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

**6th International Conference on Big Data – United Nations**

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- BRIEF OVERVIEW OF FAO GEOSPATIAL WORK
- FAO – UN GLOBAL PLATFORM COLLABORATION
  - Context
  - Main actors and components
  - Sentinel2 processing and classification
  - Status
- NEXT STEPS

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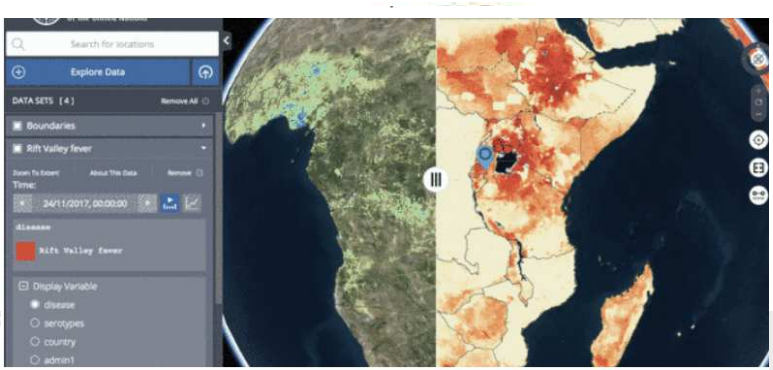
# OVERVIEW OF FAO GEOSPATIAL WORK

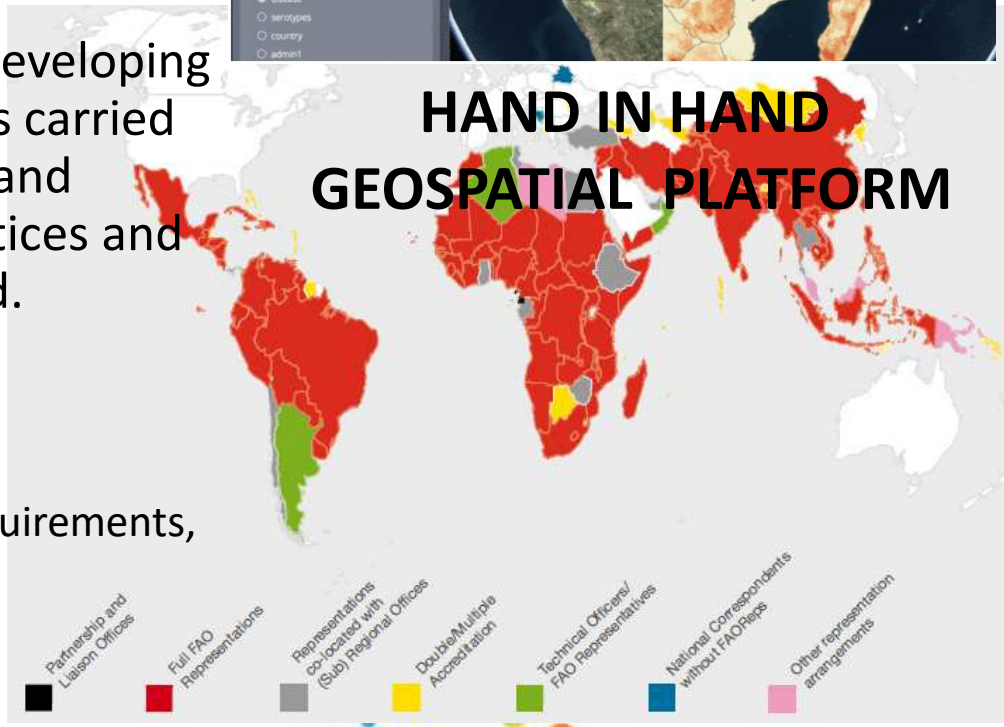
- FAO has more than 30 years of experience in the development and use of geospatial data, methods and tools, ranging from national to regional and global scale.




- 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.

**HAND IN HAND GEOSPATIAL PLATFORM**

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




**FAO PRESENCE IN COUNTRIES**

- Partnerships Public and Private

Big Data
UN Global Working Group

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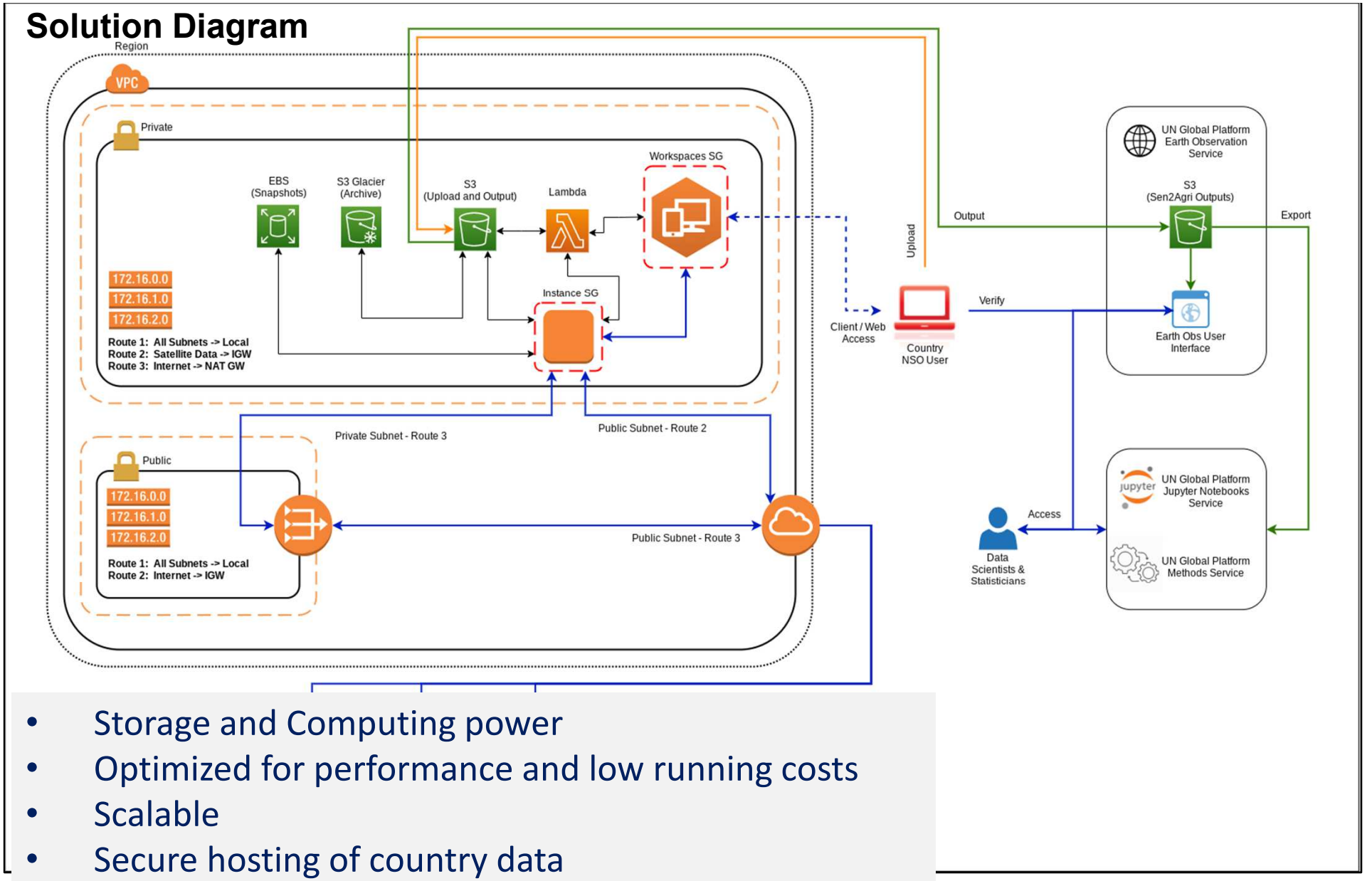
# Solution Diagram




- Storage and Computing power
- Optimized for performance and low running costs
- Scalable
- Secure hosting of country data
- Sharing of trusted data, methods and algorythms
- Incubator/accellerator for innovations
- Dissemination/Visibility

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# MAIN ACTORS & COMPONENTS

## Actors

Country stakeholders

DIRECTION DE L'ANALYSE, DE LA PRÉVISION ET DES STATISTIQUES AGRICOLES

Institut Sénégalais de Recherches Agricoles

CSE Centre de Suivi Ecologique

Agence Nationale de la Statistique et de la Démographie ANSD

Implementers

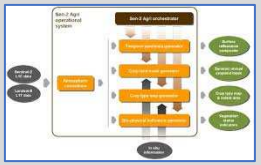
UCLouvain

## Input Data

Sentinel 2

AGRIS Surveys & in-situ data

## Technology



Sen2 Agri toolbox

BigData UN Global Working Group Marketplace Alpha

**National Agricultural Statistics**

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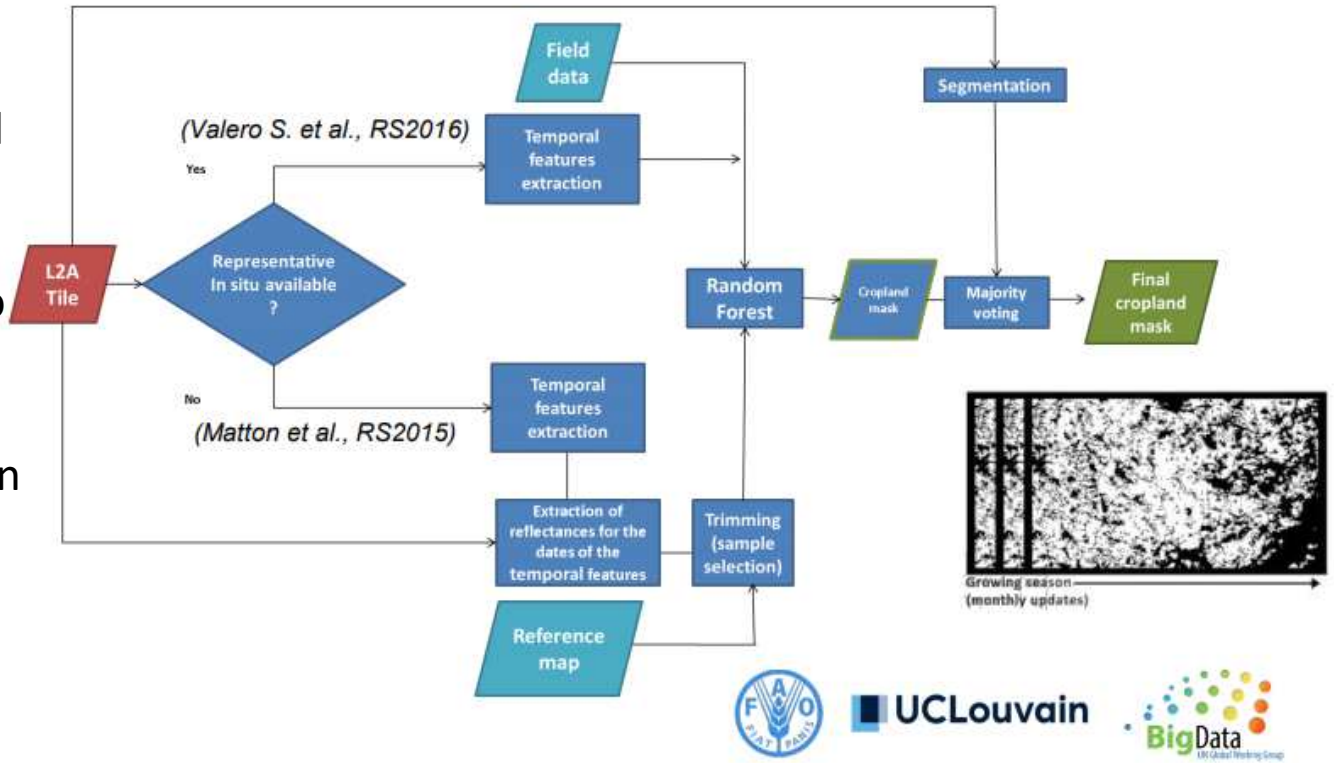
# SEN2 AGRI – CROP MASK

- 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



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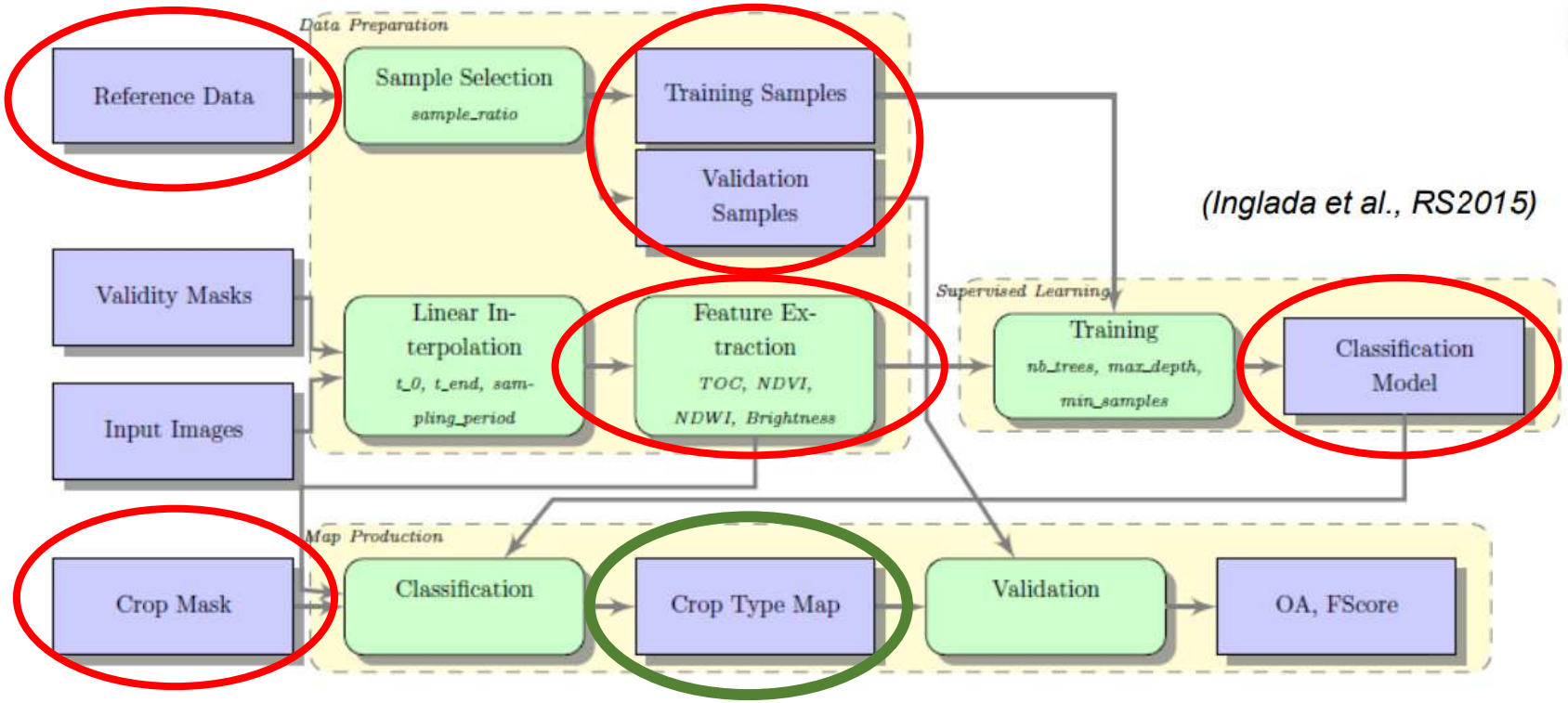
# SEN2 AGRI – CROP TYPE MAPS



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# 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
- ❑ December2020-January 2021: Presentation of final results
- ❑ 2021: Sharing training material through the UN GlOBAL PLATFORM

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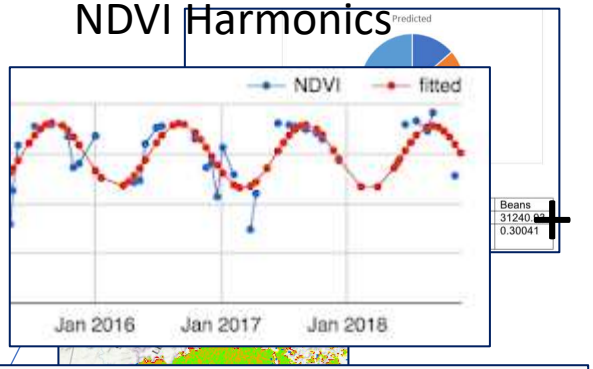
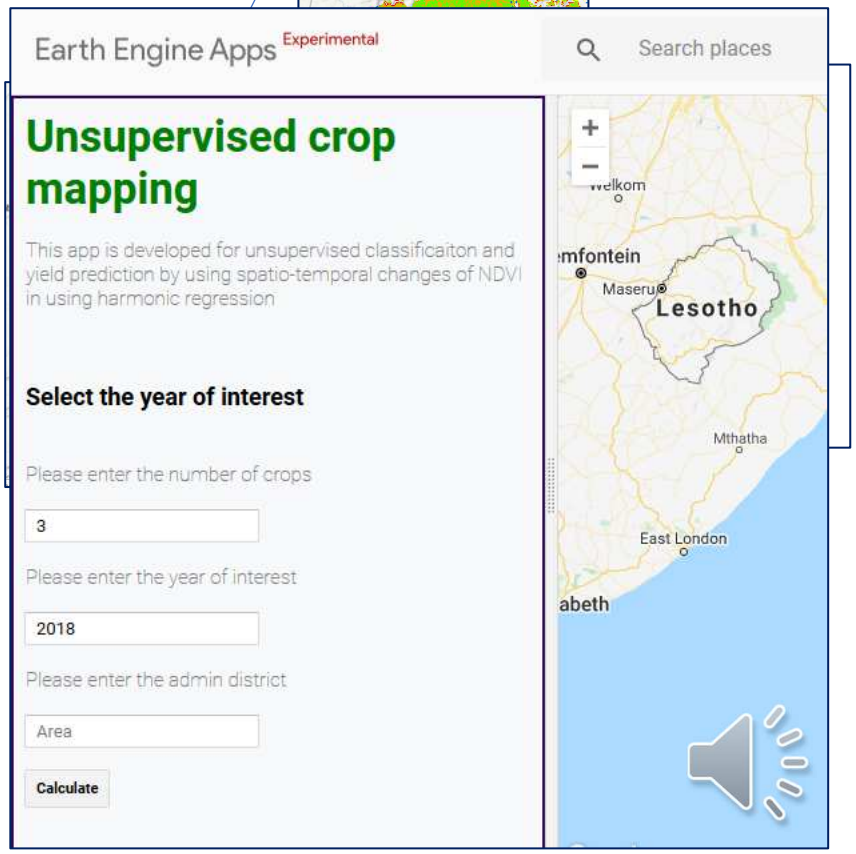
# MORE EO FOR CROP STATISTICS

**PROJECT NAME:** EOSTAT
**COUNTRIES**: LESOTHO
**COUNTERPARTS**: BOS, MAFS
**TIMEFRAME:** 2020
**METHOD:** **UN**SUPERVISED
**PLATFORM**: GEE/Python/Jypiter 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 admnistrative 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 algorythm to improve performance
2) Improvement of the app tool. Explore integration with UN GLOBAL PLATFORM

# THANK YOU

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