



Food and Agriculture Organization
of the United Nations

THURSDAY 16 FEBRUARY 2023
(9:00 AM – 11:30 AM EST)



OPEN MEETING

UNITED NATIONS
COMMITTEE OF EXPERTS ON
FOOD SECURITY, AGRICULTURE
AND RURAL STATISTICS
(UN-CEAG)

54TH SESSION OF THE
UNITED NATIONS STATISTICAL
COMMISSION

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SESSION 3

Improving the Use of Earth Observation (EO) data for agriculture statistics – Recent achievements and next steps

Eduardo Vázquez Andrade (INEGI-Mexico)

Updates to the Joint Task Team

- New co-chairs in 2022
 - Mr. Lorenzo de Simone (FAO) and Mr. Talip Kilic (World Bank) were selected as new co-chairs, in replacement of Ms. H el ene B erard and Mr. Gordon Reichert from Statistics Canada.
- New members were added to the Joint Task Team
 - Representatives from United Arab Emirates, Palestine, Brazil, Digital Earth Africa
- New collaboration
 - First discussion with colleagues from China Regional Hub and upcoming meeting with Brazil Regional Hub

Achievements

The overall objective of the Joint Task Team is to promote the operational uptake of EO data to help countries to overcome technical challenges.

Task Team has worked on a series of use cases through collaborations with countries.

- Government of Australia: Use of blended small, medium, and high-resolution satellite imagery to identify growing crops in Queensland.
- Ministry of Agriculture in Senegal: Use of Sen2Agri, and Sentinel-2 satellite imagery to assess crop acreage in 2018.
- Government of Lesotho: Use of Sentinel-2 satellite imagery to produce annual land cover maps for the period 2017-2022.
- The Geostatistical Development and Research Unit of the Geostatistics Directorate of the Colombian National Statistical Office: Improved the national land cover classification process using machine learning techniques and Sentinel-2 satellite imagery fused with very-high resolution RPAS (Remotely Piloted Aircraft Systems) imagery.

Achievements

- Under the 50x2030 Initiative, the World Bank & Atlas AI, conducted research to formulate the requirements that should be met by large-scale household surveys to provide training data for EO applications for high-resolution crop area mapping in smallholder farming systems.
- Data Sharing: Task Team, through the UN Global Platform, delivered the infrastructure to securely share georeferenced data owned by the Ministry of Agriculture in Senegal.
- Training: Task Team developed a user-interactive training app, that allows for building a training curriculum on EO for land cover and land use mapping, based on specific expectations and characteristics of the user. The app dynamically identifies training material from existing sources.

Next steps

The 2023-2024 work program builds on the 2022 work program and includes the following priorities:

- Development of data frugal classification algorithms.
- Re-use of in situ data through artificial re-generation based on EO time series analysis.
- Development of EO-based tools to improve field survey design, through geo-enabled stratification and probabilistic sampling.
- Promotion of guidelines for the design and implementation of large-scale household and farm surveys that can calibrate and validate EO applications for crop area mapping and crop yield estimation.
- Sharing of georeferenced in-situ data through the use of differential privacy techniques and other means
- Improvement and updating of the EO training app
- Engaging the Regional Hubs and expanding the scope of the work to include environmental statistics and food security.

Questions and contacts

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Thank you

<https://www.fao.org/about/ce-on-food-security-agricultural-rural-statistics/en/>