



Working group on “Water relations & Irrigation”

Report on WG activities

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The main “water-related” issues the EU Fruit Sector is called to face

- Water scarcity/quality
- Heat stress
- Uncertainty in irrigation scheduling
- Pollution due to excessive irrigation
- Climate change and potential shifts in the cultivation areas for the different species
- Maintenance of “terroir”
- Re-calculation of K_{cs}



Some approaches to face such needs and problems

- Genetic improvement of varieties/rootstocks
- Soil and plant-based sensors for the early detection of drought stress – remote sensing
- Decision Support Systems to optimize the orchard water management
- Cultural strategies to save water (e.g. regulated deficit irrigation, shading nets, precision irrigation)
- Cultural practices to preserve soils / overcome soil deficiencies
- Etc.

The Water Relation and Irrigation WG

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- A map of Europe with several pink dots indicating the locations of member institutions. The dots are located in France, Italy, Spain, Portugal, and Israel. The map is overlaid on a blue background.
- INRA-Montpellier (FR)
 - INRA-Avignon (FR)
 - Association climatique moyenne Garonne- ACMG (FR)
 - GRCETA (FR)
 - CEHM (FR)
 - University of Basilicata (IT),
 - CRA-SCA, Bari (IT)
 - University of Pisa (IT)
 - University of Bologna (IT)
 - CSIC-Sevilla (ES)
 - CSIC
 - IRTA-Lleida (ES)
 - ISA – University of Lisbon (P)
 - Agroscope (CH)
 - University of Ghent (BE)
 - Golan Research Institute (IL)
 - Wageningen University (DLO)

2016: new chair and new secretary



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Last WG Meetings

- Montpellier (France) - October 2012
- Bologna (Italy) - November 2013
- Lleida (Spain) - February 2015
- **Potsdam (Germany) – October 2016**

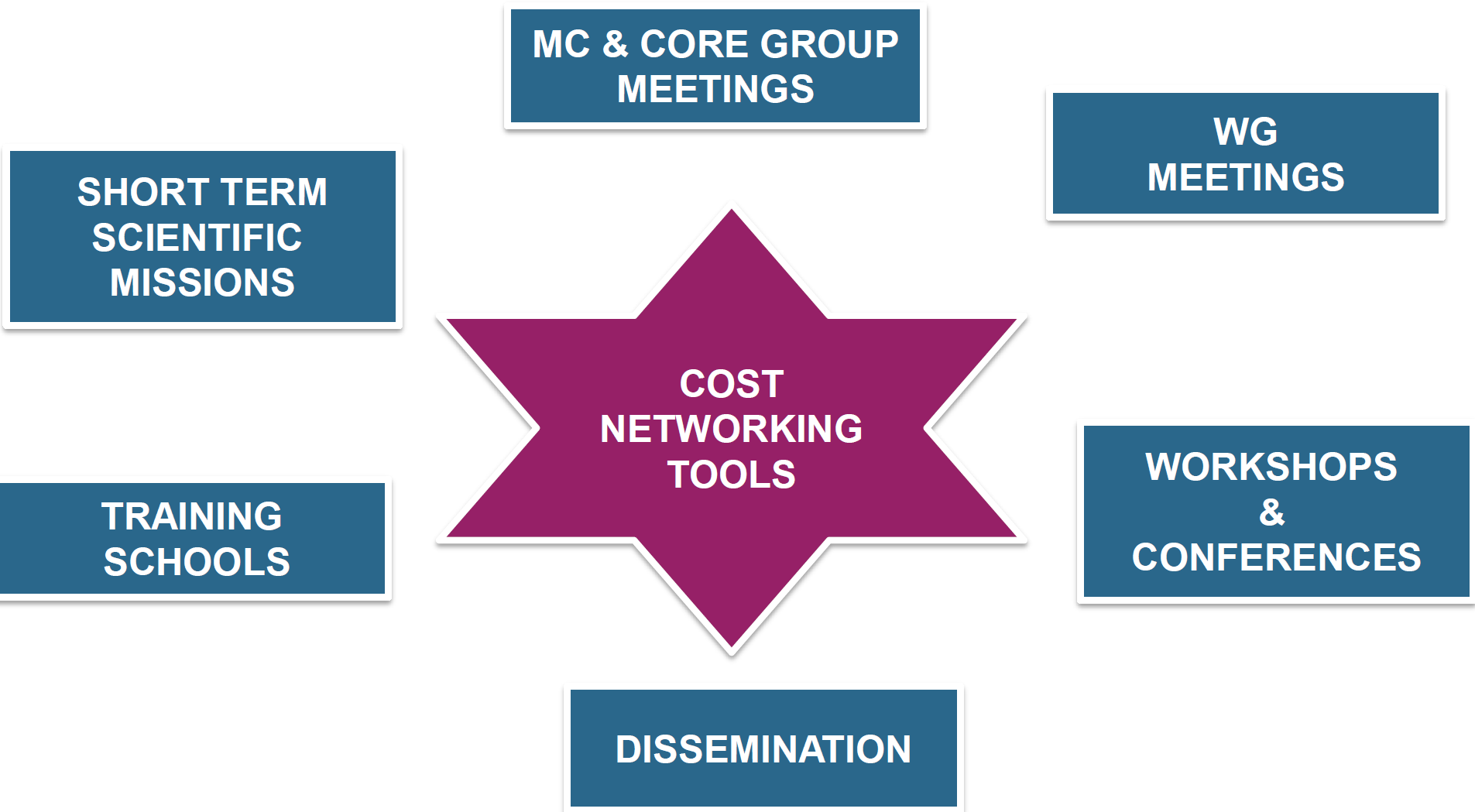
2016 initiatives

- Contribution to **EUFRUIT** scanning reports
- Preparing a **COST action** proposal





COST Networking Tools



THE IDEA:

Understanding which physiological variables, sensors, models are more suitable to be used as plant stress indicators in DSS for the various crops/environments

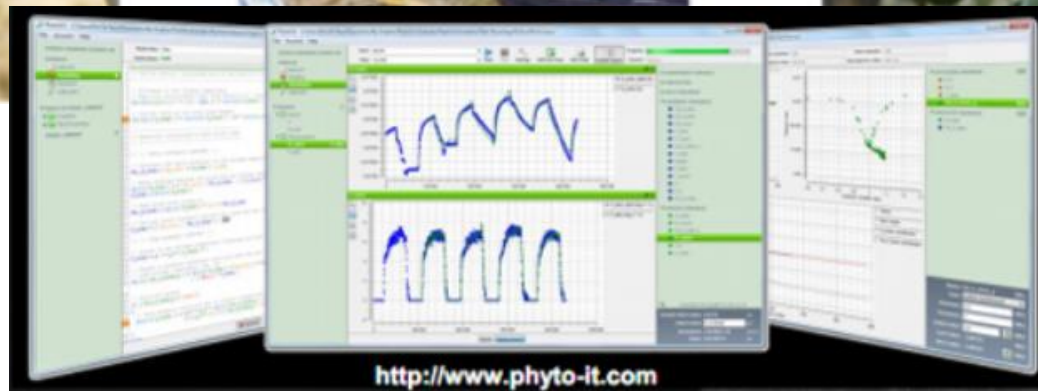
Sap flow

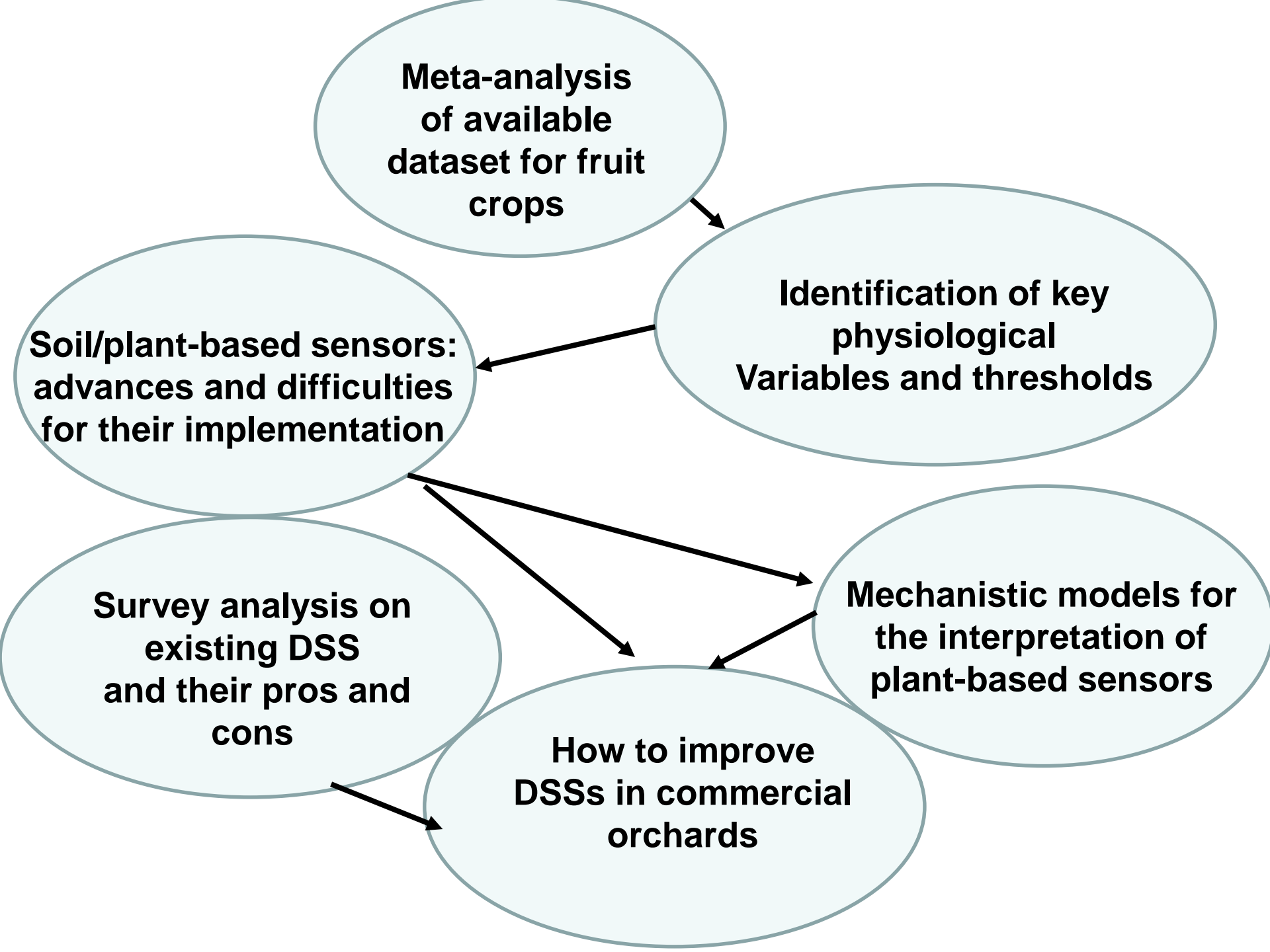


Dendrometers



Leaf patch clamp probes





**Meta-analysis
of available
dataset for fruit
crops**

**Identification of key
physiological
Variables and thresholds**

**Soil/plant-based sensors:
advances and difficulties
for their implementation**

**Mechanistic models for
the interpretation of
plant-based sensors**

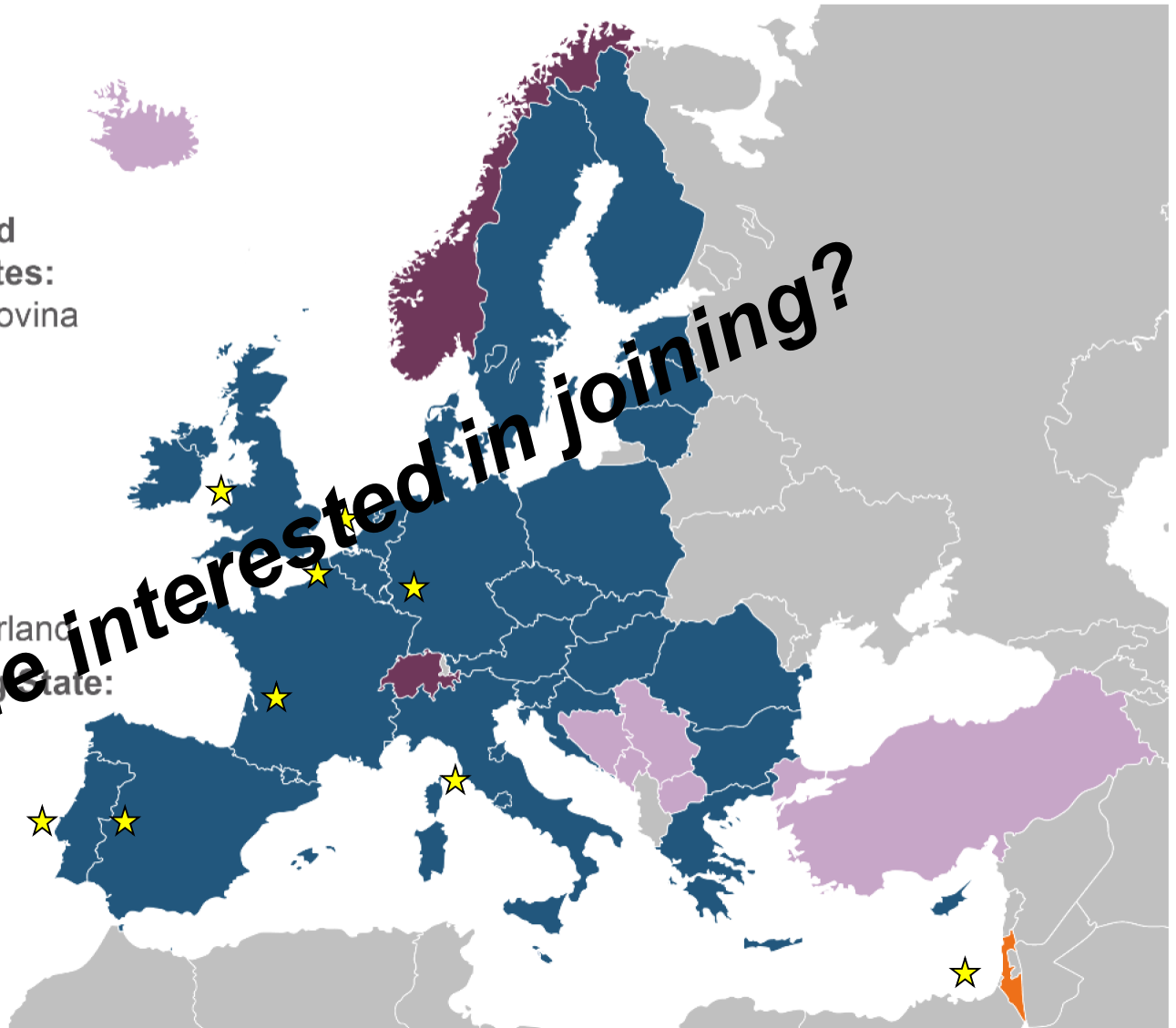
**Survey analysis on
existing DSS
and their pros and
cons**

**How to improve
DSSs in commercial
orchards**

COST Member Countries

- EU 28
- EU Candidates and Potential Candidates:
 - Bosnia and Herzegovina
 - fYR Macedonia
 - Montenegro
 - Iceland
 - Republic of Serbia
 - Turkey
- Other Countries:
 - Norway and Switzerland
- COST Cooperating State:
 - Israel

Anyone interested in joining?



Thank you!



***'Water Relations and
Irrigation' Working Group***