



**Germ of Life**

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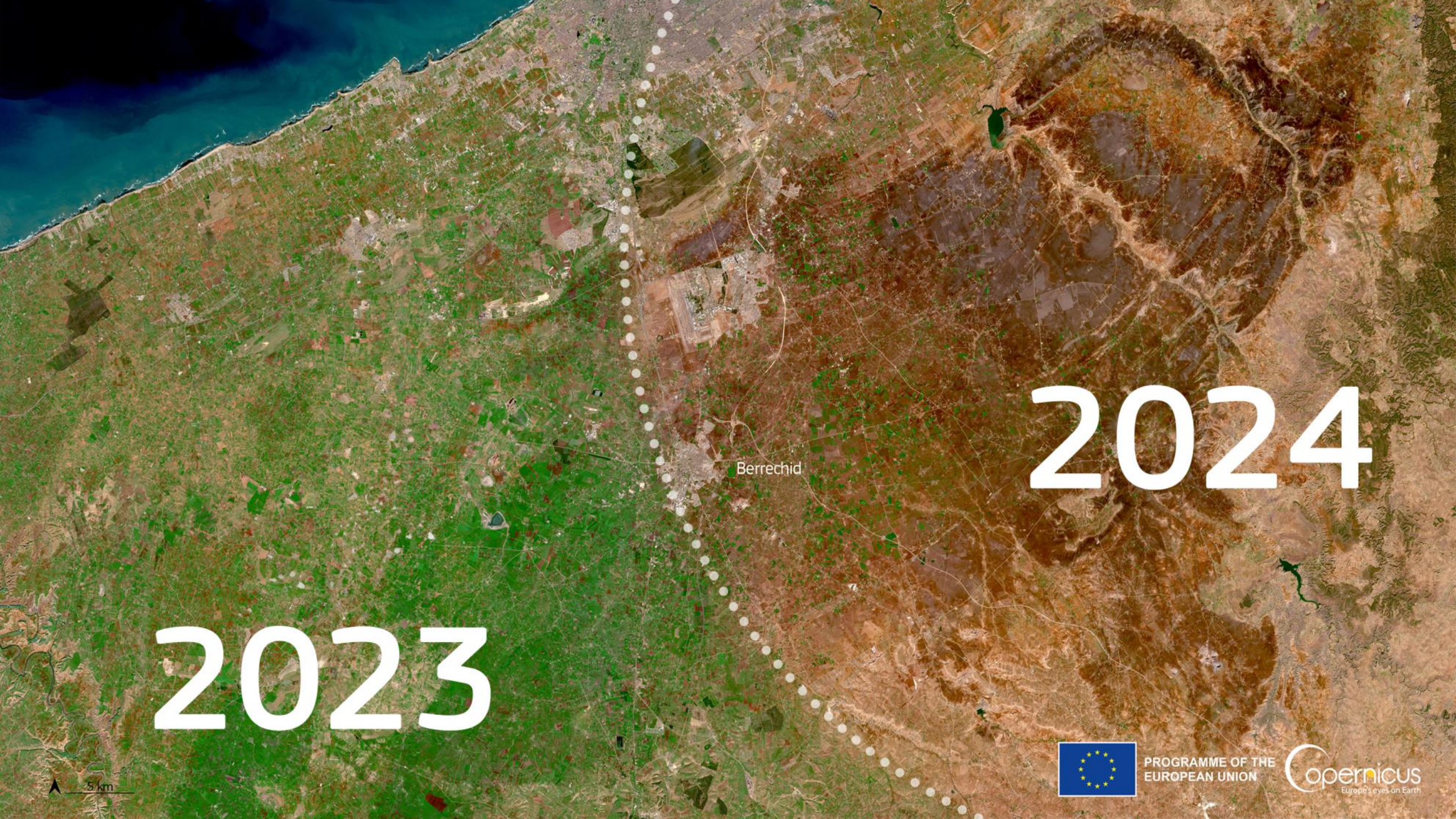
**2D<sup>i</sup>** Sud Est  
**Atos**

PROTECTING, RESTORING AND VALORISING NATURAL HERITAGE



GERM OF LIFE





2023

2024

Berrechid

5 km



PROGRAMME OF THE  
EUROPEAN UNION







NEWS ANNOUNCEMENT | 20 February 2024 | Joint Research Centre | 4 min read

# Prolonged drought and record temperatures have critical impact in the Mediterranean

Severe and prolonged drought events have affected Europe for more than two years and northern Africa for six years, causing water shortages and hampering vegetation growth.





# Germ of life

Partenaires du projet



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UNIVERSITY OF  
PATRAS  
ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ



REGION  
OF WESTERN  
GREECE  
*full of contrast!*



cmcc  
Centro Euro-Mediterraneo  
sui Cambiamenti Climatici



UbiTel

Atos



EDIA  
Empresa de Desenvolvimento  
e Infra-estruturas do Alqueva, S.A.



Junta de Andalucía  
Consejería de Sostenibilidad,  
Medio Ambiente y Economía Azul

DOTSOFT  
TECHNOLOGY+PROJECTS+SOLUTIONS



Visit our website

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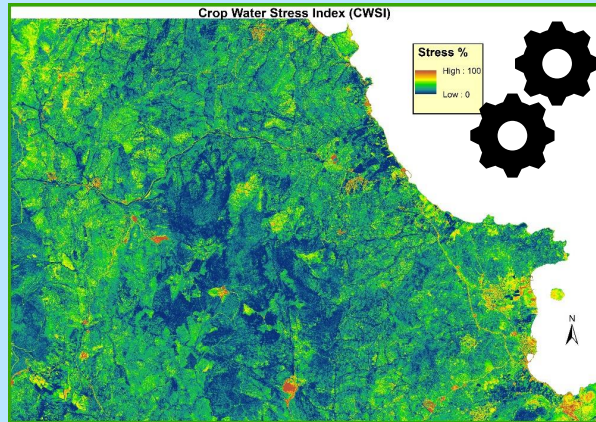


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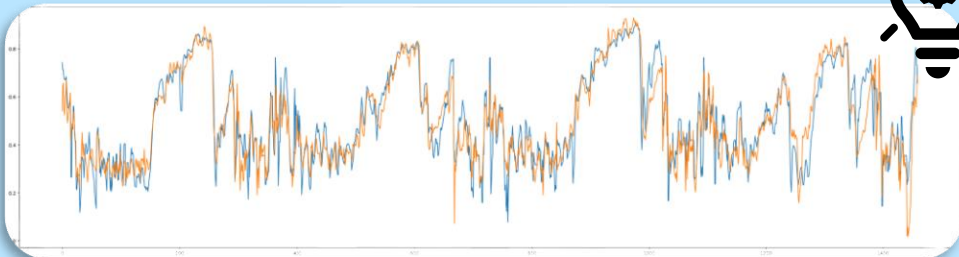
# Contexte du projet

## Plate forme de gestion du risque sécheresse avec solutions basées sur la nature

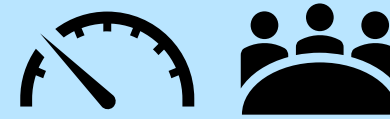
Plate-forme d'aide à la prise de décision



Informations sur les conditions de sécheresse en **temps réel** et jusqu'à **7 mois à l'avance**

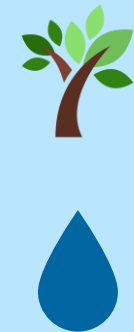


Outils précis pour la gestion des ressources en eau de manière anticipée



Mise en œuvre de solutions fondées sur la nature

Restauration des écosystèmes  
Gestion des sols  
Gestions des ressources en eau  
Préservation/ restauration de la biodiversité  
Approche participative locale



# Contexte du projet

## Plate forme de gestion du risque sécheresse avec solutions basées sur la nature

### GoL Platforms

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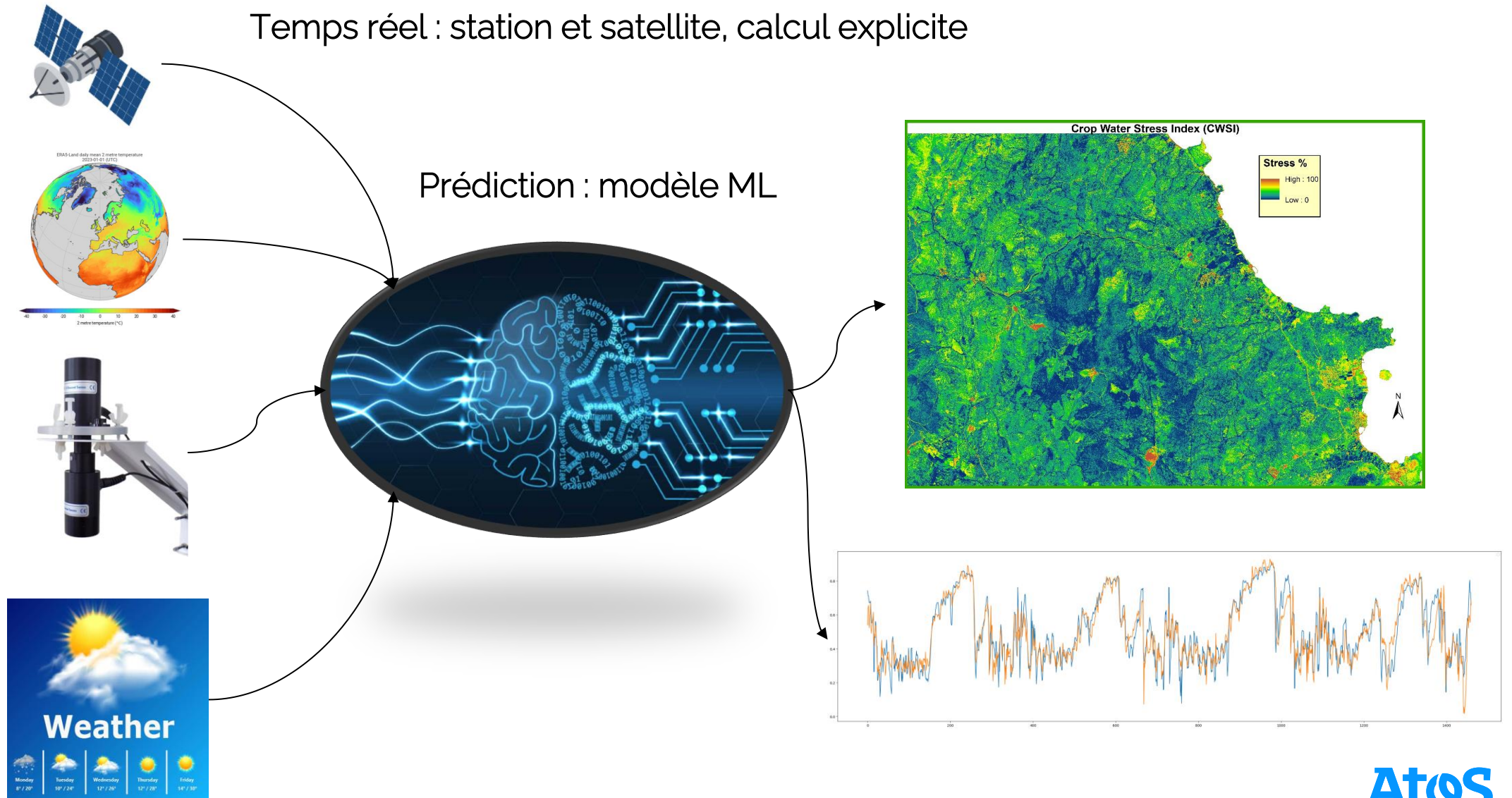
The project aims to address identified challenges and leverage opportunities to provide **proactive drought risk management** through new and adaptable solutions that support various stakeholders in:





# Contexte du projet (2024-2026)

## Caractériser et prédire le risque sécheresse grâce à l'IA



# Stations de mesure

## Installation de capteurs

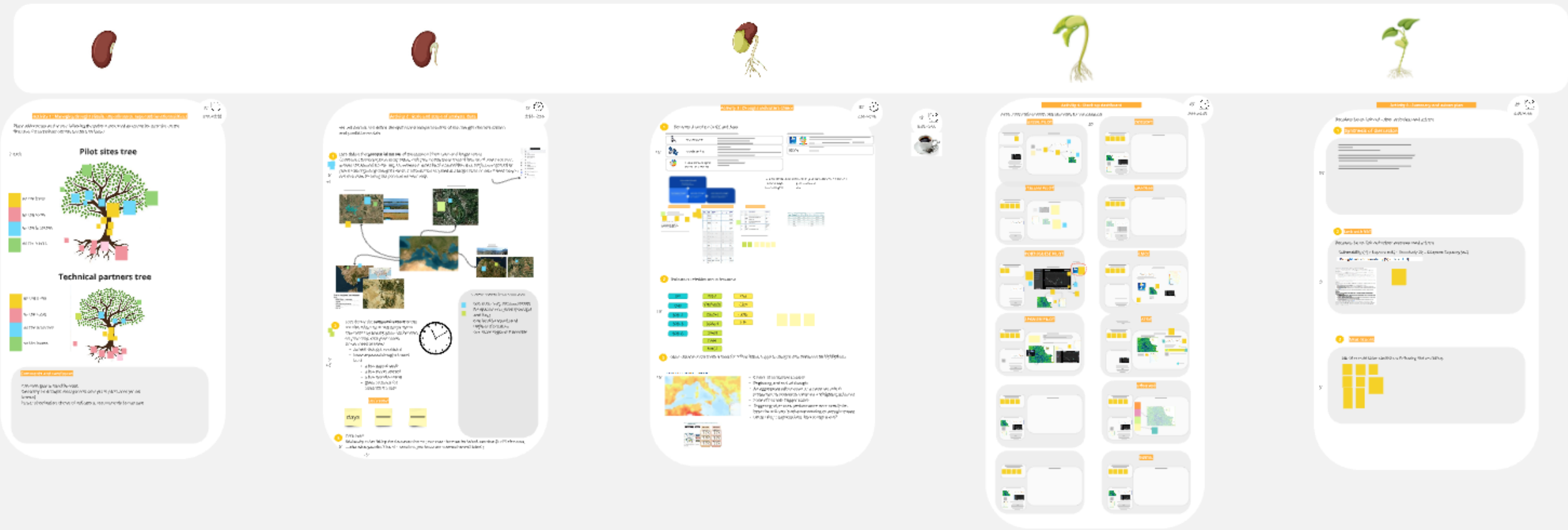


Mesures météorologiques, humidité du sol, conditions de la végétation  
Ecosystèmes et agro-écosystèmes divers



# Co-définition de la plate-forme et des modèles

## Ateliers participatifs

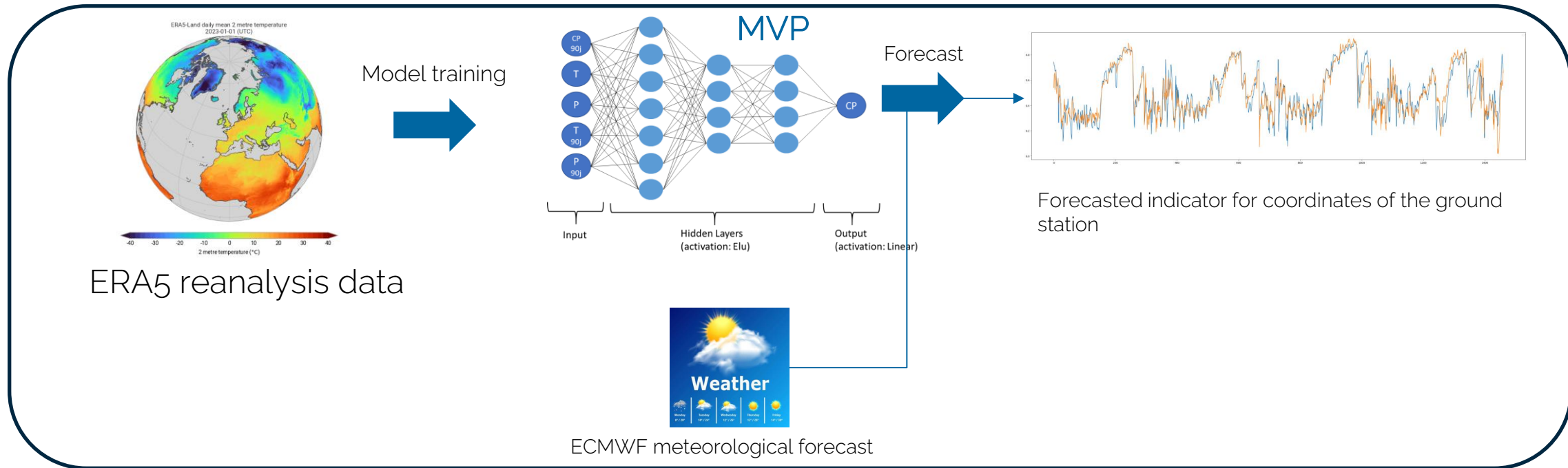


Aim : clarify requirements for Activity 1.4, such as optimal predictive time horizons, spatial scale, how the outputs would be used. The different activities enabled to identify priorities and to list elements yet to clarify.



# Development of the solution for 1.4

## Overview



Ground station data to validate and assess performance of predictive models  
Can also be used to calculate local indicator for near real time (current drought conditions)



Remote sensing data to validate and assess performance of predictive models  
Can also be used to calculate local indicator for near real time (current drought conditions)



# Crop Water Stress Index model

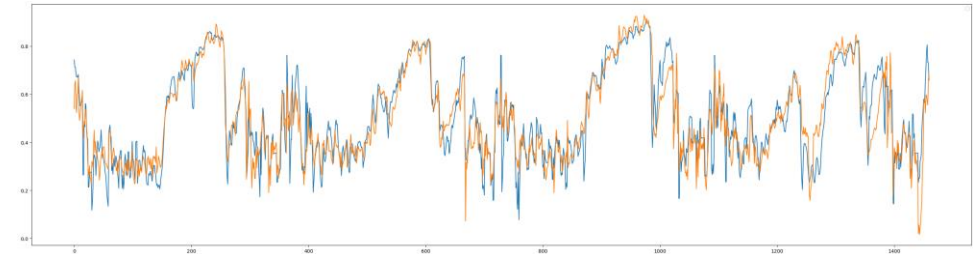
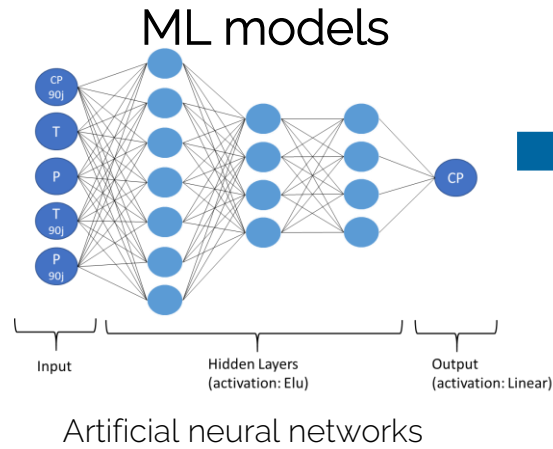
## Initial results 1 : sensor data

Spanish test site (data transmitted by CMCC) for proof of concept

Training and  
validation



Ground station



CWSI forecast  
(observation in blue, prediction in orange)

Best performance : NSE = 0,82

Forecast  
mode



Input data in production TBC  
ECMWF meteorological forecasted data (P, T, p...)  
Using SEAS5 and Set III ENS



# Crop Water Stress Index model

## Initial results : Satellite data

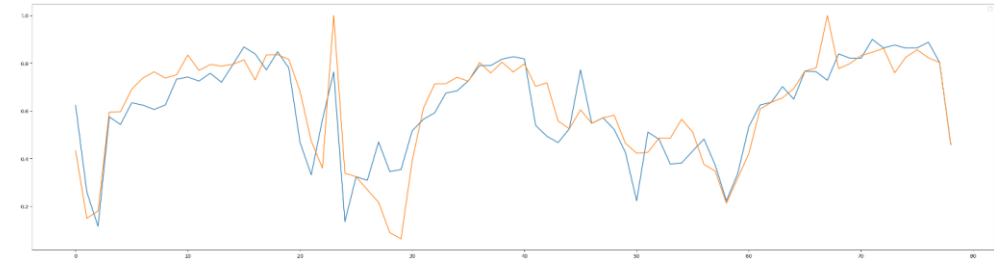
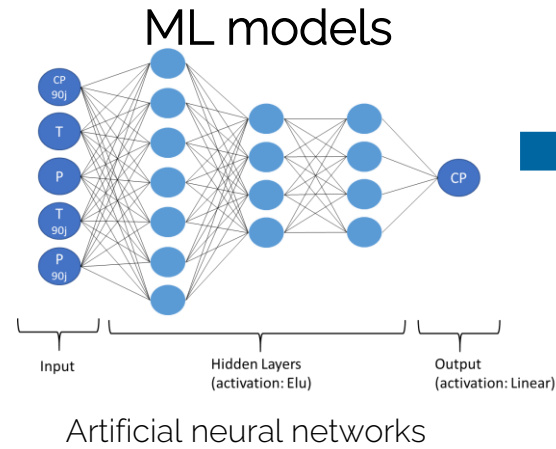
Spanish test site (data transmitted by CMCC) for proof of concept

Challenge : very limited data points 2000-2023

Training and  
validation



Sentinel 2



CWSI forecast  
(observation in blue, prediction in orange)

Best performance : NSE = 0,82

Forecast  
mode



Input data in production TBC  
ECMWF meteorological forecasted data (P, T, p...)  
Using SEAS5 and Set III ENS

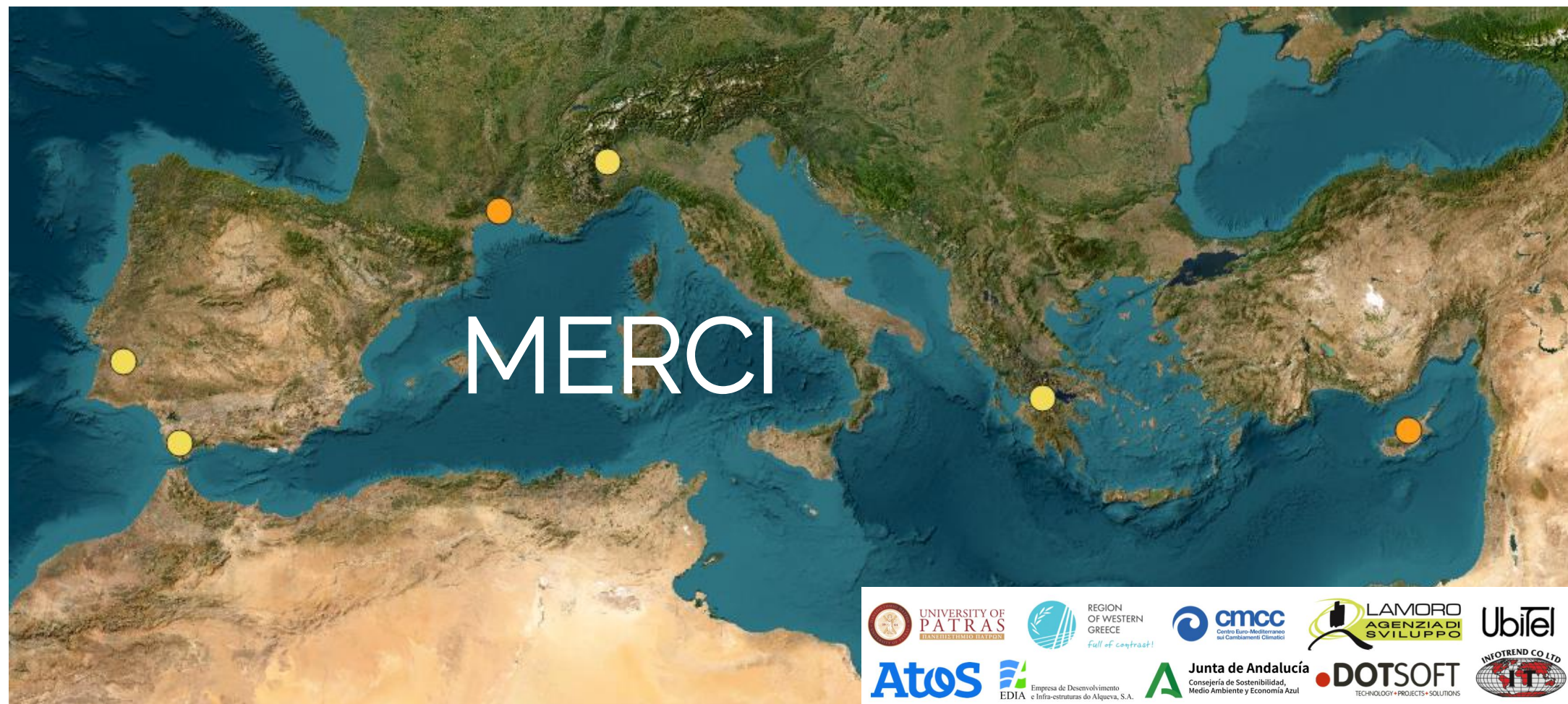


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