PRIMO PRINCIPIO

IoT solutions for Rural: Smart-Agricolture

www.PrimoPrincipio.it - www.WiForAgri.com

→ Primo Principio is certified by the Italian Ministry as innovative SME

→ WiFor Technology: awarded “Seal of Excellence” by the EU commission

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Agricultural Crops monitoring → Project Actions

Typical Project actions:

→ **consultancy**: identification of specific needs and technology design

→ set-up of agri-monitoring-network: **monitoring stations and sensors on the fields** totally wireless and energetically self-sufficient

→ Set-Up of **innovative ad-hoc prediction Software** (depending on crop and specific needs)

→ **Training** of local technical staff and users (**technology transfer**)

→ **Software tuning to the local microclimate**: agro-meteo and field data feed the prediction models which **provides DSS (decision support system) to producers** and stakeholders

→ Typical Project duration: 2-3 years

CROP target examples:

- Grapewine
- Corn
- Apple
- Olive
- Irrigation (any crop)
- Manuring (any crop)
- other crops (on demand)
- ...

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WiForAgri Solution: Smart-Service for Agri

Features

Possibility of setting SMS/e-mail alarms

Data visualization through intuitive diagrams

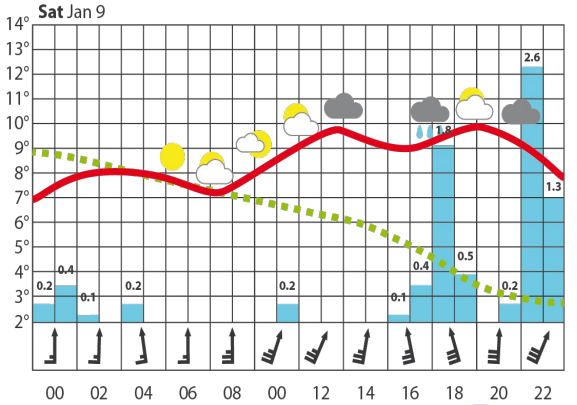
Forecast models of diseases and risky situations

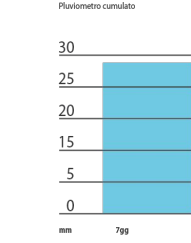
Management of field data and logbook

Historical data storage and possibility to export data in tabular form

Possibility to create ad hoc customizations

"Value from Information"





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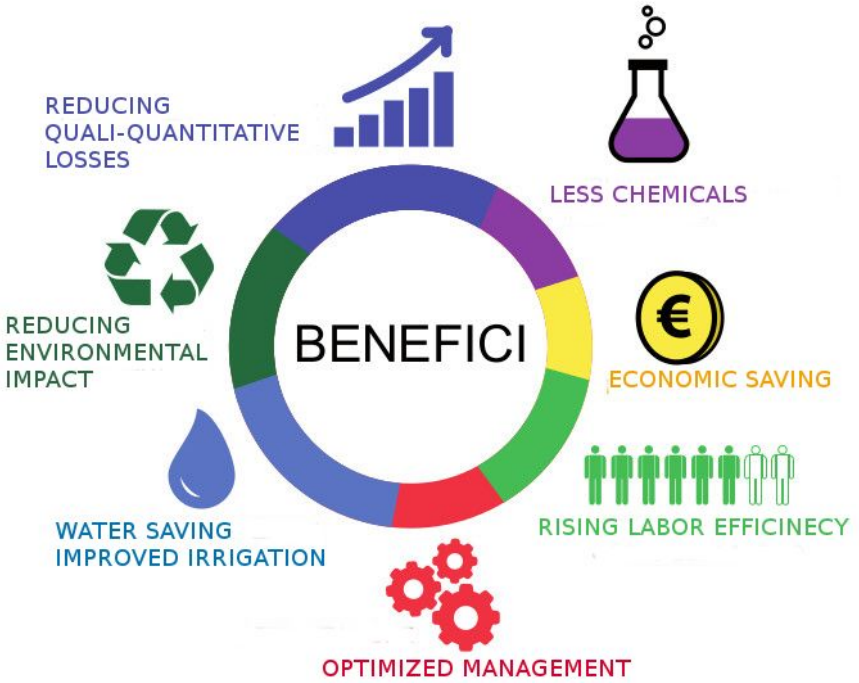
WiForAgri Solution: Value and Benefits

→ Rationalization of pest management and herbicides, **pesticides and fungicides saving**

→ **Irrigation and fertilizers optimization** and **savings in labor costs** and rising labor efficiency due to remote monitoring e control

→ **Guidance to the farmer** about the optimal time for harvesting and improvement in the average **product quality**

→ reduction in **environmental impact** due to the reduction and rationalization of operations



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Case-Study ERSA: Consultancy, tech-transfer and training to the Regional Agency for Development in Agriculture

Where: Italia (Region of FVG) - ERSA is the Regional Agency for Development in Agriculture of the Friuli Venezia Giulia Region

ersa
REGIONE AUTONOMA FRIULI VENEZIA GIULIA
Agenzia regionale per lo sviluppo rurale

When: 2019-2021 - duration: 2 years

Target: Regional Agency and farmers (more than 100.000 farmers): wine, corn, apple, pear, other vegetables and fruits

Budget: about 160.000 Euro

Challenge: **- innovation and training of Regional Agency**
- allow to Regional Agency to provide high-level information **services** and consultancies to local producers**;**

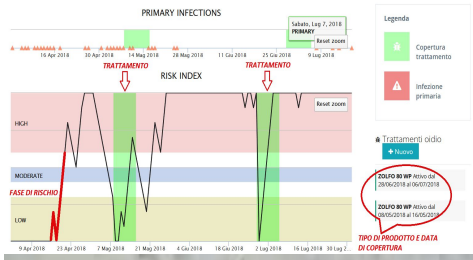
Goal: - efficient integrated defense **reducing chemicals** ;
- improve **quantity** and **quality reducing losses** in difficult seasons**;**
- improve local **farmer agronomic techniques**

Case-Study ERSA: actions and solutions

→ Primo Principio provides **consultancy** (mathematical modeling) to for the development of an **ICT platform** for access to **forecast models** and agronomic and phytosanitary **DSS software** (Decision Support System).

→ <u>The project models concern:</u>

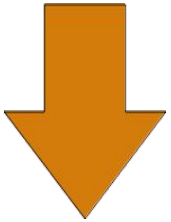
- **Irrigation and crop fertilization** at farm level (for any cultures)
- **Farm management simulation**
- **for viticulture**: downy mildew (Plasmopara viticola); vine moth (Eupoecilia ambiguella); American grapevine leafhopper / flavescence dorée (Scaphoideus titanus)
- **for apple and pear growing**: punctuation of the apple tree (Venturia inaequalis); codling moth (Cydia pomonella)
- **for corn**: corn root worm (Diabrotica virgifera); corn borer (Ostrinia nubilalis)



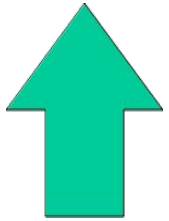
Case-Study ERSA: expected results

ERSA has now an innovative **IT platform** to provide **high-level information services**

Innovative **models and DSS** to provide consultancies and warnings to producers



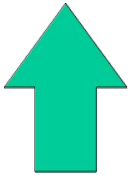
chemical reduction above 30% as an average for local ecosystem



- **quantity** and **quality**
- improved **agronomic techniques** of local farmers

First Target: the Regional Agency enhancing its tools and know-how
Potential Target (final users) → more than 100.000 farmers

economical and environmental sustainability of producers



Regional Agency funding capabilities