



**GEO-LDN**

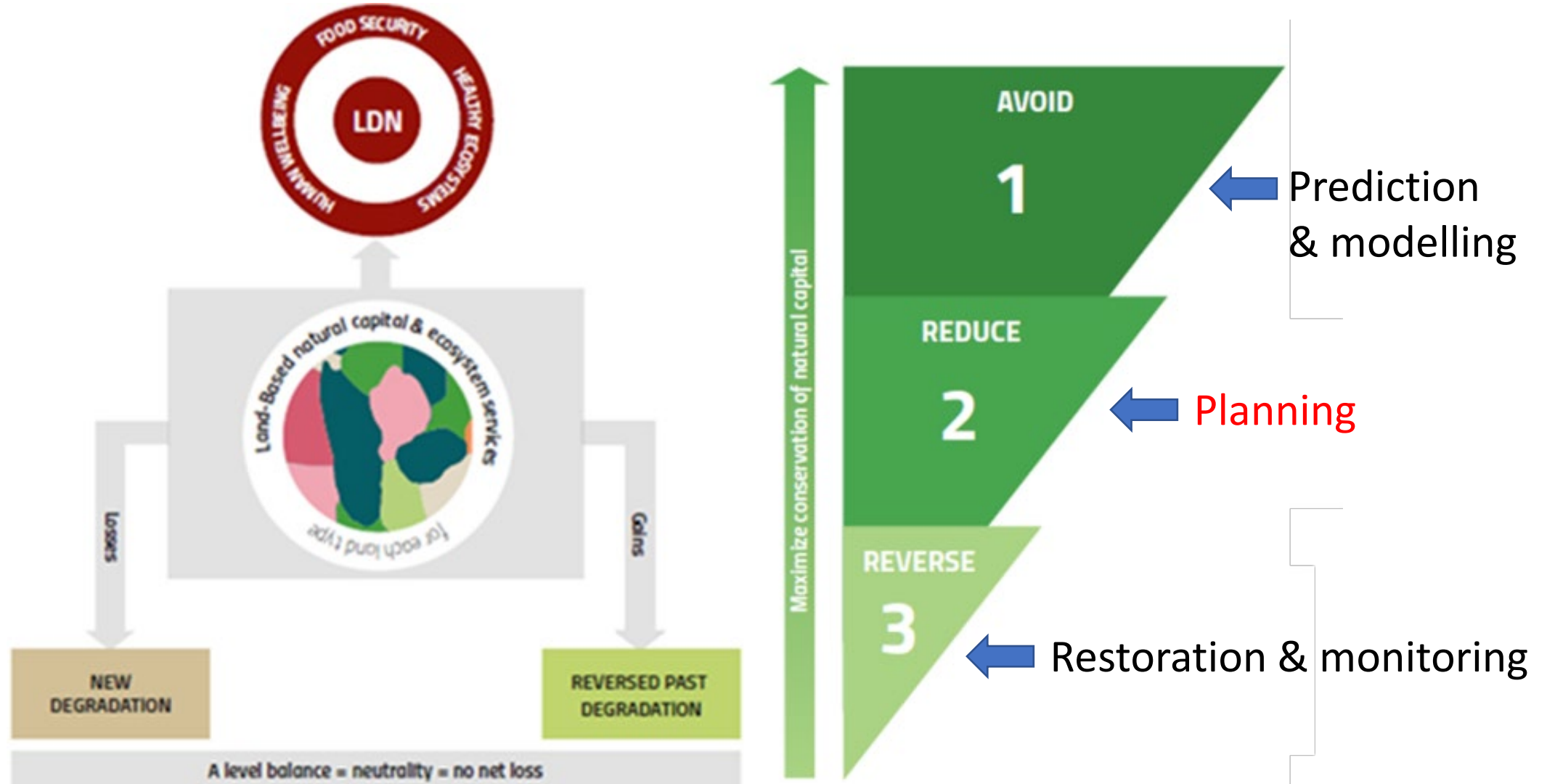
The Group on Earth Observations

Land Degradation Neutrality Initiative

# Data analytics strategy for the GEO Land Degradation Neutrality Initiative

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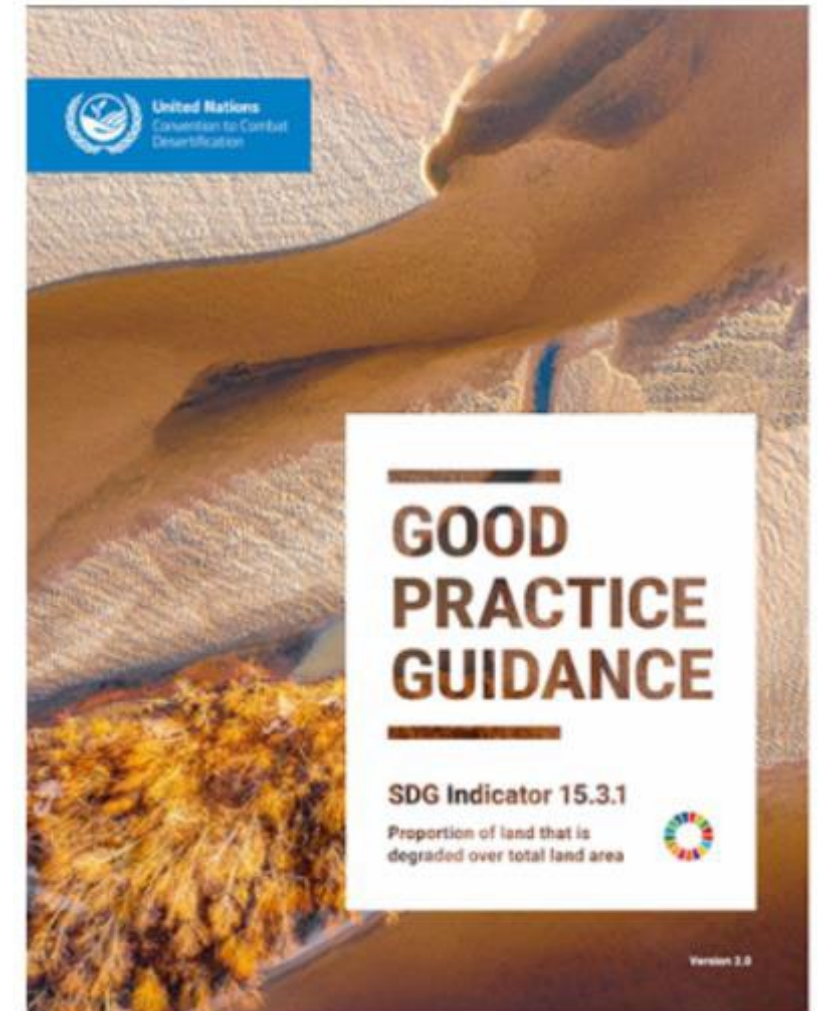
# Land Degradation Neutrality (LDN)



# GPG v2 for SDG Indicator 15.3.1



- Released September 2021
- <https://www.unccd.int/publications/good-practice-guidance-sdg-indicator-1531-proportion-land-degraded-over-total-land>
- Updated analytics
- New guidance
  - Recalculating the baseline
  - Degradation magnitude
  - Linking to LDN





# Indicator 15.3.1: the proportion of land that is degraded over total land area



One-Out-All-Out

Support Class	Sub indicator			Indicator
	Land cover	Productivity	SOC	Degraded
1	Y	Y	Y	Y
2	Y	Y	N	Y
3	Y	N	Y	Y
4	Y	N	N	Y
5	N	Y	Y	Y
6	N	Y	N	Y
7	N	N	Y	Y
8	N	N	N	N

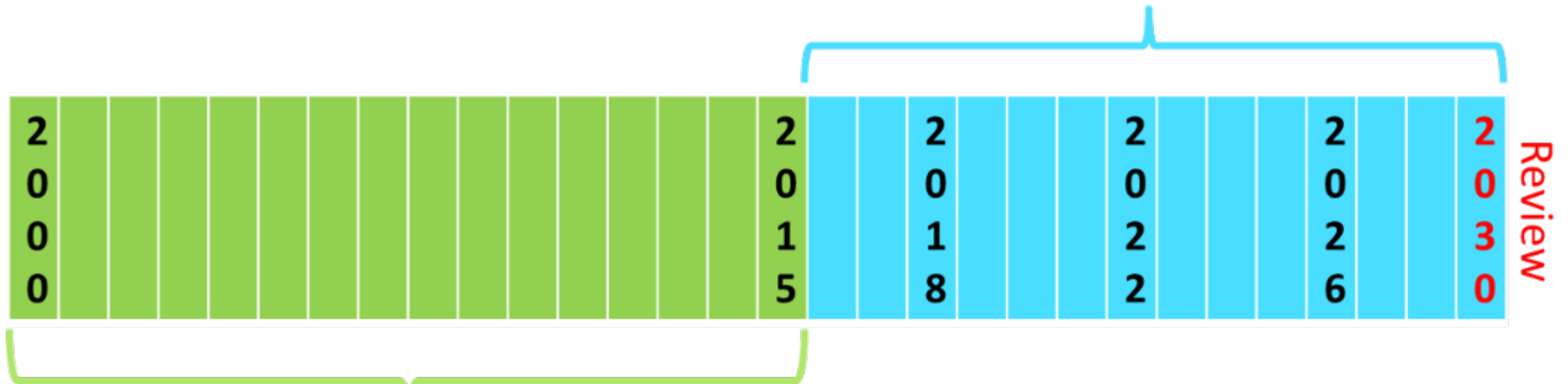


Adapted from: <https://knowledge.unccd.int/sites/default/files/inline-images/SDG%205.3%20framework.png>

# Degradation is a change over time



## Reporting



# Datasets: Default global



Sub-indicator	Default data provided for 2018 reporting	Alternatives
<b>Land Cover</b>	<b>ESA-CCI-LC</b> <sup>43</sup> 300m annual global from 1992 to 2019	<b>Copernicus CGLS-LC100 (Collection 3)</b> <sup>44</sup> 100m annual global from 2015 to 2019
<b>Land productivity</b>	<b>JRC Land Productivity Dynamics (LPD)</b> <sup>45</sup> 1km annual global from 1999-2013	<b>MODIS vegetation index (MOD31Q1, MYD13Q1)</b> <sup>46</sup> 250 m global, 16-day integration period since 2000 <b>Copernicus Global Land Service NDVI</b> , <sup>47</sup> 1km annual global since 1998.
<b>SOC</b>	<b>ISRIC SoilGrids250m</b> <sup>48</sup> 250 m global spatial predictions for selected soil properties at six standard depths	<b>ISRIC SoilGrids250m version 2</b> (de Sousa et al. 2020), updated global product at 250 m spatial resolution with spatial uncertainty. <b>FAO Global Soil Organic Carbon Map</b> <sup>49</sup> , global and national maps of SOC stocks at 1 km spatial resolution; latest version 2019.  * <a href="https://soilsrevealed.org/">https://soilsrevealed.org/</a>

# Datasets: Key data needs

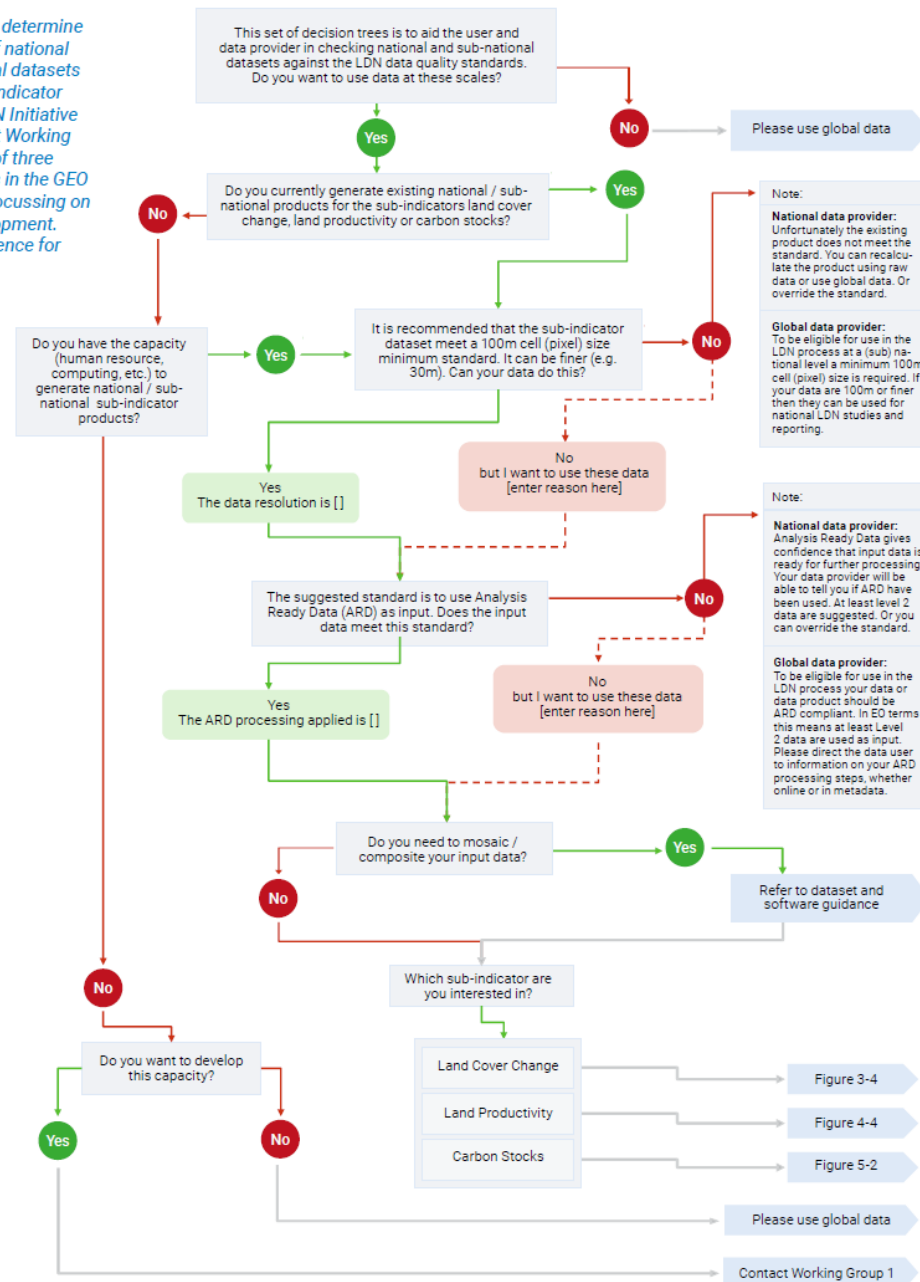


- Consistent high-resolution baseline products from 2000 to present
  - Data blending?
  - NPP
  - Land cover
- C stocks above and below ground
  - Replace SOC placeholder
- Datasets for specific geographies (Decision trees)
  - Small islands
  - Mountainous regions
  - Coverage shadows (data providers)

# Standards: Data quality

- Identify suitability of national and/or new datasets for reporting Indicator 15.3.1

**Figure 2-2**  
Decision tree to determine the suitability of national and sub-national datasets for calculating Indicator 15.3.1 (GEO-LDN Initiative 2020). Note that Working Group 1 is one of three Working Groups in the GEO LDN Initiative, focussing on Capacity Development. See link in reference for more details).





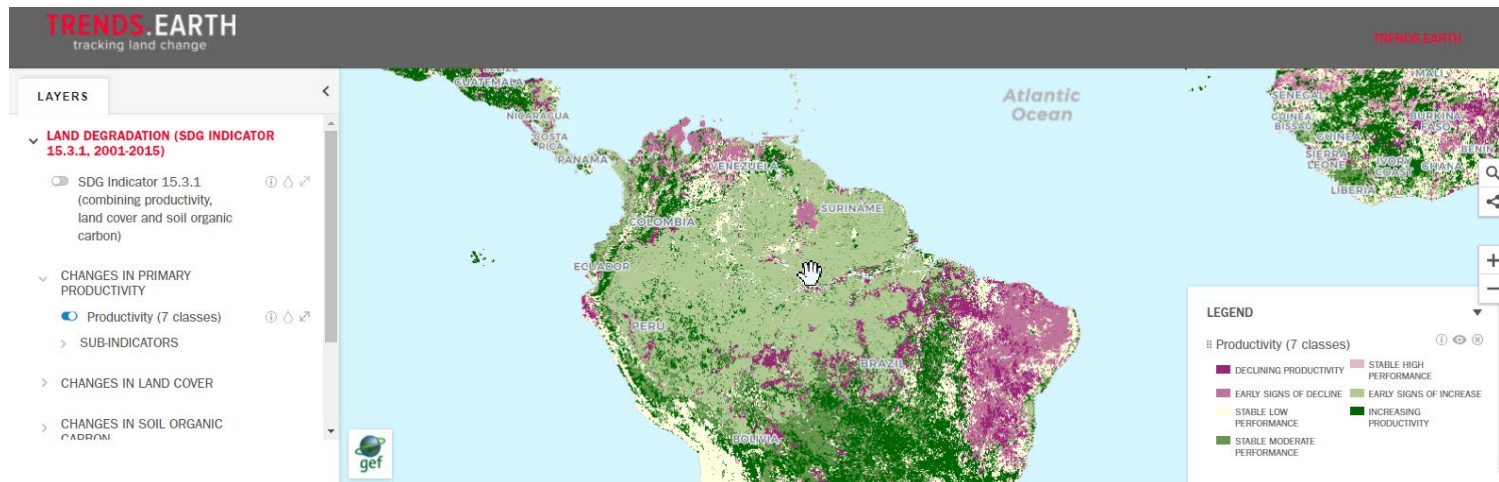
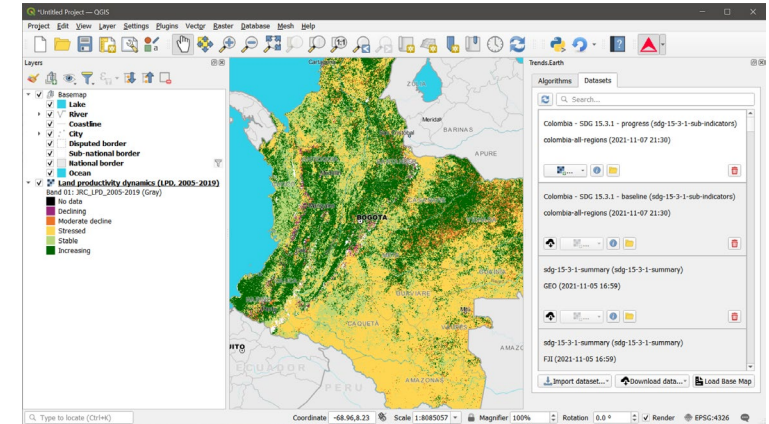
# Tools: Measuring Land Degradation



LAND DEGRADATION NEUTRALITY

## TRENDS.EARTH

- Free and open-source
- Focused on desertification, land degradation, and drought
- Implements GPG v2 methods
- Links to default datasets (and others)
- Links to UNCCD reporting portal



(<http://trends.earth/docs/en/>)

Area (sq km)		Percent of total land area			
Total land area:				1,119,715.5	100.00%
Land area with improved productivity:		194,973.5	17.41%		
Land area with stable productivity:		682,744.8	60.97%		
Land area with degraded productivity:		241,452.1	21.56%		
Land area with no data for productivity:		545.2	0.05%		

baseline year	Land cover type in target year							Total
	Tree-covered areas	Grasslands	Croplands	Wetlands	Artificial areas	Other lands	Water bodies	
2000	43,449.60	376.69	108.74	3.38	1.65	0.06	0.00	43,940.12
2018	2,289.67	124,214.54	224.03	4.23	11.34	5.11	0.00	126,748.94

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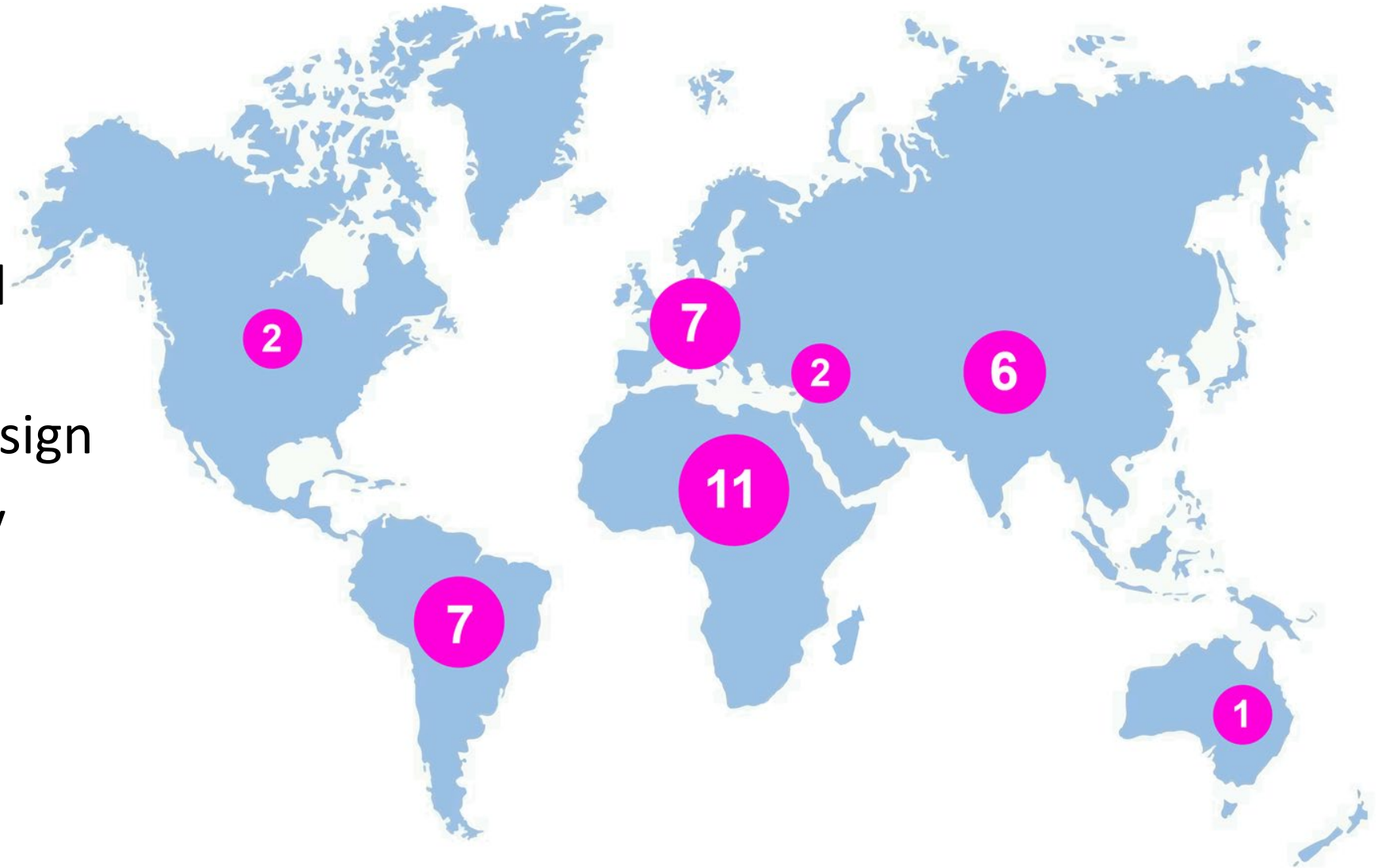


CONSERVATION INTERNATIONAL



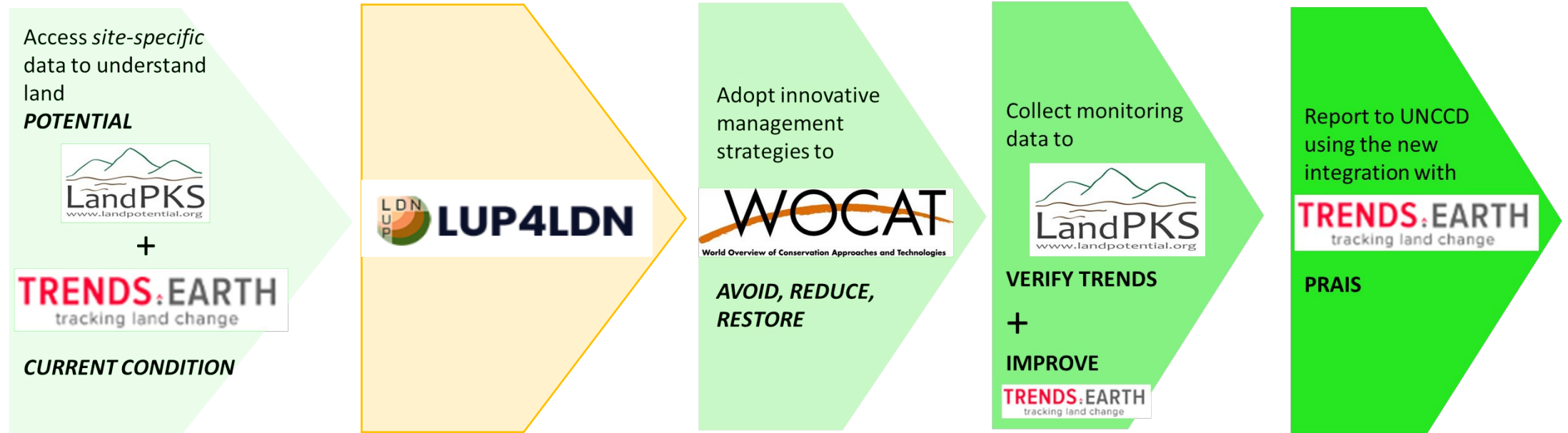
# Tools: Land Use Planning

- 23 Teams
- 36 Countries
- Every inhabited continent
- User centric design
- Interoperability





# Interoperability

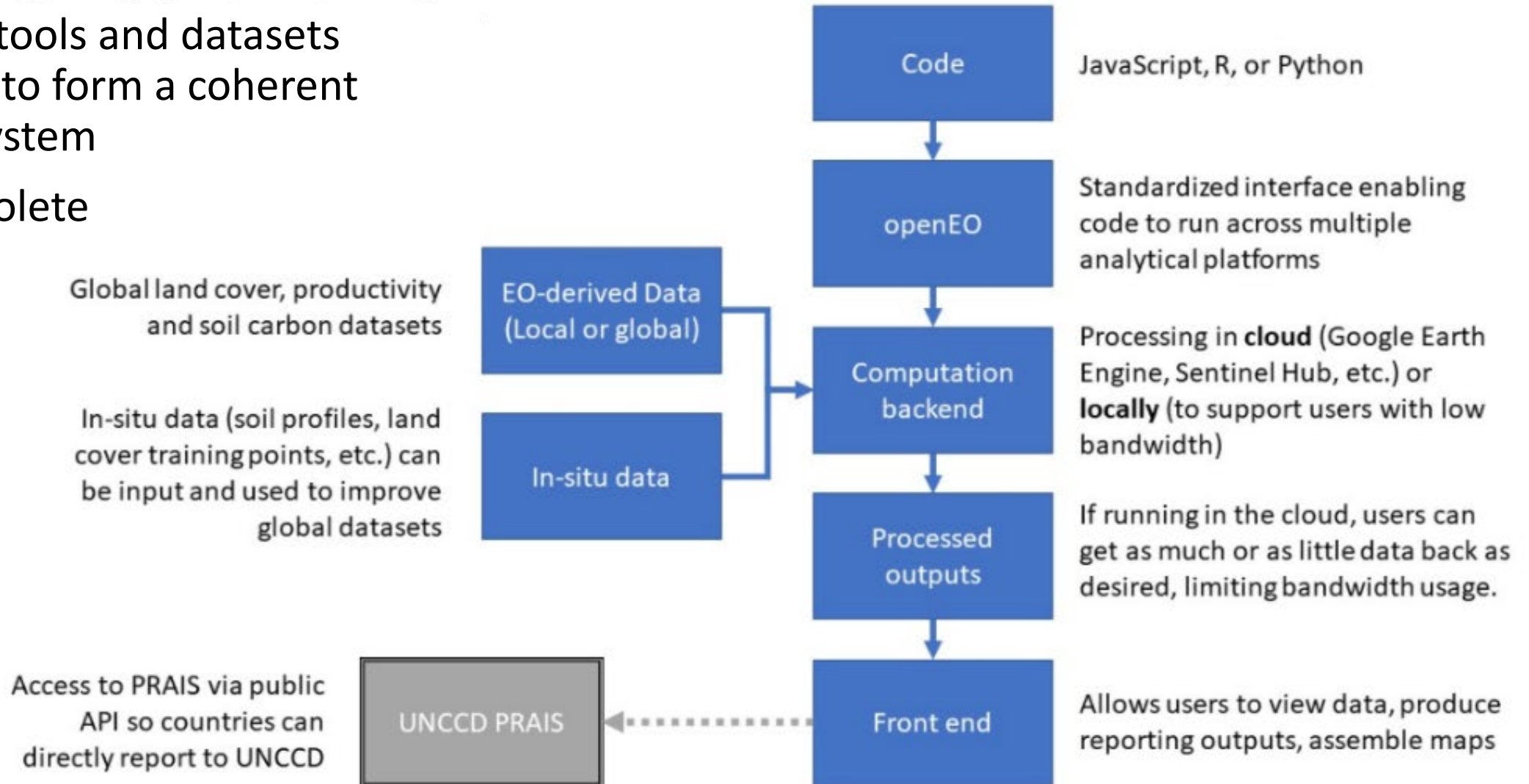


*Adapted from Zvoleff et al., 2022 (UNCCD COP presentation)*



# DAP v1: Federated

- Drawing tools and datasets together to form a coherent overall system
- Now obsolete

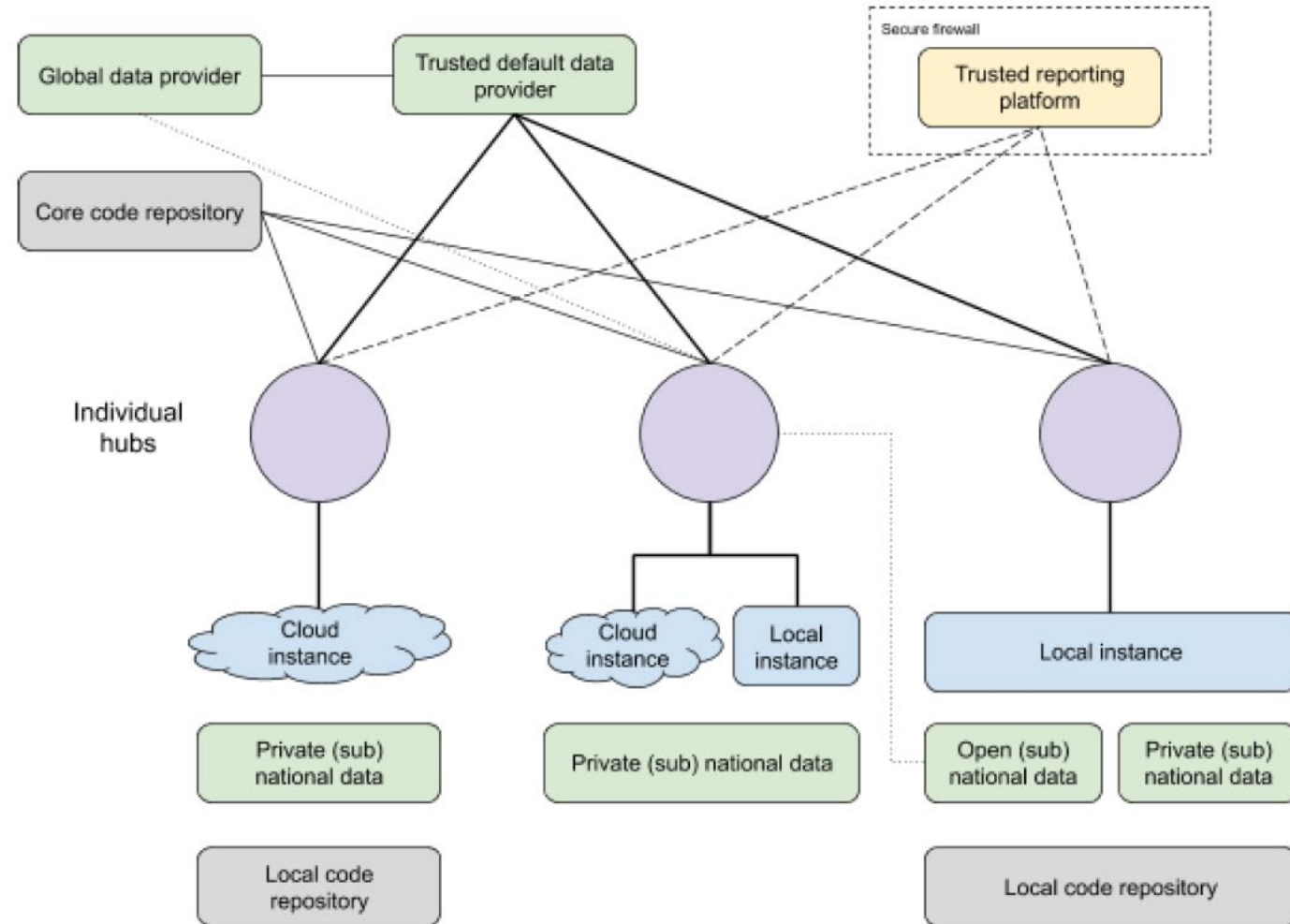
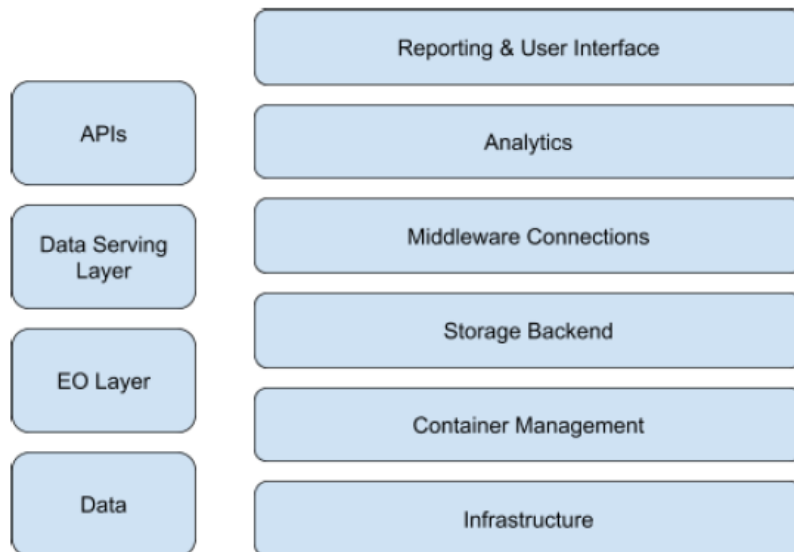




# DAP v2: Collaborative open source



- Support interoperability of tools and datasets
- Technical, data quality and content standards
- Facilitate development of datasets and tools where necessary



# Data Analytics Strategy



- Evolving
  - ‘Federated’, interoperable, collection, links, maintenance etc.
  - Support Capacity Development activities
- Review of existing and emerging standards, datasets & tools
  - Alastair Graham (Geoger, 2020)
  - Pointers to aligned tools and key design elements
  - Rapidly developing area
- GEOSS review
- BMZ funding, GLZ implementation support

# WE NEED YOU



**LAND  
DEGRADATION  
NEUTRALITY**

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