VISCA

VINEYARDS INTEGRATED
SMART CLIMATE APPLICATION

VISCA Project

Overview

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 730253.

Introduction

- Agriculture is a highly dependent sector on heat, sunlight and water, and therefore very sensitive to **climate change**.
- According to climate projections, weather events are very likely to become more extreme and frequent overpassing agriculture´s **adaptation limits**.
- Even if **policies** and efforts to reduce emissions prove effective, impacts of climate change are inevitable.

- **Strategies and actions to adapt to climate change impacts are needed.**

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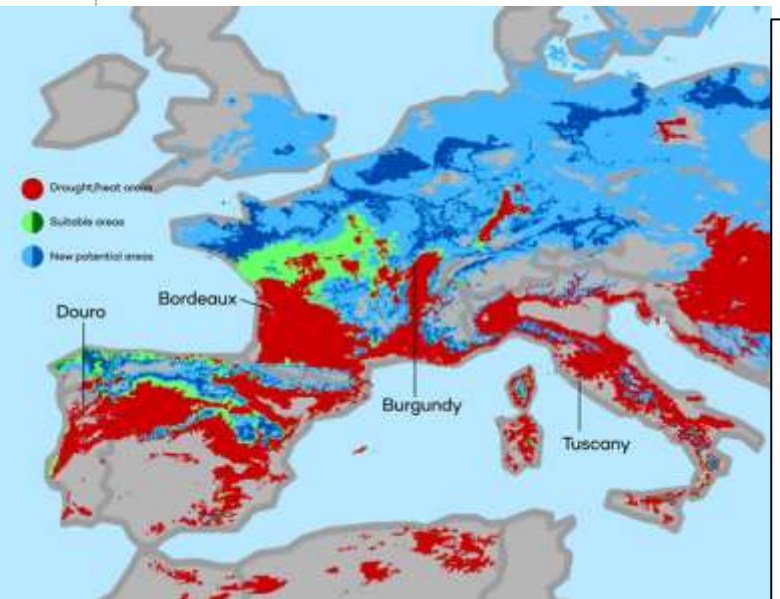
Introduction

- **Premium wine-grapes** are threatened since grapevines are extremely sensitive to their surrounding environment directly **affecting the European wine industry**.

- Direct and indirect **economic activity** linked to winemaking and the commercialization of wine is the main economic activity of regions from South of Europe.



(Areas in red with extreme heat and drought stress in 2015.)

Source: Conservation International http://winefolly.com/update/climate-change-vs-wine-a-snapshot-of-year-2050/

Introduction

- In EU, farming employs over **20 million** people (Eurostat statics, 2015).
- **The European Union is the World leading producer of wine.**
- Between 2013 and 2017, the average annual production was **168 million hectolitres.**

Source: 2015, OIV/ ceev http://www.ceev.eu/images/documents/press_releases/2016/Brochure_CEEV_-_High_resolution.pdf

Brief Overview

- **VISCA:** Vineyards´ Integrated Smart Climate Application – **H2020 project**.
- **Total Budget:** 3,2 M€ / Awarded Grant = 2,8 M€
- **Duration:** 36 months (01/05/2017-30/04/2020)
- **Consortium composition:**

11 partners from 5 countries

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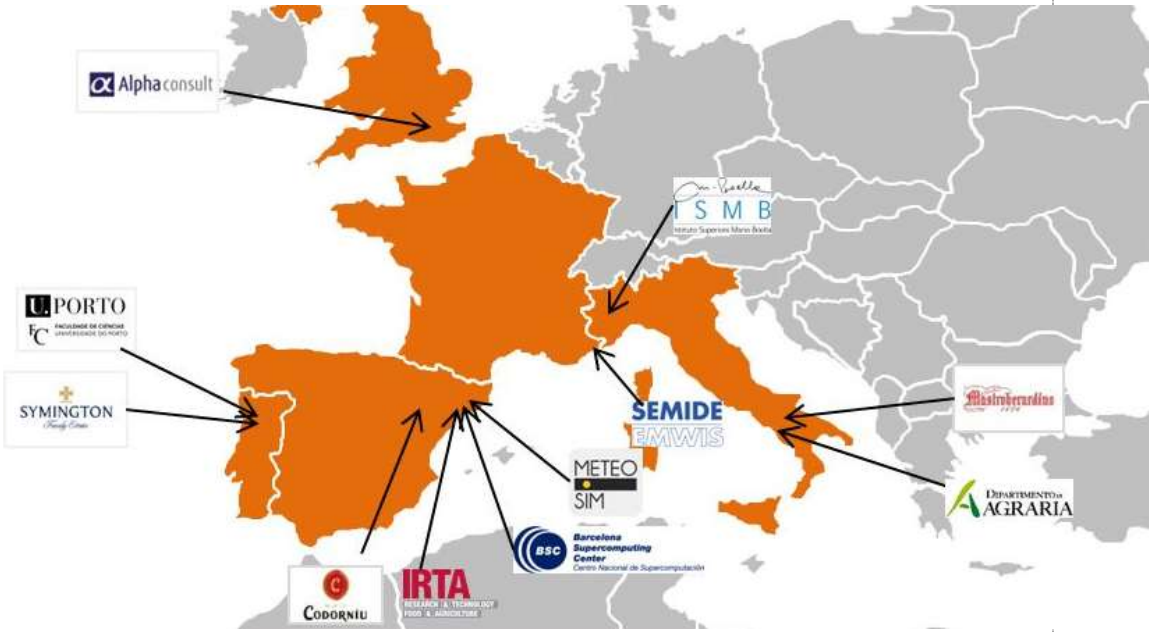
Partners

- **3 end-users:**
  - CODORNIU, MASTROBERARDINO, SYMINGTON
- **3 scientific/research entities:**
  - IRTA, UNINA, UPORTO
- **1 ICT solutions provider:**
  - ISMB
- **2 climate data providers:**
  - METEOSIM, BSC
- **1 dissemination partner:**
  - SEMIDE
- **1 exploitation partner:**
  - ALPHA CONSULT



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VISCA Project

- VISCA is a **Climate Service (CS)** and **Decision Support System (DSS)** that integrates climate, agricultural and end-users´ specifications to design medium- and long-term **adaptation strategies** to climate change on vineyards.

- The main objective of VISCA is to make European **wine industries resilient to climate changes** while minimizing costs and risks through an improvement of the production management.

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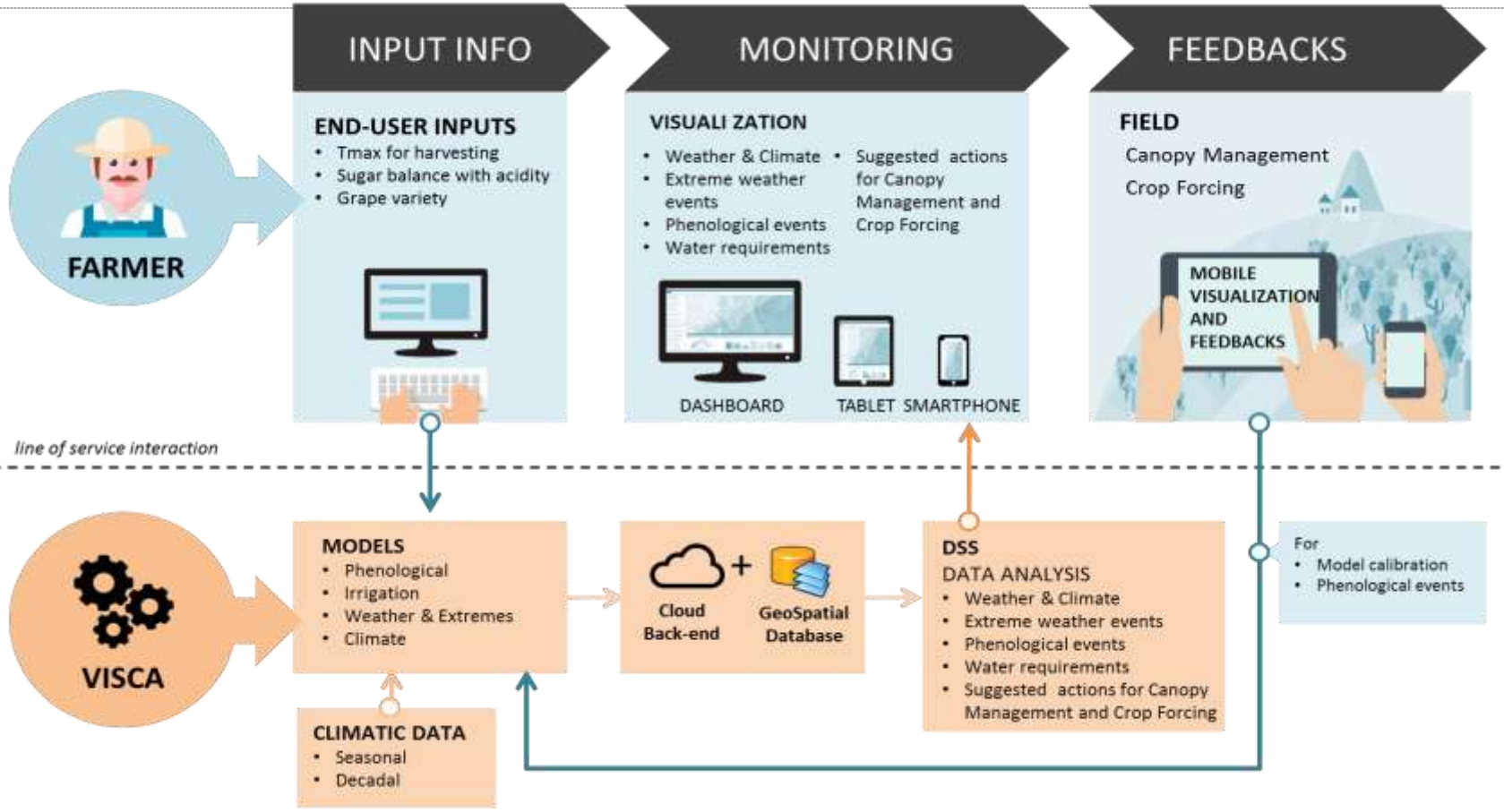
VISCA SYSTEM ARCHITECTURE

Methodology



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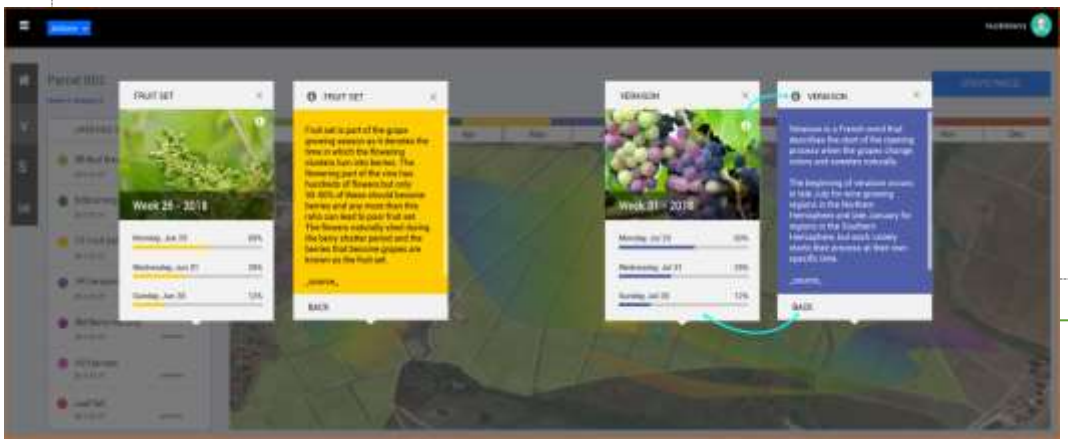
Methodology

- **VISCA tool outputs**
  - Supply of well-founded decisions of specific aspects of crop planning (budburst, harvesting, defoliation, pruning, minimum water needs, etc.).
  - Short, medium-term and seasonal weather forecasting
  - Warning against (short-term) extreme events
  - Historical and future projections on the effects of climate change over phenological events.

VISCA tool will forecast the optimum harvesting dates according to the technology applied (Crop Forcing or Shoot Trimming)



VISCA Status

- In order to validate the strategies suggested by VISCA, trials are being carried out in the demo-sites : Symington Family Estates (Portugal), Codorníu (Spain) and Mastroberardino (Italy).
- The models produced under this project as well as the climate forecasts **are being validated** based on the climate and phenology information provided by these three companies.
- The applicability of two agronomic techniques proposed by VISCA are being studied: **Crop Forcing**, to be tested in Portugal and Spain, and **Shoot Trimming** in Italy.
- The first year of trials is ongoing and to date the vines have shown a **positive response** to the techniques applied!

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VISCA Status

Crop Forcing To delay Harvest dates

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VISCA Status

Phenological and Irrigation strategies:
Validation and Calibration

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Replicability

- **Finally, VISCA aims to create replicability opportunities in the wine sector as well as in the other sectors (olives, rice and cereals) in Europe and beyond.**

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www.visca.eu

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