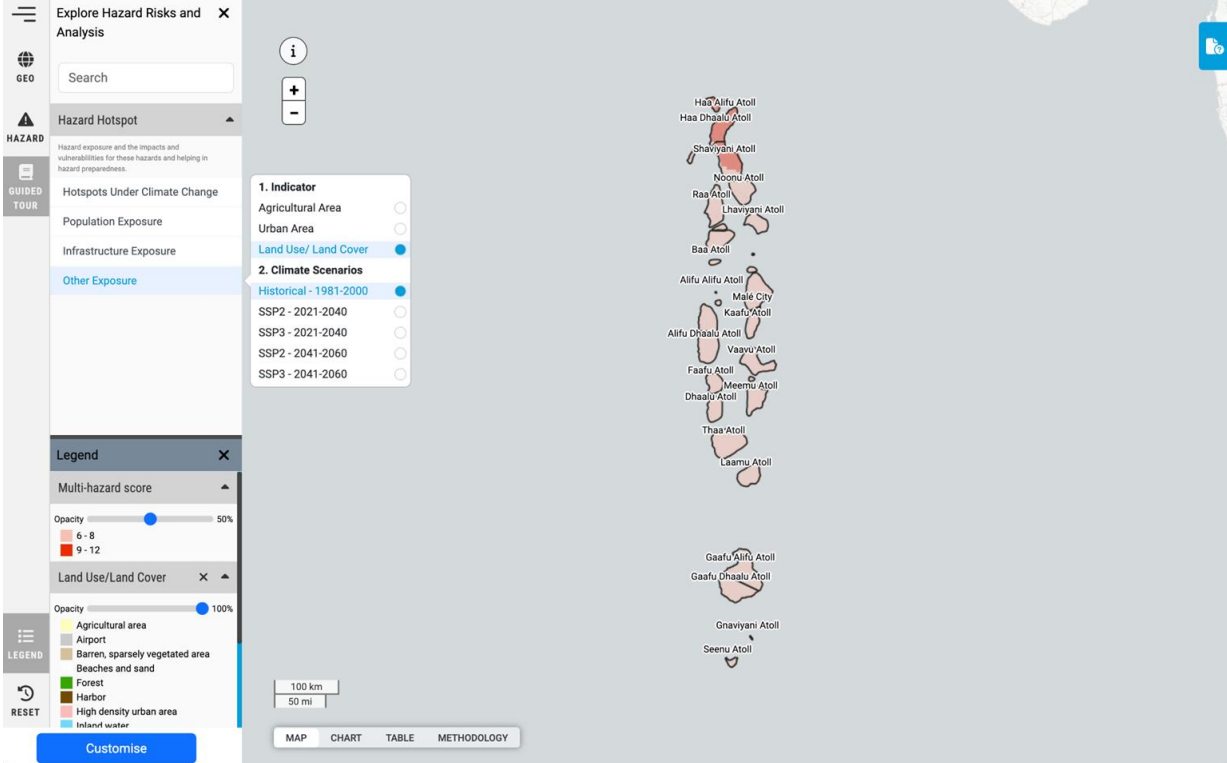
- Opacity 100%
- Agricultural area
  - Airport
  - Barren, sparsely vegetated area
  - Beaches and sand
  - Forest
  - Harbor
  - High density urban area
  - Inland water

RESET

Customise

100 km  
50 mi

MAP CHART TABLE METHODOLOGY



Compare

Search

Hazard Hotspot

Hazard exposure and the impacts and vulnerabilities for these hazards and helping in hazard preparedness.

Hotspots Under Climate Change

Population Exposure

Infrastructure Exposure

Other Exposure

- 1. Indicator
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  - Historical - 1981-2000
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  - SSP3 - 2021-2040
  - SSP2 - 2041-2060
  - SSP3 - 2041-2060

Legend

Multi-hazard score

Opacity 50%

6 - 8  
9 - 12

Land Use/Land Cover

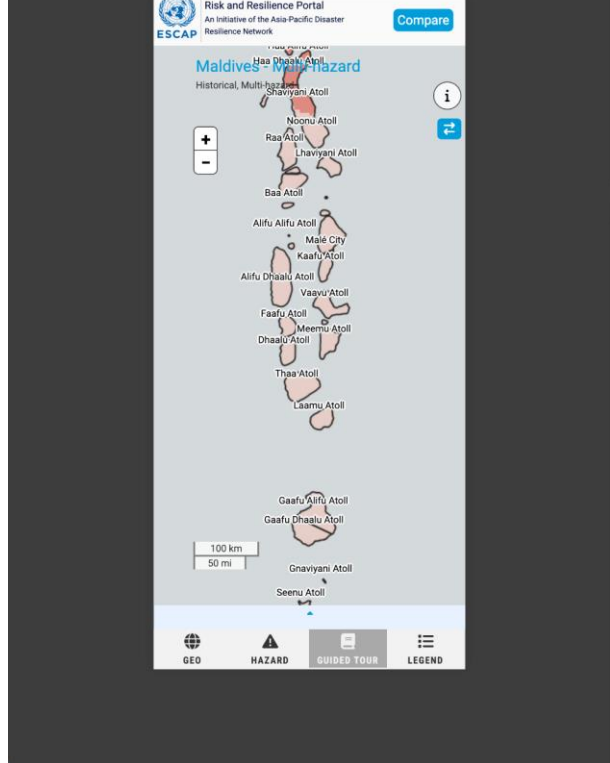
- Opacity 100%
- Agricultural area
  - Airport
  - Barren, sparsely vegetated area
  - Beaches and sand
  - Forest
  - Harbor
  - High density urban area
  - Inland water

RESET

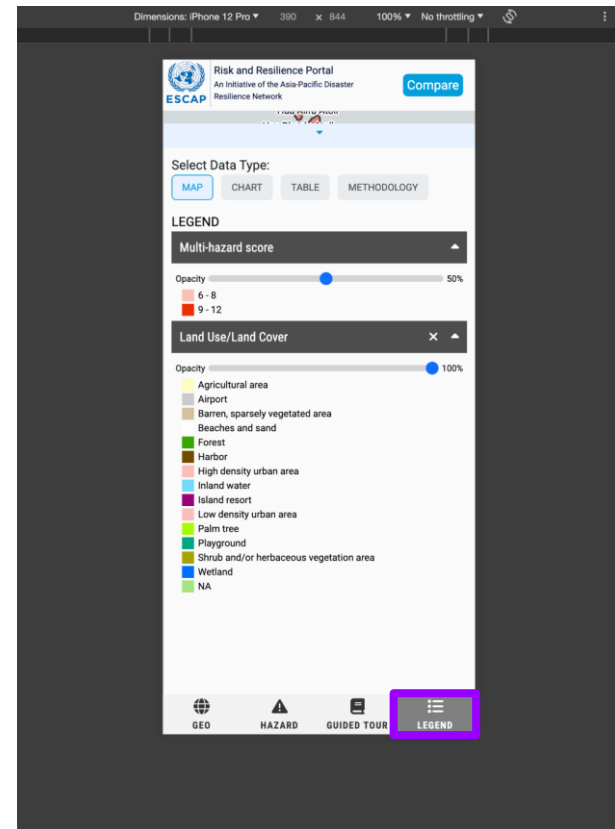
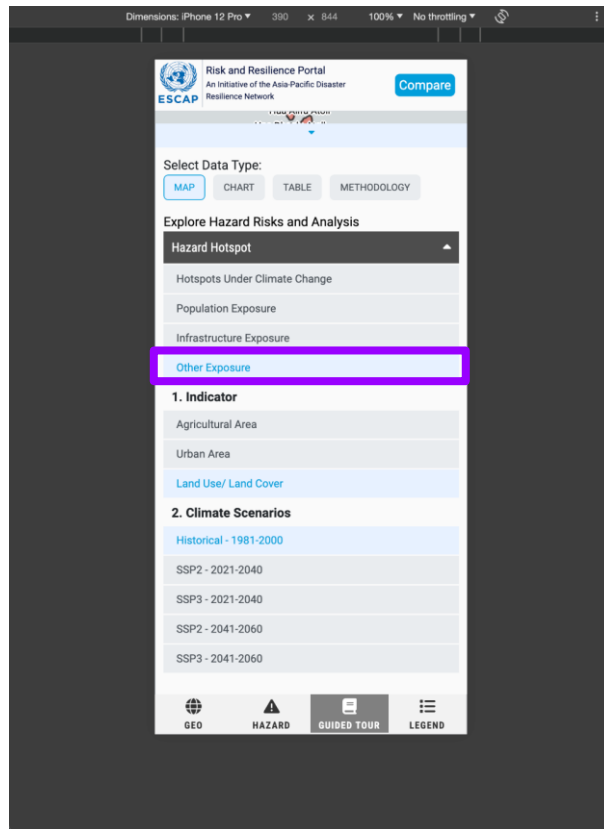
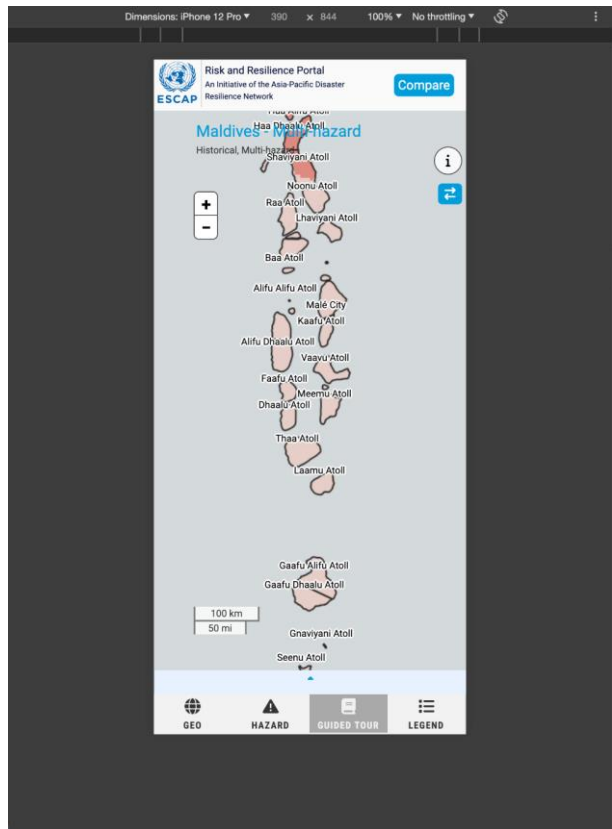
Customise

100 km  
50 mi

MAP CHART TABLE METHODOLOGY



Guided Tour > Other Exposure > Land Use/Land Cover



**Guided Tour > Other Exposure > Land Use/Land Cover : Mobile access to Legend**

Risk and Resilience Portal  
An Initiative of the Asia-Pacific Disaster Resilience Network

Explore Hazard Risks and Analysis

Search

Hazard Hotspot

Hazard exposure and the impacts and vulnerabilities for these hazards and helping in hazard preparedness.

Hotspots Under Climate Change

Population Exposure

Infrastructure Exposure

Other Exposure

Legend

LEFT MAP  RIGHT MAP

Sea Level Rise (Units: m)

Opacity 50%

- 0.824 - 0.829
- 0.829 - 0.834
- 0.834 - 0.839
- 0.839 - 0.844

Land Use/Land Cover

Opacity 100%

- Agricultural area
- Airport
- Barren, sparsely vegetated area

Customise

Risk and Resilience Portal  
An Initiative of the Asia-Pacific Disaster Resilience Network

Explore Hazard Risks and Analysis

Search

Hazard Hotspot

Hazard exposure and the impacts and vulnerabilities for these hazards and helping in hazard preparedness.

Hotspots Under Climate Change

Population Exposure

Infrastructure Exposure

Other Exposure

Legend

LEFT MAP  RIGHT MAP

Sea Level Rise (Units: m)

Opacity 50%

- 0.931 - 0.939
- 0.939 - 0.944
- 0.944 - 0.956

Land Use/Land Cover

Opacity 100%

- Agricultural area
- Airport
- Barren, sparsely vegetated area
- Beaches and sand

Customise

Maldives - Sea Level Rise

Historical, Sea Level Rise

1. Indicator

- Agricultural Area
- Urban Area
- Land Use/ Land Cover

2. Climate Scenarios

- Historical - 1981-2000
- SSP2 - 2021-2040
- SSP3 - 2021-2040
- SSP2 - 2041-2060
- SSP3 - 2041-2060

MAP CHART TABLE METHODOLOGY

Maldives - Sea Level Rise

Near-term (2021-2040) - SSP3, Sea Level Rise

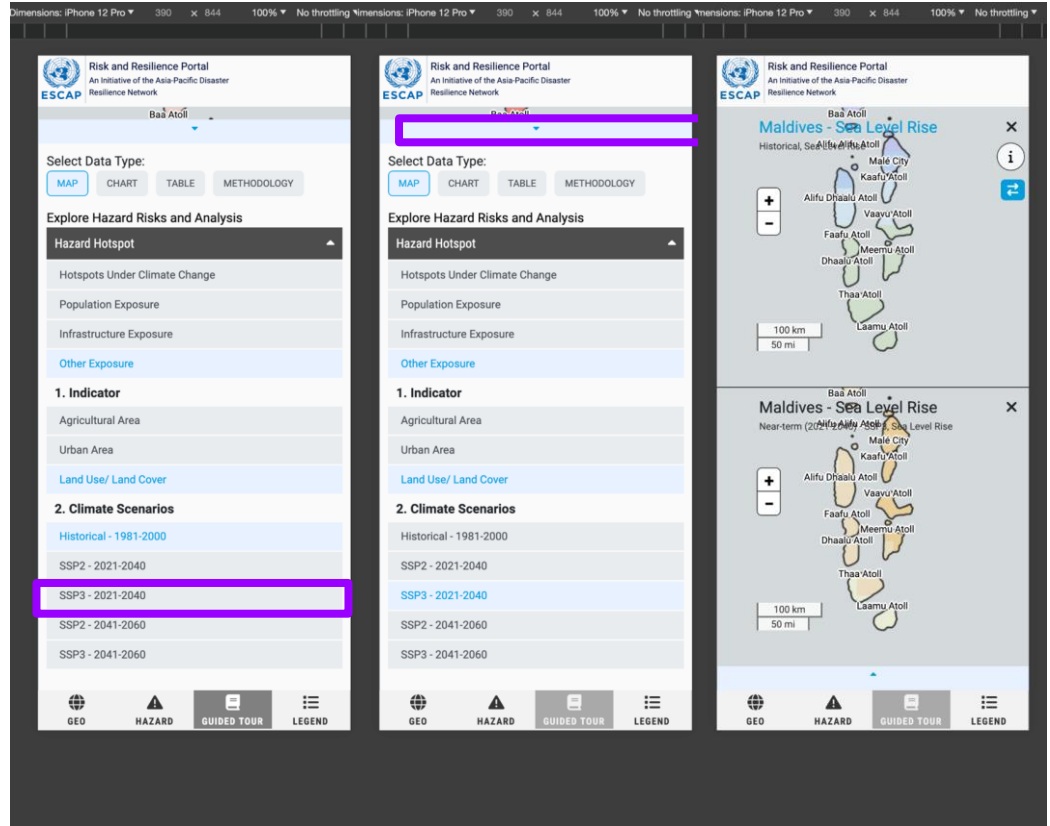
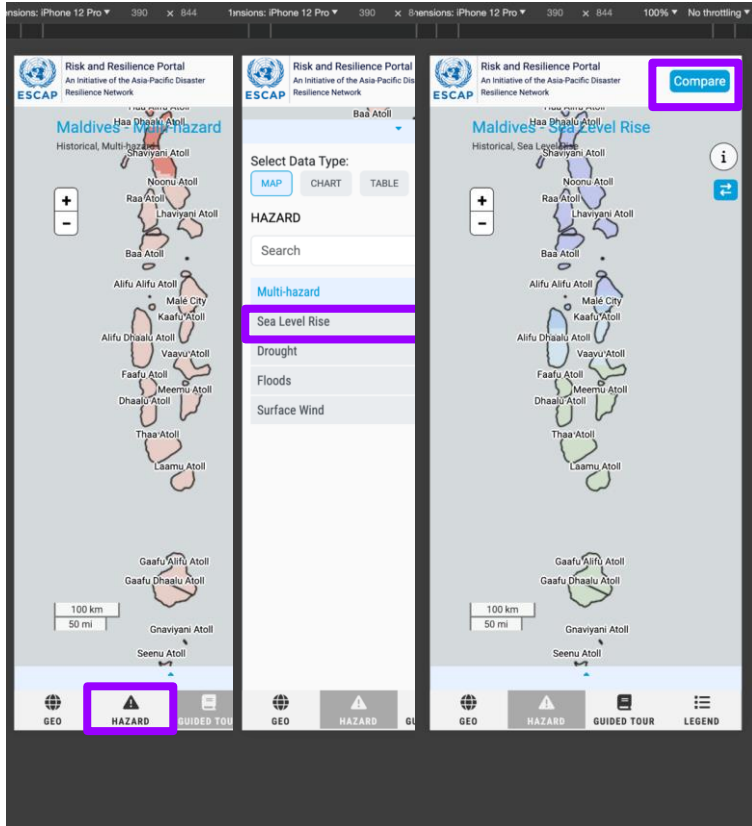
Maldives - Sea Level Rise

Historical, Sea Level Rise

Maldives - Sea Level Rise

Near-term (2021-2040) - SSP3, Sea Level Rise

Comparison



Comparison : Mobile access to Hazard and Compare



## Maldives - Sea Level Rise

Historical, Sea Level Rise

### GEO

- KAUFU Atoll
- LAAMU Atoll
- LHAVIYANI Atoll
- MALÉ City
- MEEMU Atoll
- NOONU Atoll
- RAA Atoll
- SEENU Atoll
- SHAVIYANI Atoll
- THAA Atoll
- VAAVU Atoll

### Legend

LEFT MAP  RIGHT MAP

#### Sea Level Rise (Units: m)

Opacity

- 0.931 - 0.939
- 0.939 - 0.944
- 0.944 - 0.956

#### Land Use/Land Cover

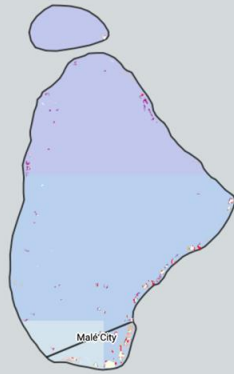
Opacity

- Agricultural area
- Airport
- Barren, sparsely vegetated area
- Beaches and sand

Customise

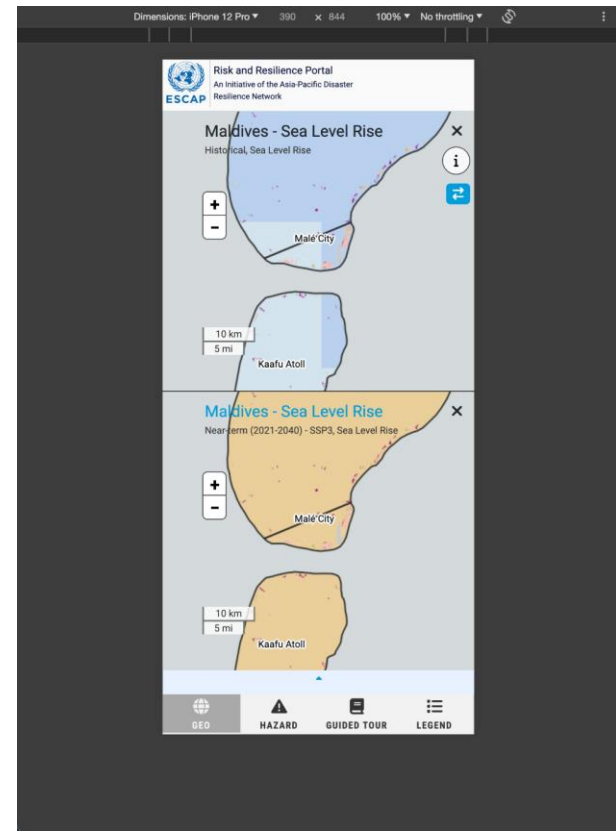
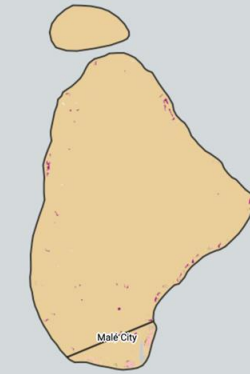


MAP CHART TABLE METHODOLOGY

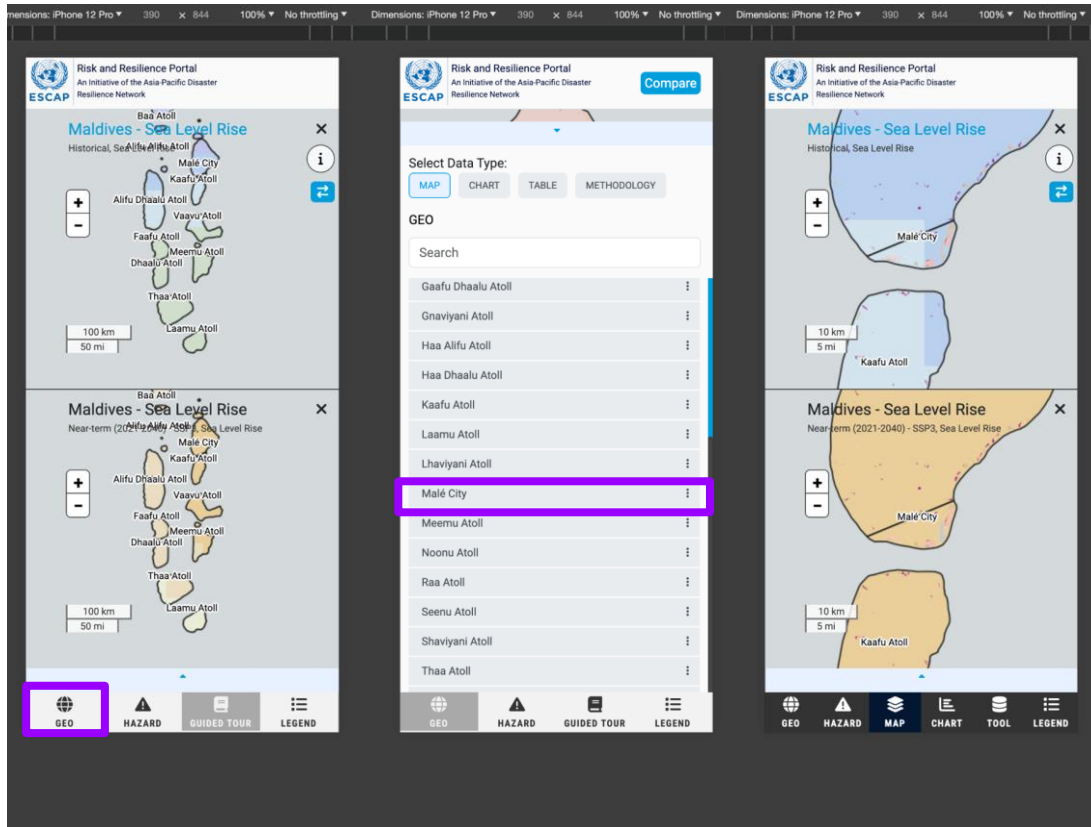


## Maldives - Sea Level Rise

Near-term (2021-2040) - SSP3, Sea Level Rise



# GEO > Malé City



## GEO > Malé City : Mobile access to locations



## Maldives - Sea Level Rise

Historical, Sea Level Rise

**MAP LAYER**

Search

Basemap

- Atoll Boundary
- Island Boundary
- Island Label
- Elevation
- Reef
- Lagoon

Social Exposure

- Total Population
- Female Population

Economic Exposure

Legend

LEFT MAP  RIGHT MAP

Sea Level Rise (Units: m)

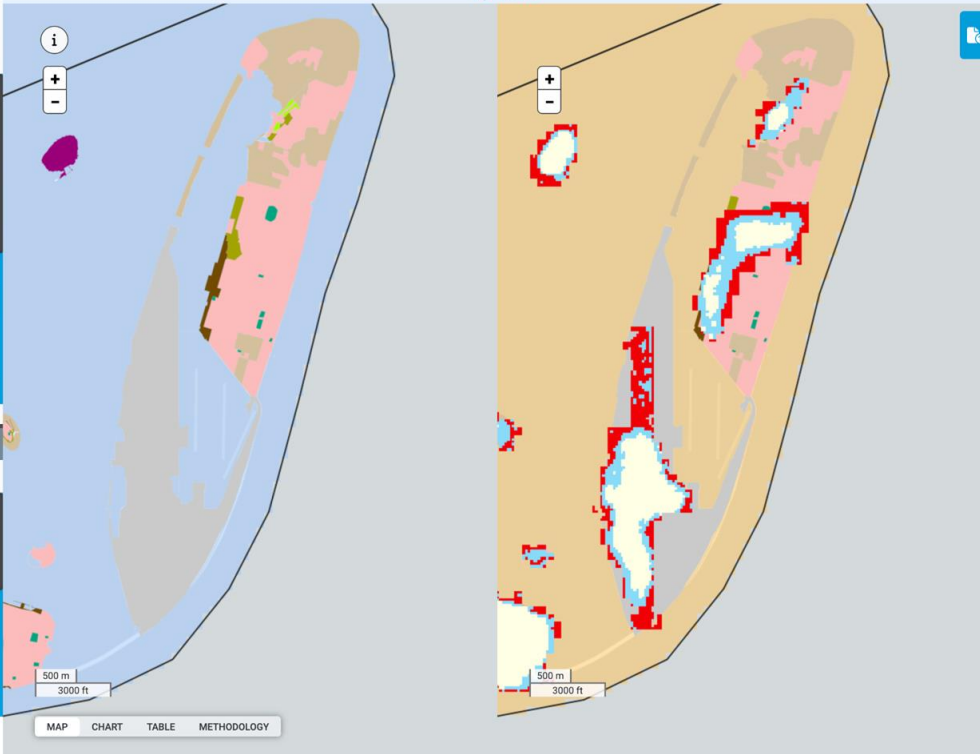
Opacity: 50%

- 0.931 - 0.939
- 0.939 - 0.944
- 0.944 - 0.956

Land Use/Land Cover

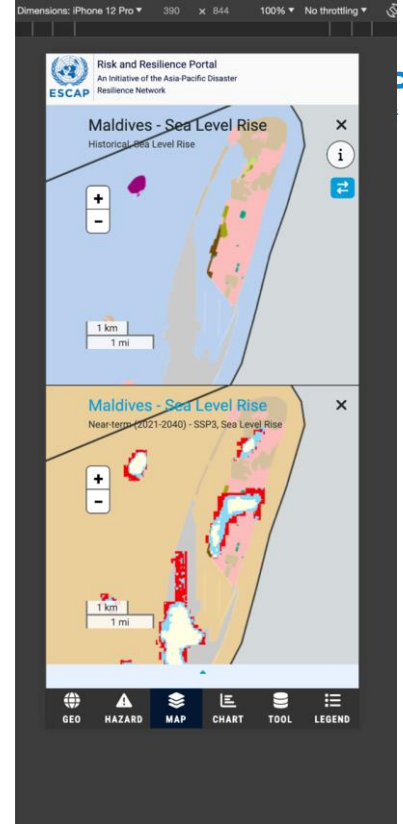
Opacity: 100%

- Agricultural area
- Airport
- Barren, sparsely vegetated area
- Beaches and sand

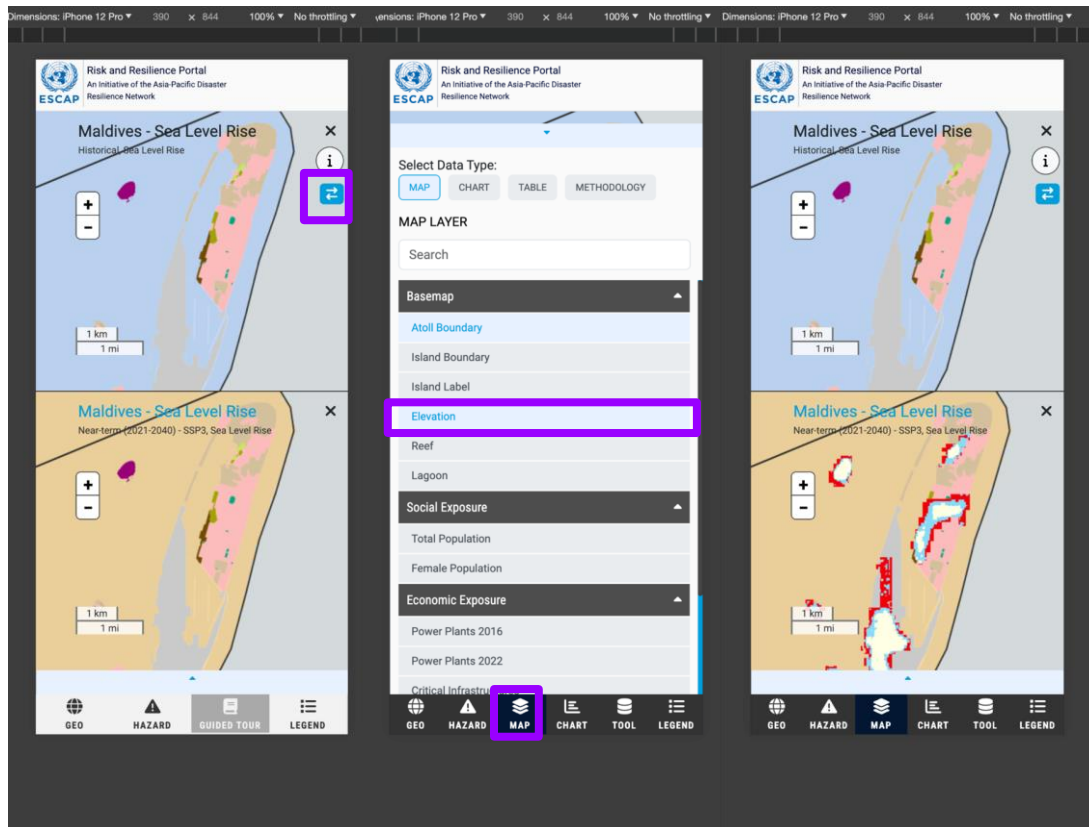


## Maldives - Sea Level Rise

Near-term (2021-2040) - SSP3, Sea Level Rise



Customize > Elevation



## Customize > Elevation



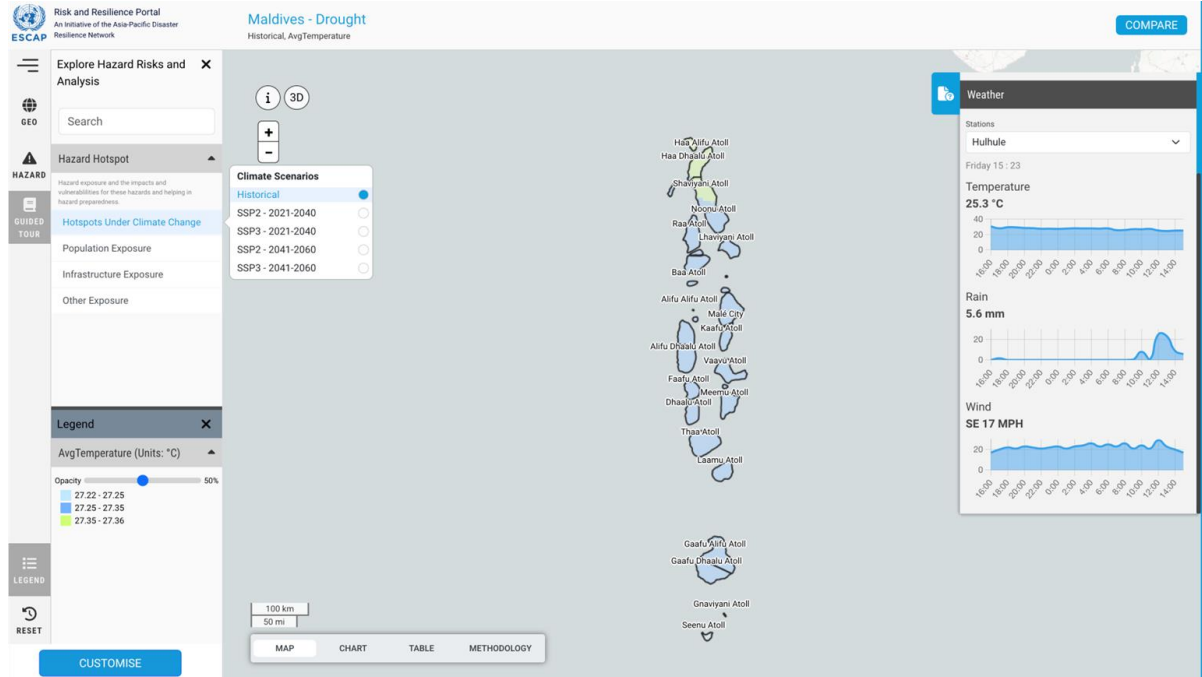
# Local Data Import



# Local Meteo Data

Imported by API from  
<https://www.meteorology.gov.mv/>

- Under development
- Available for some stations

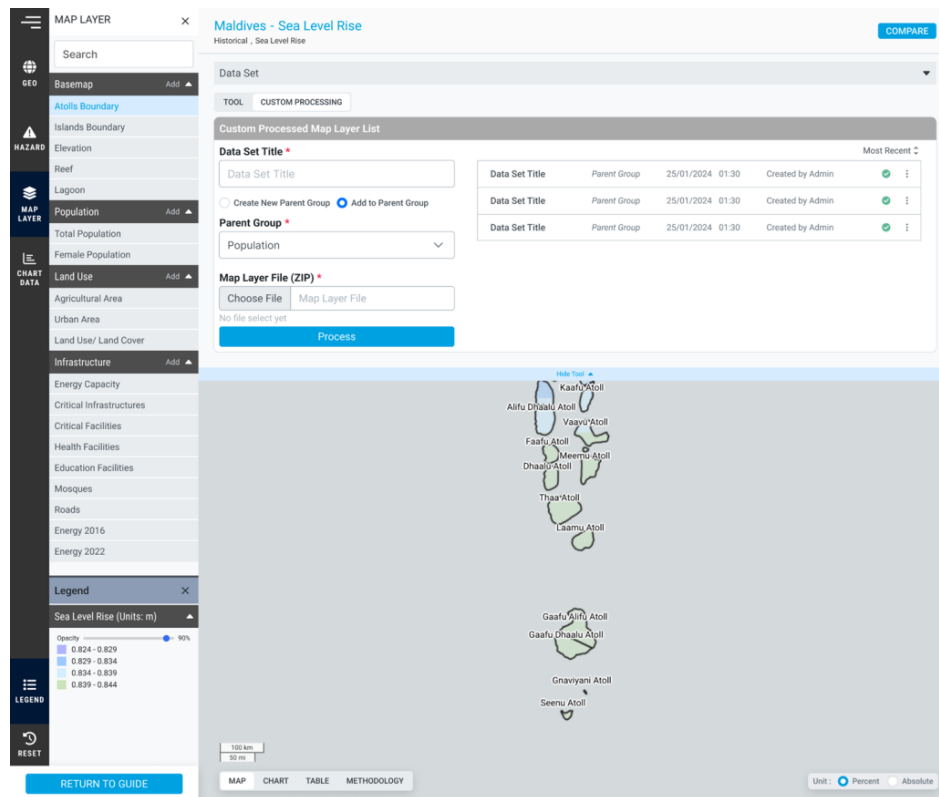


# Local Data Import

Functionality will be available for partner organizations

- Login required
- Functionality available through frontend
- Able to import and automatically process data provided in standard format
- Data only visible to logged in users

Example: Add new population layer



**MAP LAYER** ×

Search

MAP LAYER

Basemap Add ▾

Atolls Boundary

Islands Boundary

Elevation

Reef

Lagoon

Population Add ▾

Total Population

Female Population

Land Use Add ▾

Agricultural Area

Urban Area

Land Use/ Land Cover

Infrastructure Add ▾

Energy Capacity

Critical Infrastructures

Critical Facilities

Health Facilities

Education Facilities

Mosques

Roads

Energy 2016

Energy 2022

Legend ×

Sea Level Rise (Units: m) ▾

Opacity 90%

0.824 - 0.829

0.829 - 0.834

0.834 - 0.839

0.839 - 0.844

RETURN TO GUIDE

**Maldives - Sea Level Rise**

Historical, Sea Level Rise COMPARE

Data Set

TOOL CUSTOM PROCESSING

Custom Processed Map Layer List

Data Set Title \*

Data Set Title

Parent Group

Map Layer File (ZIP) \*

Choose File Map Layer File

No file select yet

Process

Data Set Title	Parent Group	25/01/2024 01:30	Created by Admin	Most Recent
Data Set Title	Parent Group	25/01/2024 01:30	Created by Admin	🟢 ⋮
Data Set Title	Parent Group	25/01/2024 01:30	Created by Admin	🟢 ⋮
Data Set Title	Parent Group	25/01/2024 01:30	Created by Admin	🟢 ⋮

Map Layer File (ZIP) \*

Choose File Map Layer File

No file select yet

Process

Map View: Maldives - Sea Level Rise

Map Tools

Kaafu Atoll

Ailufu Dhaalu Atoll

Vaavu Atoll

Faafu Atoll

Meemu Atoll

Dhaalu Atoll

Thaa Atoll

Lamu Atoll

Gaafu Dhaalu Atoll

Gaafu Atoll

Gnaviyani Atoll

Seenu Atoll

100 km

50 mi

MAP CHART TABLE METHODOLOGY

Unit:  Percent  Absolute

# Local Data Import

## Example: Add new population layer

- Add via “Custom Processing”
  - or via Map Layer group
- Enter details
- Select file
- Process

Able to publish / unpublish

The screenshot displays the 'Maldives - Sea Level Rise' interface. The left sidebar shows the 'MAP LAYER' menu with 'Population' highlighted and an 'Add' button next to it. The central panel is titled 'CUSTOM PROCESSING' and contains the following fields:

- Data Set Title \***: A text input field.
- Parent Group \***: A dropdown menu with 'Population' selected.
- Map Layer File (ZIP) \***: A 'Choose File' button and a 'Map Layer File' input field.

Below these fields is a 'Process' button. The right sidebar shows the 'MAP LAYER' menu with 'Focus Population' highlighted and an 'Add' button next to it. The map view shows the Maldives islands with a legend for 'Sea Level Rise (Units: m)' and a scale bar.

# THANK YOU

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# ESCAP

Economic and Social Commission  
for Asia and the Pacific