Tales of data processing from the frontline – SDG 15.3.1

(and global & national examples of open data projects)

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Unexpected data challenges

- Data analyst team deriving global default data
  - Proportion of degraded land (15.3.1)
  - 2000-2015 baseline period
  - Built on Land Degradation Neutrality data experiences 2016/2017

- Compiled UNCCD analysis & reporting globally (Jan, 2019)
- Compiled SDG 15.3.1 reporting globally (mid 2019)

Unexpected data challenges – default data

- Did you know?
  - There are no fully ‘agreed’ boundaries of the world
  - Nor agreed country/region names (4! lists so far...)
  - Data projection for area calculations ...

  - Territory is not as settled as you think
    - Some countries claim sea/water territory as land territory MUST be in accounts
    - Some countries ‘forgot’ some of their territories
    - Some counties ‘exaggerate’ their territories
    - Some countries claim the same territory

Unexpected data challenges – why I hate commas

- Then we got the data back ... And had to do the global analysis
- Entry of data was not consistent, collection systems were sub-optimal

- 147,000,00
- 147 000
- 147,000
- 147.000
- 147
- 147,000.00
- 147000
- 147000.0

Unexpected data challenges – integrating country data

- Some countries only partially reported
  - Certain landcover classes, one sub-indicator
  - % degraded that was not based on data (political statement)

- Most countries wanted to use their own data
  - Trends.Earth QGIS was a great help here!
  - Lowered the barrier to spatial account creation (little GIS required)
  - National tailoring is encouraged

- Very important that baseline could be changed
  - Accounts not set in stone

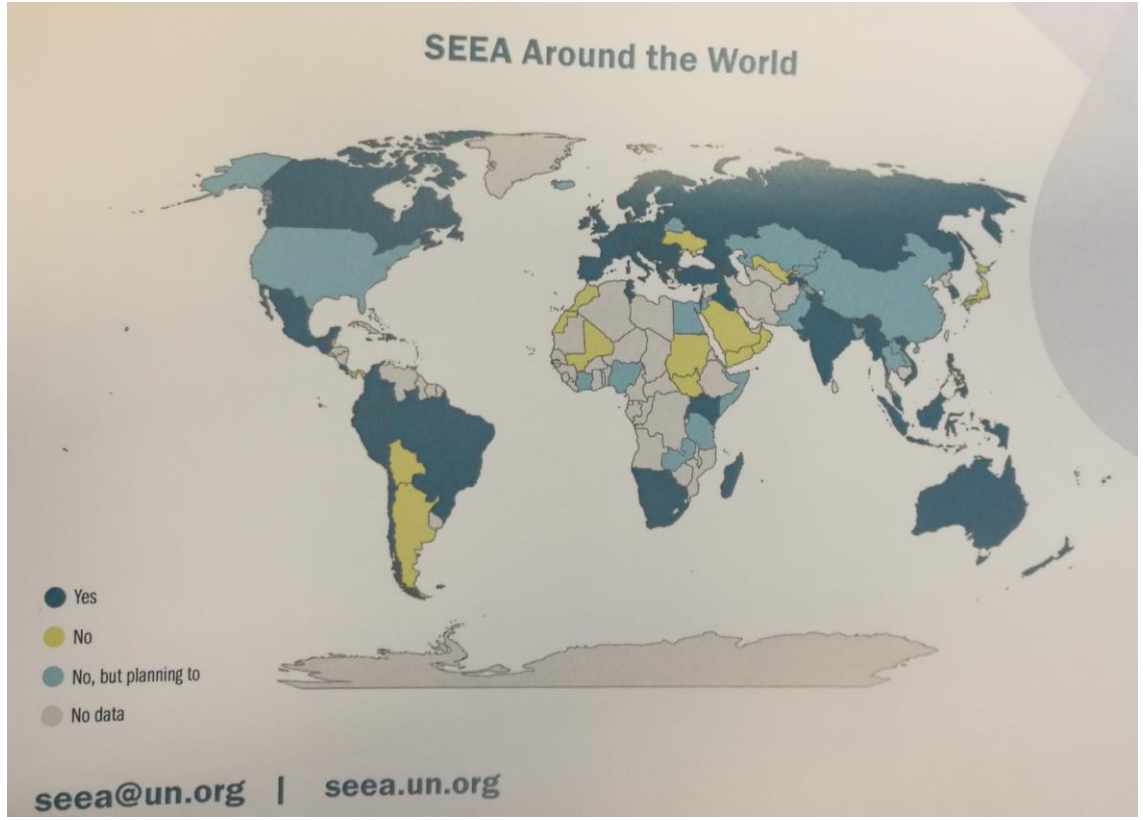
What could SEEA do?

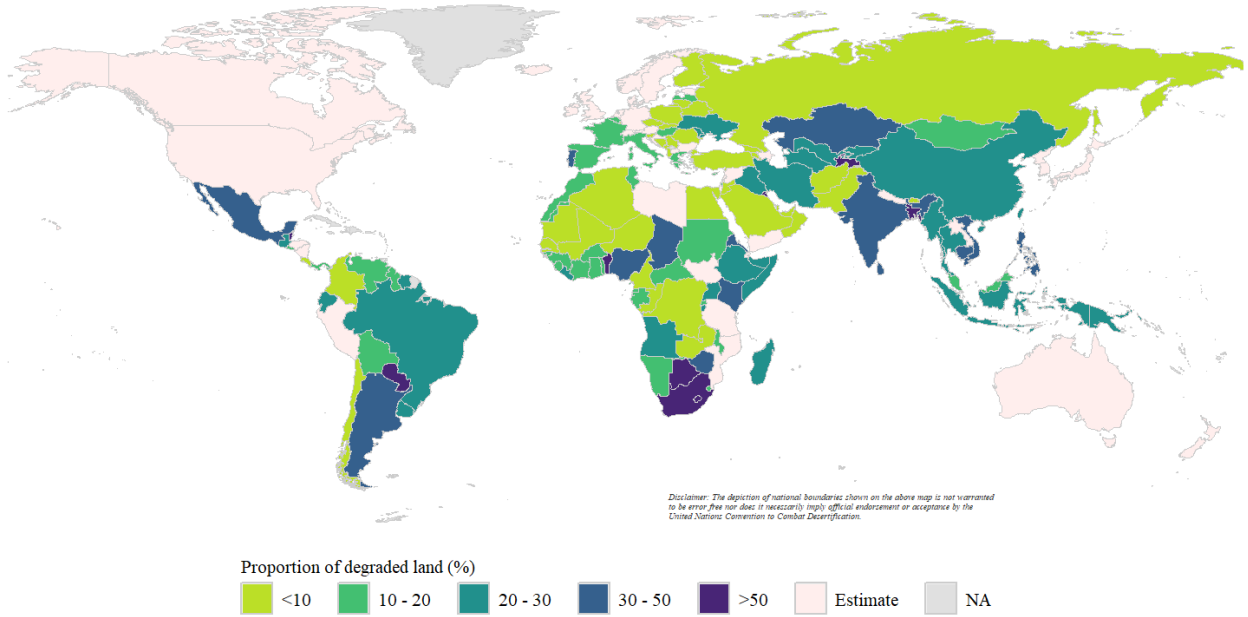
- Help national agencies collaborate/collate data internally
- Consistent data standards
- Handle verification/validation questions
- DECIDE what is degradation/not degradation
  - Need local contextual knowledge

- Please be interoperable in terms of classification
- Don’t be afraid on indexes (they’re really just factors)

Perfection prevents progress

Unexpected data challenges – many SEEA countries missed reporting?





Global data examples

- OpenGeoHub.org
  - OpenGeoHub is a non-profit foundation
    - publishing and sharing of Open Geographical and Geoscientific Data
    - using and developing of Open Source Software
    - championing transparency & reproducibility
- LandGIS
  - OpenGeoHub initiative to publish global open source datasets
  - Full versioning
  - Full user accessibility
  - Collaborative data development
  - No restrictions (except attribution to authors)
  - Demo

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Australia's land ecosystem observatory

NCRIS
National Research Infrastructure for Australia
An Australian Government Initiative

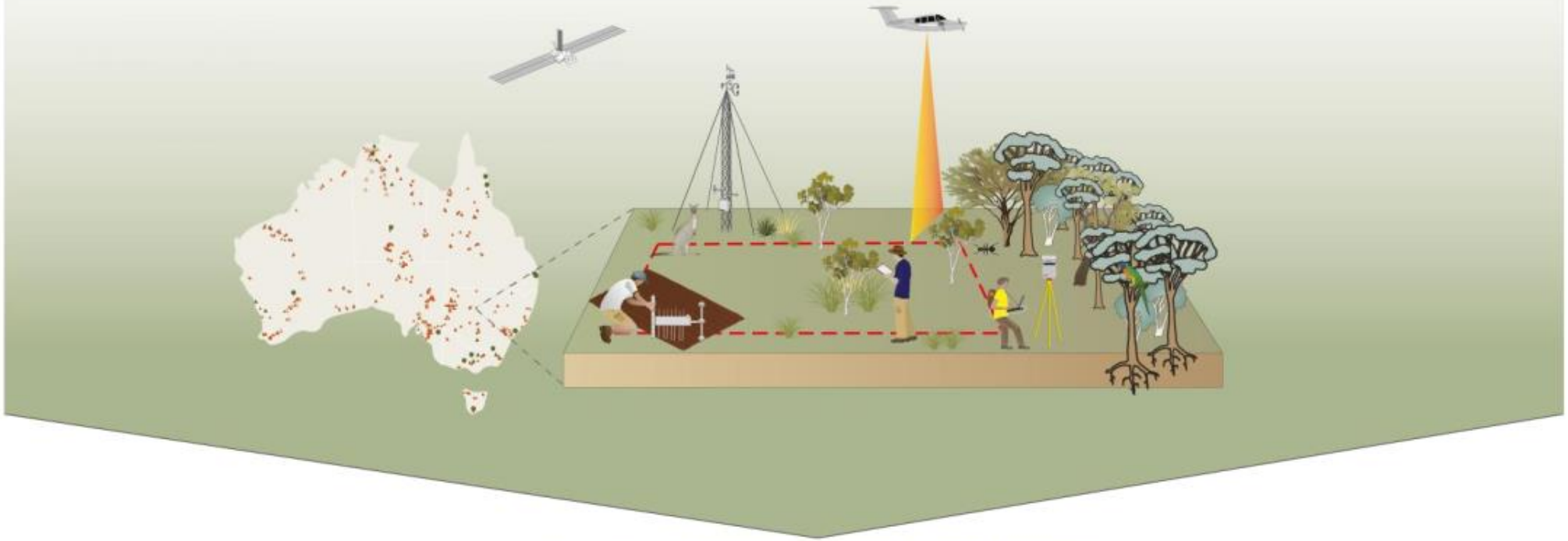
Biodiversity

Land & terrain

Carbon & water

NATIONAL DATA COLLECTION: FIELD, AIRBORNE, AND SATELLITE

TERN's national infrastructure includes on-ground, airborne and satellite data collection with data integration and delivery infrastructure that is designed to deliver information, knowledge and tools that are meaningful at local, regional, continental and global scales.



DATA INTEGRATION, ANALYSIS, AND DELIVERY

more than **600** ecosystem observing sites

more than **2500** open datasets

more than **50** national and international partners

more than **90** year continuity for datasets

more than **1000** peer-reviewed papers using TERN data

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Temporal data streams contributing to achieving SDGs

AUSTRALIA'S MANGROVE OBSERVING SYSTEM

by TERN Australia

https://sdgs.org.au/projects/

Target (Contribute to progress on the Target, not necessarily the Indicator)	Goal	Indicator (Direct measure or indirect support to the Indicator)
1.4, 1.5	1 No poverty	1.4.2
2.3, 2.4, 2.c	2 Zero hunger	2.4.1
3.3, 3.4, 3.9, 3.d	3 Good health and well-being	3.9.1
	4 Quality education	
5.a	5 Gender equality	5.a.1
6.1, 6.3, 6.4, 6.5, 6.6, 6.a, 6.b	6 Clean water and sanitation	6.3.1, 6.3.2, 6.4.2, 6.5.1, 6.6.1
7.2, 7.3, 7.a, 7.b	7 Affordable and clean energy	7.1.1
8.4	8 Decent work and economic growth	
9.1, 9.4, 9.5, 9.a	9 Industry, innovation and infrastructure	9.1.1, 9.4.1
10.6, 10.7, 10.a	10 Reduced inequalities	
11.1, 11.3, 11.4, 11.5, 11.6, 11.7, 11.b, 11.c	11 Sustainable cities and communities	11.1.1, 11.2.1, 11.3.1, 11.6.2, 11.7.1
12.2, 12.4, 12.8, 12.a, 12.b	12 Responsible consumption and production	12.a.1
13.1, 13.2, 13.3, 13.b	13 Climate action	13.1.1
14.1, 14.2, 14.3, 14.4, 14.6, 14.7, 14.a	14 Life below water	14.3.1, 14.4.1, 14.5.1
15.1, 15.2, 15.3, 15.4, 15.5, 15.7, 15.8, 15.9	15 Life on land	15.1.1, 15.2.1, 15.3.1, 15.4.1, 15.4.2
16.8	16 Peace, justice and strong institutions	
17.2, 17.3, 17.6, 17.7, 17.8, 17.9, 17.16, 17.17, 17.18	17 Partnerships for the goals	17.6.1, 17.18.1

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Courtesy: Dr Alex Held

Australia's Environmental Explorer – Ausenv.online

- There is a lot of spatial environmental data out there.
- Working with those large data sets is not easy.
- You often need specialists to summarise or interpret the data for you,
- ..but that can take years, and the information will have become less relevant.

- Our objective: automated, systematic, annual, and nation-wide environmental analysis and summary reporting.

Van Dijk et al. (2014) *Science of the Total Environment* 473: 338-349

Themes and Indicators

- 6 Themes
- 13 Indicators

- pragmatic selection of biophysical and vegetation indicators
- scope for additional indicators
- limited by spatial observation and estimation methods

Land cover change

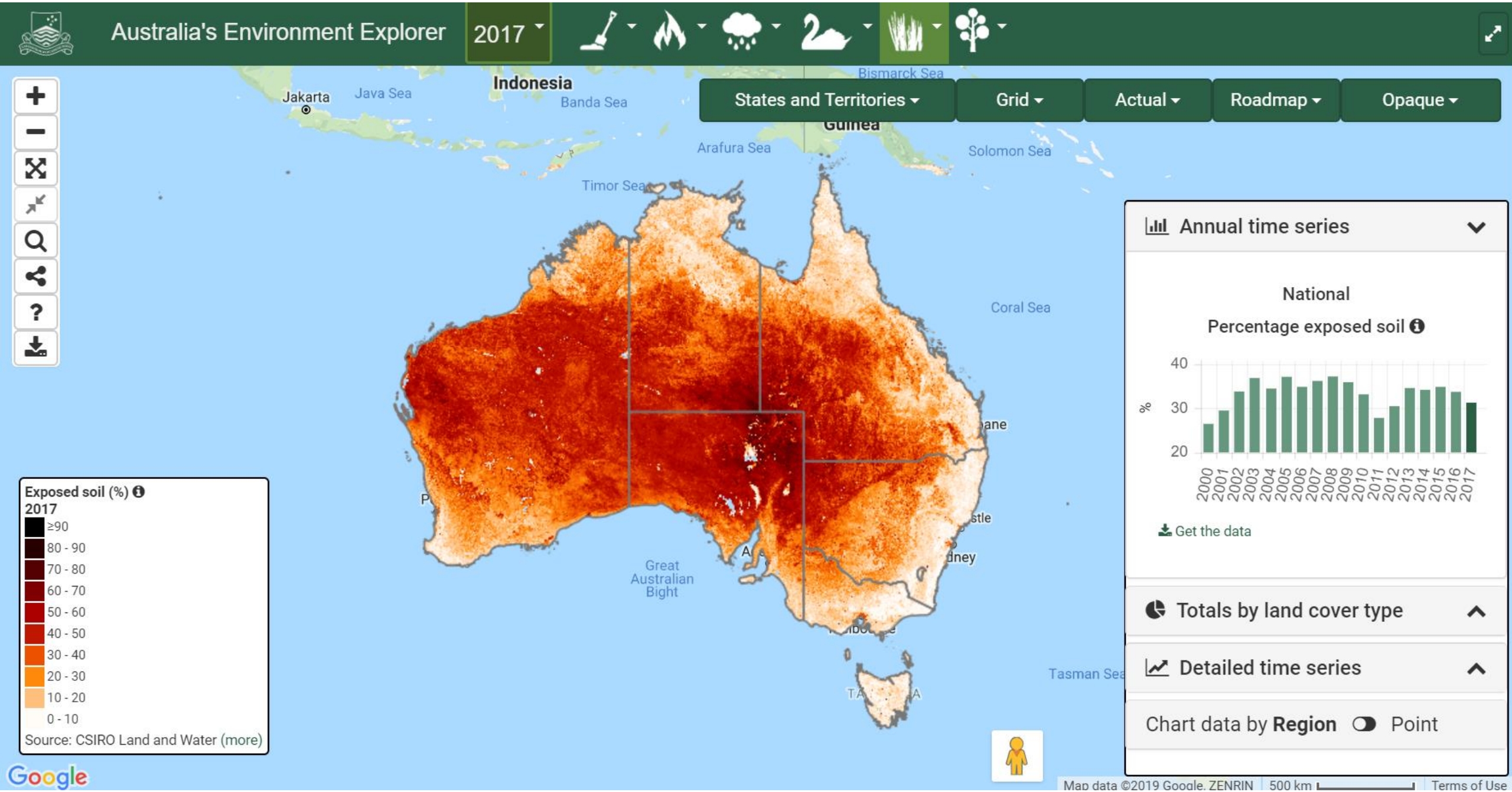
Bushfire

Water availability

Rivers and wetlands

Landscape condition

Carbon storage


Australia's Environment Explorer
2017
States and Territories
Grid
Actual
Roadmap
Opaque
Indonesia
Jakarta
Java Sea
Banda Sea
Arafura Sea
Timor Sea
Bismarck Sea
Solomon Sea
Coral Sea
Tasman Sea
Great Australian Bight
Exposed soil (%)
2017
≥90
80 - 90
70 - 80
60 - 70
50 - 60
40 - 50
30 - 40
20 - 30
10 - 20
0 - 10
Source: CSIRO Land and Water (more)
Annual time series
National
Percentage exposed soil
40
30
20
%
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
Get the data
Totals by land cover type
Detailed time series
Chart data by Region
Point
Google
Map data ©2019 Google, ZENRIN
500 km
Terms of Use