



Bridging EO capacities and country needs
for informed decisions to reach
Land Degradation Neutrality

Bernd Eversmann
GEO-LDN / GIZ

ESA Symposium on Earth Observation for Soil Protection and Restoration

GEO-LDN and its mandate from UNCCD



United Nations
Convention to Combat
Desertification

mandates



**GROUP ON
EARTH OBSERVATIONS**

established



**LAND
DEGRADATION
NEUTRALITY**

Decision 9/COP.13: The COP “Invites the Group on Earth Observation to **support** the efforts of **Parties** to the United Nations Convention to Combat Desertification in **implementing the Convention** by providing space-based information and in situ measurements to assist countries in **fulfilling the reporting requirements** for Sustainable Development Goal indicator 15.3.1 and fostering data access, national data capacity-building and the development of standards and protocols”

Primary mandate on **reporting**, via Decision 9/COP.13

Periodically reinforced via decisions at COP14 and COP15, which go beyond reporting into **using Earth observations to inform decision making and planning to reach LDN.**

GEO-LDN – A global network



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How GEO-LDN supports UNCCD parties

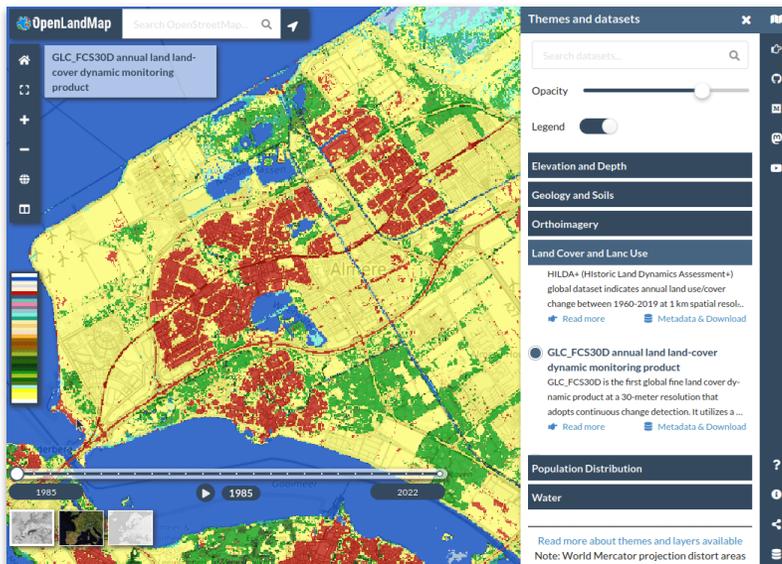
- **Human capacity:** trained experts who can help countries to make sense of the data
 - Webinars, trainings, e-learnings, post-graduate LDN studies at UENR in Ghana
 - Establishing a LDN helpdesk
- **Working with partner countries** globally who want to implement their voluntary LDN targets
- **Development of improved datasets** for the next reporting cycle



Country teams from Senegal and Brazil working on their LDN roadmap during the GEO-LDN Dialogue Forum in South Africa

Actionable data needs and emerging datasets

- **Technologies, computing resources:** available imagery, crowd-sourcing for validation, machine learning, cloud computing and file formats like CoG, accessibility of datasets through STAC)
- **Combination of data sources** (Denser in-situ sampling point networks, imagery, ML) enables better mapping and modeling of SOC over time



Soon to be published: There is **enough public data to produce SOC maps at up to 30 m resolution**, and for various periods e.g. 2000–2005, 2005–2010, 2010–2015, 2015–2020, ...



scikit map



Key messages



- Global SOC datasets do not yet meet the **requirements of countries** (especially for some regional geographies), but solutions are emerging
- **“Frontier” technologies** like AI, together with new datasets (satellite + in situ) show promise for filling gaps in space and time and will result in global datasets with higher resolution and less uncertainty
- Increased and additional technical and financial **support for soil data inventories** is needed. There would be a significant return on investment for this kind of work (inventory requirements of the UNFCCC, carbon credits based on SOC data).

Thank you



LinkedIn



X



Bernd Eversmann

bernd.eversmann@giz.de