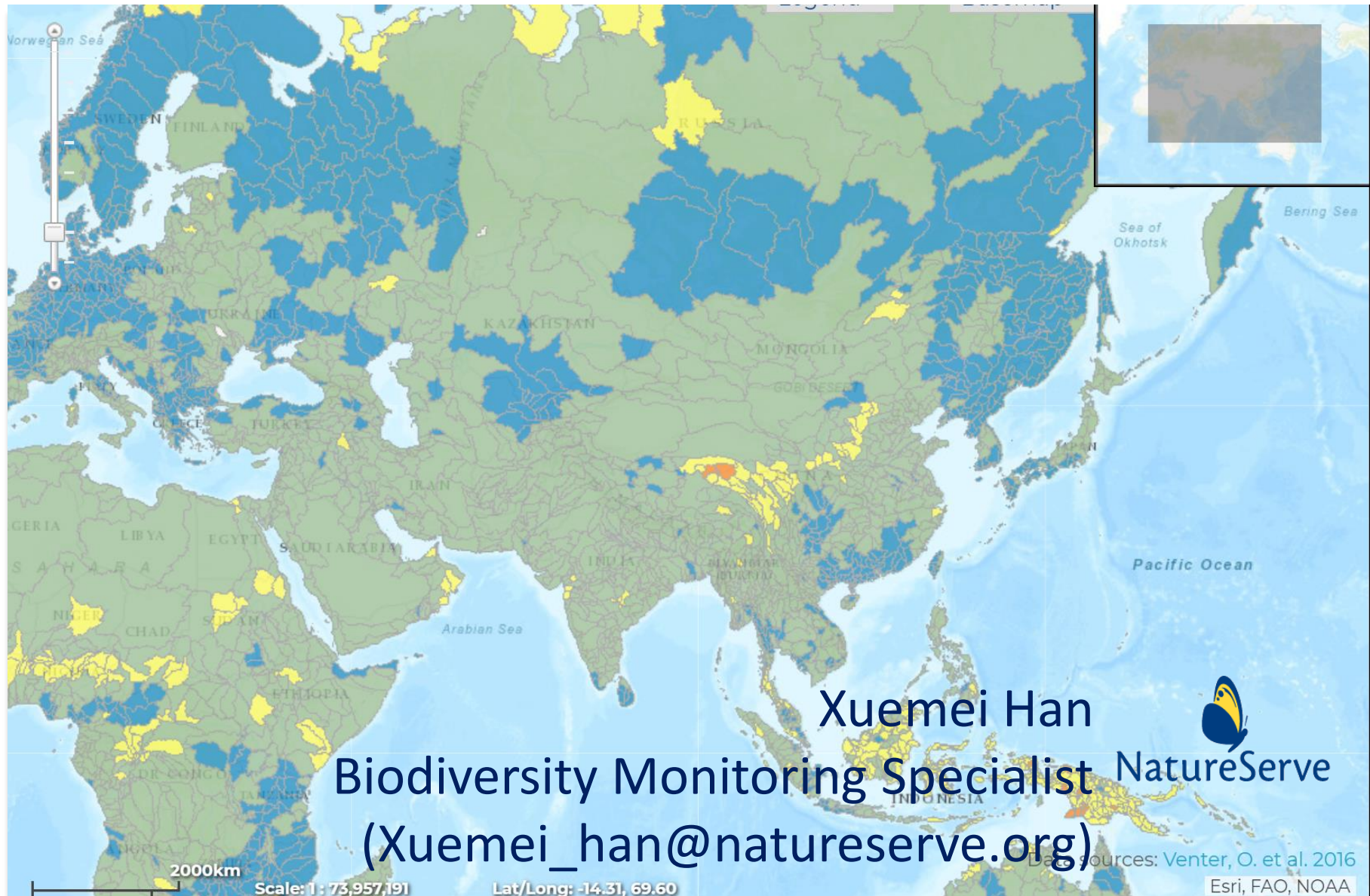


Dashboard Visualization of Biodiversity Indicators in Support of National Clearing-House Mechanisms



Outline

- Overview of NatureServe
- The Challenge of Biodiversity Indicators and Reporting
- The Biodiversity Indicators Dashboard
- Opportunity to support Clearing-House Mechanisms in Asian countries
 - Support indicator visualization in BioLand
 - Fill indicator gaps
 - Support scientific research



80+

NETWORK BIODIVERSITY
CENTERS IN THE UNITED
STATES, CANADA, AND
LATIN AMERICA

OVER
1,000

CONSERVATION PROFESSIONALS

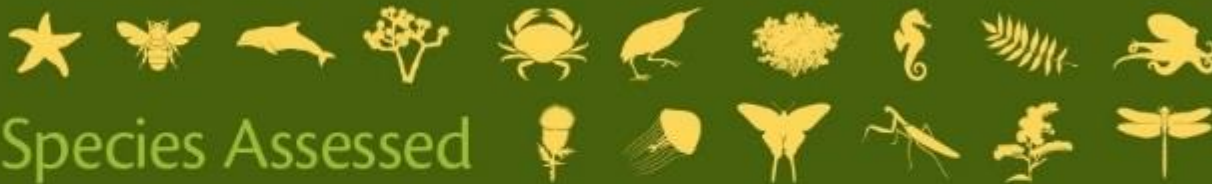
**POWER
OF THE
NETWORK**

www.natureserve.org

The network collects, analyzes,
and distributes detailed scientific
data about plants, animals, and
ecosystems in their jurisdictions

70,000

Species Assessed



1,600+

Ecosystems Mapped



Map of Project Areas

-  Network Biodiversity Centers
-  Major NatureServe Project Areas
-  NatureServe Conservation Mapping Areas



ASEAN Biodiversity Outlook 2

The ASEAN Biodiversity Outlook (ABO) is the flagship publication of the ASEAN Centre for Bio...

AMS CHM Websites

- ▶ Brunei Darussalam
- ▶ Cambodia
- ▶ Lao PDR
- ▶ Indonesia
- ▶ Malaysia
- ▶ Myanmar
- ▶ Philippines
- ▶ Singapore
- ▶ Thailand
- ▶ Viet Nam

Step 1 Select indicator

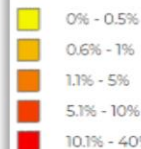
Pressure

Human Footprint

☑ Dams, mines, and hydrocarbon wells

Forest cover

Annual Loss of Forest Cover (2000-2014)



FAO Forest cover

☑ Forest cover (Government reported)

Intact Forest Landscape Cover

FAO Mangrove cover

Mangrove cover (Government reported)

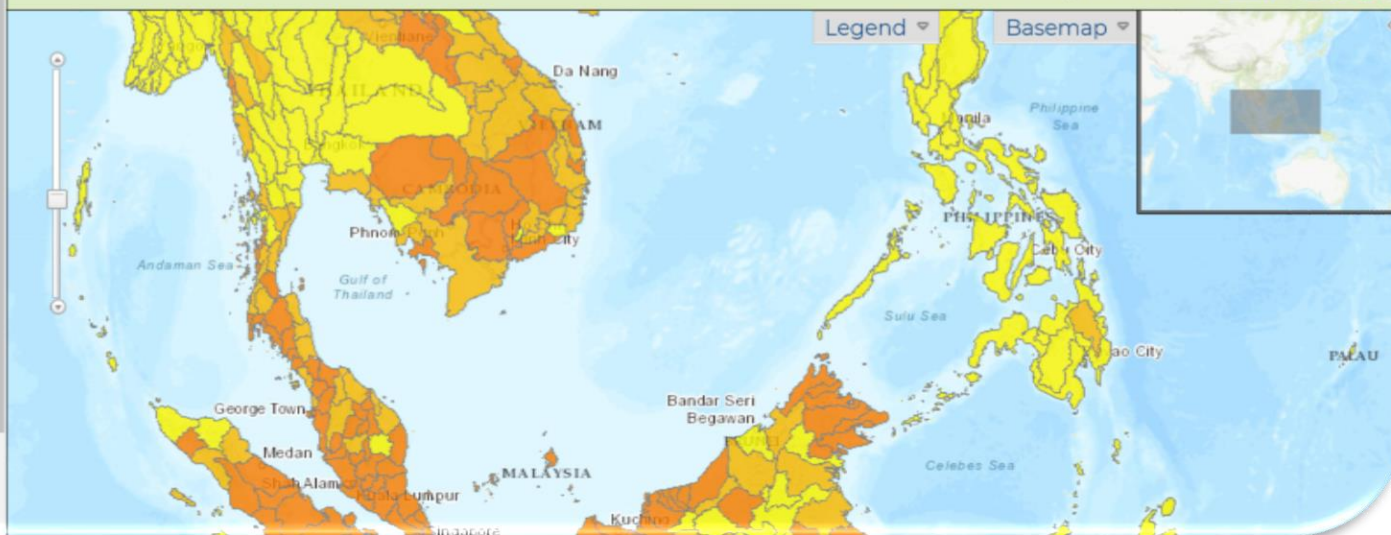
Click map for trends.

Reset



Legend

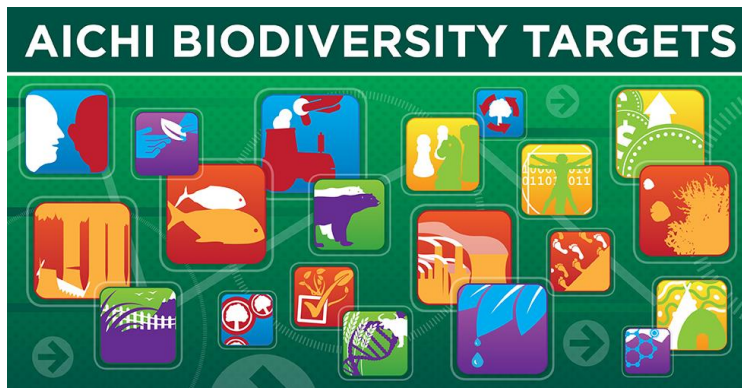
Basemap



Political Commitment (and Reporting Requirements) for Biodiversity



Convention on
Biological Diversity



SUSTAINABLE
DEVELOPMENT GOALS



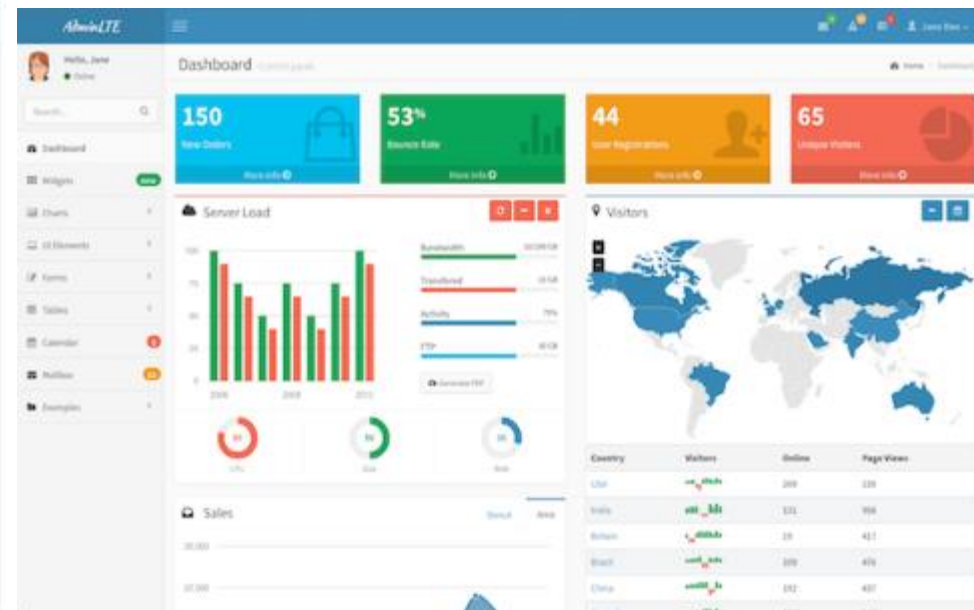
Challenges of biodiversity indicators and reporting

- Lack of evidence-based indicators and spatial data in previous national reports
- Static, periodic assessments
- Overlapping and continual national reporting requirements
- Inefficiencies in accessing and using datasets and indicators
- Lack of validation opportunities for the use of global datasets at national scales
- Current targets are not aligned, in many cases, with existing data and indicators
- Limited data in Clearing-House Mechanisms

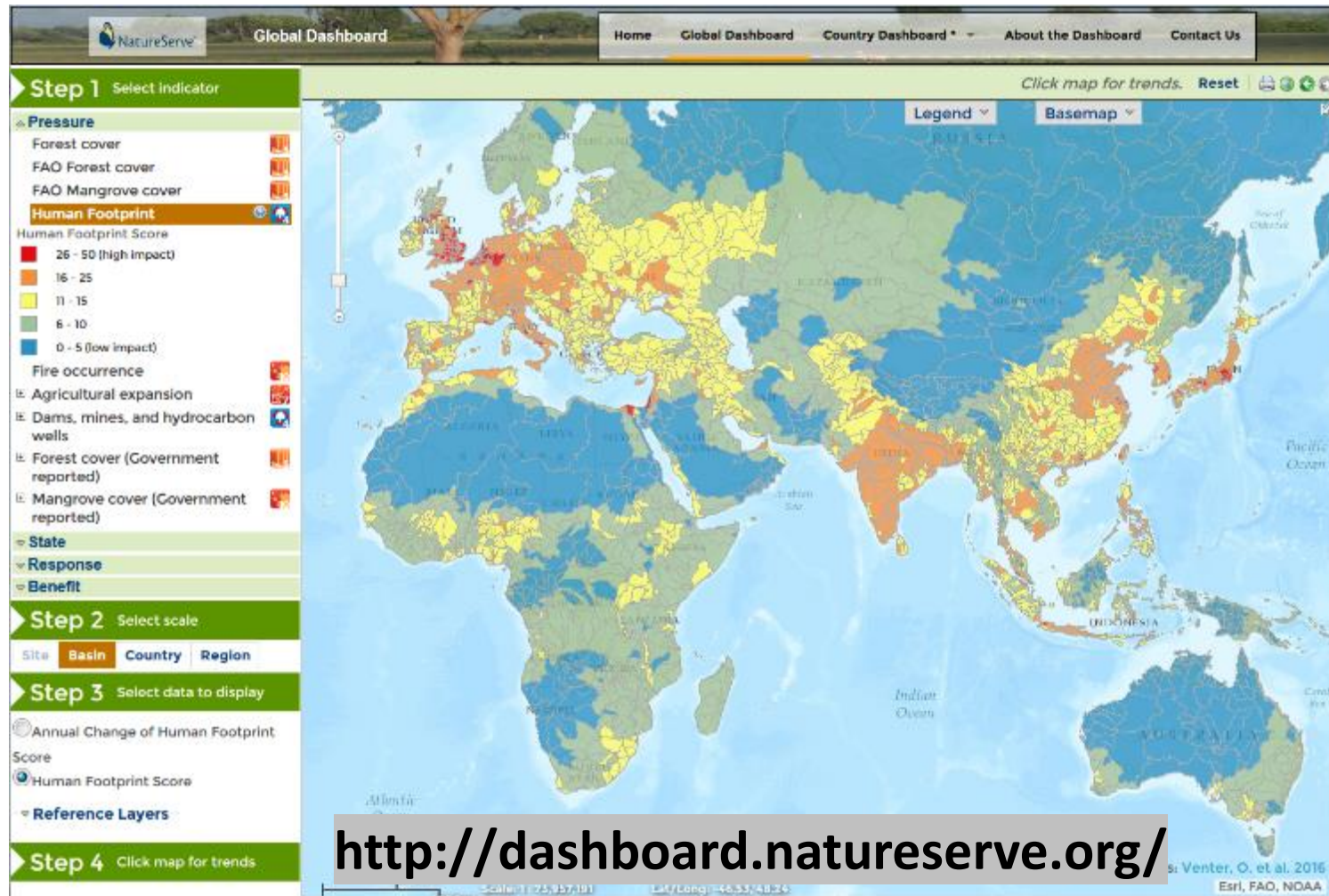


Dashboard:

Intuitive data visualization to quickly convey essential information



The Biodiversity Indicators Dashboard provides **analysis**, **visualization**, and **communication** of datasets on biodiversity status and trends



Human Global Footprint score, watershed scale



Freshwater provision

How dependent are people on the clean water that comes from this river basin?

[Learn more >](#)

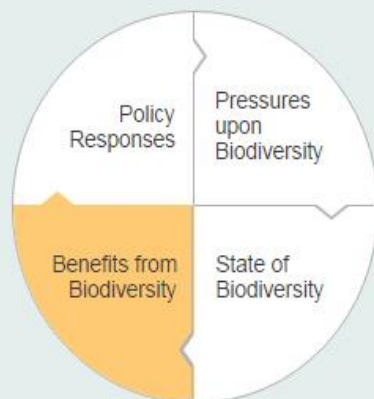


The Biodiversity Indicators Dashboard

Measuring Progress and Challenges to Conservation

How successful are our efforts to conserve biodiversity? Increasingly, we need to measure how well our actions to conserve biodiversity achieve their goals.

The Biodiversity Indicators Dashboard unites diverse metrics that chart progress towards global conservation goals, such as the [Aichi Biodiversity Targets](#).



Aichi Biodiversity Targets

- A** Mainstream biodiversity across government and society
 - 1
 - 2
 - 3
 - 4
- B** Reduce pressures on biodiversity
 - 5
 - 6
 - 7
 - 8
 - 9
 - 10
- C** Improve biodiversity status
 - 11
 - 12
 - 13
- D** Enhance benefits from biodiversity and ecosystem services
 - 14
 - 15
 - 16
- E** Enhance capacity and knowledge
 - 17
 - 18
 - 19
 - 20

Collaborators



Pressure

Human Footprint

Forest cover

FAO Forest cover

FAO Mangrove cover

Fire occurrence

Forest cover (govt reported)

Dams, mines, & hydrocarbon wells

Agricultural expansion

Future dams

Response

Biodiversity records accessible thr. GBIF

Protected Area Representativeness Index

Protected Area Connectedness Index

Protection of KBAs

ASEAN Heritage Parks

Conservation Investment

Benefit

Carbon sequestration

Freshwater provision

Community forestry & fishery

Today: 34 Indicators

State

Landscape condition

Clean Waters Score

Ocean Health Index

Biodiversity Habitat Index

Red List Index

National Red List Index

Red List Index for exploited species

Biodiversity Importance Index

Genetic diversity of livestock

River dolphin population size

Context

Protection of land areas

Protection of marine areas

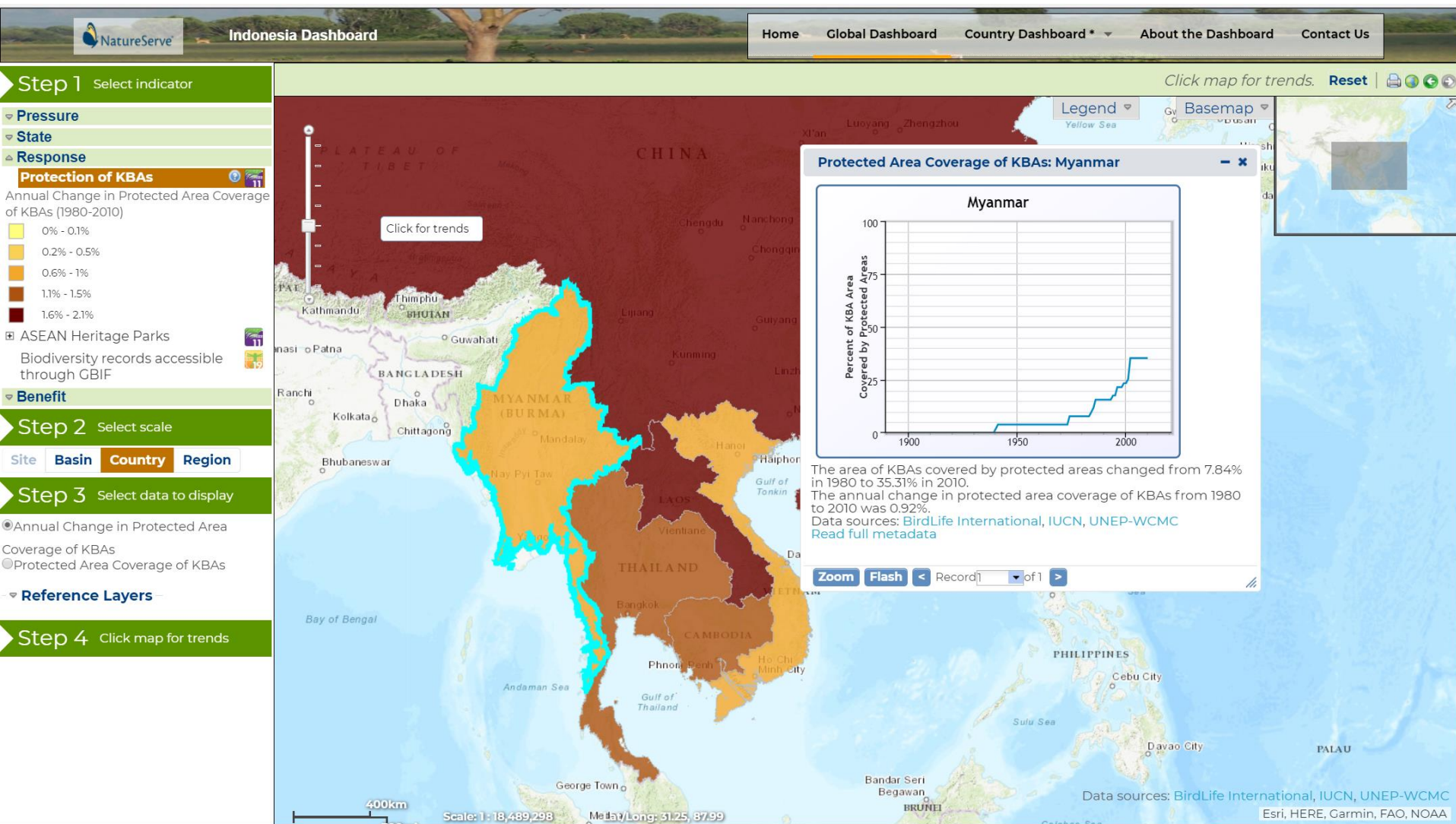
Number of species by taxa

Habitat diversity

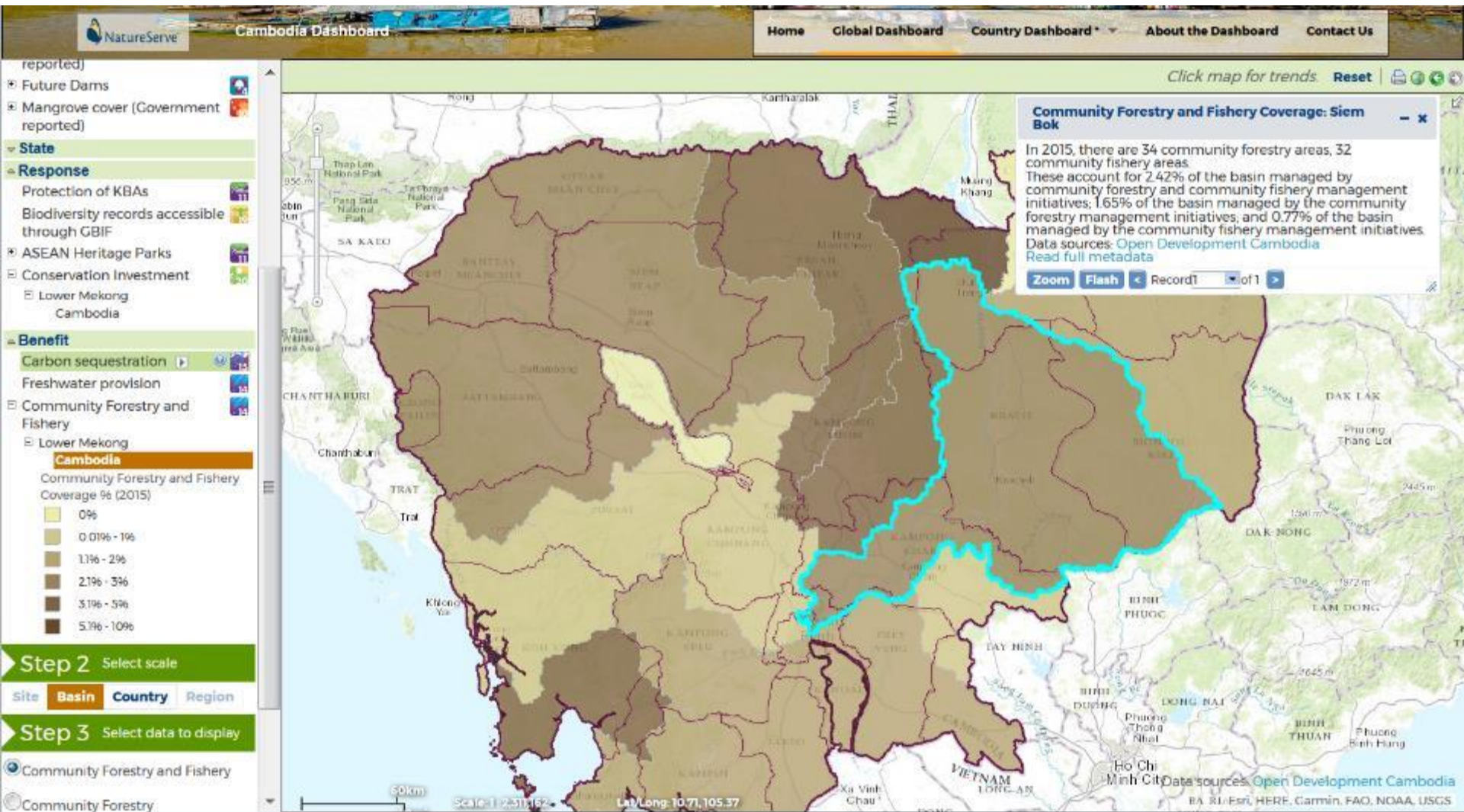
GDP per capita

CO₂ emissions per capita

Protected Area Coverage of KBAs

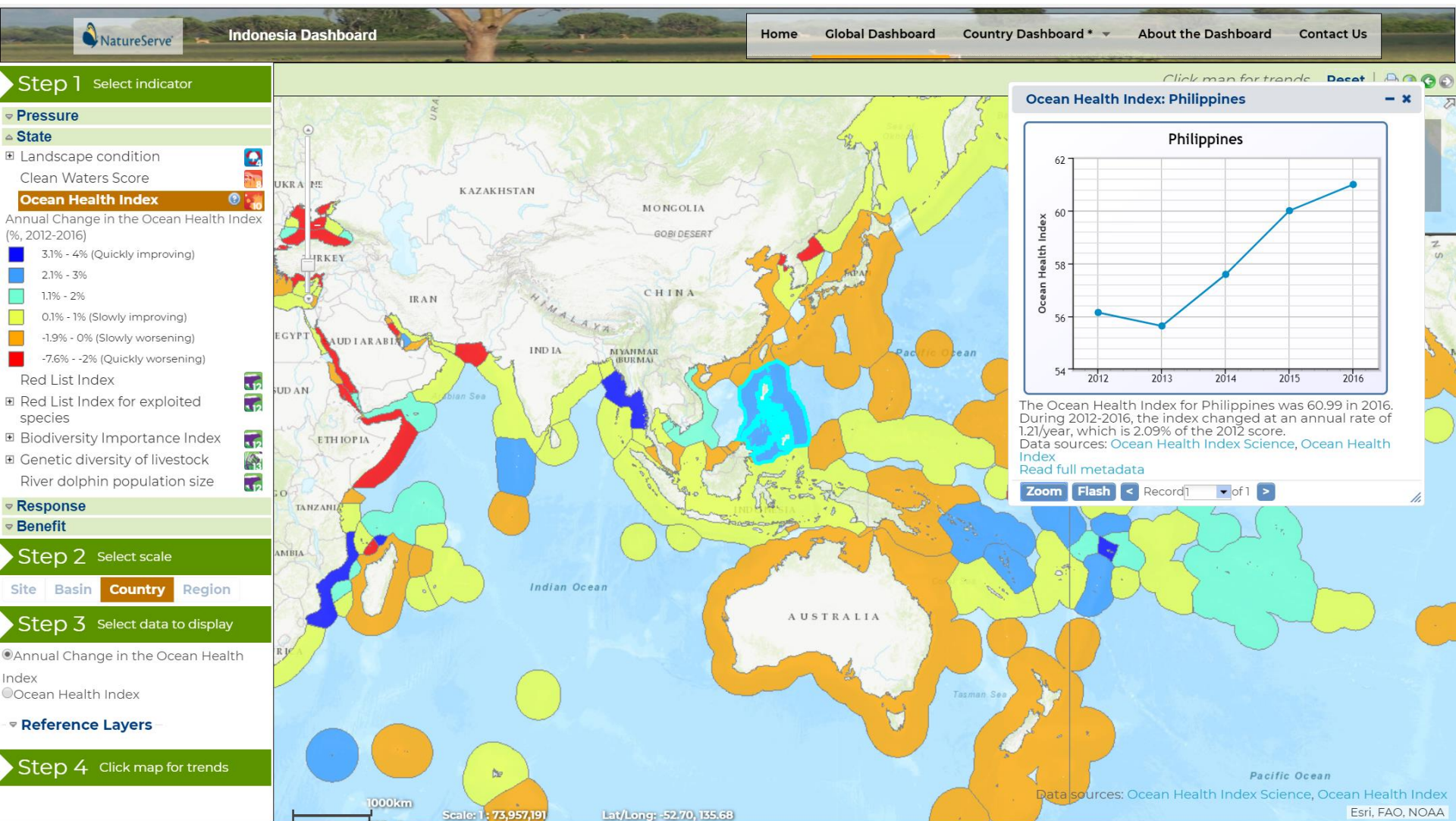


Nationally-generated Indicators



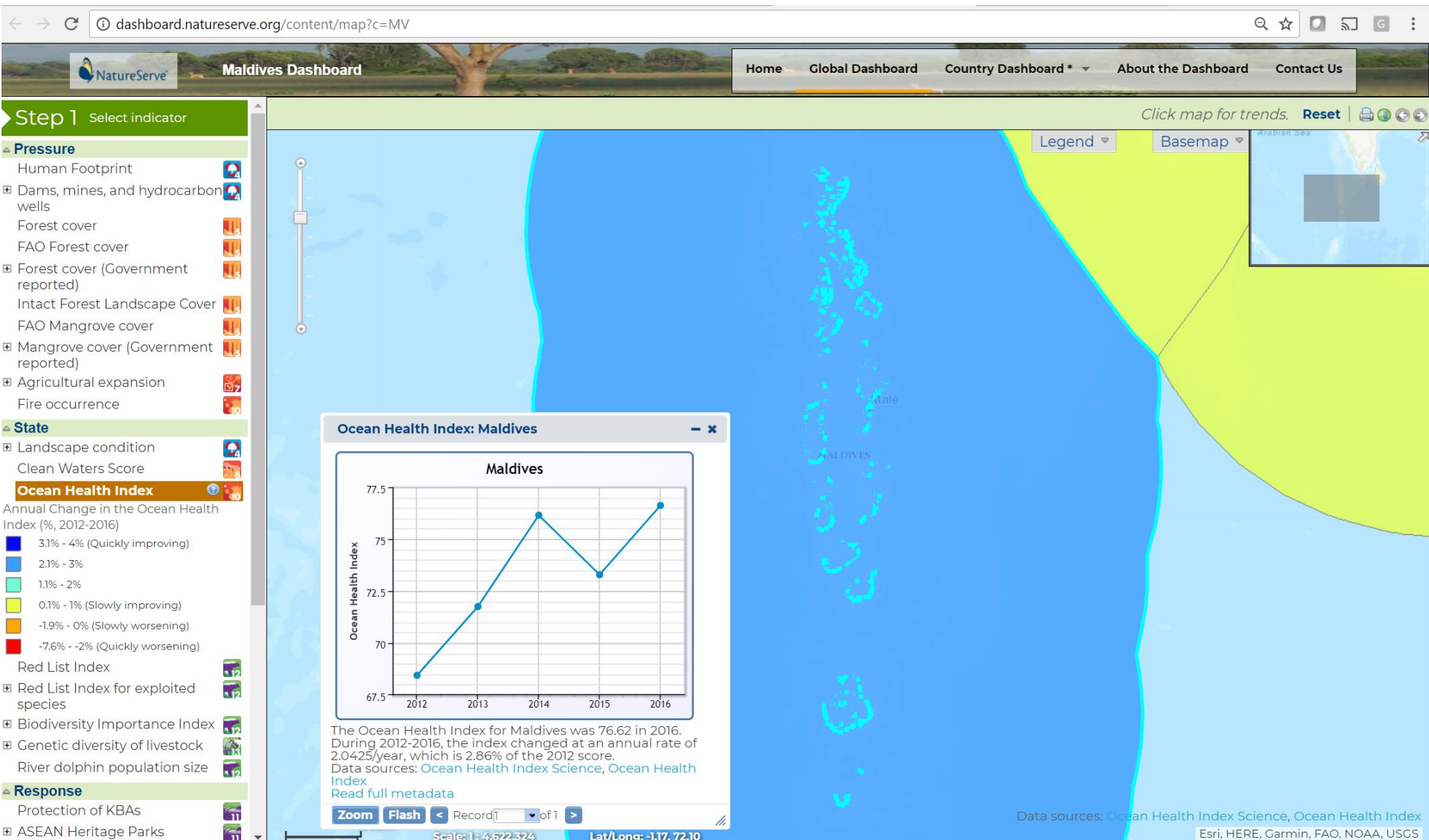
-- Indicator provided by Open Development Cambodia

Marine Indicators



-- Indicator from Ocean Health Index Science

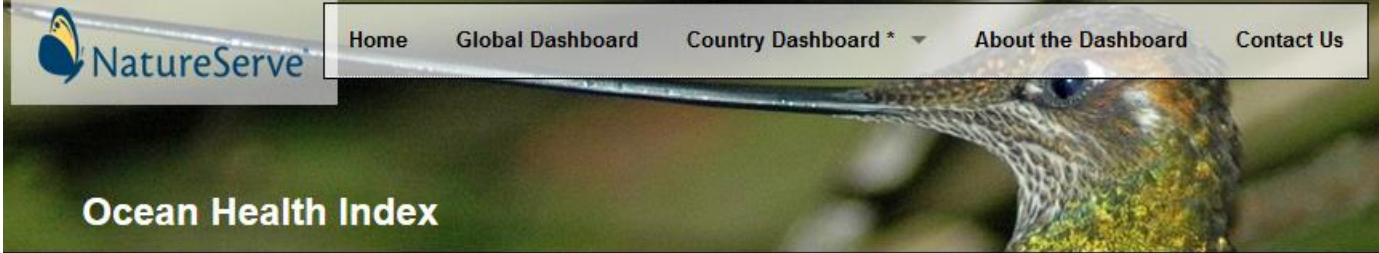
Marine Indicators



-- Indicator from Ocean Health Index Science

Detailed
metadata
are
available
for all
published
indicators

[Home](#)[Global Dashboard](#)[Country Dashboard *](#)[About the Dashboard](#)[Contact Us](#)



Ocean Health Index

[HOME](#) / [OCEAN HEALTH INDEX](#)

Indicator name
Ocean Health Index

Indicator type
State

Data sources
[Ocean Health Index](#)

[Ocean Health Index Science](#)

What does this data layer represent?
This indicator measures the state of the world's oceans based on how well they are able to sustainably provide the benefits and services that people need and desire. The assessment combines and compares all dimensions of the ocean, including ecological, social, economic, and physical traits, to measure how sustainably people are using ocean and coastal resources.

Which Aichi target does this indicator relate to?
 By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

What does a trend in this indicator tell us?
The Ocean Health Index scores range from 0-100, with 100 representing the best possible score indicating the healthiest state of an ocean area can be in sustainably providing resources to people.
The average annual change in Ocean Health Index is the percent of Ocean Health Index score change from 2012 to 2016. Positive value indicates improving of ocean health, and negative value indicates worsening of ocean health. Higher absolute value indicates a quicker change (improving or worsening).

Locations

Scientific research

PublishAboutBrowse

 OPEN ACCESS  PEER-REVIEWED

RESEARCH ARTICLE

A Biodiversity Indicators Dashboard: Addressing Challenges to Monitoring Progress towards the Aichi Biodiversity Targets Using Disaggregated Global Data

Xuemei Han , Regan L. Smyth, Bruce E. Young, Thomas M. Brooks, Alexandra Sánchez de Lozada, Philip Bubb, Stuart H. M. Butchart, Frank W. Larsen, Healy Hamilton, Matthew C. Hansen, Will R. Turner

Published: November 19, 2014

Contents lists available at [ScienceDirect](#)

Biological Conservation

journal homepage: www.elsevier.com/locate/bioc



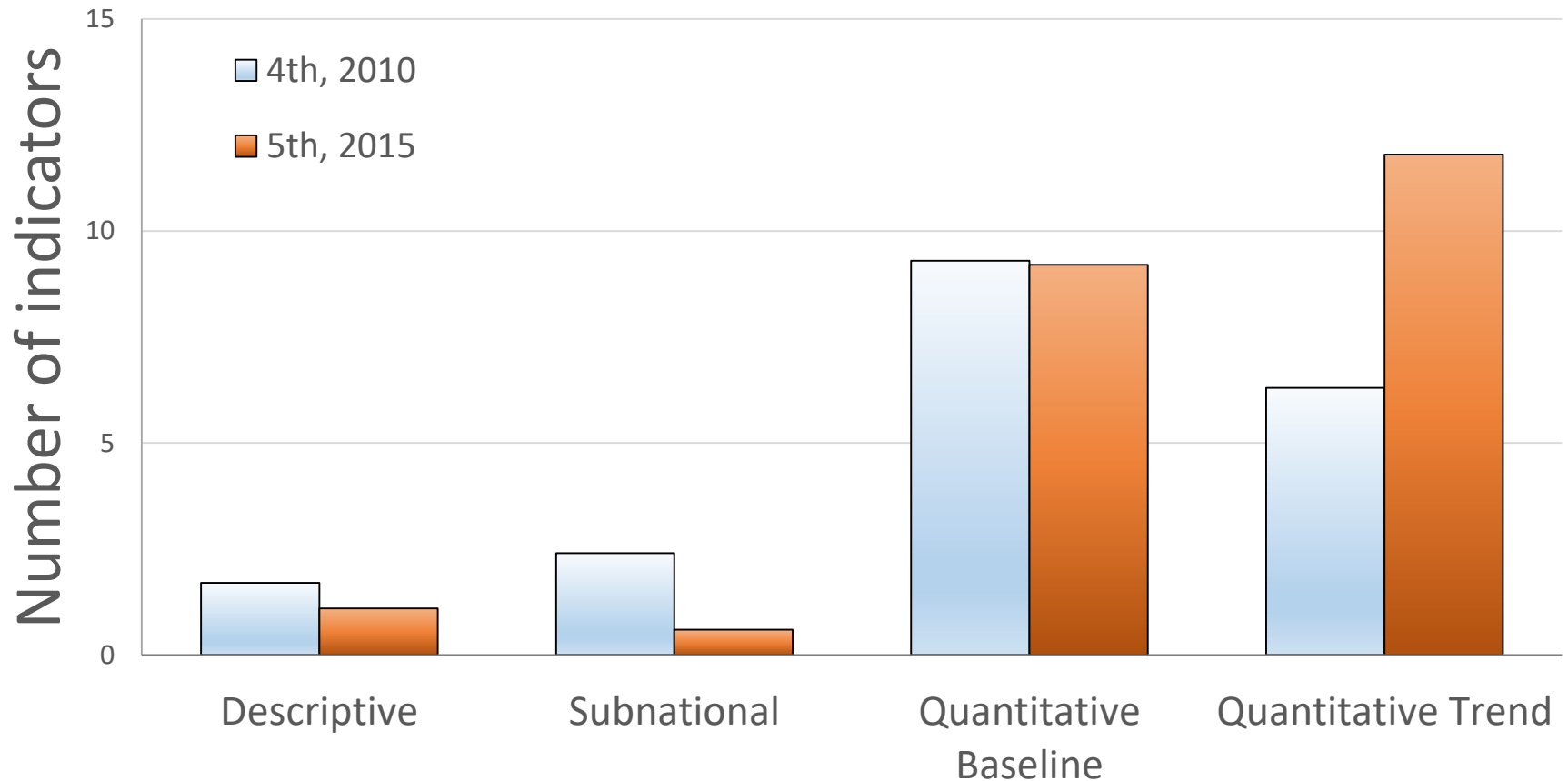
Monitoring national conservation progress with indicators derived from global and national datasets

Xuemei Han ^{a,b,*}, Carmen Josse ^a, Bruce E. Young ^a, Regan L. Smyth ^a, H. Healy Hamilton ^a, Nadine Bowles-Newark ^c

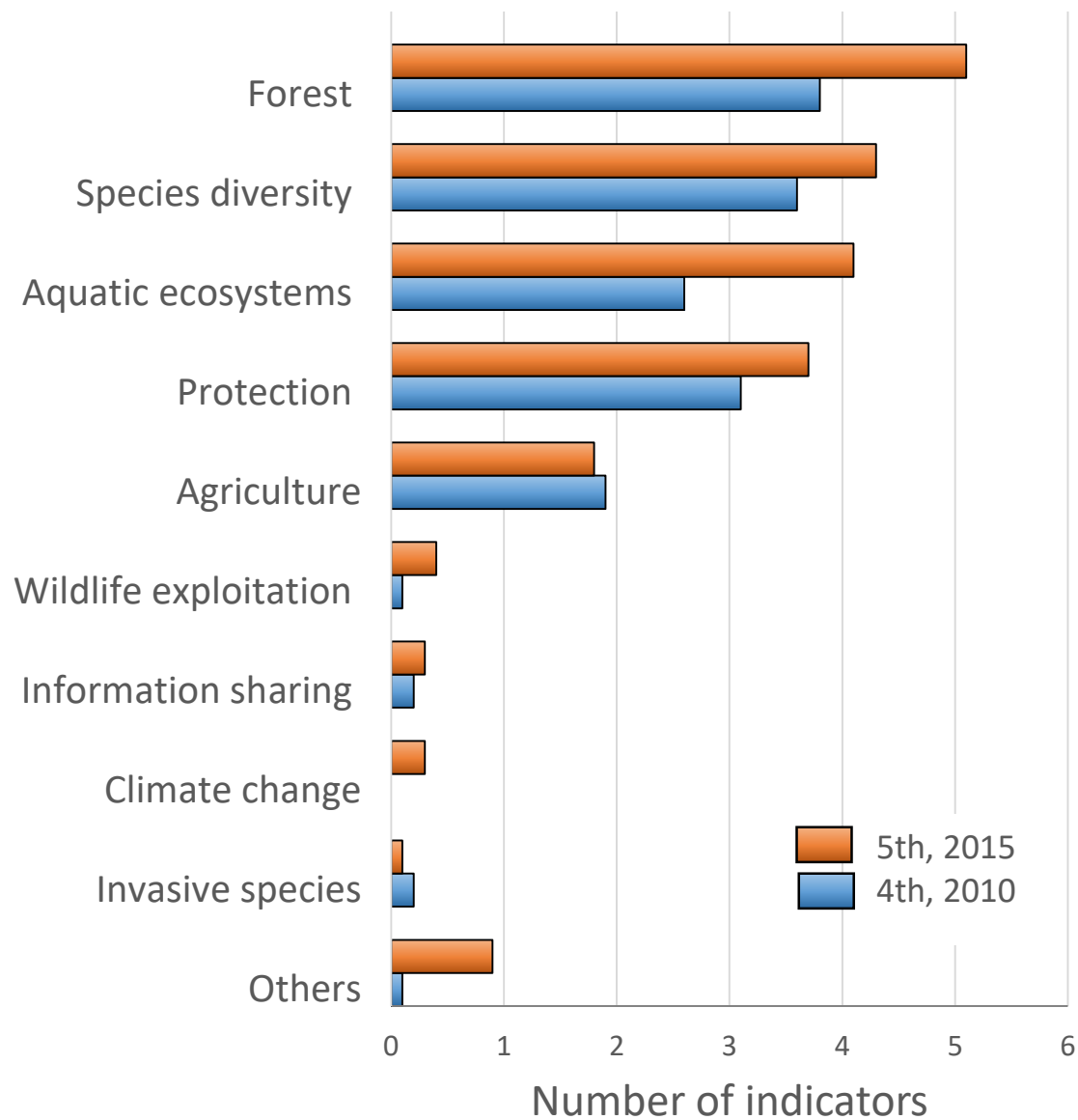
^a NatureServe, 4600 N. Fairfax Drive, 7th Floor, Arlington, VA 22203, United States
^b Department of Environmental Science and Policy, George Mason University, 4400 University Drive, MS 5F2, Fairfax, VA 22030, United States
^c UNEP World Conservation Monitoring Centre (UNEP-WCMC), 219 Huntingdon Road, Cambridge, CB3 0DL, United Kingdom



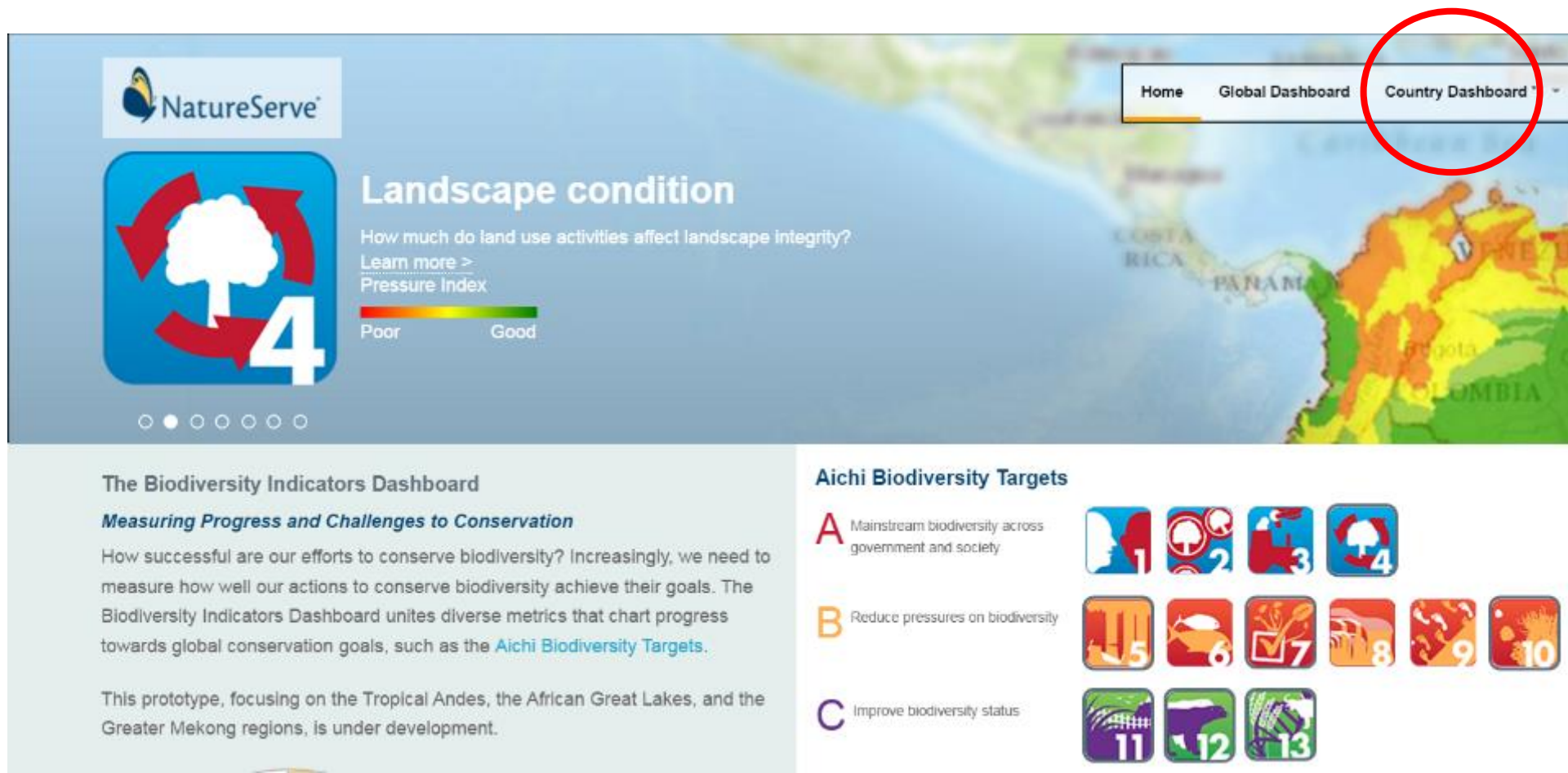
Number of indicators used in 4th and 5th national reports by ASEAN Member States



Number of indicators used in 4th and 5th national reports by AMS by schemes



Country dashboard landing pages for all nations and territories





Explore More Country Indicators

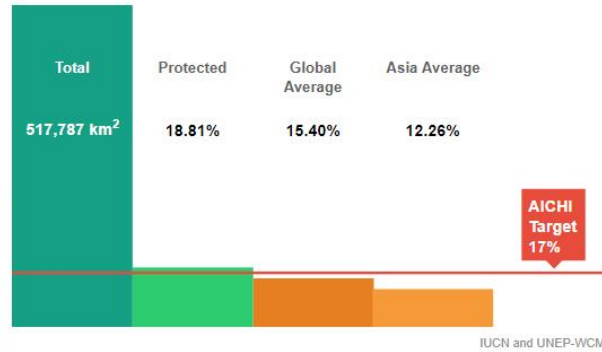


Convention on
Biological Diversity

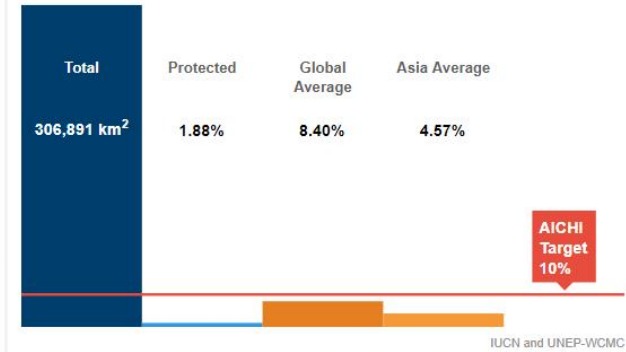
Visit Country Profile

Protected Area

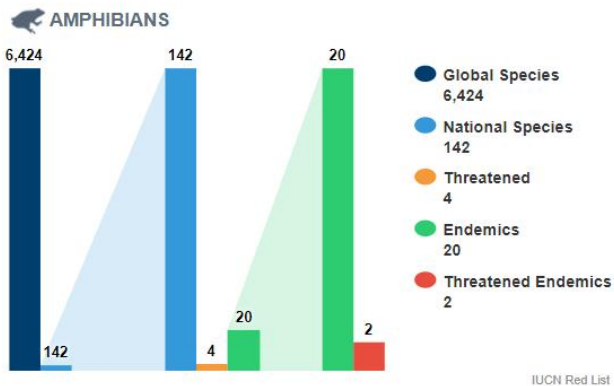
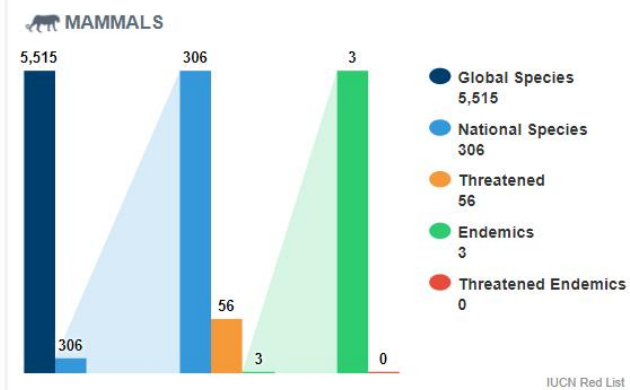
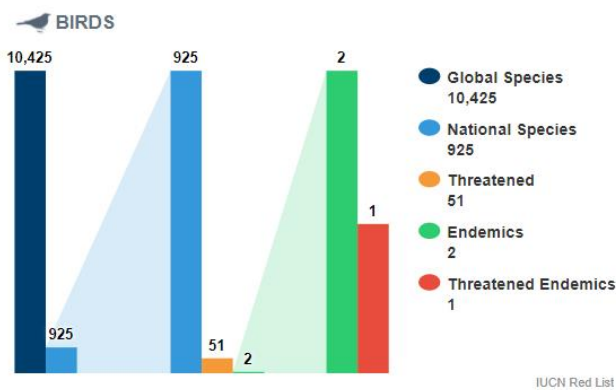
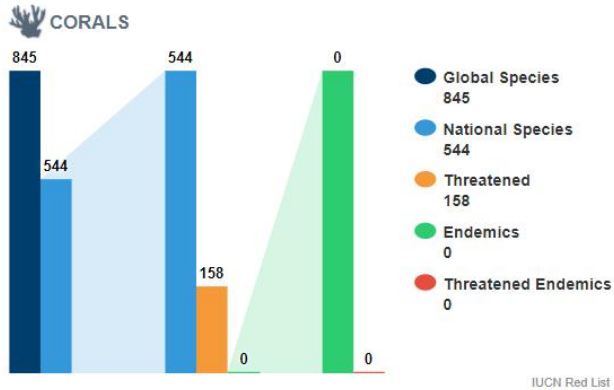
LAND AREA



MARINE AREA

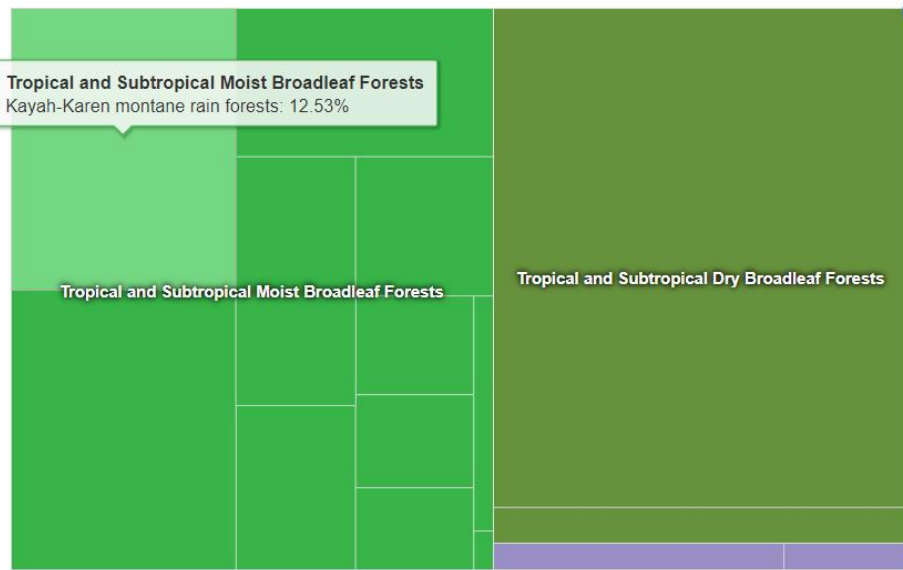


Biodiversity



<http://dashboard.natureserve.org/country/th>

Habitat Diversity



Kayah-Karen montane rain forests: 12.53%

Click [here](#) to view a description of this habitat from World Wildlife Fund (WWF).

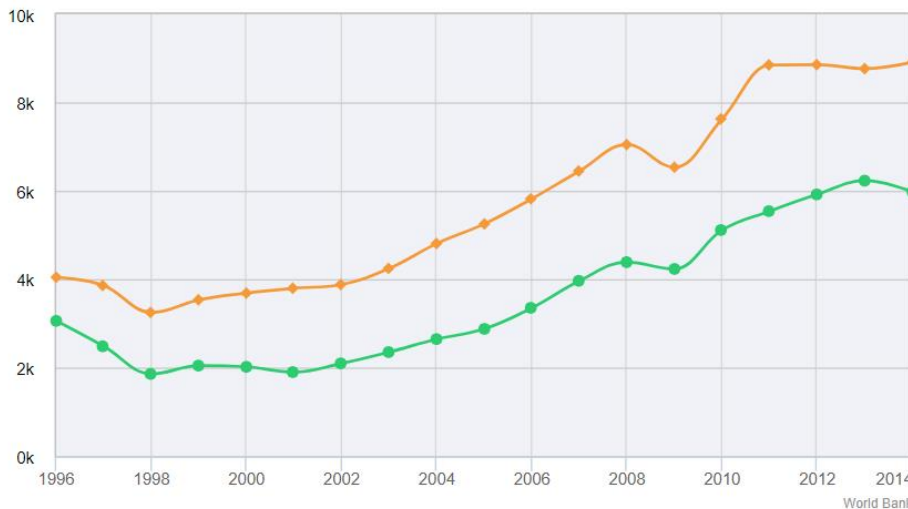


let | HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors
NatureServe IVC, WWF Ecoregions

Trends

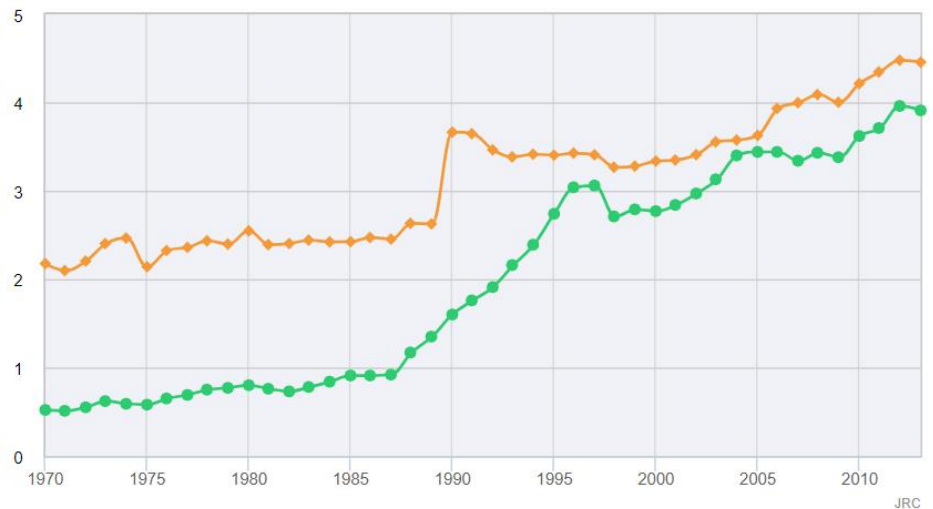
GDP PER CAPITA

Thailand \$5,977.40 Asia \$8,909.79



CO2 EMISSIONS PER CAPITA

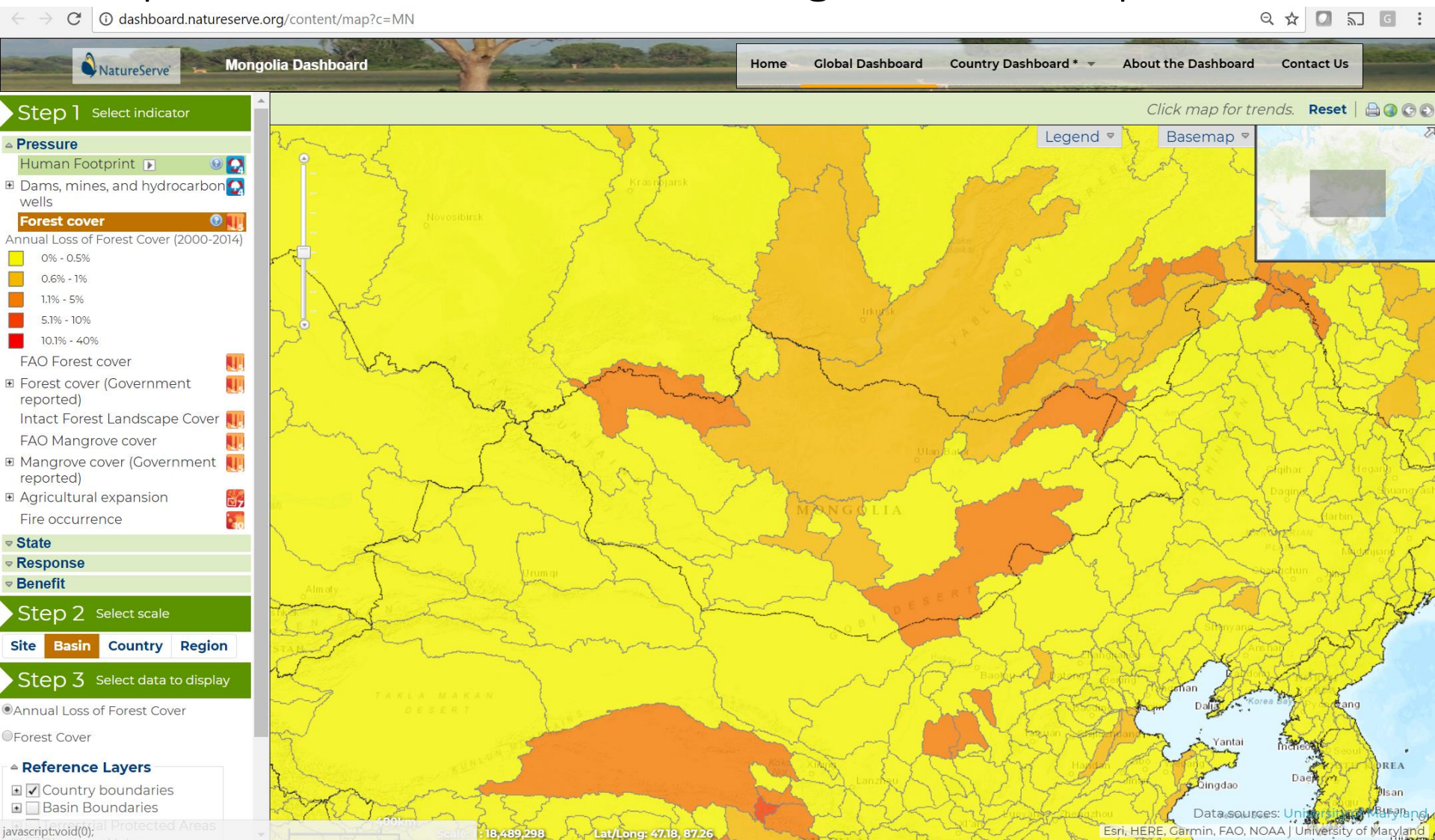
Thailand 3.91 tonnes Asia 4.46 tonnes



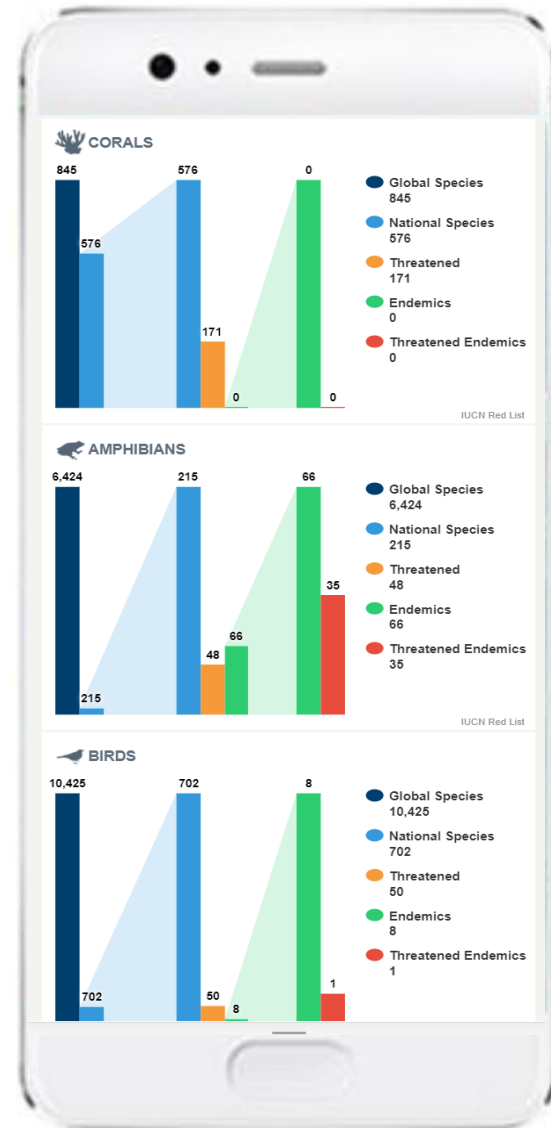
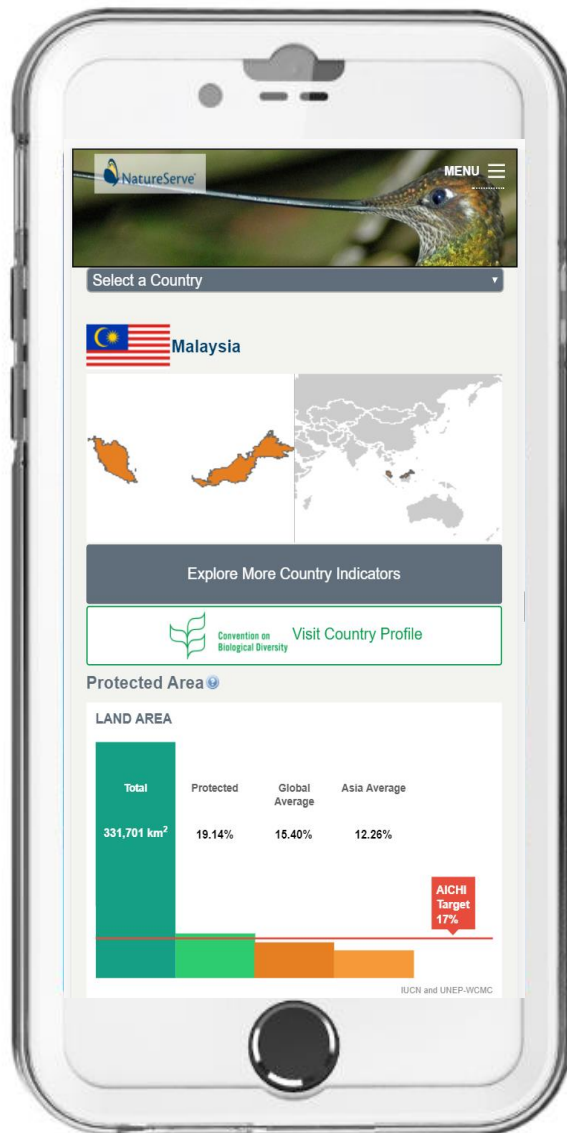
Country-specific URL

<http://dashboard.natureserve.org/country/mn>

<http://dashboard.natureserve.org/content/map?c=MN>

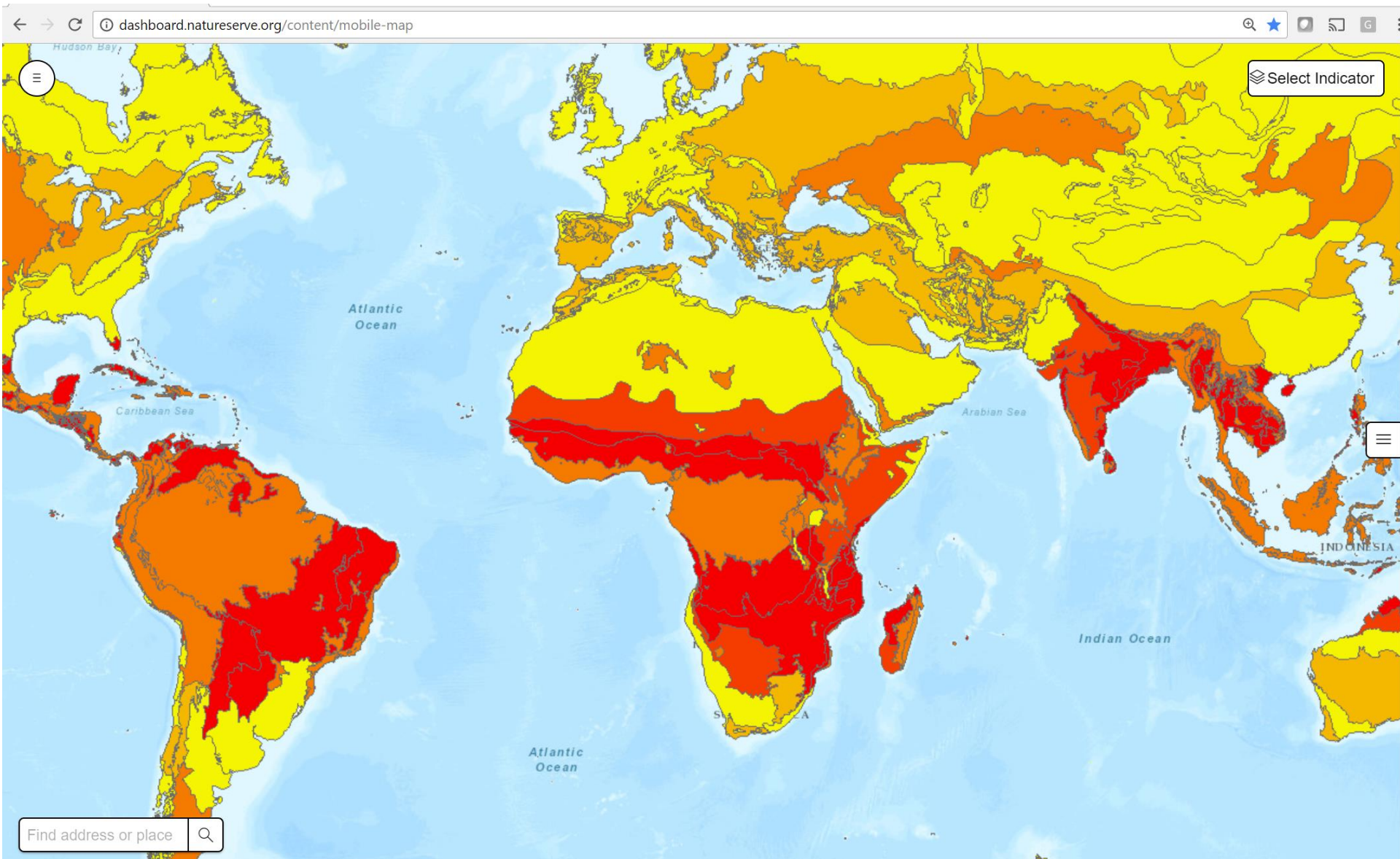


Mobile Friendly



Mobile version

<http://dashboard.natureserve.org/content/mobile-map>



Opportunity for Supporting Asia Countries' CHMs:

- Visualize national data on country Dashboards as a component of Bioland
- Use global data or newly-developed indicators to fill gaps where appropriate
 - Pressure indicators (few appear in NBSAPs)
 - Trends in state indicators
 - Can show spatial variation within a country

Providing visualization in Bioland



Nepal Biodiversity

National Clearing-House Mechanism Demonstration Website

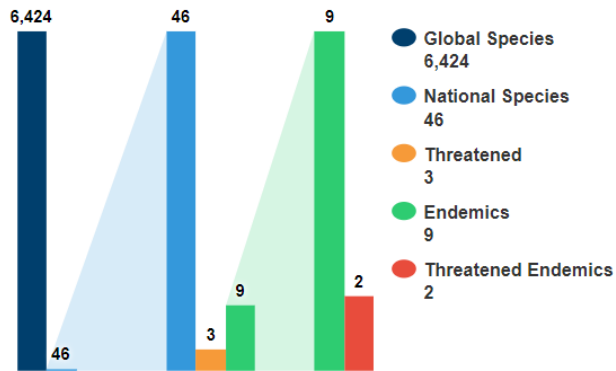
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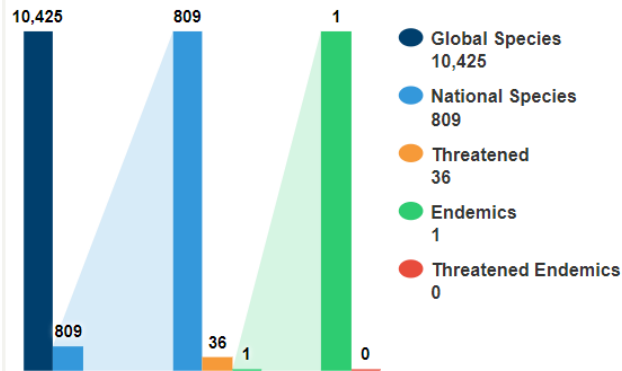
[Visualization](#) > **Biodiversity**

AMPHIBIANS



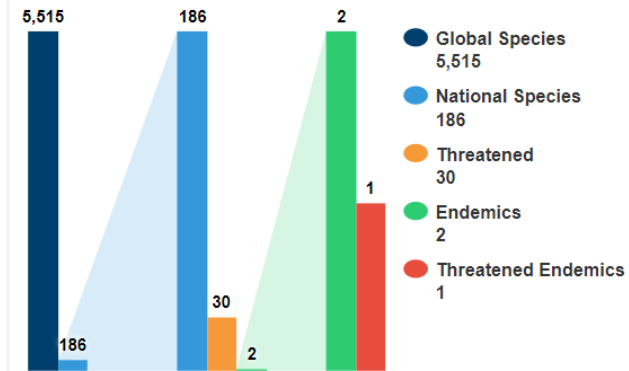
IUCN Red List

BIRDS



IUCN Red List

MAMMALS



IUCN Red List

Quick links

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CBD links

[CBD](#)
[Strategic Plan for Biodiversity](#)

Bioland

[CBD country profile](#)
[GSS projects](#)

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[Facebook](#)
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Providing visualization in Bioland



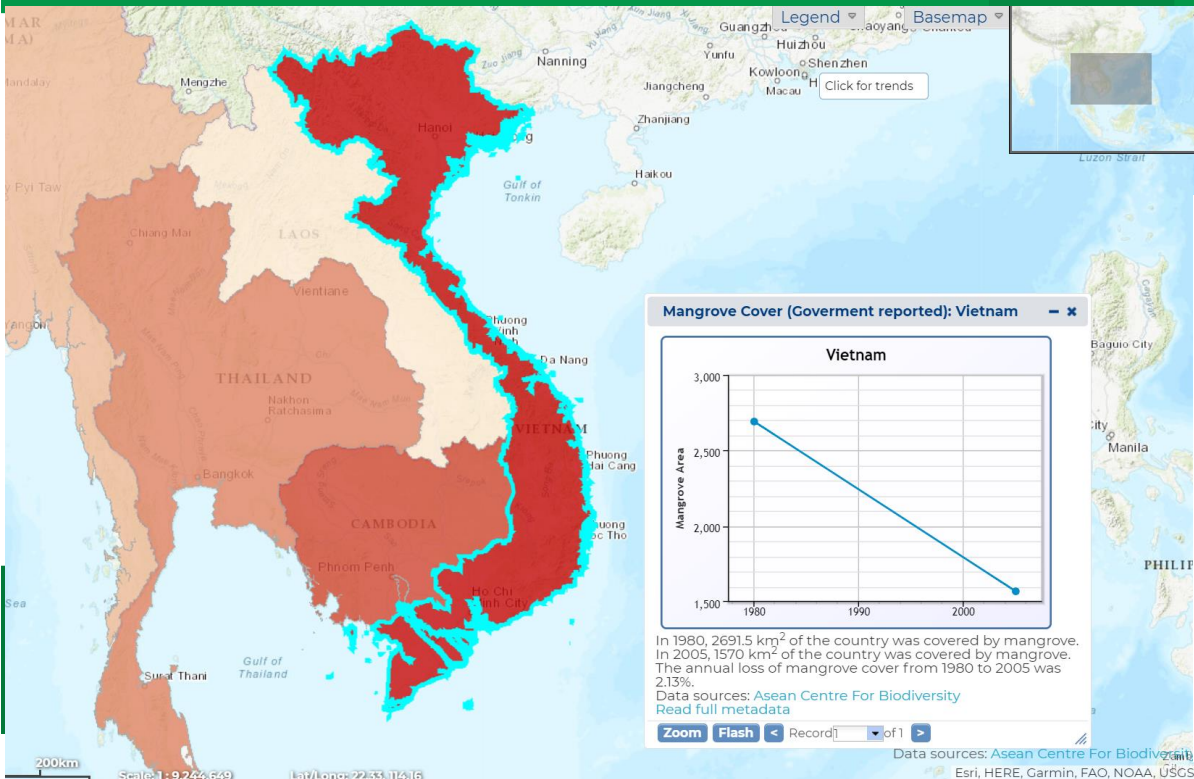
Viet Nam Biodiversity

National Clearing-House Mechanism Demonstration Website

Search ...



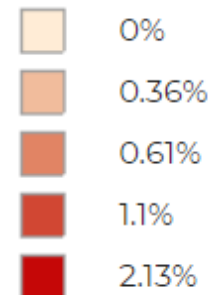
HOME ABOUT US BIODIVERSITY IMPLEMENTATION INFORMATION VISUALIZATION



Mangrove cover (Government reported)



Annual Loss of Mangrove Cover (1980-2005)



Providing visualization in Bioland



Indonesia Biodiversity

National Clearing-House Mechanism Demonstration Website

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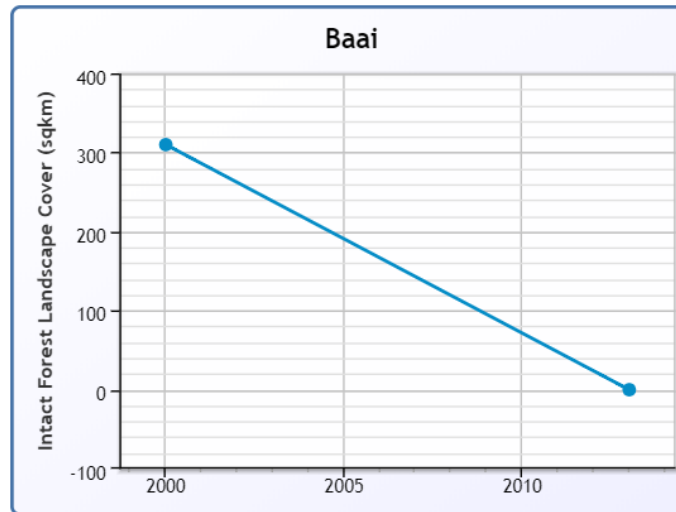


HOME ABOUT US BIODIVERSITY IMPLEMENTATION INFORMATION VISUALIZATION

Intact Forest Landscape Cover

Annual Loss of Intact Forest Cover (2013)

Intact Forest Coverage: Baai



From 2000 to 2013, the extent of intact forests in Baai changed from 310 km² to 0 km², representing a 35.7% annual rate of loss. During that period, 310 km² or 100.0% of intact forest in Baai was lost.

Data sources: [Intact Forest Landscape](#), Potapov et al. 2017

[Read full metadata](#)

Providing visualization in Bioland



Bhutan Biodiversity

National Clearing-House Mechanism Demonstration Website

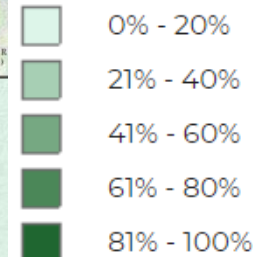
Search ...



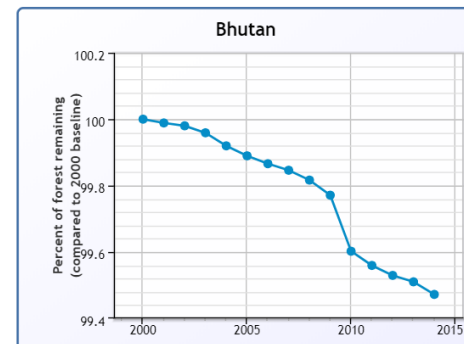
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Forest cover

Forest Cover (2000)

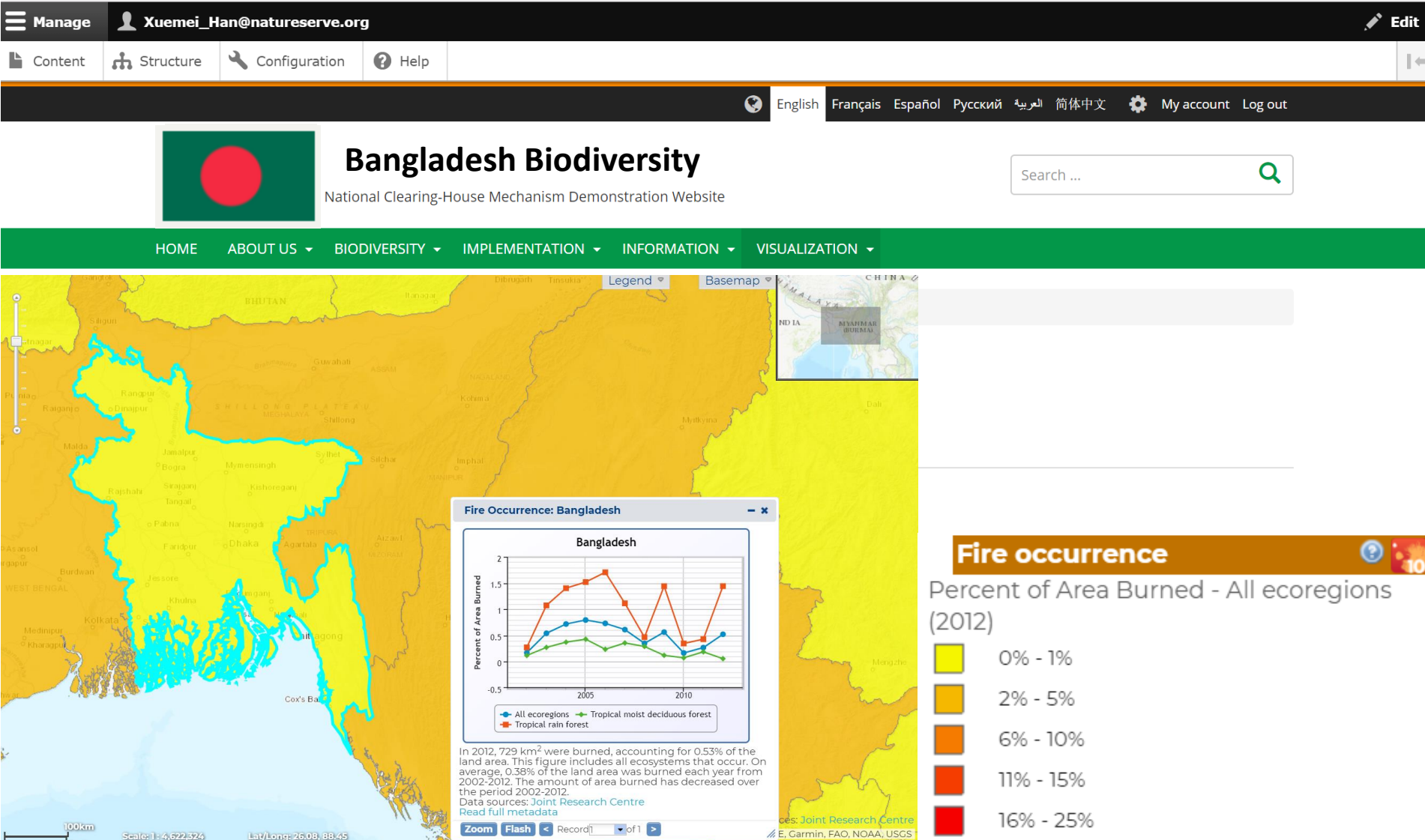


Forest Cover: Bhutan

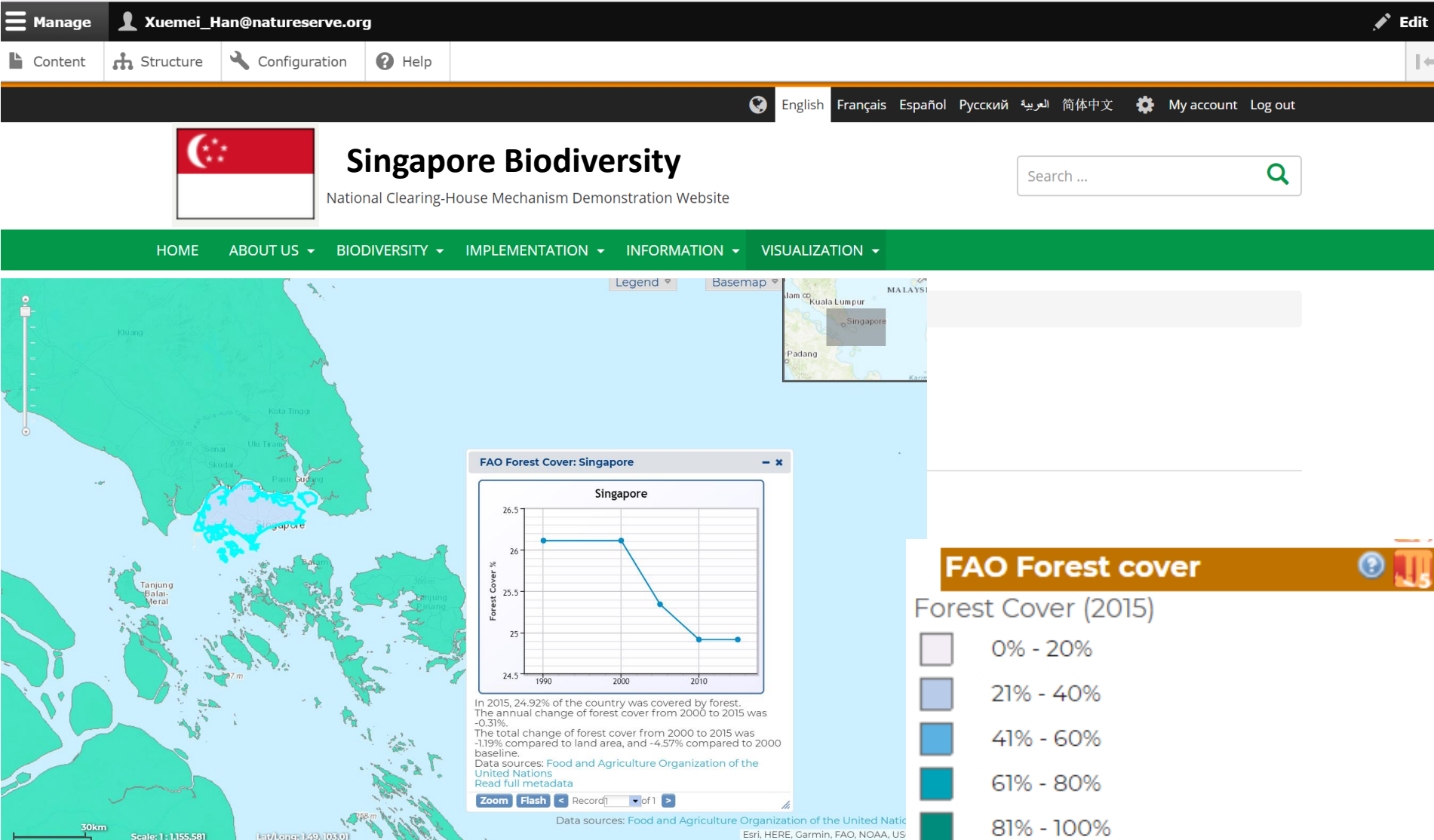


In 2000, 67.54% of the country was covered by forest. The annual loss of forest cover from 2000 to 2014 was 0.04%. The total loss of forest cover from 2000 to 2012 was 0.53%, and the total gain of forest cover from 2000 to 2014 was 0.08%, compared to 2000 baseline.
Data sources: [University of Maryland](#)
[Read full metadata](#)

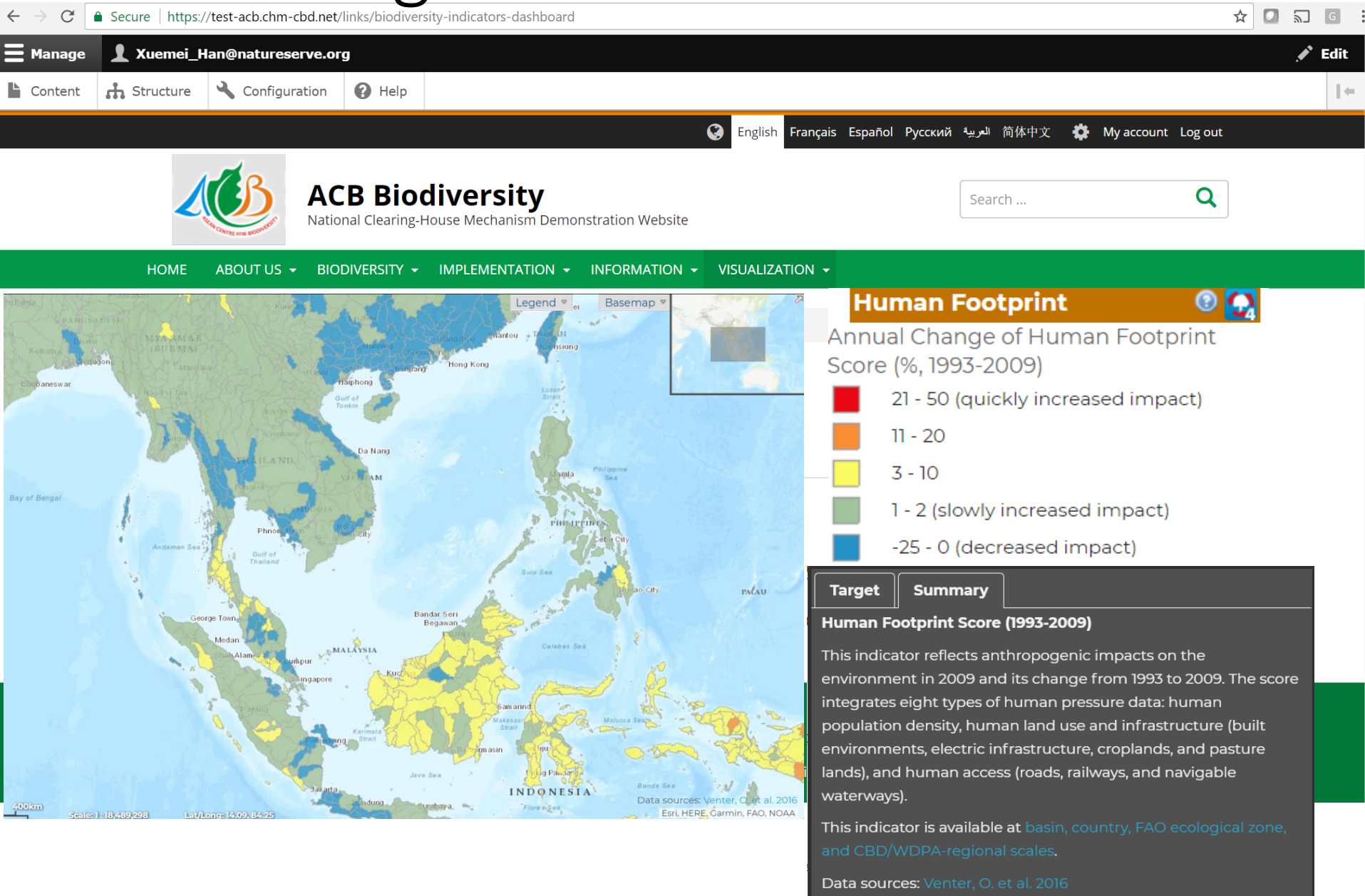
Providing visualization in Bioland



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Xuemei_Han@natureserve.org

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ACB Biodiversity

National Clearing-House Mechanism Demonstration Website

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Dhaka

Kolkata

Bay of Bengal

Hyderabad

Chennai

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SRI LANKA

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Kuala Lumpur

MAINTAINIA

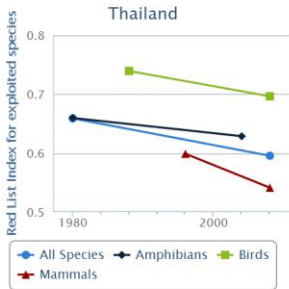
Manila

PHILIPPINES

Back

Greater Mekong : Thailand

Thailand



Year	All Species	Amphibians	Birds	Mammals
1980	0.66	0.66	0.74	0.66
2004	0.63	0.63	0.70	0.60
2008	0.60	0.60	0.70	0.54

The Red List Index for all species in 2008 was 0.60.
The Red List Index for amphibians in 2004 was 0.63.
The Red List Index for birds in 2008 was 0.70.
The Red List Index for mammals in 2008 was 0.54.
The annual change of the Red List Index for all species from 1988 to 2008 was -2.75×0.001 .
The annual change of the Red List Index for amphibians from 1980 to 2004 was -1.29×0.001 .
The annual change of the Red List Index for birds from 1988 to 2008 was -2.15×0.001 .
The annual change of the Red List Index for mammals from 1996 to 2008 was -4.80×0.001 .

Data sources:
[IUCN, IUCN Species Survival Commission, Centre d'Ecologie Fonctionnelle et Evolutive](#)
[Read full metadata](#)

Red List Index for exploited species

Greater Mekong

Annual Change - All Species (x0.001, 1988-2008)

-4.37 (Quick increase of extinction risk)

-3.20

-3.13

-2.75

-2.74

-2.41 (Slow increase of extinction risk)

ocial Media

Facebook

LinkedIn

Opportunity for Supporting CHM in Asia Countries:

Work with ACB to develop and visualize new indicators



Marine Pollution



Funding for
Conservation



Shipping Traffic



Invasive
Species



Pollinators



Bats

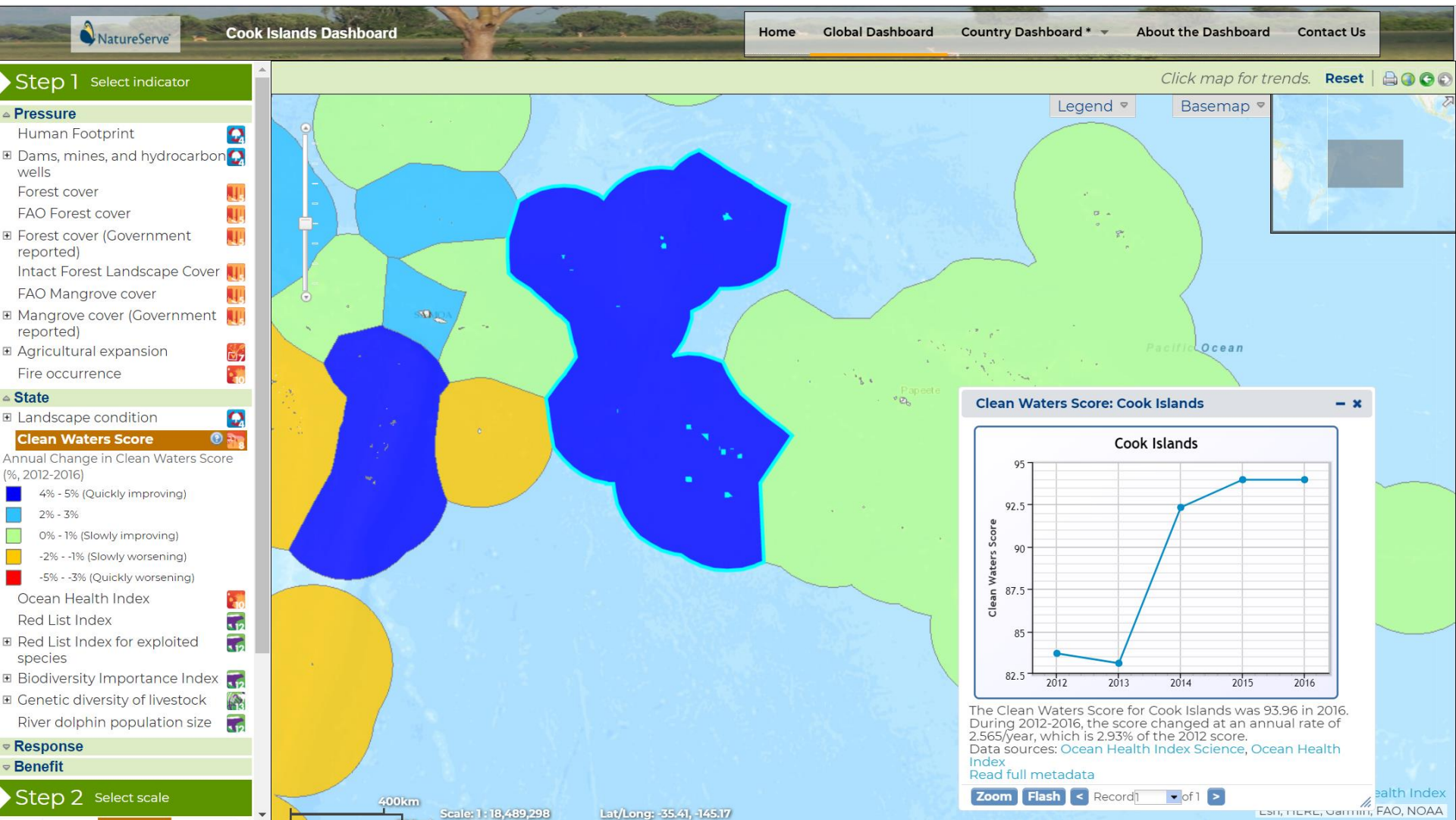


Linguistic Diversity



Climate Exposure

Example: Clean Waters Score



-- Indicator from Ocean Health Index Science

Questions & Discussion

- What additional content and functions can help you use the Dashboard?
 - Region and country specific indicators?
 - Translation?
 - Simplified/customized interface?
 - Others?
- What's the appropriate move to next steps? Identifying potential partnerships...

<http://dashboard.natureserve.org/>

Mike.gill@natureserve.org

Xuemei_han@natureserve.org

Sgvergara@aseanbiodiversity.org

Partners & Collaborators



Partnership for
nature and people



MacArthur
Foundation