



UNSC56 Side event

UN-CEAG/UN-CEBD Joint Task team on the use of EO data for agricultural statistics

“Operational application of EO data for agricultural statistics: from crop classification and parcel segmentation to early-season yield forecasting and paddy crop phenology identification”

Monday, 3 February 2025 (09.10 to 10.15 AM New York Time / 15.10–16.15 Rome Time)

Background and Scope

The integration of Earth Observation (EO) data into agricultural statistics has been transformative, enabling timely, granular, and cost-effective insights that address the growing demand for actionable data in agricultural monitoring and food security planning. Recognized by the United Nations Statistical Commission as a critical component of statistical modernization, EO data complements traditional methods, supporting Sustainable Development Goals (SDGs) and providing a robust framework for evidence-based decision-making.

The Joint Task Team (JTT) on Earth Observations for Agricultural Statistics, established under the UN-CEBD and UN-CEAG, has played a pivotal role in advancing the use of EO data. Its initiatives include the development of crop classification algorithms, yield forecasting models, and innovative methodologies for land cover and crop type mapping. These advancements, documented through diverse national case studies, demonstrate the transformative potential of EO technologies in addressing agricultural challenges across regions.

This side event will provide a platform to showcase the achievements of the JTT, focusing on national use cases from countries including **Austria, Brazil, Finland, Indonesia, Mexico, Poland, Senegal and Zimbabwe**. These examples highlight the operational application of EO data, from crop classification and parcel segmentation to early-season yield forecasting and paddy crop phenology identification. Additionally, the event will emphasize the importance of capacity-building initiatives and collaboration to support the integration of EO technologies into official agricultural statistics globally.

The session aims to engage stakeholders, share lessons learned, and foster discussions on the future direction of EO applications in agricultural statistics. By doing so, it will underline the JTT's contributions to enhancing data-driven agricultural strategies and the broader statistical modernization agenda.

Agenda

1. Opening Remarks (5 minutes)

- **Time:** 9:10 - 09:15
- **Presenter:** Ashwell Jenneker, Chair of the UN Committee of Experts on Big Data and Data Science for Official Statistics (UN-CEBD)
- **Content:** Welcome participants and outline the importance of Earth Observations in agricultural statistics.

2. Introduction of the Joint Task Team (JTT) Programme of Work (10 minutes)

- **Time:** 09:15 - 09:25
- **Presenter:** Lorenzo De Simone, , PhD, FAO
- **Content:** Overview of recent achievements, case studies, and the strategic focus for 2025.

3. Presentations of Case Studies and Key Achievements (3-4 minutes each)

- **Time:** 09:25 – 09:50
- **Speakers and Topics:**
 - **Abel Alejandro Coronado Iruegas**, Vice Director de investigación en Ciencia de Datos Instituto Nacional de Estadística y Geografía (INEGI) **Mexico**
 - **Topic:** *AI and Satellite Data Integration for Crop Classification*
 - **Maria Yli-Heikkilä**, Researcher, Natural Resources Institute (LUKE) **Finland**
 - **Topic:** *Early-Season Crop Yield Forecasting Using Sentinel-2 Data*
 - **Ian Nunes**: Cientista de Dados/Pesquisador, Instituto Brasileiro de Geografia e Estatística (IBGE), **Brazil**
 - **Topic:** *Parcel Segmentation Using Deep Learning and High-Resolution Imagery*
 - **Achmad Fauzi Bagus Firmansyah**: Statistician and Data Scientist, Badan Pusat Statistik (BPS), **Indonesia**
 - **Topic:** *Earth Observation Data for Paddy Crop Phenology Identification*
 - **Artur Laczynski**, Director of the Agriculture Department at Statistics Poland (**GUS**) and **Przemysław Slesiński**, Researcher, Institute of Geodesy at the University of Warmia and Mazury, **Poland**
 - **Topic:** *Crop Monitoring and Yield forecasting*
 - **Nils von Norsinski**: Statistician, Statistik Austria, **Austria**
 - **Topic:** *Crop classification*

4. Highlighting Capacity-Building Activities and Applications *(10 minutes)*

- **Time:** 09:50 – 09:55
- **Presenter:** Nelson Mupfugami, Statistician, Zimbabwe Statistics Office (ZIMSTAT)
- **Content:** Use of Earth Observations for agricultural statistics in Zimbabwe
- **Time:** 09:55 – 10:00
- **Presenter:** Lorenzo De Simone, FAO

Content: Development of alternative classification methods in the context of in-situ data scarcity

5. Questions and Answers (Q&A) *(10 minutes)*

- **Time:** 10:00 – 10:15
- **Moderator:** Eduardo Vasquez, INEGI Mexico
- **Content:** Open floor for participant questions and discussion.