Statistical-Geospatial Integration Forum

Geospatial Information and Earth Observations: Supporting Official Statistics in Monitoring the SDGs

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UN GGIM: The **U**nited **N**ations Committee of Experts on **G**lobal **G**eospatial **I**nformation **M**anagement

UN-GGIM Task Team on 2030 Sustainable Development Goal Indicators

- Objective: To support the IAEG-SDGs in the development of a global indicator framework
- Members: High-level experts from national governments (Burkina Faso, Mexico, State of Palestine, Ethiopia, Côte d'Ivoire, Brazil, USA, Togo, China, Egypt, Belgium, Australia, Denmark) + ESRI and GSDI
- Work focus:
  - Identify specific geospatial inputs to the further definition of the indicators – methods applied and data sources
  - Focus on tangible results that can conveyed to the IAEG-SDG in a practical manner for the purpose to develop the so-called metadata for the indicators

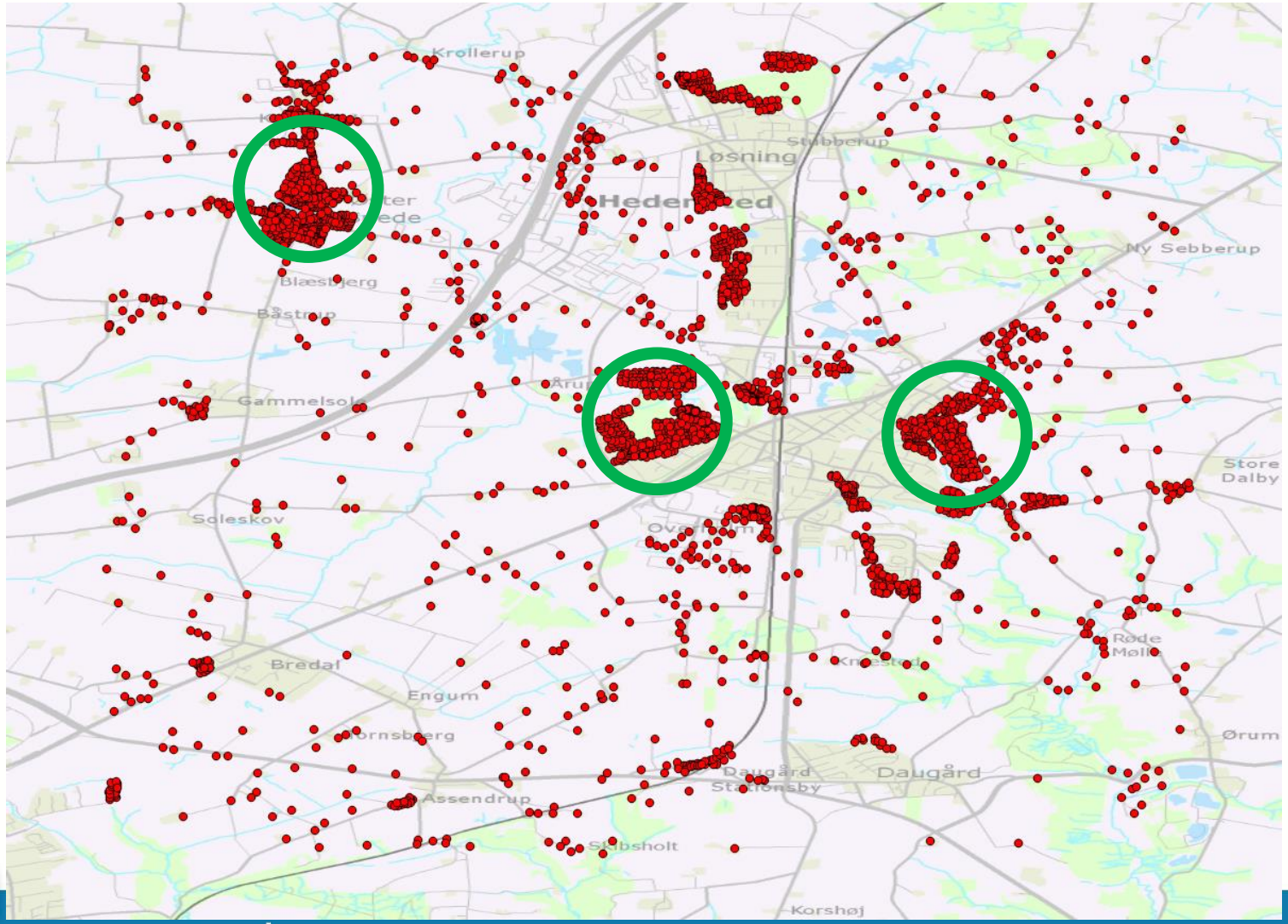
Analysing using geospatial information indicator 11.2.1 example

” Proportion of the population that has convenient access to public transport…”

Data sources needed:

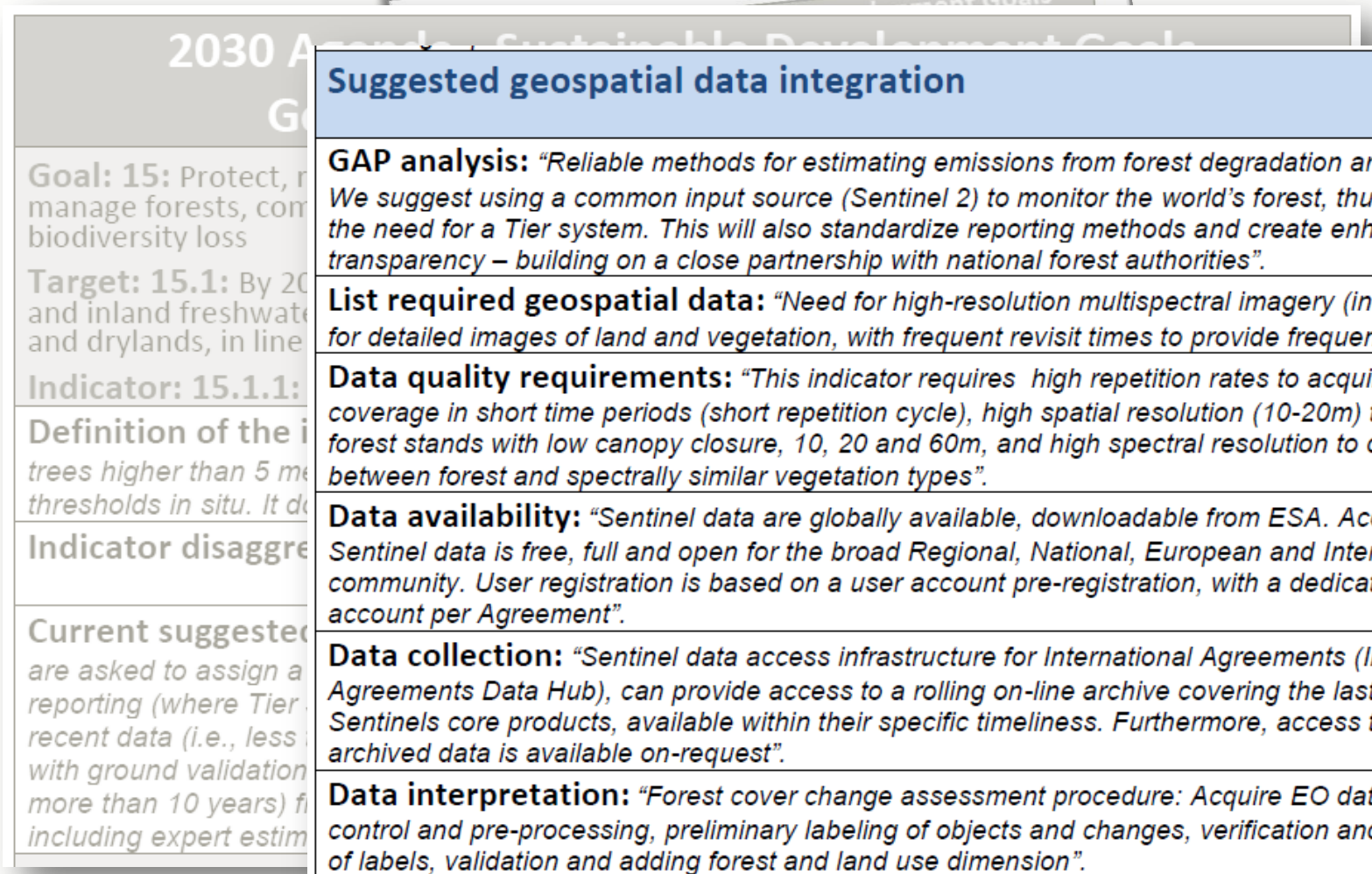
- Population distribution (grid/addresses)
  - include data on a spatially detailed distribution of residential population inside the cities or regions.
- Road network
  - The road segments should include attributes allowing for a selection of streets accessible by pedestrians.
- Public transport data
  - the location of stops and stations (frequency of departures at these stops).

Geospatial analysis: 11.2.1 Proportion of the population that has convenient access to public transport



Target	Indicator	Addresses	Administrative units	Built-up area polygons	Cadastral parcels	Geographical names	Habitats and biotopes	Transport networks	.....	Additional geometry
Goal 1 End poverty in all its forms everywhere										
1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day	1.1.1 Proportion of population below the international poverty line, by sex, age , employment status and geographical location (urban/rural)	✓	✓	✓						
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation										
9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	9.1.1 Proportion of the rural population who live within 2 km of an all-season road	✓	✓	✓				✓		
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable										
11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities	11.7.1 Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities	✓	✓							Open space Poly-gons

Proposed next steps - template



Suggested geospatial data integration

GAP analysis: *"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: *"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: *"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: *"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: *"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: *"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: *"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".*

Discussion

- Geospatial information and analysis can significantly enhance the effectiveness of the SDG indicators in monitoring and guiding sustainable development from global to local scales!
- Possible approaches:
  - Short term: For the work ahead on methodology, data sources and governance - seek for UN-GGIM to deliver input to the metadata for indicators
  - Longer term: Find a way to support the needed capacity building for geospatial data processing
  - To achieve this, we need to continue the good collaboration between our two communities – and extend it to the thematic communities to achieve the full SDG monitoring potential – by employing geospatial information