

# APOLLO PROJECT FUNDED THROUGH H2020



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APOLLO  
P L A T F O R M

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# CONTEXT

🌐 APOLLO – Advisory platform for small farms based on Earth Observation (EO)

🌐 H2020 Topic: [EO-1-2015 - Bringing EO applications to the market](#)

🌐 Type of action: Innovation action



# H2020 Topic:EO-1-2015 - Bringing EO applications to the market

## 🌐 Specific challenge:

- 🌐 Commercial product/service based on EO data
- 🌐 Highly automated process
- 🌐 The product shaped according to the users' needs

## 🌐 Transnational collaboration – access to markets beyond national borders

## 🌐 Focus on SMEs

## 🌐 Focus on Copernicus Sentinel data



# H2020 Topic: EO-1-2015 - Bringing EO applications to the market

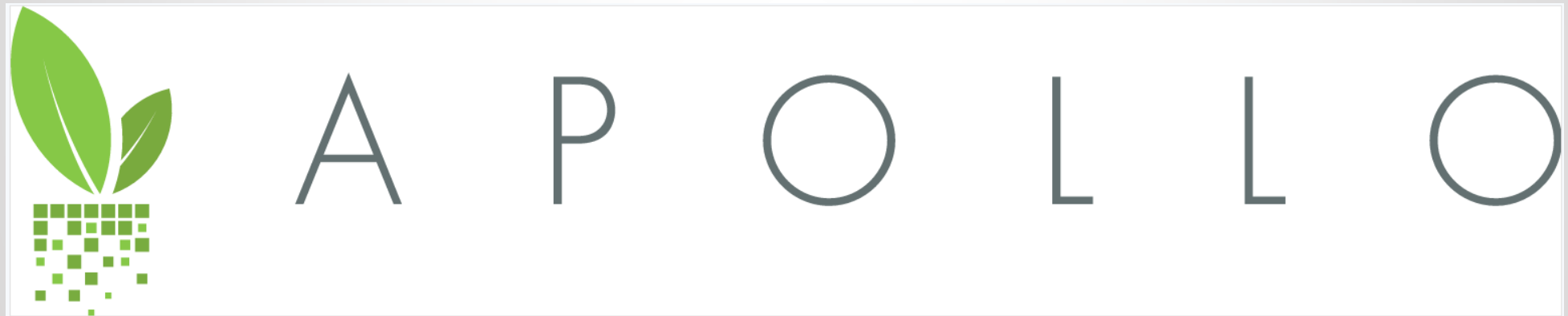
## 🌀 Expected impact:

- 🌀 Innovative EO applications with demonstrated commercial value with targeted client communities
- 🌀 Complete integration into the customer's existing business processes
- 🌀 Enhancing the European industry's potential and boosting business activity
- 🌀 Significant turnover for the participants, and creation a significant number of new jobs



# THE IDEA OF APOLLO

- 🚀 Commercial platform that will provide a suite of farm management advisory services specifically designed to address the needs of small farmers



# THE IDEA OF APOLLO - SERVICES

## Tillage Scheduling



Soil degradation due to improper tillage at low soil moisture content.



Tractor stuck in the mud due to high soil moisture content.

Tillage scheduling service can provide information on soil tillage according to soil's water content. The farmer can estimate if it is possible to apply soil tillage and to identify spots where the soil cannot be treated (e.g. mudding spots).



# THE IDEA OF APOLLO - SERVICES

## Irrigation Scheduling



Wilted crops due to absence of water.



Over-irrigated crop.

Irrigation is the artificial application of water to the land or soil. Irrigation scheduling determines the correct frequency and duration of watering for avoiding problems caused to crops by over- and/or under- application of water.



# THE IDEA OF APOLLO - SERVICES

## Crop Growth Monitoring Service



Wheat with proper development.



Wheat with fungal infestation.

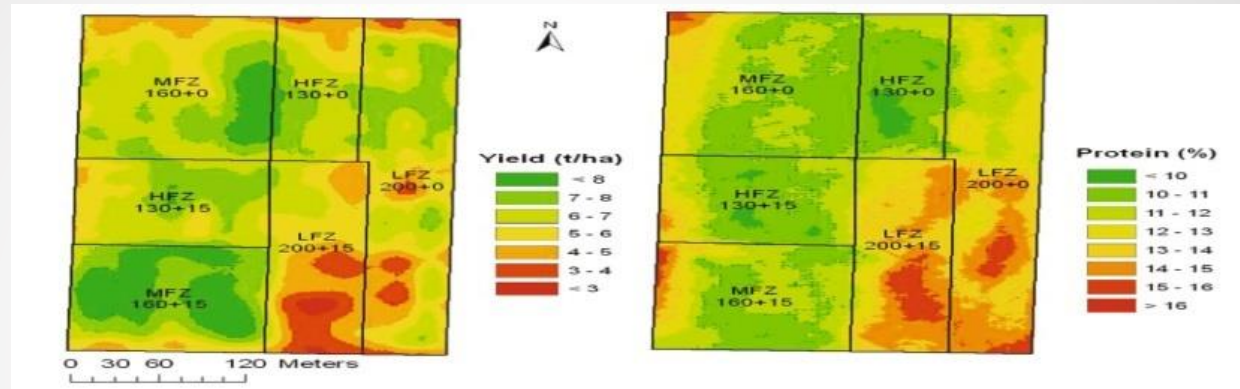
Crop growth monitoring is the process of monitoring the crop status from emergence to harvest. In this way, farmers can be early alerted on infestations and nutrient deficiencies.





# THE IDEA OF APOLLO - SERVICES

## Yield Estimation Service



Wheat yield and protein estimation maps.

Crop yield estimation is the process of estimating crop yield parameters before harvest. Expected income and evaluation on crop and/or variety adaptability can be assessed.



# THE IDEA OF APOLLO

- 🌐 Services are based on geo-spatial information generated from free and open **EO data**, meteorological and auxiliary data
- 🌐 The geo-information include: soil moisture data, biophysical parameters of crops (LAI, Chl/N content, biomass), temperature and precipitation



# THE IDEA OF APOLLO

- 🚀 Services based on automated processing chain
- 🚀 Independence from the need for ground-based sensors
- 🚀 Delivered through a web and mobile interface
- 🚀 APOLLO platform and business case will be validated through pilot testing in Spain, Greece, and Serbia
- 🚀 Result: APOLLO services will be cost-effective and affordable



# COPERNICUS DATA AND APOLLO

- 🚀 Copernicus Sentinel missions: free and open data
- 🚀 Optimal characteristics of the data:
  - 🚀 Sentinel-1: SAR data, spatial resolution 10m, temporal resolution 2-3 days with two satellites
  - 🚀 Sentinel-2: Multispectral optical data, spatial resolution 10m, 20m, spectral resolution 13 bands, temporal resolution 5 days with two satellites
- 🚀 Supportive tools: SCI Data Hub (+API), sen2cor, SNAP,..
- 🚀 Along other open EO data (Landsat, MODIS, etc..) Copernicus data provide great opportunity for business



# SYNERGY BETWEEN SCIENCE AND BUSINESS

- 🌐 Academic institutions: research infrastructure, access to scientific materials, connections with academic community
- 🌐 SMEs: commercial exploitation of innovative products and services, access to the market

PEOPLE

IDEAS

LEARNING

KNOW-HOW



 **THANK YOU FOR YOUR ATTENTION**

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