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“Enhancing National Statistical Offices’ Capacity with Earth Observation Data for Sustainability Monitoring”

“MIGUEL-LAGO_Abstract_Enhancing SDGs with Earth Observation_EFGS2024”

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Theme: Mapping Sustainability and Support Environmental Risks Management

Earth Observation (EO), particularly satellite-derived data, holds great potential for National Statistical Offices (NSOs) in sustainable development monitoring and reporting. Integrating EO data enhances the quality, accuracy, and timeliness of statistics, especially for tracking environmental changes, land use or climate metrics, which are vital for achieving the United Nations Sustainable Development Goals (SDGs).

Earth Observation (EO) provides consistent and reliable observations over large areas, addressing gaps in traditional survey methods. Geospatially tagged data provides valuable insights, especially for rural and remote areas, while continuous satellite monitoring complements authoritative data, enhancing the analysis of trends such as deforestation, urbanization, water quality, etc. This is made possible due to the high temporal, spatial, and spectral resolution of the data, allowing for detailed and accurate monitoring over time. Although integrating new datasets with traditional statistical methods can be challenging, the Copernicus programme, through its Sentinel satellites and third-party missions, ensures global and regional data comparability by using standardized methods for data collection and processing. This standardization allows for consistent, accurate observations across different regions, helping to integrate satellite-derived data with traditional statistical methods.. This support enables National Statistical Offices (NSOs) to better align their efforts with SDG reporting: (i) designed to collect data using consistent methods and instruments, so the standardization ensures that data from different regions and time periods are comparable (ii) uniform processing techniques to the raw data, guaranteeing that the data is transformed in a consistent way, allowing for comparisons across different geographic areas and over time (iii) continuous global coverage capturing data with diverse spatial and temporal resolutions but facilitating comparability (iv) Free and open data policy so countries can access and use the same data, promoting consistency in how data is analyzed and reported across various institutions and countries (vi) the continuous use of validation and calibration of satellite observations enhancing the accuracy and comparability of the data across different regions (vii) Additionally, EO offers cost-effective monitoring solutions where traditional methods are challenging or expensive.

Collaborations between stakeholders are essential to report more precisely and frequently and initiatives like the ESA [Stakeholders Engagement Facility](#) provide this guidance for incorporating EO into national statistics and positioning it as a key tool for advancing climate neutrality and global sustainability goals.