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Webinar:

Climate change adaptation on European islands

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LIFE ADAPT2CLIMA

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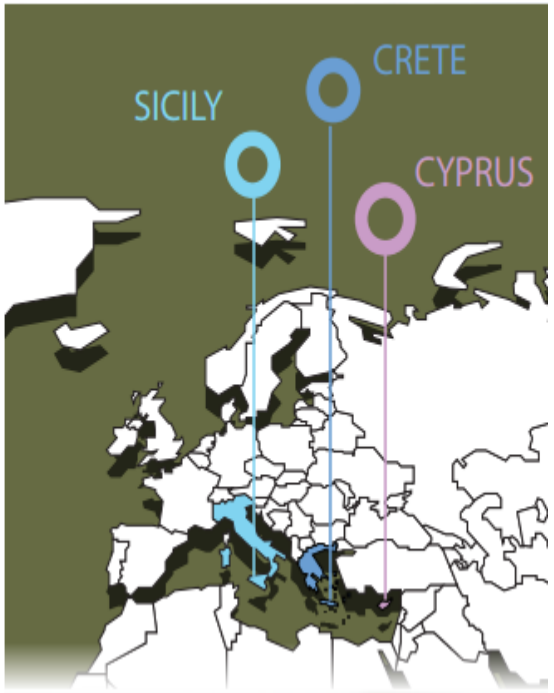
Title: **Adaptation to Climate change Impacts on the Mediterranean islands' Agriculture (LIFE14 CCA/GR/000928)**

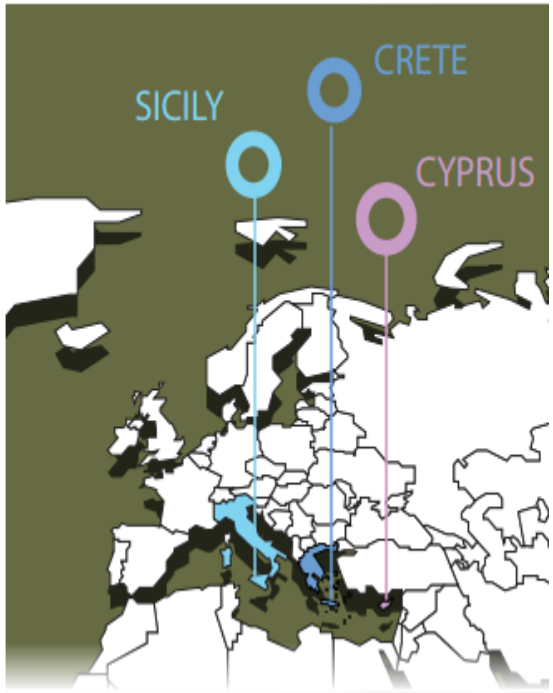
The overall aim of LIFE ADAPT2CLIMA is to **increase knowledge** on the **vulnerability** of EU Mediterranean **agriculture** to climate change and to **support decision making** for adaptation planning



Duration: **53 months** (1 Oct. 2015 – 29 Feb. 2020)
Project Budget: **1,497,060 €** (60% EC funding)
Implementation Areas: **Crete (Greece), Cyprus, Sicily (Italy)**

- **Coordinator**: National Observatory of Athens-Greece

- **Partners:**
  - National Technical University of Athens - Greece
  - Agricultural Research Institute - Cyprus
  - Institute of BioEconomy (CNR-IBE) - Italy
  - Region of Crete - Greece
  - Department of Agriculture, Rural Development and Mediterranean Fisheries, Region of Sicily, Italy



olive trees

vineyards

tomatoes

crops

wheat

potatoes

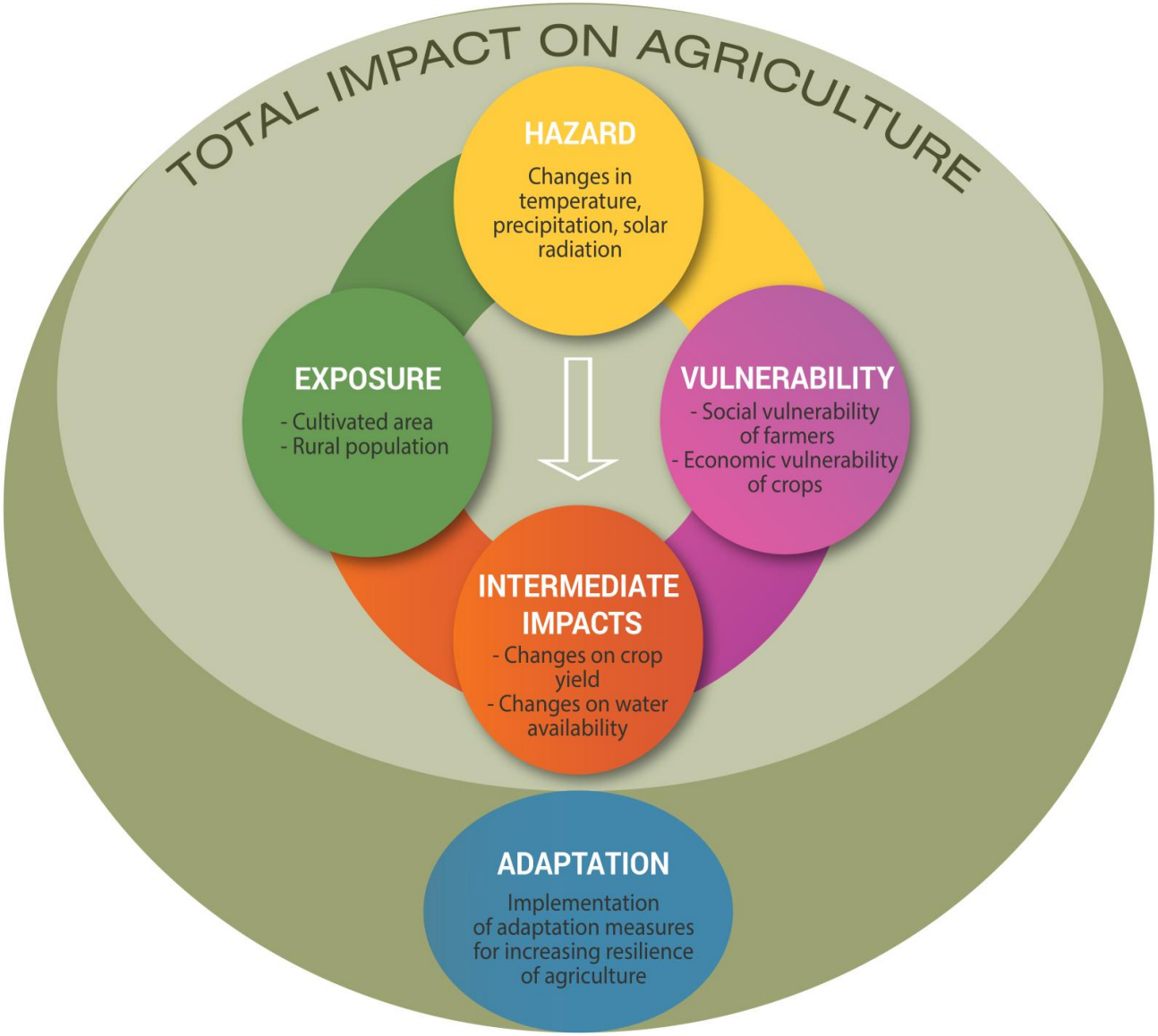
barley

Results

- The **assessment** of **climate change impacts** on **crop production** in the three islands.

- The **development** and **demonstration** of a **user friendly** and **interactive decision support tool** for supporting decision making in agriculture.

- The **development** of **adaptation strategies** for the agricultural sectors of the islands.



Total Impact on Agriculture

- Based on the IPCC AR5 (2014) terminology
- Assessment at geospatial level so as to enable the identification of high risk areas where adaptation measures should be implemented

Total impact on agriculture =

Impact on crops + Vulnerability

Impact on crops = *Crop yield change * Cultivated area per crop*

+

Vulnerability = *Social vulnerability + Economic vulnerability*

Social vulnerability = *Size of agricultural population; Dependency on agriculture; Age of farmers)*

Economic vulnerability = *Economic importance of crops (in terms of revenues and value)*

Total impact after adaptation = *Total impact w/o adaptation – Adaptation*

All indicators were normalized using a 5 degree scale to allow for their correlation

IMPACT ASSESSMENT METHODOLOGY

Climate models and scenarios

Two RCMs developed within the **EURO-CORDEX** initiative at a hor. resolution of 12km:

- HadGEM2-ES/RCA4
- MPI-ESM-LR/RCA4

Average climatic conditions expected for the period **2031-2060** according to the following Representative Concentration Pathways (RCPs):

- RCP4.5-Stabilization of GHG concentration levels, with mitigation policies
- RCP8.5-Increasing GHG concentration levels, no mitigation policies

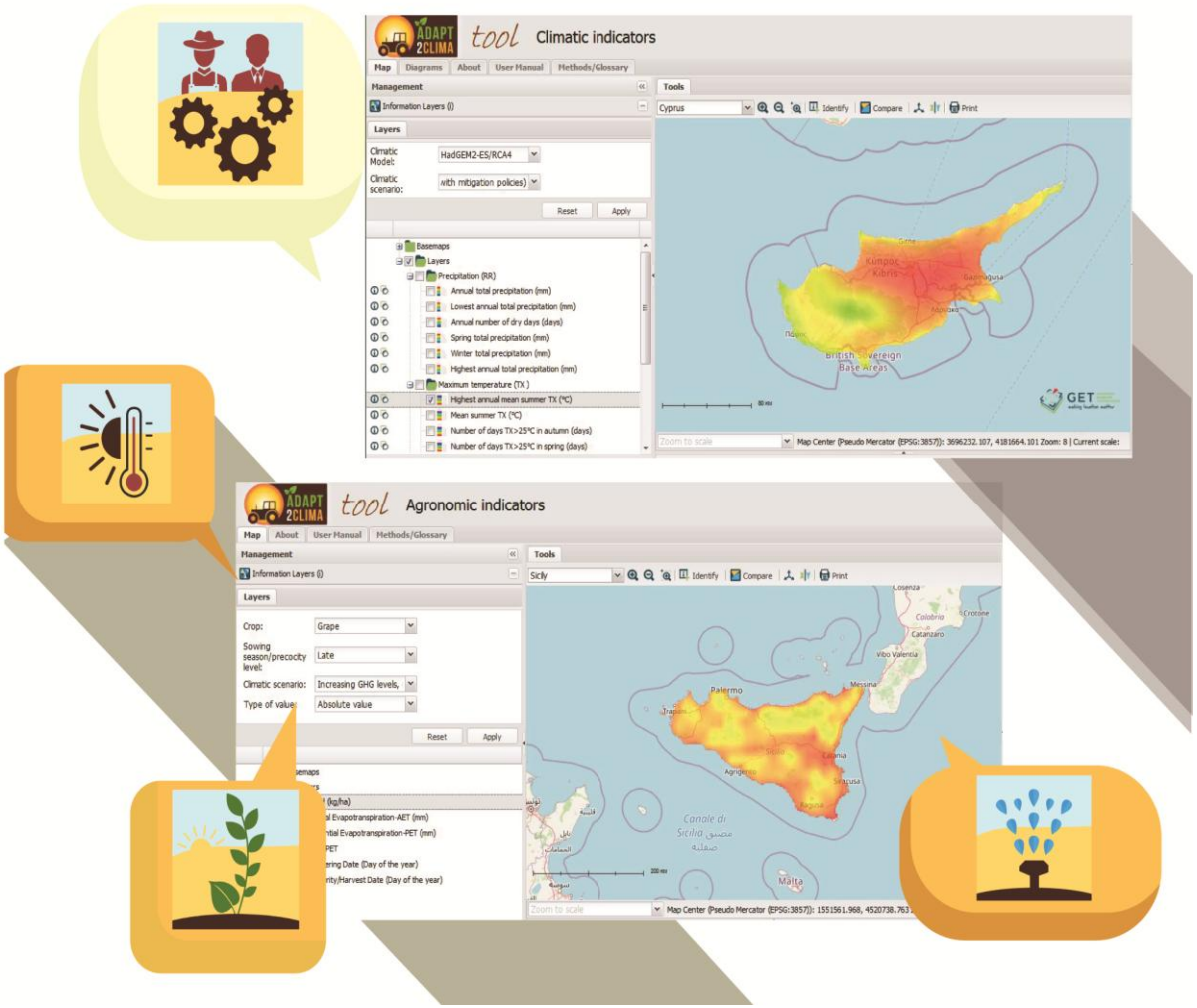
long-term adaptation planning

Extreme climatic conditions according to RCP8.5:

- Intense warm/cold and dry/wet years

short-term adaptation planning

ADAPT2CLIMA decision support tool : https://tool.adapt2clima.eu

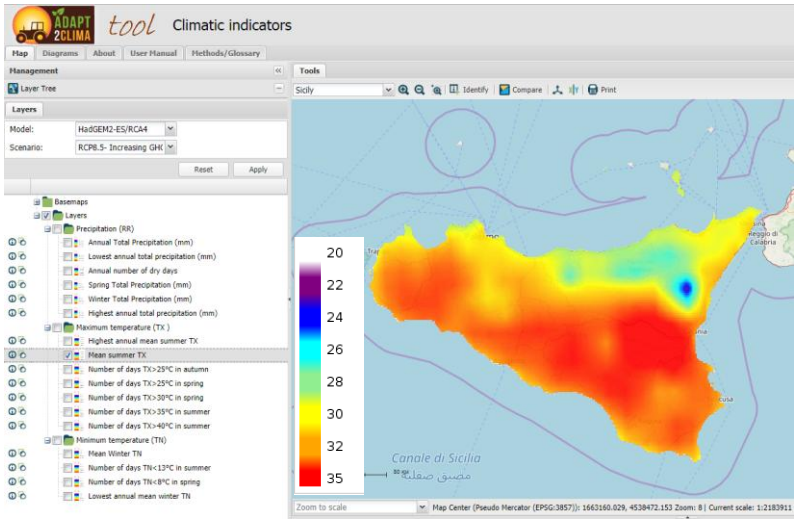


Tool components

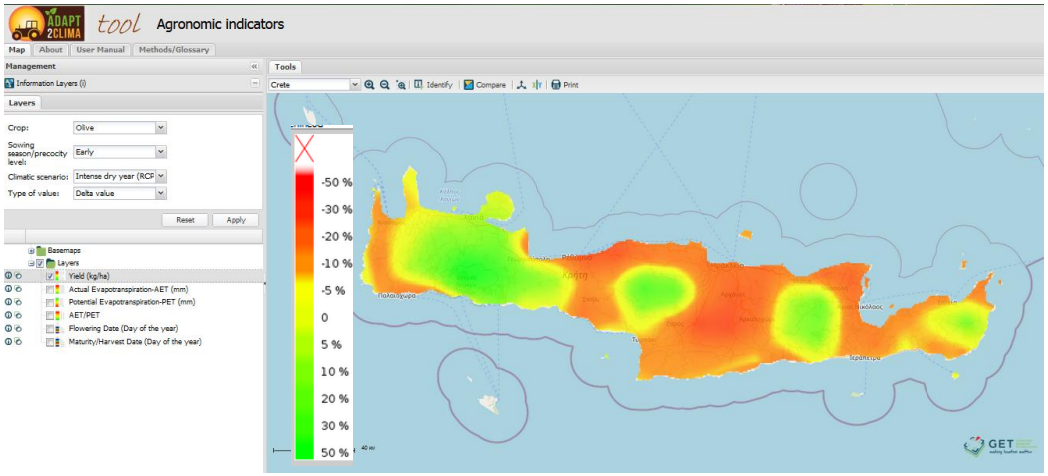
Provides information through **interactive maps** and **graphs** within a **GIS-based environment** on:

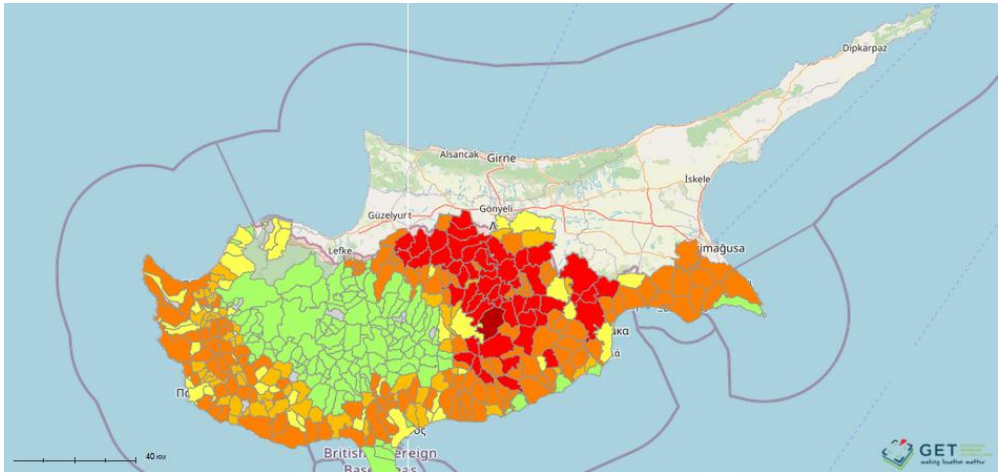
- agriculture relevant **climatic indicators**
- **hydrologic** and **drought** indicators for the project's pilot areas
- **crop performance** indicators for different sowing seasons and precocity levels for each crop
- **socio-economic** indicators used in the cc impact assessment
- evaluation of available **adaptation measures** for addressing climate change impacts on crops
- **total climate change impact assessment** for each crop **with or without the implementation of adaptation measures**

Mean summer maximum temperature – RCP8.5



Olive- yield change for an intense dry year under RCP8.5





Total impact (without adaptation) on olives – RCP4.5

Legend Impact	None	Low	Low to medium	Medium	Medium to high	High	No cultivated land

Potential users of the tool

- **Individual farmers** and agricultural cooperatives may be informed on the expected cc impacts to their cultivations as well as on the available measures for adaptation
- **Agronomists** may support farmers to the adaptation process, while the agribusiness industry may redesign or develop new adaptation-oriented products
- **National, regional and local authorities** may gain an overall insight to the expected cc impacts on their agricultural sectors and identify the available adaptation measures in order to include them in adaptation strategies and policies
- The **academic community** may access valuable scientific data to promote research on climate change and agriculture-related research fields
- **Non-Governmental Organizations**, **civil associations** and the public in general may gain insight on the cc impacts for the project areas, promote public acceptance of adaptation policies and push for governmental action

Replicability of the tool

- The ADAPT2CLIMA tool is universally applicable to any region/municipality of Italy and Greece.

- The minimum data required for conducting a climate change impact assessment are the expected crop yield change (%) and the cultivated area at municipal level, as well as some economic data related to the examined crops.

➢ **Competent authorities may decide on the specific areas and crops where adaptation measures should be implemented**

Adaptation strategies of agriculture to climate change

Three adaptation strategies of agriculture to cc were developed as a first policy outcome.

Cyprus	Sicily	Crete
• proposed adaptation measures will be incorporated in the new Rural Development Programme 2021-2027 and in revised Climate Adaptation Action Plan	• first political orientation document towards a Regional Strategy in Sicily • streamline for the future planning of the 2021-2027 Rural Development Program of the region	• the results of the ADAPT2CLIMA decision support tool, for identifying crops' vulnerabilities and selecting the proper adaptation measures will be used in the Regional Adaptation Action Plan

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Thank you for your attention.

For more information please visit our website:
http://adapt2clima.eu/en/