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**

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)
- ...

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
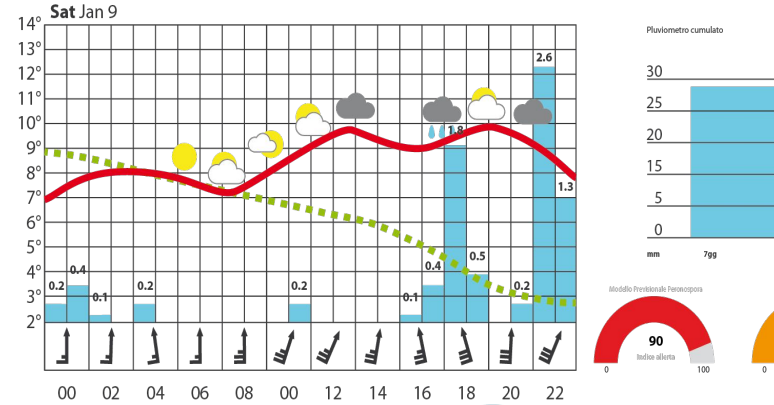

Management of field data and logbook

Historical data storage and possibility to export data in tabular form

**Possibility to create ad hoc customizations**

"Value from Information"

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
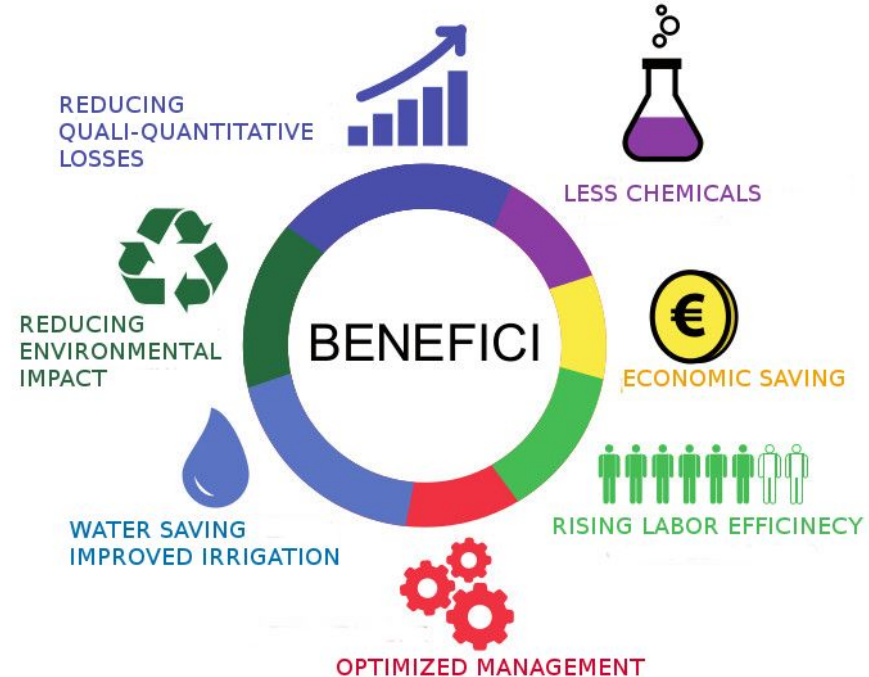
Case-Study SUSGRAPE: sustainability viticolture

Where: Italia (Region of FVG) and Slovenia

When: 2017-2020 (funded Interreg ITA-SLO Project) - <u>duration: 3 years</u>

Target: cross-border wine-producers (more than <u>10.000 farmers</u>)

Budget: about <u>300.000 Euro</u> (budget related to the following challenge)

Challenge: - **develop and validate innovative forecasting models**
          (downy mildew and powdery mildew);
      - **optimize field management;**

Goal: - efficient integrated defense **reducing chemicals** ;
      - researching about **bio-pesticides** and **bio-fertilizers;**

17 → Private Company
2 → Producer Consortium
1 → ICT innovative SME
1→ University
2 → Research Centers
1 → Chamber of Commerce

Case-Study SUSGRAPE: actions and solutions

→ cross-border monitoring network : **42 monitoring stations** totally wireless and energetically self-sufficient

→ Development **innovative ad-hoc prediction SW** for "downy mildew and powdery mildew"

→ **Validation of prediction model** on field

→ **Training** of technical staff of farmers-partner

→ Using the tablets provided within the project, the WiForAgri platform will enabled partners to **upload field data**

→ **Tuning prediction model to the local microclimate**: Agrometeo and field data feed the prediction model which **provides DSS** (decision support system) to producers
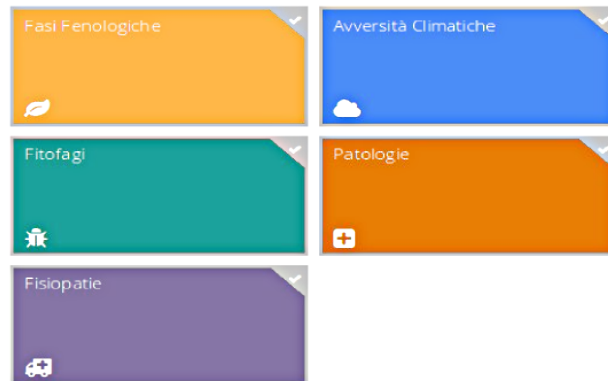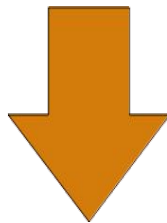
Case-Study SUSGRAPE: expected results

Innovative **prediction models** which will be **location-based** and **tunable** by farmers

Innovative **DSS for local production ecosystem** (and not for single farmers)

chemical reduction above 30% as an average for local ecosystem

toward **bio-pesticides in viticulture** for further **chemical reduction**

Potential Target (final users) → more than 10.000 farmers

"We want to show that when agriculture invests in appropriate technologies, it gets results of excellence"

economical and environmental sustainability

market success funding capabilities