EQUIPPING ROMANIAN FARMERS TO BECOME MORE SUSTAINABLE

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ROMANIAN PILOT’S GOALS UNDER DEMETER - SIMAVI & APPR

- Development of a decision-making tool, in order to streamline activities related to maize crops.
- Use of information collected by APPR in maize fields (phenological data).
- Use of an already existing farm management platform (INOVAGRIA).
- Use of multiple data sources and correlating them to support accurate decisions (e.g., satellite data, weather parameters, soil sensors).
- Recommendations and real-time alerts on the optimal period of agricultural works.
- Creating farm clusters and profiles corresponding to geographical position and crop types.
INOVAGRIA 100% integrated app:

✓ The management of all operated land
✓ Subsidy simulation, application submission
✓ Management of leased land
✓ Management of technological mix and agricultural works by crop
✓ Nutrient plan and nutrient records keeping
✓ PPP records keeping
✓ Analysis of data from sensors installed in the field
✓ Analysis of NDVI vegetation indices/satellite images
✓ Alerts and recommendations
Romanian pilot – contribution to DEMETER PROJECT

- 15 maize growing farms endowed with smart sensors on the monitored parcels
- Develops an algorithm for calculating the optimal N amount depending on expected yield
- Sets up the right moment for input application/spraying
- Contributes to trans-national digital platforms for managing agricultural area
- Testing and validation of data collected via IoT (soil and air sensors)
DEMETER

Determining the temperature and water stress:

Mapping the affected areas

Assessing plant health

Input application recommendations.

DIAGNOSIS of MAIZE FIELDS

INOVAGRIA - Satellite images, NDVI, overlap the farmer's lands and allow the detection of areas affected by stress (depending on the colour) and fall into the following categories:

- Optimal nitrogen level
- Average nitrogen level
- Low nitrogen level
Determining the temperature and water stress (cont’d): assessing the level heat intensity and frost intensity; assessing the soil moisture.

INOVAGRIA – The weather info collected by the sensors installed on the farmer’s land allows to determine the intensity of the heat / frost and the degree of soil moisture – allowing the user to see the variation of weather parameters over a selected period of time.
DEMETER: FERTILIZING PLAN for MAIZE FIELDS

- Mapping the Nitrogen level for selected plots;
- Recommendations for nitrogen application rate according to soil yield (precursor crops, soil quality and type, previous amounts used);

INOVAGRIA – Returns the calculated recommended nitrogen rate for a maize plot, based on the data entered by the farmer in the technology sheet - nitrogen fertilization information

Map Legend
- Optimum Nitrogen Level (100 - 85%)
- Medium Nitrogen Level (84 - 59%)
- Low Nitrogen Level (48 - 0%)

Recommendation
Parcel 1a - 1 dose of 100kg of urea

Fisa tehnologică - informații fertilizare azot

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- Recommendations for the optimal period of agricultural works (e.g., nutrient application)

- Determination of nitrogen levels in plants.

**INOVAGRIA – Fertilization recommendations can be made based on weather forecasts. Depending on the weather parameters, the recommendations can be: Optimal, Satisfactory, Not recommended.**

![Image of fertilization plan and weather forecast chart]
DEMETER: BENEFITS for FARMERS who USE THE PLATFORM

- **Profit maximization** by optimizing input use;

- **Variable rate** for input application across the same land plot;

- Setting up the **most appropriate time** for different agricultural operations/works;

- **Crop monitoring and historical analysis** of different phenological stages;

- Handy and timely **assessment of the plant health** — satellite & weather data, sensors;

- **Shortened time** for a **science-based decision** regarding PPP applications for pest and disease control.
Thank you for your attention!

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