

2030 Agenda - Sustainable Development Goals

Geospatial components for Indicators – Example for Discussion

Goal: 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Target: 15.1: By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

Indicator: 15.1.1: Forest area as a percentage of total land area

Definition of the indicator: (State the definition of the indicator as well as any suggested computational methods).

“Forest is defined as land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use”.

Indicator disaggregation: (List the indicator disaggregation by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts to support the monitoring of the implementation of the SDGs). *“Disaggregation by geospatial location is embedded in the indicator”.*

Current suggested use of geospatial data for the indicator: (Describe the use of geospatial data, as suggested by the existing metadata – the “as-is” situation). *“When reporting countries are asked to assign a Tier level 1, 2 or 3 indicating the level of detail of data sources used for reporting (where Tier 3 is regarded as the highest level of detail). Typically, Tier 3 estimates are recent data (i.e., less than 10 years ago) from National Forest Inventories (NFIs) or remote sensing, with ground validation or programme for repeated compatible NFIs. Tier 2 are older estimates (i.e., more than 10 years) from NFIs or full cover mapping/remote sensing. Core is any other data sources including expert estimates”.*

Suggested geospatial data integration

GAP analysis: (Describe what changes in use of data and applied methods are needed to go from the suggested/current procedure for monitoring the indicator, to a future procedure which better fulfils the reporting requirements - going from the “as-is” situation in the present metadata proposal to a “to-be” situation). *“Reliable methods for estimating emissions from forest degradation are still lacking. We suggest using a common input source (Sentinel 2) to monitor the world’s forest, thus eliminating the need for a Tier system. This will also standardize reporting methods and create enhanced transparency – building on a close partnership with national forest authorities”.*

List required geospatial data: (Develop a list from the GAP analysis, which lists the geospatial data sources and themes which are required to support the to-be situation). *“Need for high-resolution multispectral imagery (including NIR) for detailed images of land and vegetation, with frequent revisit times to provide frequent images”.*

Data quality requirements: (List in general terms the requirements for the suggested sources and themes with relevant parameters: Resolution, completeness, logical consistency, positional accuracy, temporal accuracy etc. List if certain international standards should be followed. Data quality should allow computing results to the needed level of resolution and disaggregation). *“This indicator requires high repetition rates to acquire large data coverage in short time periods (short repetition cycle), high spatial resolution (10-20m) to assess also forest stands with low canopy closure, 10, 20 and 60m, and high spectral resolution to discriminate between forest and spectrally similar vegetation types”.*

Data availability: (List the data availability: 1) geographically: national/regional/global (as well as comparability across countries), 2) Source: Accessible through services or download, 3) Commercial/legally: license conditions - are data free or are there restriction on use). *“Sentinel data are globally available, downloadable from ESA. Access to Sentinel data is free, full and open for the broad Regional, National, European and International user community. User registration is based on a user account pre-registration, with a dedicated single account per Agreement”.*

Data collection: (Describe how the geospatial data for the indicator can be collected/made available, and issues to overcome – are there many sources to collect from, do they need to be integrated and nominalized etc.). *“Sentinel data access infrastructure for International Agreements (International Agreements Data Hub), can provide access to a rolling on-line archive covering the last month(s) of Sentinels core products, available within their specific timeliness. Furthermore, access to off-line archived data is available on-request”.*

Data interpretation: (Describe which analysis, procedures and computations are needed to provide the results needed to support the reporting requirements (“to-be” situation)). *“Forest cover change assessment procedure: Acquire EO data, site image control and pre-processing, preliminary labeling of objects and changes, verification and adjustments of labels, validation and adding forest and land use dimension”.*

Method of integration: (Describe how the geospatial data are envisaged to be integrated in the monitoring cycles). *“1) A governance structure is agreed nationally and internationally, 2) A global reference data set is created, 3) Monitoring cycles are agreed, 4) Methods for change detection are developed, and the centrally established dataset is revised, 5) An online portal like the Forest Resources Information Management System “FRIMS” is used as channel for interaction between FAO and each national authority”.*

