

«Project 101074546. LIFE21-ENV-ES-LIFE H2OLOCK»

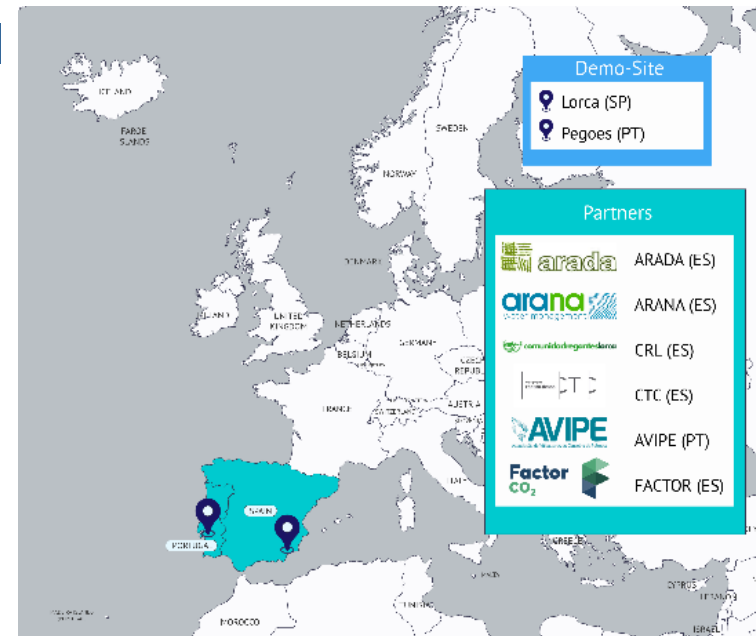
PROJECT LOCATION: Spain/Portugal

BUDGET INFO:

Total amount: 1.782.370,69 €

% EC Co-funding: 1.067.257,97 €

**DURATION: Start: 01/Sep/22
End: 31/Oct/25**



PROJECT'S IMPLEMENTORS:

Coordinating Beneficiary: ARADA INGENIERIA, SL

Partners:

(Arana) Arana Water Management S.L
(CTC) Fundación Centro Tecnológico de Componentes,
(AVIPE) Associação de Viticultores do Concelho de Palmela
(CRL) Comunidad de Regantes de Lorca
(GFI) Global Factor International Consulting S.L.

*José Miguel Gimeno
Project Coordinator*


H₂OLOCK

The objectives of the project.

➤ **SO1. Reducing water evaporation**

In medium to large scale (>20.000m²) AWR up to 80% evaporation losses while keeping water quality by naturally avoiding algae growth up to 100% without any chemical algicides.

➤ **SO2. Being energetically self-sufficient.**

To achieve energetically self-sufficient agricultural irrigation exploitations by integrating PV technology on AWR covers.

➤ **SO3. Being cheaper**

To decrease 30% the solution costs in terms of installation and maintenance in comparison with conventional technologies.

➤ **SO4. Being an universal system.**

Ensuring replicability and transferability to any kind of AWR or different climate conditions and weather phenomena.



➤ **SO5. Being greener.**

To demonstrate the environmental and social benefits of the solution.

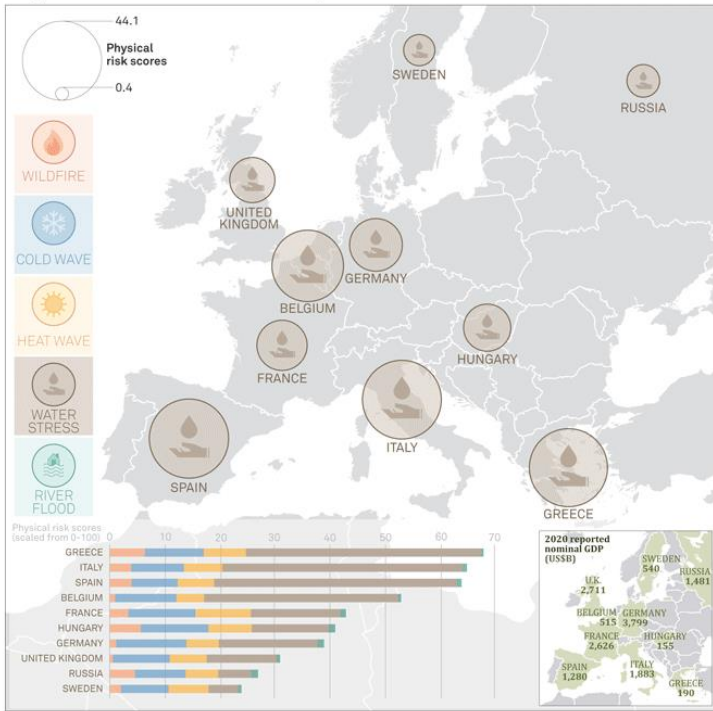
➤ **SO6. Being viable.**

Defining the business model for the commercial exploitation.

➤ **SO7. Being known.**

Moving to disseminate and communicate the results of the project

The problem: Fight against water Stress



RISKS & MONEY

Current annual losses from drought are around 9 €billion for the EU with the highest losses in Spain (1.5 €billion/year)

EVAPORATION IN AWR

Southern regions of Spain (e.g. Murcia), annual evaporation rates of water can reach up to 1.8 m³/m². Losses from 6.5% to 11.7% of the water available for irrigation in the basin

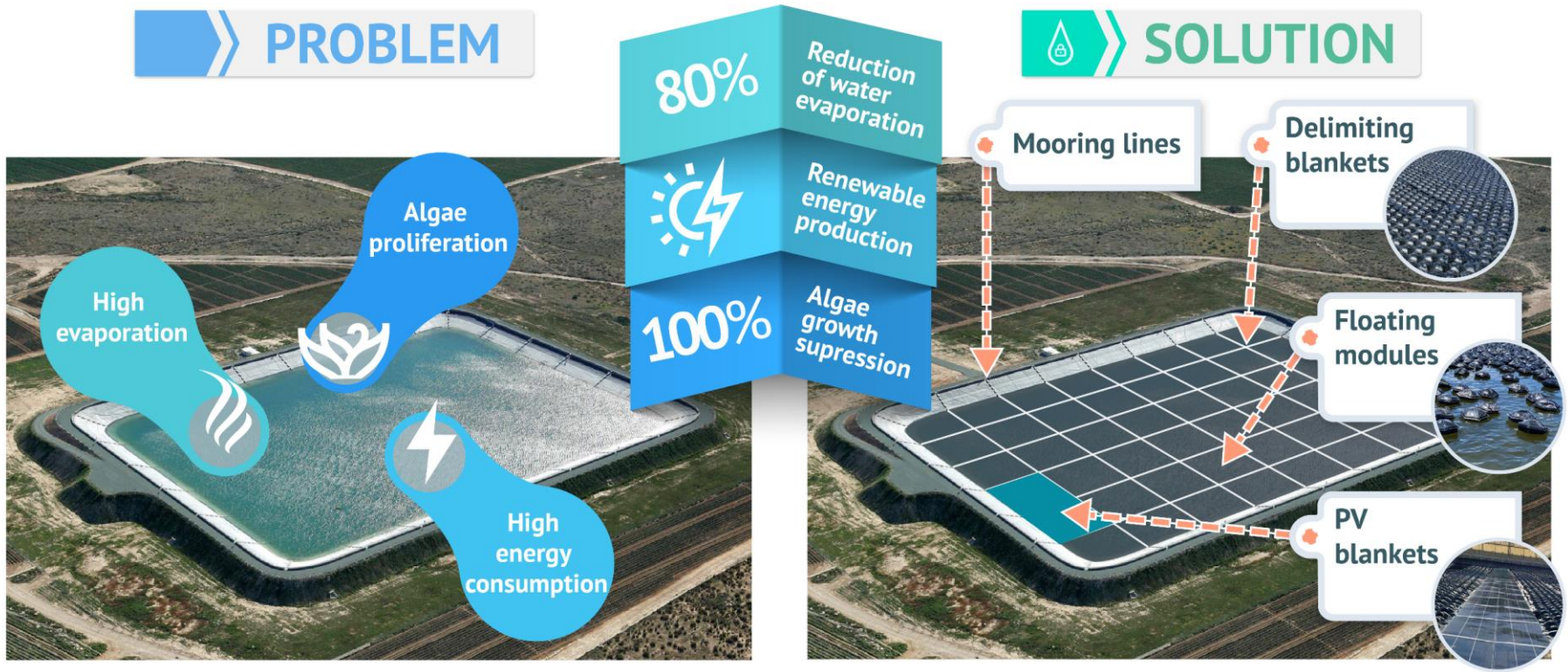
WATER QUALITY IN AWR

Algae blooms negatively affect water quality . Produce odour problems, obturation or blocking of pumps, filters and pipes

NO TECHNICAL SOLUTION



How?



Reducing water evaporation

Covering with Floating tiles and blankets in a particular configuration to avoid climatologic risks

Being energetically self-sufficient

Using as much photovoltaic blankets as needed on the site

EXPECTED IMPACTS

1. Decrease of the evaporation of agricultural water ponds saving 70-120,000 m³ during the project and 1.3 M m³ in 3-5 years

2. Avoid the use of algicides

700kg during the project and 15 ton m³ in 3-5 years

3. Save money

*59,006.21 € for the Spanish demo site, and 21,064.7 € for the Portuguese demo site.
3-5 years: 1.5 M € for AWR in semi-arid areas and 0.472 M € for greenhouse areas.*

4. Be sustainable

0% Chemicals +77% reduction of CO₂ emissions derived from irrigation + energy consumption <5% on the sites +80% reduction of evaporation

5. Social impact in employment

35-60 employments in 5 years.

❑ *Figures calculated expecting 25 sites/year during the first three years, and 50 sites/year after that.*

POLICY IMPLICATIONS

H2OLOCK will create synergies with the following directives:

1. Directive 2000/60/EC, Water Framework Directive (WFD).

2. EU Directive 2018/2001.

3. EU Common Agricultural Policy (CAP).

4. Water Scarcity and Droughts Communication. *One of policy options aligned with H2OLOCK project is Fostering water efficient technologies and practices that can provide significant water savings. The project aims to suppress water evaporation in 80%, thus highly contributing to this aim.*

5. The FAO56 and a broad range of partners has developed the **Global Framework for Action to Cope with Water Scarcity in Agriculture in the Context of Climate Change (abbreviated below to "the Global Framework for Action" and "the Global Framework").**

6. Sustainable Development Goals (SDGs).



POLICY IMPLICATIONS

*At Spanish regional level, H2OLOCK project is supported by current initiatives, such as the one setup in 2017 by the **Land Policy Commission of the Region of Murcia (Spain)**.*

- ❑ *They approved a plan to implement measures to avoid evaporation losses in water reservoirs.*
- ❑ *This kind of initiative is positive for promoting the use of pond cover systems like H2OLOCK.*
- ❑ *Current Spanish Government initiatives include of the implementation of renewable energy installations, like PV technology by means of the ERDF funds.*

Much work remains to be done to make farmers and politicians aware that water storage infrastructure IS NOT COMPLETE without its cover.

The handicap for its implementation is mainly economic



Aids? Promotion? Mandatory?

REPLICATION-TRANSFER-MARKET UPTAKE

175 replications of the Project in 3 years. An achievable goal

- *130 sites in semi-arid areas. Seeking primarily to save water and produce energy*
- *45 sites in greenhouse areas. Mainly looking to solve algae problems and produce energy*



It's possible because:

- *Spain and Portugal farmers belonging to CLR (10000) and AVIPE (400) network will discover the system*
- *Arana has already covered 90 ponds in two years.*
- *The competitors are in the same side building a new market.*
- *Non-agricultural companies which need to store water begin to interest (solar thermal power plants, Desalinization plants, Water management companies...)*
- *Scale: 70000 ponds only in Spain.*

Its hard because:

- *We have to built a new market, and a new way of thinking.*
- *Its still cost expensive in a global crisis (Pandemic, War, Trasports, Energy, ...)*

Thanks