



Geospatial Applications for the Agrifood Sector

Hyderabad

24.01.2017

Agri-food and Fisheries Information Service is:

- **A decentralized body** of the Ministry for Agriculture, Livestock, Rural Development, Fisheries and Food in Mexico

Attributions of the SIAP

Disseminate the official information of the Agri-food Sector.

Designing and coordinating the National System of Information of the Agri-food Sector and Fisheries of Mexico (rules and guidelines).

Manage the Satellite Images Reception Groundstation

Sign agreements with public and private actors for the exchange of information.

- **Network Agricultural in Web (RAW)**, installed in **33** State Delegations, **192** Districts of Rural Development (DDR) and **712** Rural Development Support Center (CADER), centralized in the SIAP.
- **520** (CADER) field technicians for agricultural and fisheries information **monitoring**.
- **132** geographic information specialists.
- **Administrative Records** (inputs for the information monitoring such as sacrifice in TIF, surface traces supported by PROAGRO).

Agricultural year 2017

Mexico has **two production cycles: Fall-Winter (FW)** and the **Spring-Summer (SS)**, the sum of the production of them make up an agricultural year of 18 months.

For the **Agricultural Year 2017**, it began with sowings of the FW cycle in October 2016, whose crops extend to November 2017. It continues with cycle SS in April 2017 and the harvest until March 2018.

818 agro-industrial and agri-food products



748

agricultural



12

livestock

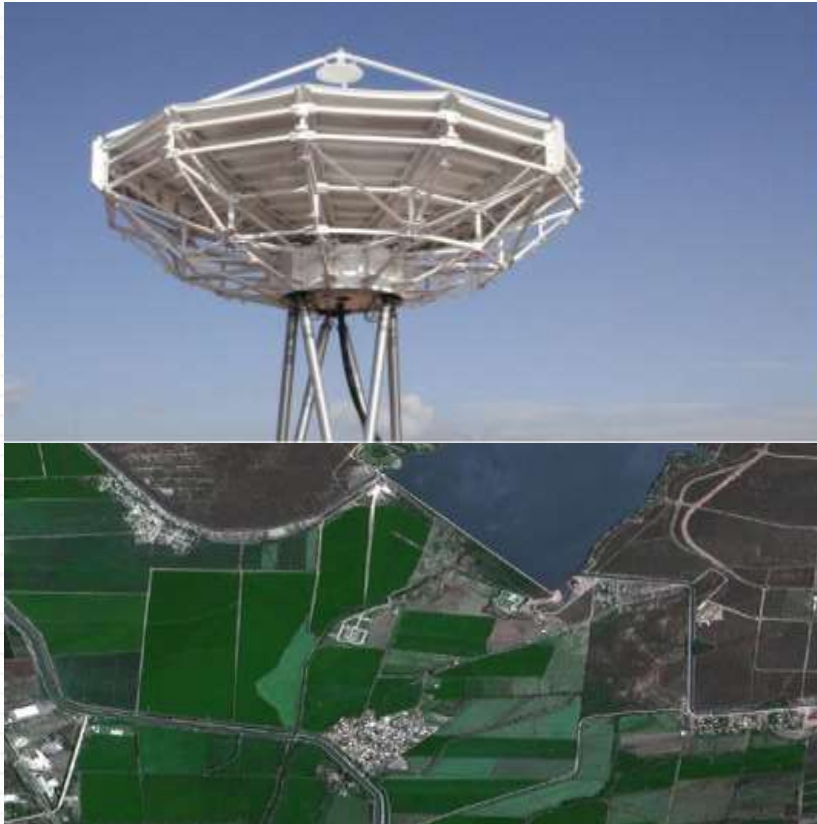


58

fisheries

Geospatial Applications

Satellite Technology



Unmanned flight

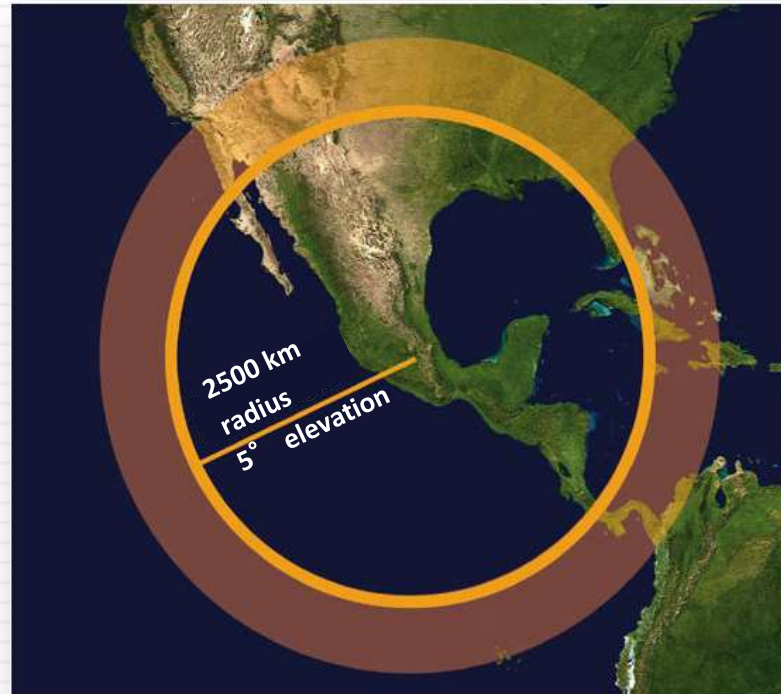


Satellite Technology



Coverage

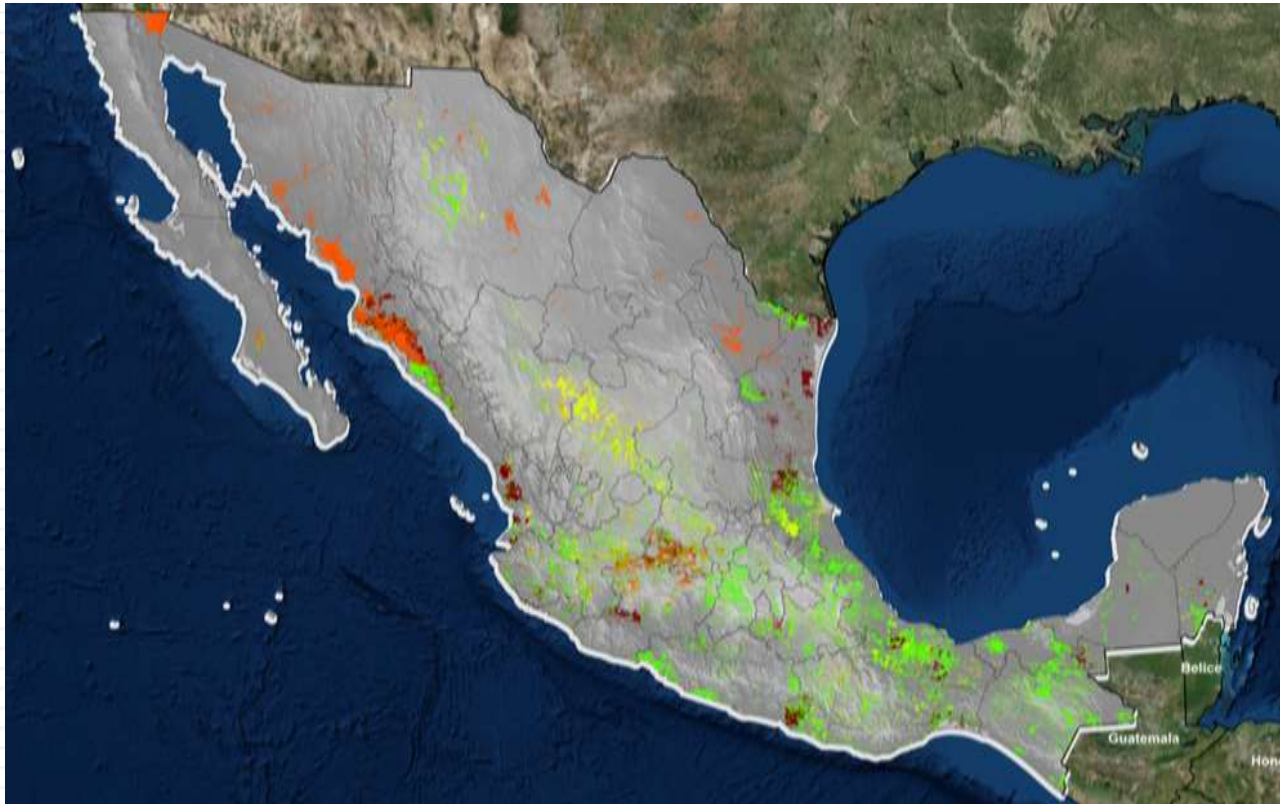
- The National Mosaic is gathered from November to the next year's May, and is composed by 822 images.
- Since 2003, 13 national mosaics have been gathered. The most recent is composed of SPOT 7 and Pleiades images.
- Actually, there are more than 650 thousand archive images.
- The spatial resolution is of 1.5 meters and are 60 X 60 km² big.



Satellite images allow:

- ✓ **National Mosaic**
- ✓ **Crop monitoring**
- ✓ **Estimate of areas and yields**
- ✓ **Update the Agricultural Frontier**
- ✓ **Early Response to Climate Contingencies / Calculate the impact**
- ✓ **Focus on resource allocation**
- ✓ **Georeferencing:**
 - Plots
 - Shops industrie
 - Industrial Units that transform food
 - Grain storage falicilities
 - Slaughterhouse, Dams, Greenhouses.
 - Surveys: Agricultural Area Frame and List Frame (With USDA Methodology)
 - Crop area estimation with remote sensing and the acquisition of GPS ground control points.
 - Identification of surface with some sanity problem using satellite images.
 - Cartography of commodity areas at parcel level.

Crop area estimation



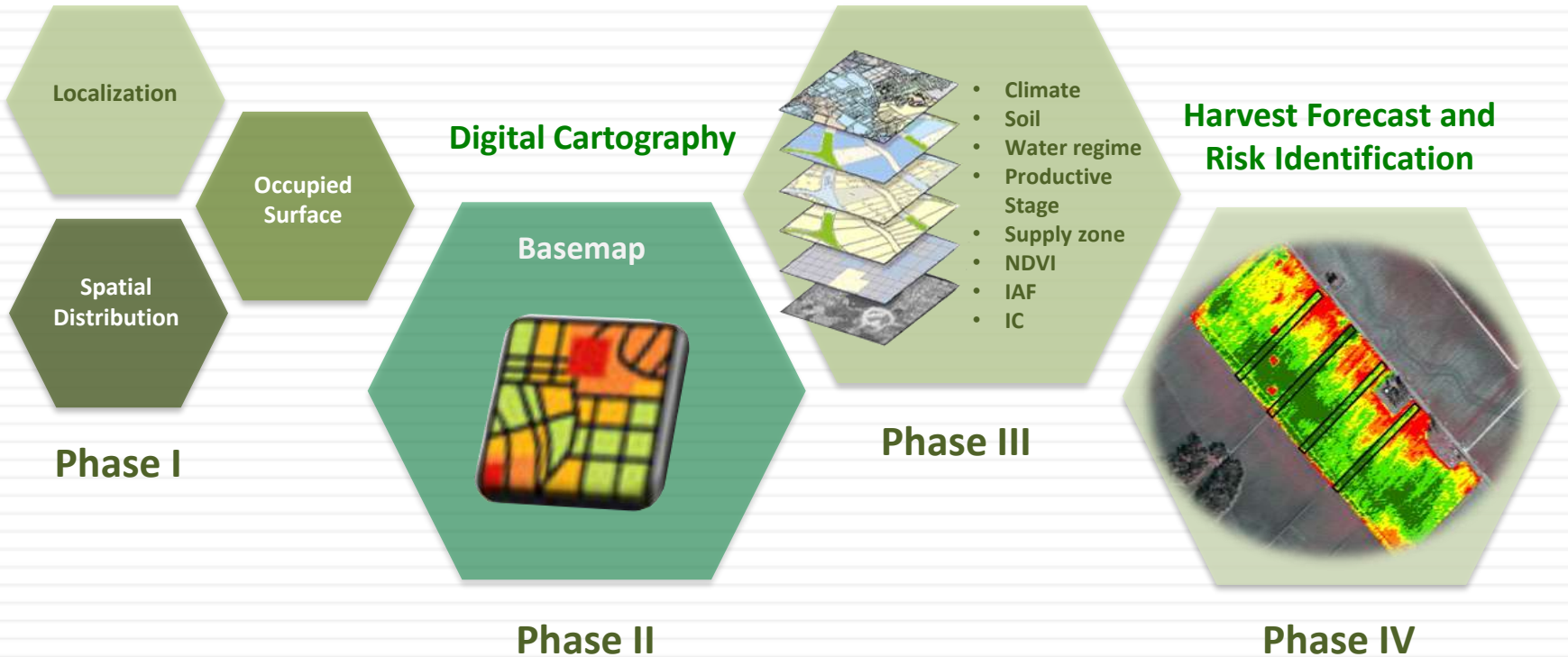
Estimation of the surface of basic crops (wheat, corn, bean and sorghum) in Mexico using satellite images and statistical analysis.

Sugarcane Cartography at Parcel Level



Surface estimation

Variable Integration and Cartography Actualization



Phase I



Localization

Occupied
Surface

Spatial
Distribution

Surface
estimation

Objective

To estimate the 2013 – 2014 harvest sugarcane sowed surface through satellite images and direct parcel supervision.

Phase II

Digital Cartography

Basemap



Objective

To generate the sugarcane sector digital cartography through photointerpretation and digitalization of high spatial resolution satellite images.

Phase III

Variable Integration and Cartography Actualization



SIE-Caña

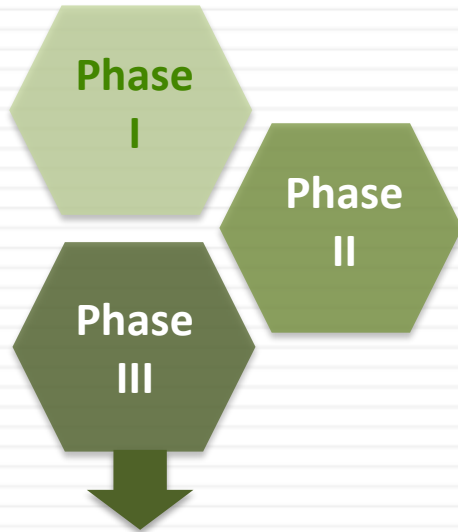
Information Strategic System About Sugarcane

Geographical tool based on an online collaboration web GIS in which sugarcane geographical information can be gathered, processed and updated.

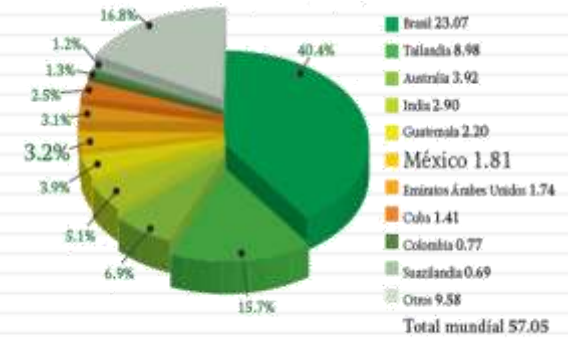
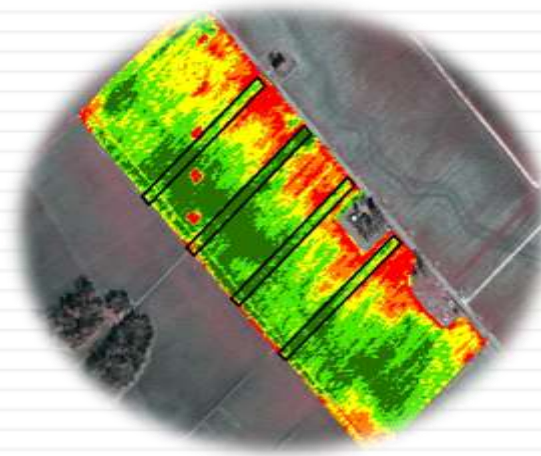
Objective

To set SIE-Caña as a platform for the generation and sharing of geospatial information each harvest cycle.

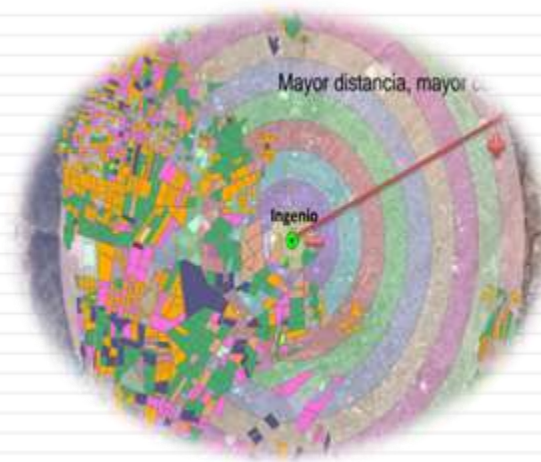
Phase IV



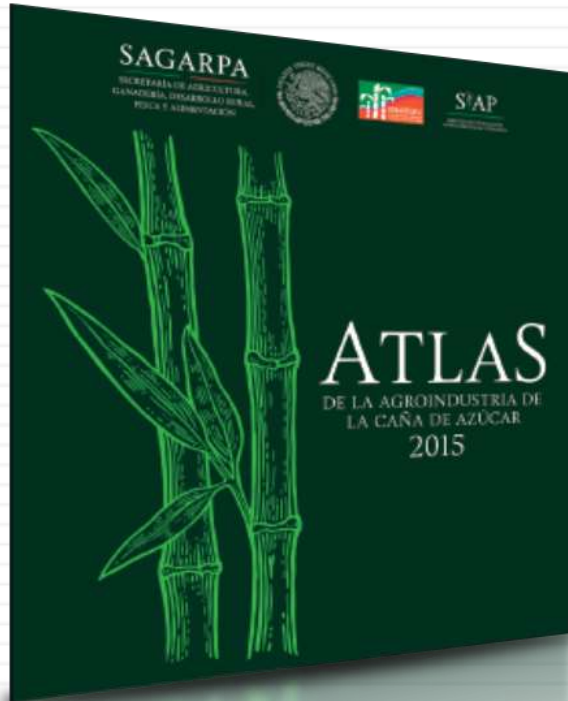
Harvest forecast



Fuente: IRI, Quarterly Market Outlook-November 2015; CONADIBUSCA, Balance Estimado 2013/2014



Sugarcane Industry Atlas



SAGARPA

SECRETARÍA DE AGRICULTURA,
GANADERÍA, DESARROLLO RURAL,
PESCA Y ALIMENTACIÓN



SIAP

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