Geospatial information support to SDG Indicator Framework : 15.1.1 Forest area as a proportion of total land area/ Target 6.3 on water quality

Regional Workshop on the Integration of Big Data and Geospatial Information for the Compilation of SDG Indicators in Arab Countries
13-15 October 2020

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Outline

- Geospatial information support to SDG Indicator Framework
- Indicator 15.1.1 - Forest area as a percentage of total land area
- Target 6.3 on water quality
- Recommendations/Conclusion

Geospatial data can contribute to monitoring of the SDG Indicators in four ways:

- **As data in itself** – geospatial data is used directly for the indicator construction (geospatial data = indicator)
  - ✓ **Indicator 15.1.1:** Forest area as a percentage of total land area
- **Support statistical data** – geospatial data is used in combination with other data to estimate an indicator (geospatial and other data -> indicator)
  - ✓ **Indicator 11.2.1:** Proportion of the population that has convenient access to public transport, by age, sex and persons with disabilities
- **Enrich statistical data** – geospatial data is used to enrich the indicators, although the indicator does not require a geospatial breakdown (analysis, enrichment of the indicators)
  - ✓ **Indicator 6.3.2:** Percentage of water bodies with good ambient water quality
- Geospatial data gives possibilities **for geographical disaggregation of data**:
  - 232 Indicators disaggregated by geographic location, urban/rural, region, etc. (Ex: Geospatial data can significantly contribute to disaggregation of data (population) at the European level - not all countries can disaggregate down to same level).
  - Administrative data often come with geospatial information (e.g. address, administrative unit, etc.).

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

As data in itself – geospatial data is used directly for the indicator construction (**geospatial data = indicator**)

- This indicator measures the proportion of the world's land area that is forested and is expressed as a percentage.
- Changes in forest area reflect changes in demand for land for other uses and may help in identifying unsustainable practices in the forest and agriculture sectors.
- The indicator measures progress towards SDG 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

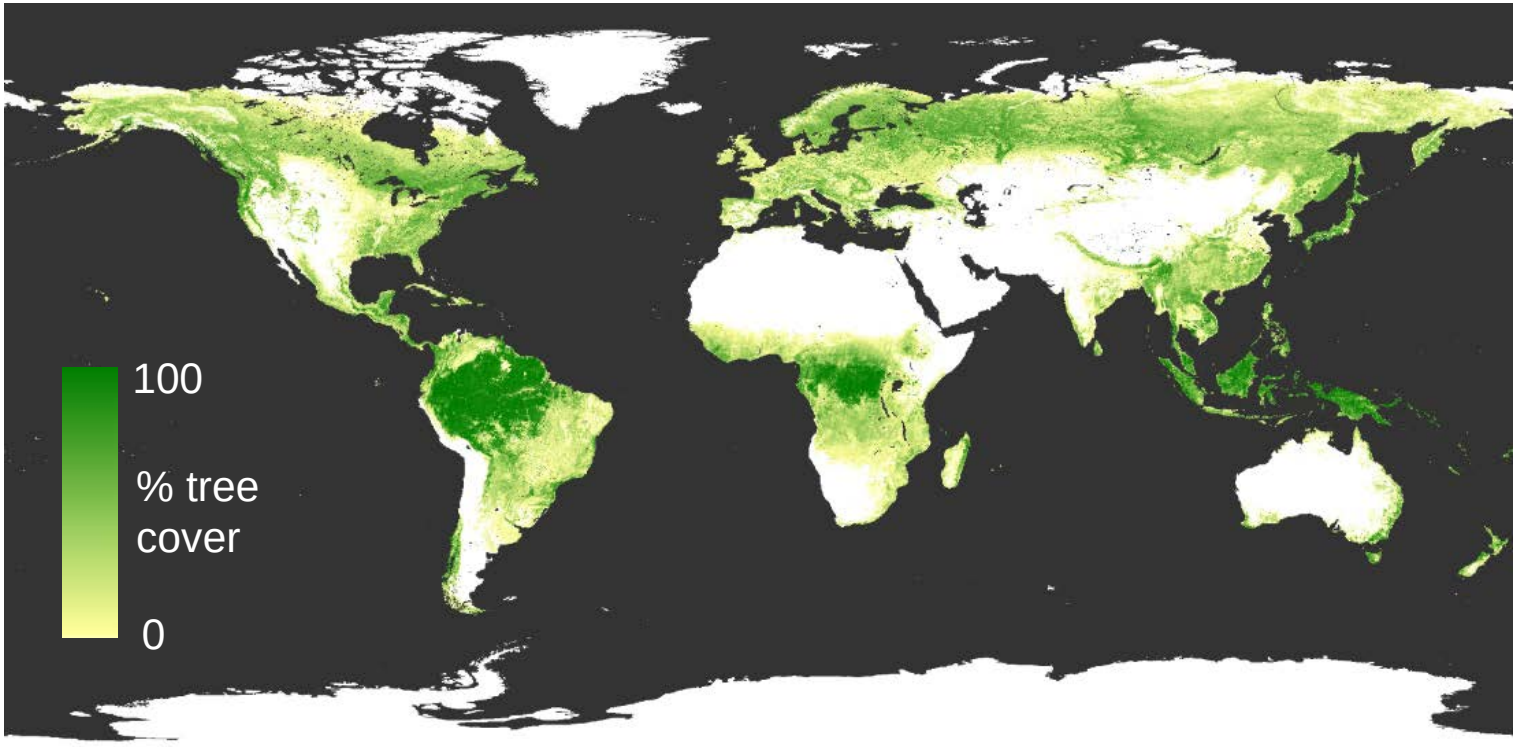
Forest area as a percentage of total land area

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...

Forest Area from Earth-observing Environmental Satellites

2013 Tree Cover



Organizations and Sponsors:
Univ. of Maryland-College Park, NASA, USAID, USGS, Google, Gordon and Betty Moore Foundation

Credit: Matthew C. Hansen, Univ. Maryland, et al.

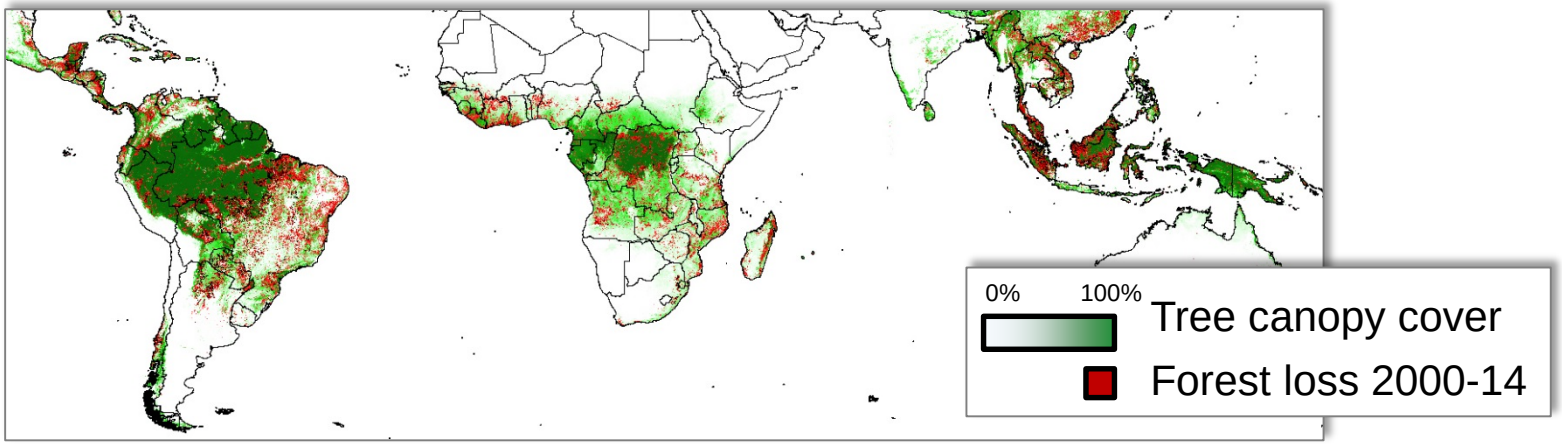
Indicator 15.1.1

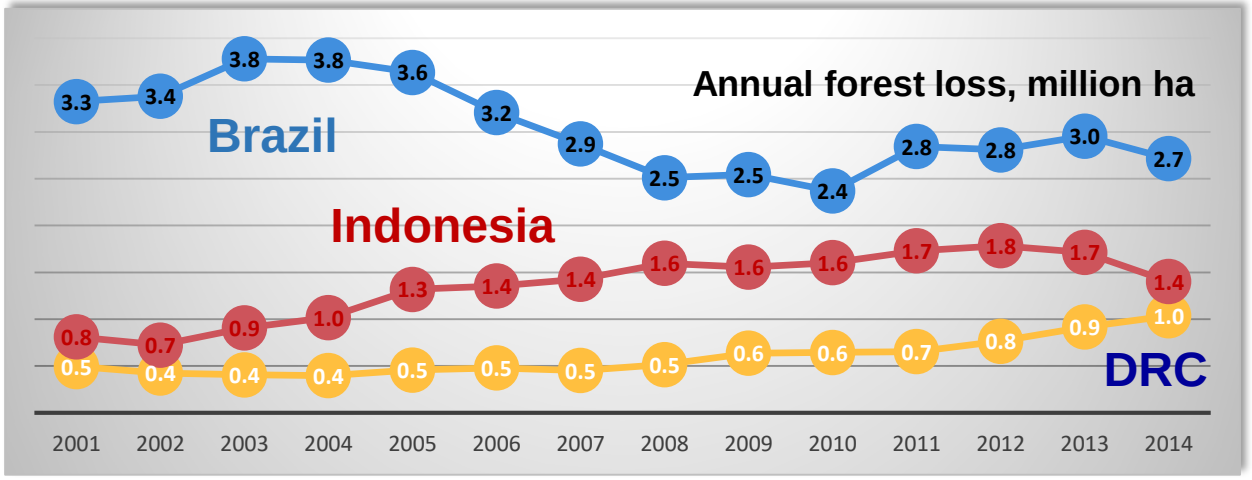
Forest area as a percentage of total land area

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...

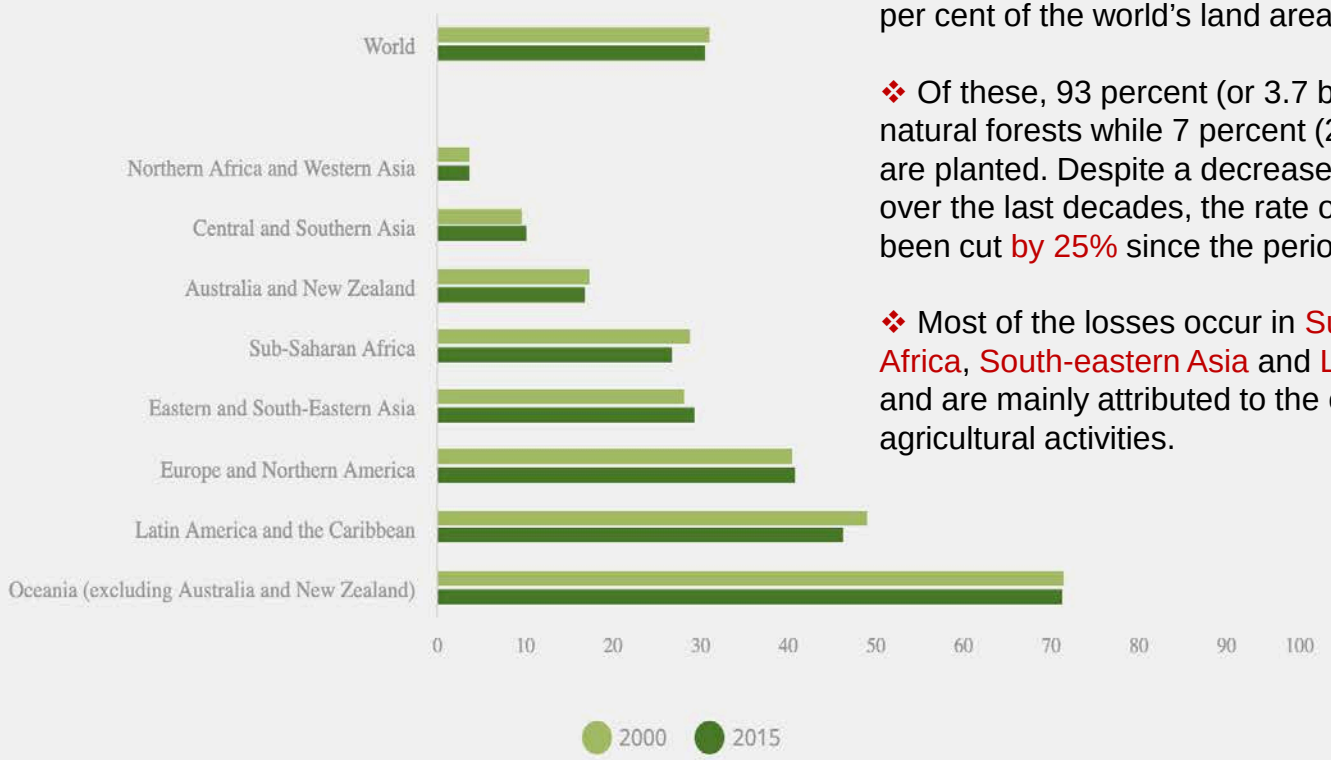
Gross Forest Cover Change: 2000-2014





<< Annual loss shown using 3-year mean filter

Credit: M. Hansen, UMd, et al.



- Forests cover about 4 billion hectares or 30.7 per cent of the world's land area.
- Of these, 93 percent (or 3.7 billion ha) are natural forests while 7 percent (291 million ha) are planted. Despite a decrease in forest area over the last decades, the rate of forest loss has been cut by 25% since the period 2000-2005.
- Most of the losses occur in Sub-Saharan Africa, South-eastern Asia and Latin America and are mainly attributed to the expansion of agricultural activities.

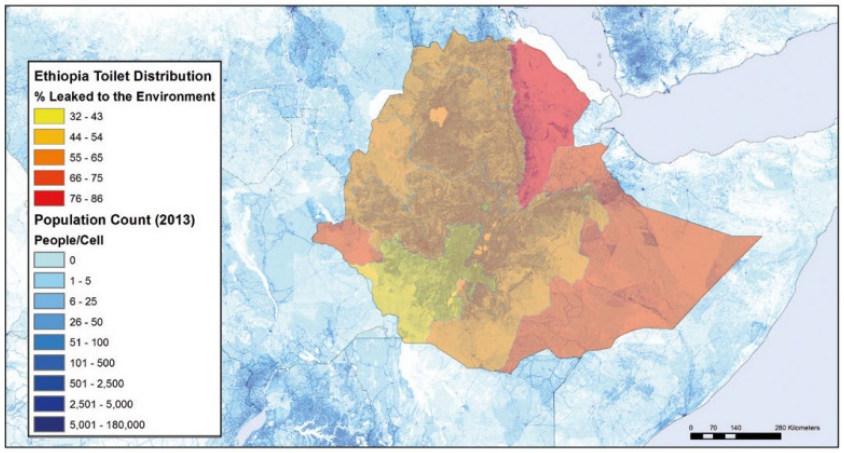
International and national references:
UN FAO Global Forest Resources Assessment 2015: Main Report: Food and Agriculture Organization of the United Nations. 2016. Global Forest Resources Assessment 2015 How are the world's forests changing? Second edition. UN FAO, Rome. (http://www.fao.org/3/a-i4793e.pdf.).

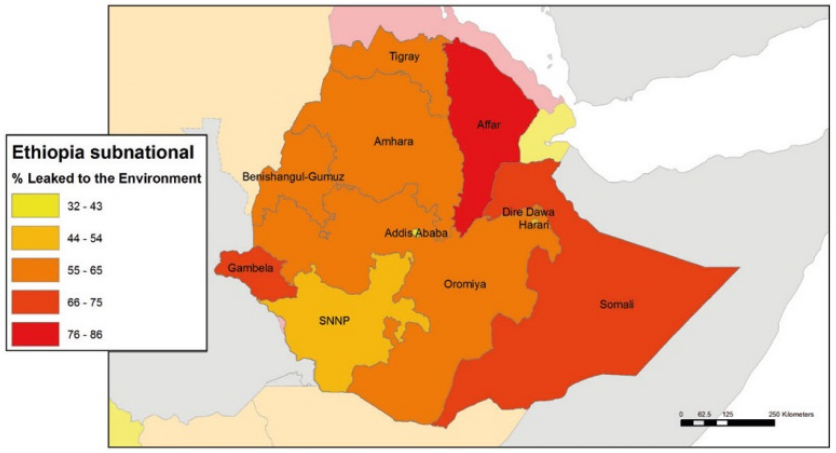
Application of EO in wastewater monitoring

EO support for the indicators (pop density, land use, land cover) integrated with other GI, survey, admin data

Target 6.3 By 2030, improve water quality by reducing pollution, illuminating dumping and minimizing the least hazardous chemicals and materials, halving the proportion of untreated waste water and substantially increasing recycling and safe reuse globally.

POPULATION DENSITY OVERLAID ON UNTREATED WASTEWATER LEAKING TO THE ENVIRONMENT, ETHIOPIA SUB NATIONAL





WHO/UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation

Integrating data from Earth observations and geospatial information with national surveys to monitor the impact of untreated wastewater on the population. The map on the left shows the extent of leakage of wastewater, excreta and grey water, with areas in red denoting extensive pollution. The map on the right integrates all data and shows where there is high impact, i.e., high leakage in densely populated areas.

Conclusions/Recommendations

- Guidance provided by the Inter-Agency and Expert Group on Sustainable Development **WG on Geospatial Information** on the role of national statistical offices (NSOs) in considering geospatial data and Earth observations as a mean to contribute to and validate datasets as part of official statistics for SDG indicators
- Developing a National **Statistical-Geospatial Framework** **is key** for the integration of statistical and geospatial information.
- At national level: better cooperation/coordination, particularly between **NSOs** and **NMAs** to develop a National Spatial-Statistical Information Infrastructure.
- Role of Governments and all stakeholders **(Partnerships)** in Mobilizing Geospatial Information Technology for Sustainable Development.

Technical Paper (in progress)

Few words on the upcoming Technical Paper:

- ✓ Overview on the integration of geospatial information with statistical information and the support it is bringing to the SDGs;
- ✓ Mapping the challenges and opportunities in the production of SDG geospatial indicators using geospatial information technologies; and
- ✓ Examples of using geospatial information in calculation of certain indicators.

Thank you شكرا جزيلا

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