FAO – leveraging the UNGP platform for building capacity in Senegal in the use of Earth Observation data to generate official crop statistics

6th International Conference on Big Data – United Nations
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Lorenzo De Simone, Senior Expert in EO
Office of the Chief Statistician, FAO
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OVERVIEW OF FAO GEOSPATIAL WORK

- FAO has more than 30 years of experience in the development and use of geospatial data, methods and tools, ranging from national to regional and global scale.

- The work is organized and delivered to developing countries through projects and programs carried out at HQ and in regional, sub-regional, and national offices to ensure that best practices and standards are adopted and implemented.

- Focus is on capacity building
  - Stakeholder engagement, gathering requirements, build skills and cocreation of solution
  - Working together
  - Data sharing - in situ
  - Building trust

- Partnerships Public and Private
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Solution Diagram

- Storage and Computing power
- Optimized for performance and low running costs
- Scalable
- Secure hosting of country data
- Sharing of trusted data, methods and algorithms
- Incubator/accelerator for innovations
- Dissemination/Visibility
MAIN ACTORS & COMPONENTS

**Actors**
- Country stakeholders

**Input Data**
- Sentinel 2
- AGRIS Surveys & in-situ data

**Technology**
- Sen2 Agri toolbox

Implementers
- FAO
- UCLouvain

National Agricultural Statistics
• Random forest classification
• Preparation of Sentinel 2 time series
  • Cloud removal
  • Interpolation/smoothing
• Time series smoothed for the processing chain without in situ data
• In situ data extracted from existing map in absence of field data
• Possibility to apply OBIA
SEN2 AGRI – CROP TYPE MAPS

(Ingliada et al., RS2015)
EOSTAT PROJECT STATUS

- February 2020  FAO project initiation mission to Senegal
- March 2020    Stakeholder follow up and communication
- April 2020    EO platform deployed on Amazon Web Services and ready to go
- June 2020     First Online training delivered
- July 2020     National Focal Point officially nominated in DAPSA
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NEXT STEPS

- September 2020: TRAINING on best practices on in situ data collection

- October/November 2020: In-situ data collection in Senegal by DAPSA and field teams

- November 2020: TRAINING on classification of the EO data, generation of crop type maps and validation. Extraction of crop acreage

- December 2020-January 2021: Presentation of final results

- 2021: Sharing training material through the UN GLOBAL PLATFORM
MORE EO FOR CROP STATISTICS

PROJECT NAME: EOSTAT
COUNTRIES: LESOTHO
COUNTERPARTS: BOS, MAFS
TIMEFRAME: 2020
METHOD: UNSUPERVISED
PLATFORM: GEE/Python/Jupyter Notebook

Project achievements as of July 2020
1) Literature review and methodological guidelines developed
2) Administrative level agric. Statistics retrieved from BOS
3) Crop type maps and acreage estimations at administrative level and national level
4) Prototype crop type mapping app developed in GEE

NEXT STEPS
1) Validation of results with in situ data collected ad hoc in Lesotho, tuning of algorithm to improve performance
2) Improvement of the app tool. Explore integration with UN GLOBAL PLATFORM
THANK YOU

Lorenzo.DeSimone@fao.org