Advances in the project "Testing Satellite Imagery, geospatial data and administrative records for producing agricultural statistics"

UN Big Data for official statistics

Open Day of the Global Working Group
UN World Data Forum
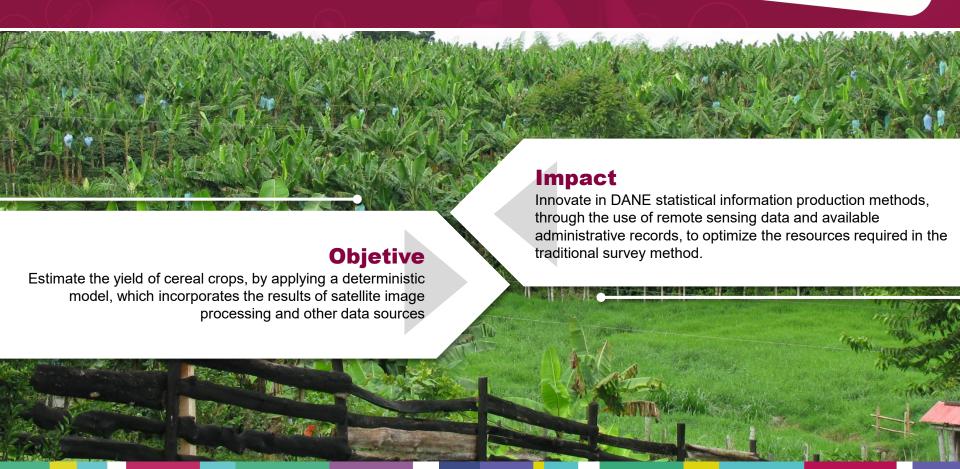
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21st October, 2018

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Big Data para estadísticas agropecuarias

Impact

Innovate in DANE statistical information production methods, through the use of remote sensing data and available administrative records, to optimize the resources required in the traditional survey method.

Objetive

Estimate the yield of cereal crops, by applying a deterministic model, which incorporates the results of satellite image processing and other data sources

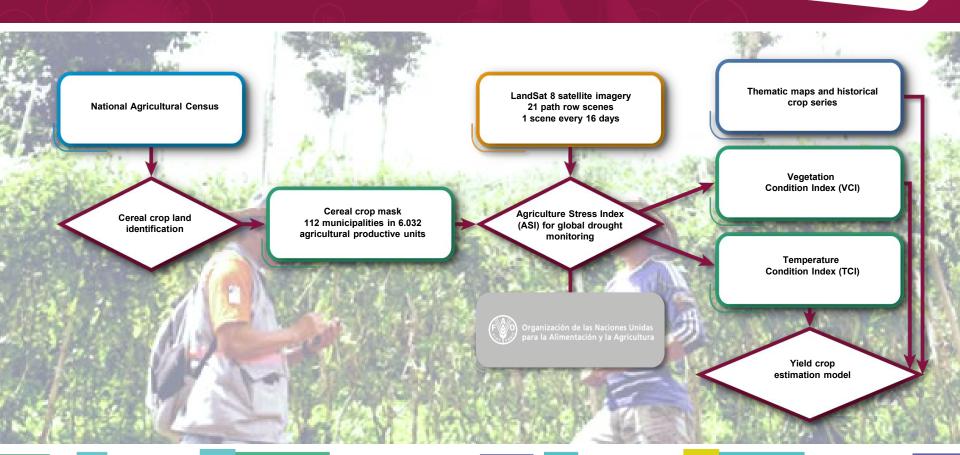# Resources and Technical Specialties Requested

▶ **Satellite imagery and Geospatial Data:**
- ◆ LandSat 8 Satellite imagery (2013 – 2017)
- ◆ Thematic maps: soil and weather variables produced by Colombian organizations
- ◆ Agricultural crop series of harvest area, production and yield from Ministry of Agriculture and Rural Development

▶ **Experts on satellite imagery processing, GIS and statistical data modelling for agricultural surveys**

▶ **Specialized software**
- ◆ For processing satellite imagery: Google Earth Engine
- ◆ For statistical processing: R

Proposed methodology

► Identification of cereal crop lands

► Algorithm in Google Earh for selecting free cloud imagery (2013-2018), and for appliyng a cloud mask,

► Algorithm in Google Earth for preprocessing and processing satellite imagery to obtain de Vegetation Condition Index (VCI) and the Temperature Condition Index (TCI).

► Consolidation of agricultural crop series (AGRONET) 2007-2017

► Download the thematic maps from IGAC, IDEAM and UPRA

Learned lessons

Google Earth Engine provides the free access to satellite imagery needed to develop innovation projects taking advantage of Earth Observation Data

There is available information produced by local organizations for providing useful data

An institutional policy that supports research allows the development of innovative projects that take advantage of non-traditional data for the generation of statistics.

There is a technical capacity at DANE as National Statistical Organization in Colombia to process satellite imagery and produce useful statistical information.

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