

EO for Insurances: Solutions for Risk Evaluation & Management in Agriculture

28 January 2021 - Farming from Space: Digital Innovation for Agriculture



Platform for Risk Evaluation and Management

Objectives:

Services for risk evaluation and management in agriculture

ESA co-financed project



INPUT



Satellite data



Meteorological data



Other geospatial data



Historical agro-insurance database



SOLUTIONS

Historical analysis



Crop monitoring



Damage detection



Impact evaluation



Risk assessment

Damage
assessment

Risk assessment



HISTORICAL ANALYSIS

Risk assessment based on historical weather and vegetation index trends



CROP MONITORING

Weather and vegetation indexes monitoring for exposure evaluation



ADVERSE EVENT MAP

Mapping of the area affected by adverse weather event



IMPACT EVALUATION

Estimation of losses occurred for claims management



Weather and
Vegetation Index
History trend



Adverse weather
events



Site
characterisation



Yield stats



Policy stats



Damage stats



Crop Failure



HISTORICAL ANALYSIS

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ADVERSE EVENT MAP

Mapping of the area affected by
adverse weather event



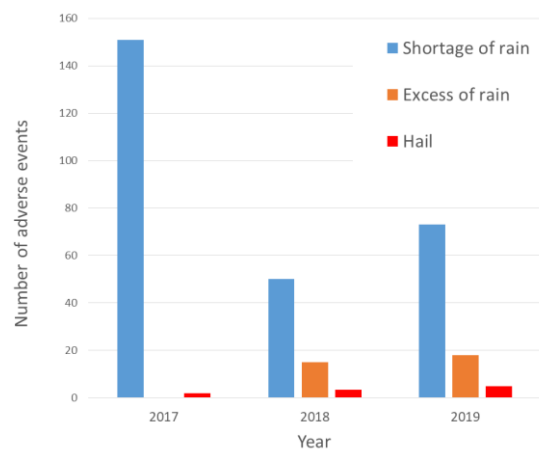
IMPACT EVALUATION

Estimation of losses occurred for
claims management

Search:

New analysis

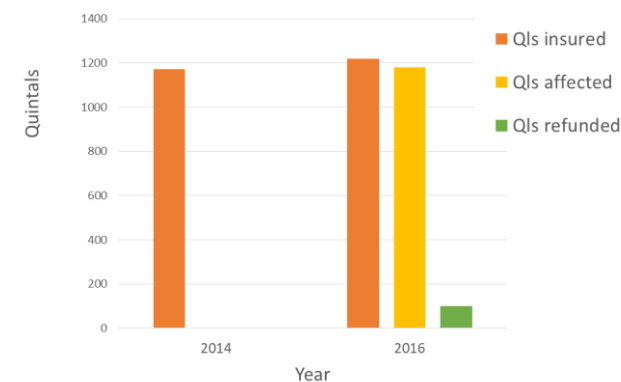
Adverse events Historical Trend



NDVI



Damage statistics for Soft Wheat and Hail, (Mairano, Italy)



Layer manager

Filter:

Baselayers

☒ Italian Orthophoto

☐ Aerial imagery

☐ OpenStreetMap

Map Content

1. Administrative boundary >

☐ Administrative boundary: Region level

☒ Administrative boundary: Province level

☐ Administrative boundary: Municipality level

2. Corine Land Cover >

☐ Corine Land cover level 1

☐ Corine Land cover level 2

☐ Corine Land cover level 3

☐ Corine Land cover level 4

3. Morphology & Soil >

☐ Soil classification

☐ Digital elevation model

☐ Slope

☐ Aspect

☐ Zoning

4. Parcel portfolio >

☐ Users parcels

Risk assessment



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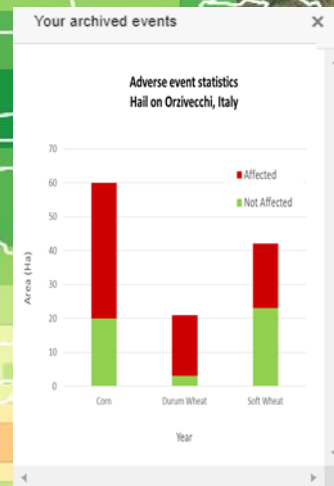
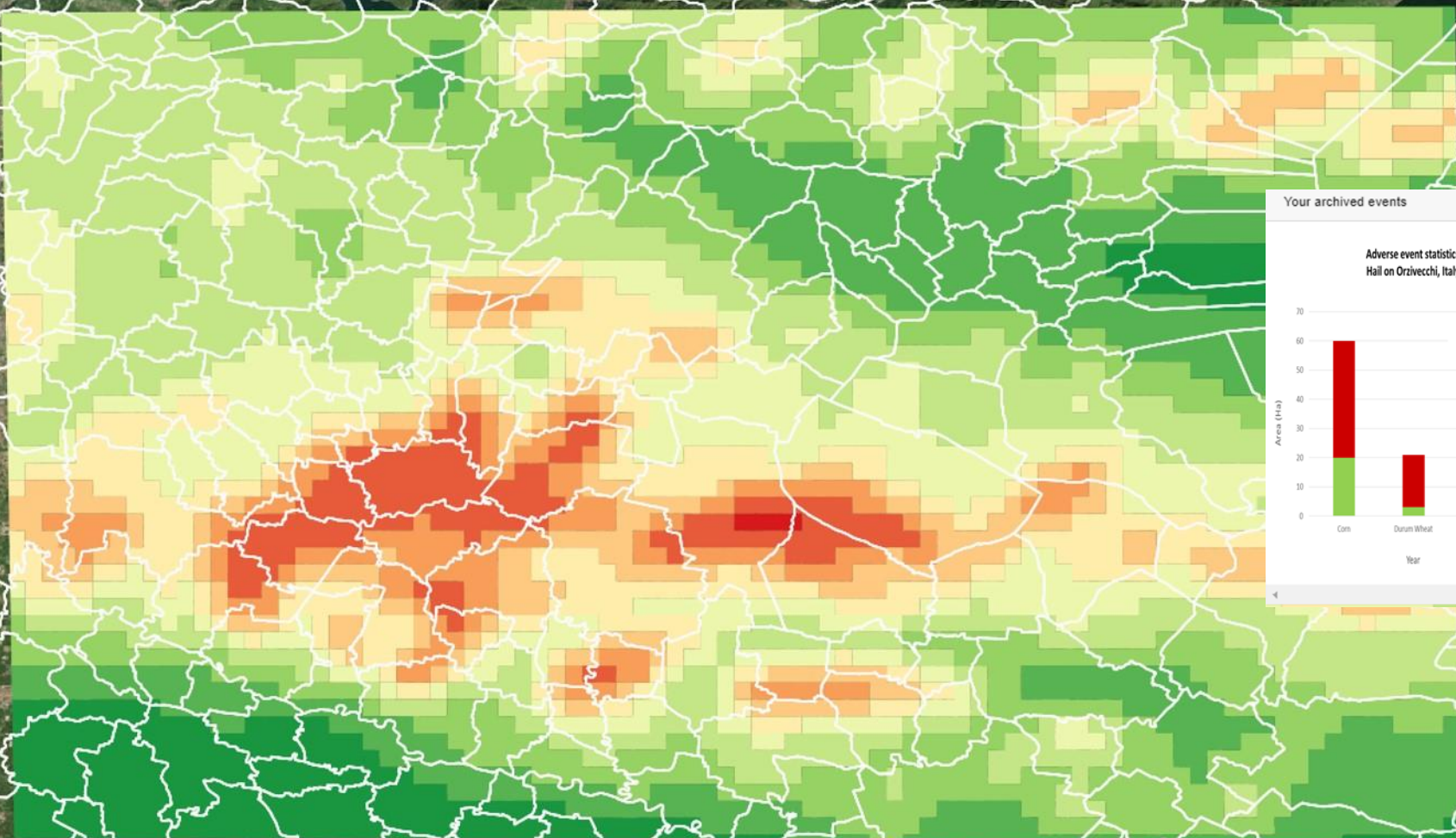


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Other >

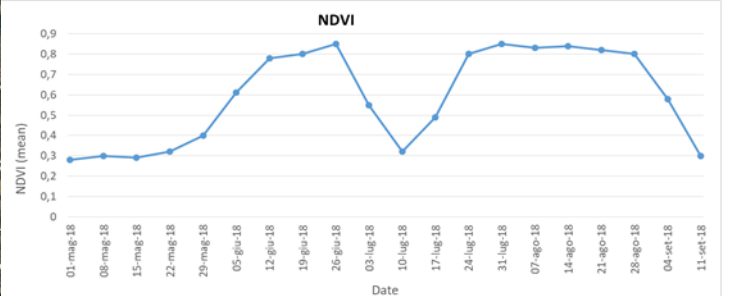
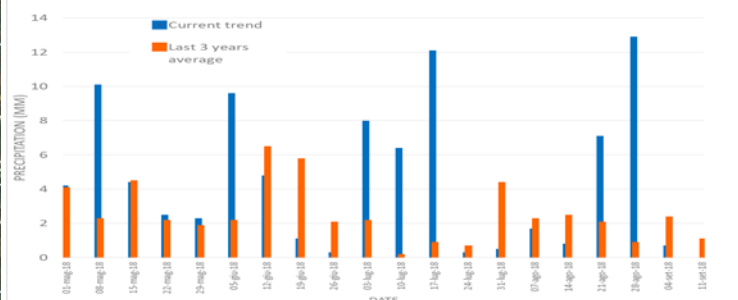
- ☒ Impact analysis Event
- ☐ Impact analysis Aoi

Search:

New analysis

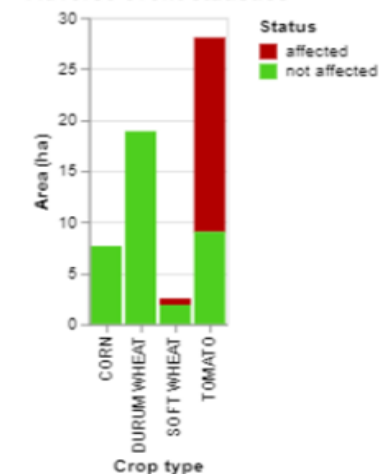
Weather and Vegetation Index trend

Precipitation trends: current and last 3 years average (weekly)



Your archived events

Adverse event statistics



Layer manager

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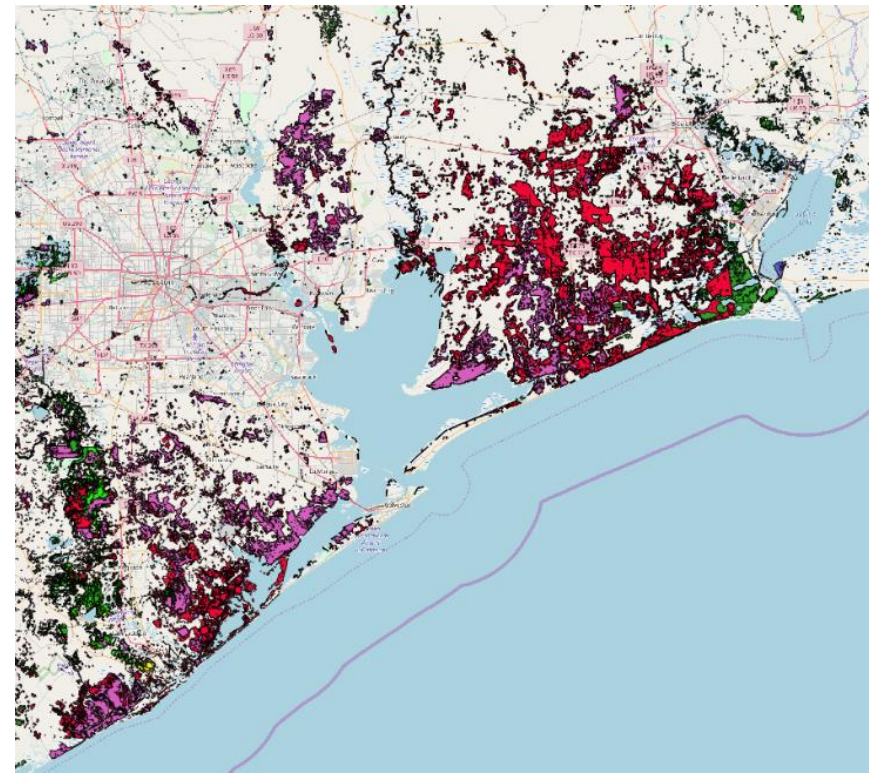
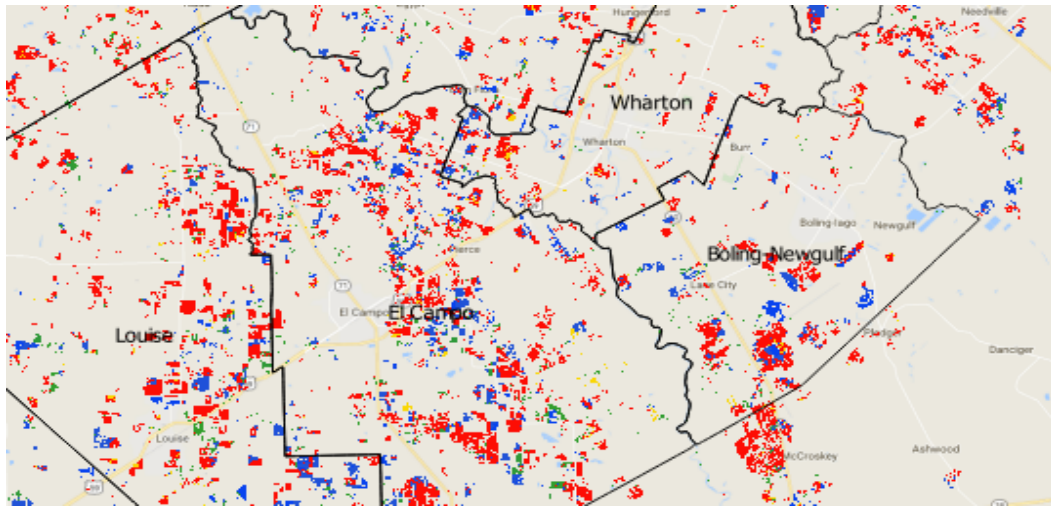
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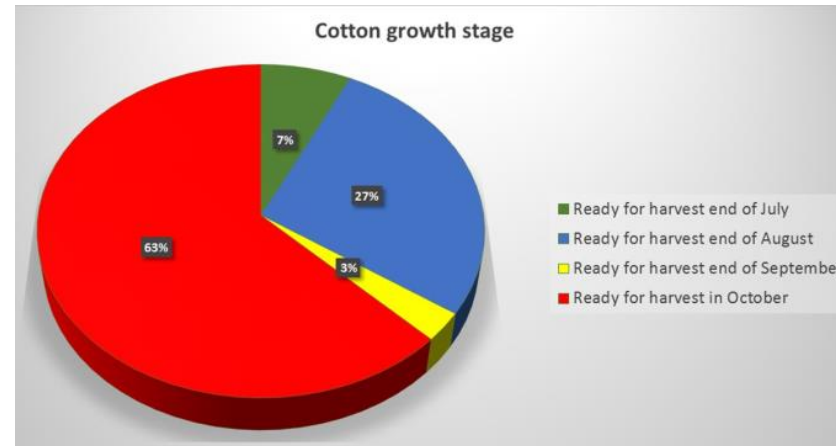
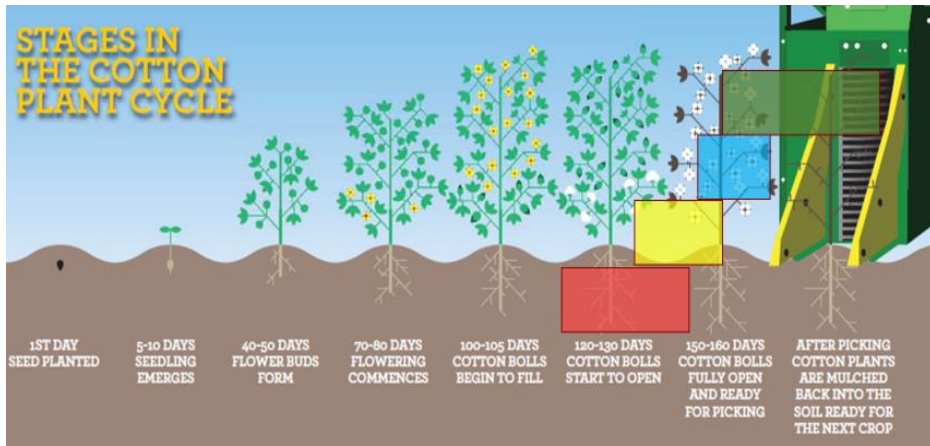


2017 COTTON GROWTH STAGE

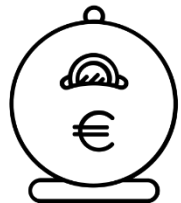


- Ready for harvest end of July
- Ready for harvest end of August
- Ready for harvest end of September
- Ready for harvest in October

- 27-Aug-2017
- 28-Aug-2017
- 29-Aug-2017
- 30-Aug-2017
- 31-Aug-2017
- 03-Sep-2017
- 04-Sep-2017
- 05-Sep-2017
- 06-Sep-2017



Take away messages



Solutions:

- have been developed with the support of our technical and scientific partners
- integrate different type of data that have been turned into information as needed by end users
- can be customized according to end user needs and data
- can be provided through the usage of web services
- Support damage assessment/loss estimation and portfolio management
- Introduce an objective instrument to support risk evaluation and loss verifications
- Contribute to promote new insurance products (i.e. indirect insurance products), also in areas never covered before by insurance



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