

Background

The 47th session of the UNSC approved a draft global indicator framework -- follow-up and review of progress towards the SDGs at the global level.

The sole indicator for SDG target 15.3, is the “**Proportion of land that is degraded over total land area**” (referred to as SDG indicator 15.3.1).

The three sub-indicators proposed by the UNCCD and its key partners -- now the Inter-Agency Advisory Group (IAAG) on SDG indicator 15.3.1 – to derive indicator 15.3.1. are focused on changes in:

- i) land cover,
- ii) land productivity,
- iii) carbon stocks, above and below ground.





Three Sub-Indicators

- provide good coverage of land-based natural capital and ecosystem services; they address changes in different yet highly relevant ways:
 - **land cover** can provide a first indication of a reduction or increase in vegetation,
 - **land productivity** tends to capture relatively fast changes in “greenness” while
 - **carbon stocks** reflects slower changes in the health or condition of land resources.
- represent a minimum that should be **complemented and enhanced by national (or sub-national) indicators** for a more accurate picture of land degradation.



Coherence with Essential Variables

Among the 50 **Essential Climate Variables** (GCOS) recognized by the UNFCCC, there are 16 for terrestrial ecosystems, including:

- Land cover (including vegetation type),
- Productivity,
- Above-ground biomass,
- Soil carbon

Candidates for **Essential Biodiversity Variables** (GEO BON), being considered under the CBD process, include:

- Net Primary Productivity,
- Ecosystem extent and fragmentation,
- Ecosystem composition by functional type



Land Cover

Land cover is a fundamental land surface parameter that assists with the interpretation and stratification of the other two sub-indicators as well as other SDG indicators (such as those for targets 15.2 and 2.4).

One challenge is how to measure and monitor to generate a strong baseline at **meaningful repeat cycles**; emerging technologies and multi-temporal data capacities.

Most often derived from Earth observation, this sub-indicator requires geospatial mapping of land cover classes using comparable methodologies at regular time intervals.

Recognize the existence (and value) of national data as well



Land Cover Change is not the same as Land Degradation

Changes in land cover can provide a first indication of a reduction or increase in vegetation, habitat fragmentation and land transition.



The challenge is develop a cross-tabulation between classes to characterize those changes that equate with degradation.



This will be addressed as part of the Good Practice Guidance for this sub-indicator which will also look at:



the importance of national inventories; the need to assess and clarify concepts, notions and definitions; and consistency with the development of other indicators.





Use of a Common Ontology

The IAAG is proposing the use of a common ontology (i.e. the formal naming and definition of the types, properties, and interrelationships) to be used to enable global comparisons such as the FAO's Land Cover Meta Language (LCML).

The following table is currently being considered to determine a common reference classification.

- IPCC land use categories (2006)
- System of Environmental-Economic Accounting (SEEA)
- FAO Global Land Cover (GLC-SHARE)



IPCC	SEEA	GLC-SHARE
Forest Land	Forest tree cover	Tree covered areas
Grassland	Pasture and natural grassland Shrubland, bushland, heathland Sparsely vegetated areas Natural vegetation associations and mosaics	Grassland Shrubs Covered Areas Sparse vegetation
Cropland	Medium to large fields of rain-fed herbaceous cropland Medium to large fields of irrigated herbaceous cropland Permanent crops, agriculture plantations Agriculture associations and mosaics	Cropland
Wetlands	Open wetlands	Herbaceous vegetation, aquatic or regularly flooded Mangroves
Settlements	Urban and associated developed areas	Artificial Surfaces
Other Land	Barren land Permanent snow and glaciers	Baresoil Snow and glaciers
	Inland water bodies Coastland Water bodies Sea	Water bodies



Evaluating Changes in Land Cover

In the spirit of the SDGs, it is ultimately the responsibility of national authorities to characterize changes as positive or negative -- contextualized with national or local information



Some critical transitions are generally considered as negative:

- natural or semi-natural land cover to cropland or settlements (i.e. urbanization)
- forest and woodland to other land cover classes (i.e. deforestation)



Good Practice Guidance will be needed to help countries determine whether change is indeed land degradation.



Data Sources

For many countries, national land cover maps are available based on high resolution Landsat or SPOT-5 imagery.

National land cover data are included in the UN-SPIDER database on data sources, which can be filtered by countries. For many African countries, land cover data are available from FAO's Africover project.

The GLC-SHARE model, which is built from best available national data (and retains the country-level degradation classes, land management data, etc.) may be a suitable model method for integrating the national data into global reporting systems.

Other global datasets are also available (e.g., ESA's Climate Change Initiative Land Cover, GlobeLand30)



Issues for Discussion

The UNCCD, in consultation with the IAAG, is currently carrying out an expert consultancy to further refine the methodology and data options in line with the requirements of the IAEG-SDGs and expects to deliver a complete package with the other two sub-indicators in late 2016 or early 2017.

- Reconciling IPCC, SEEA and GLC-SHARE classes (how to make them fit for purpose)
- Guidance for interpreting changes in land cover
- Building national data capacities (most countries will produce only one land cover map)