



Taste it, enjoy it. it's olive oil.

| 24

MADRID, SPAIN
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**Spanish National
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EL PAÍS
MÁS RICO DEL
MUNDO



The olive oil sector facing climate change: **part of the solution**

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Oil Technology and
Environment Department



Olive Oil World Congress
Madrid, June 26, 2024

The Unit: OLIVE GROWING, OLIVE OIL TECHNOLOGY & ENVIRONMENT

IDENTIFICATION, PRESERVATION & IMPROVEMENT OF GENETICAL RESOURCES OF OLIVE TREES

- Protect and develop olive genetic resources & pathogen-free genetic material for the repositories.
- Network of germplasm banks in IOC member countries

TECHNOLOGICAL IMPROVEMENT

- Spans every area of olive growing:
- Technological improvements in terms of processing
- Valorization of by-products

CLIMATE CHANGE

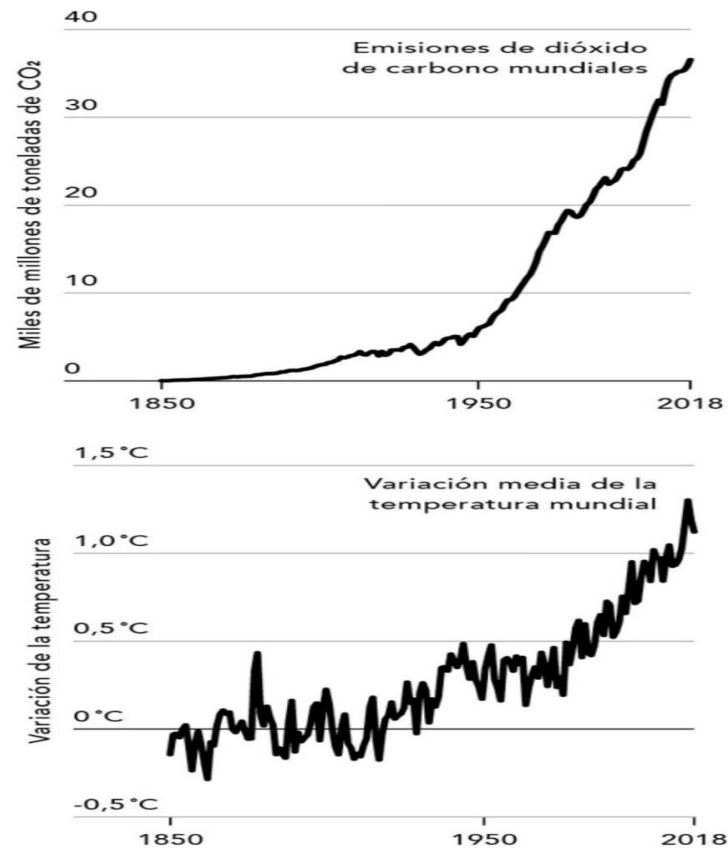
- The olive sector facing climate change
- Adaptation strategies
- Mitigation strategies

TECHNICAL ASSISTANCE & TRANSFER OF KNOWLEDGE

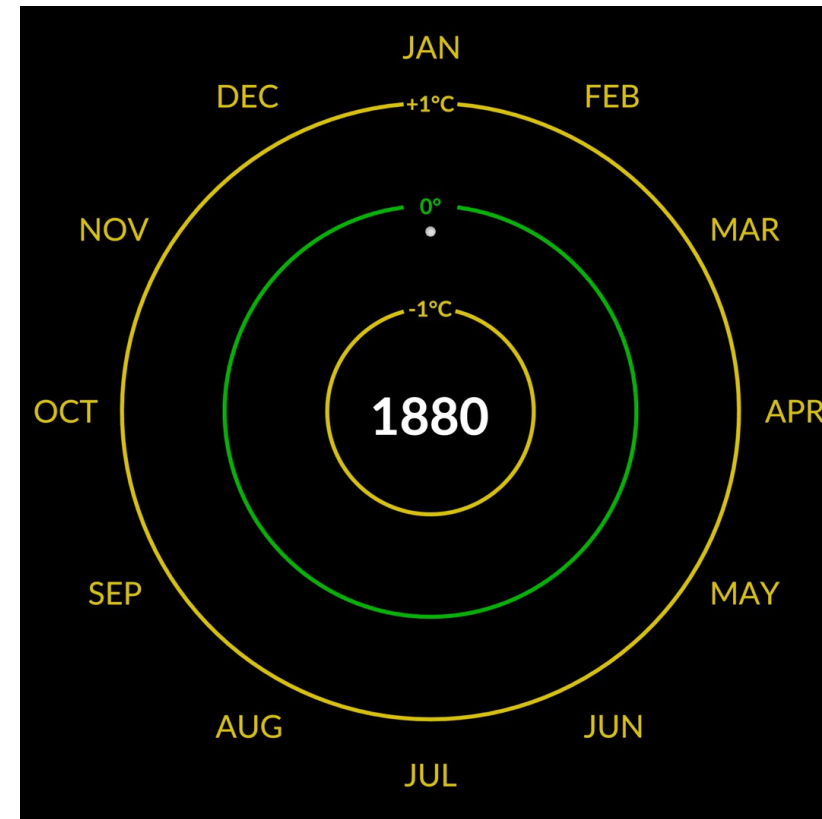
- International courses
- Grants to carry out activities to find solutions to specific problems in national olive sectors
 - National seminars
 - IOC training
 - Technical assistance



Global warming in figures



Source: How to avoid a climate disaster. Bill Gates.



Video: Climate Spiral (1880-2022)

Credit: NASA's Scientific Visualization Studio

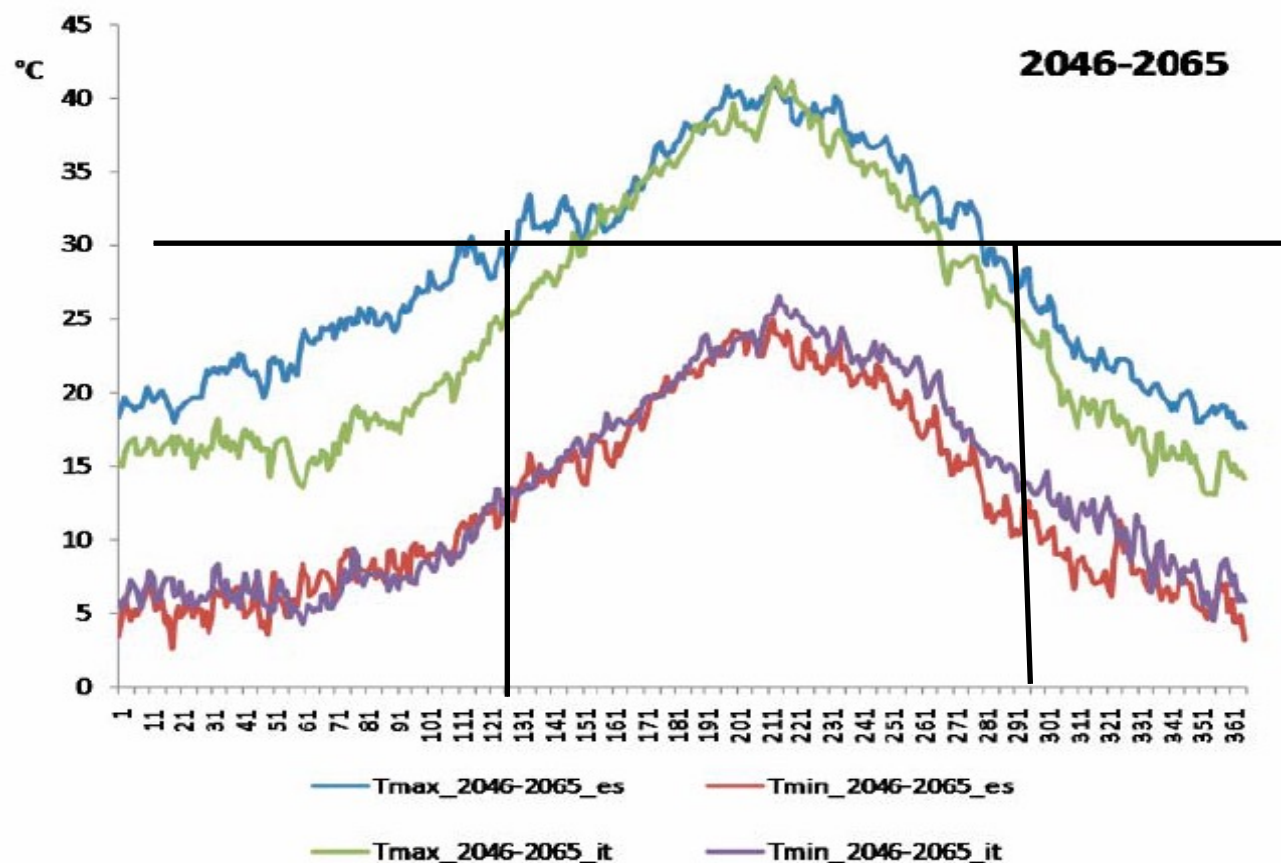


Effects of climate change (not limited to...)

- Increase in average surface temperature (warmer and drier summers and winters).
- Increased probability of days with extreme maximum temperatures.
- Increased probability of extreme weather events (droughts,...).



An illustrative example of olive groves:



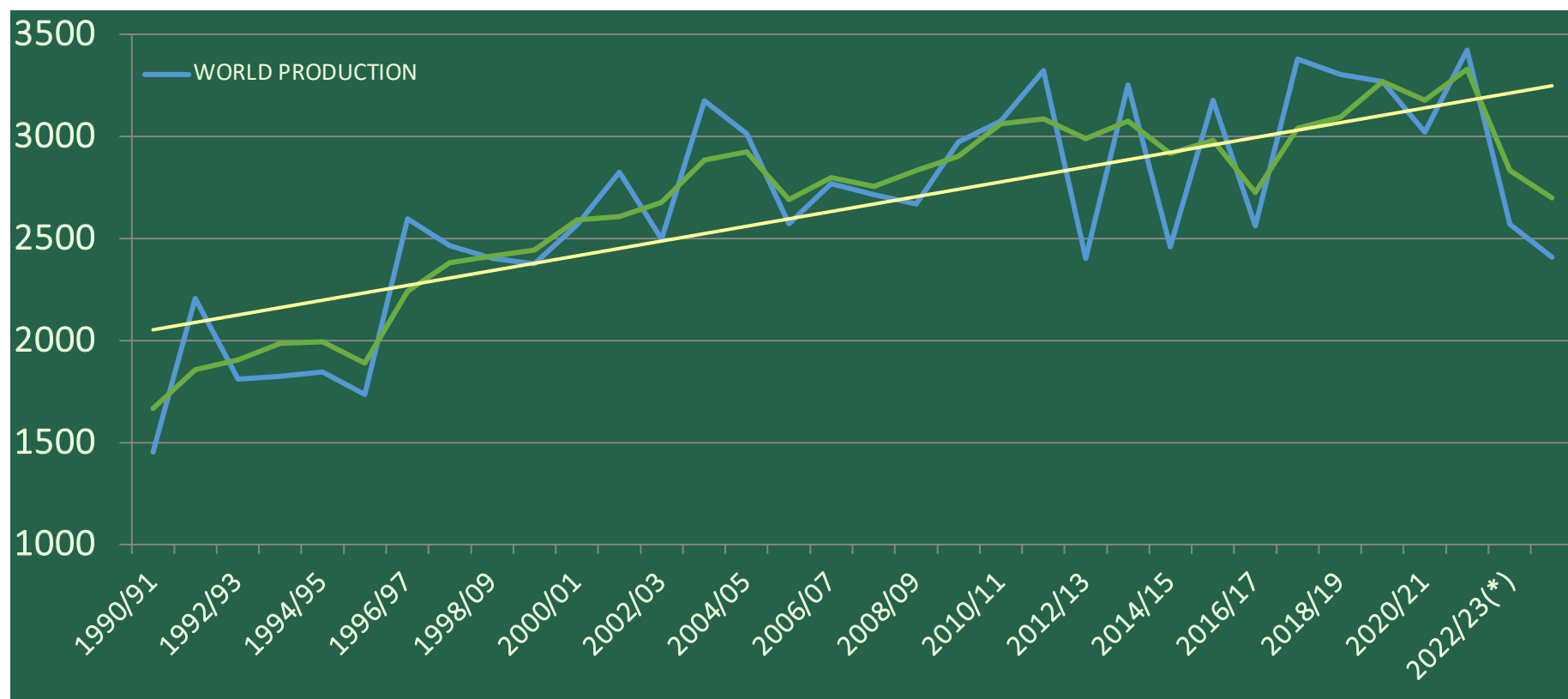
La floración del olivo (Olea europea L.) como elemento bioindicador de cambios en el clima mediterráneo: análisis preliminar. F. Aguilera, F. Orlandi, L. Ruiz, C. Galán, H. García Mozo, T. Bonofiglio, J. Oteros, C. Díaz de la Guardia, M^a.M. Trigo, R. Pérez, M. Fornaciari.

expoliva®
xvi simposio científico-técnico del aceite de oliva
xvi scientific-technical symposium of olive oil

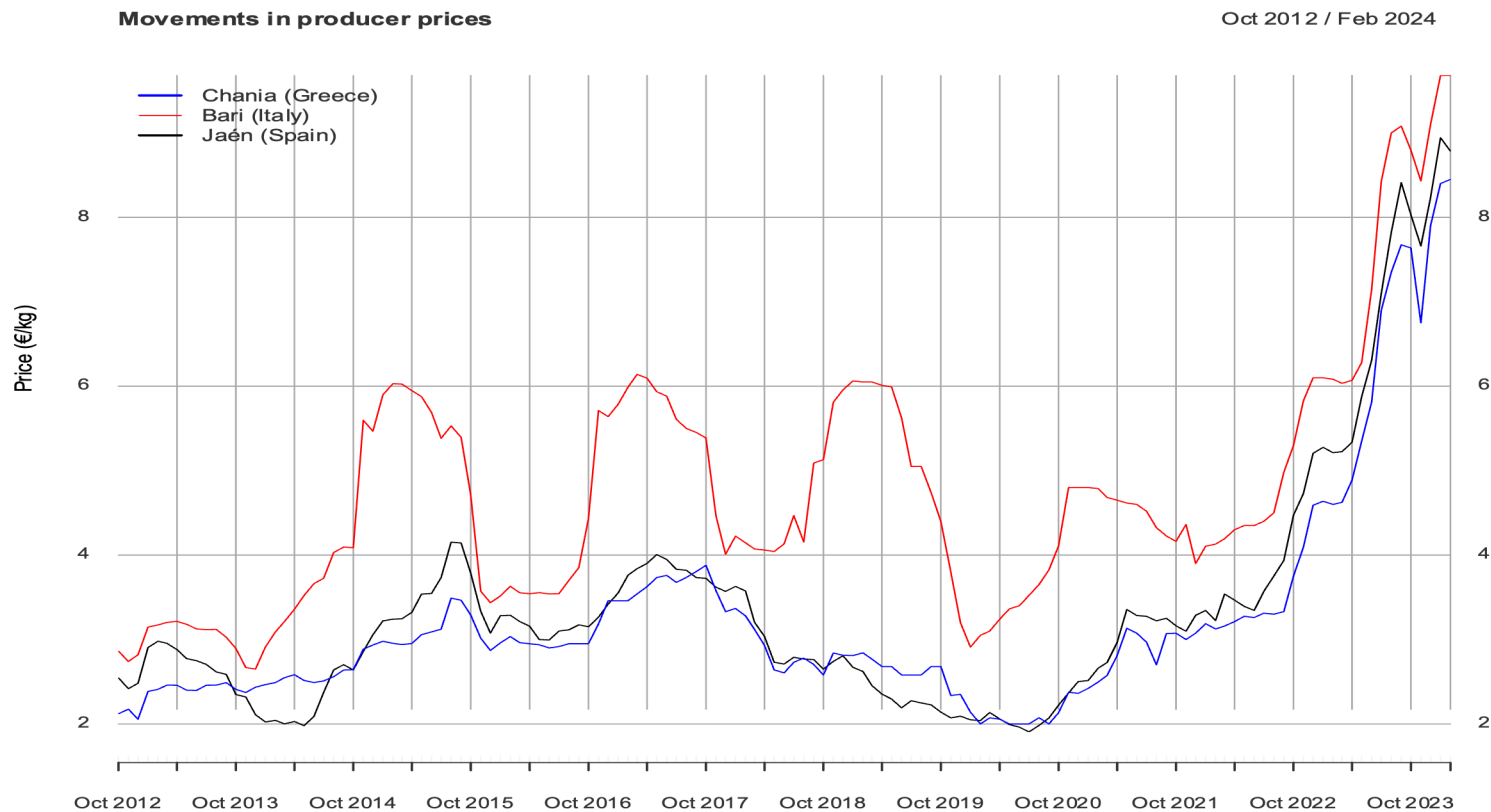
2013



OLIVE OIL PRODUCTION AND CONSUMPTION WORLD TREND 1990/2024 (1000 tonnes)



MOVEMENTS IN PRODUCER PRICES. Extra virgin olive oil prices in oil mill, in €/100kg, without VAT.





Olive Oil
world
Congress
Forum & Congress 15-16 October 2017

The olive grove in the face of the climate change challenge: being part of the solution





Olive Oil
world
Congress

Olive groves: a forest of 11 million hectares
well maintained by olive growers

■ Environmental services to Humanity



The challenge of climate change for the IOC: transforming strategy into action

Adaptation strategies:

- Efficient water use.
- Genetic improvement.
- Better adapted varieties.
- Regenerative agriculture.

Mitigation strategies:

- Reduction of GHG emissions: decarbonization of processes.
- Circular economy: valorization of by-products and waste.
- CO2 removals: Carbon credits. Voluntary carbon credit markets.

IOC's objectives for 2024-2025:

- Support research in plant genetic resources.
- Disseminate the best available practices in terms of resource efficiency (water, energy, inputs, etc.).
- Develop the methodological framework to monetize the carbon balance of the olive grove into marketable carbon credits.
- Promote the valorization of the olive grove and olive industry by-products.

2012 -2016

- Creation of a group of experts on the method for calculating the carbon balance of olive trees.

2015

- Software tool for estimating the carbon balance of olive oil

2014-2017

- Taking part in the EU initiative of the PEFCR for olive oil

2016-2017

- Participation in COP22 (Marrakech)

2018

- Technical report: "Carbon balance of olive cultivation in the world".

2022

- Workshop: Resilience of olive groves to climate change

2023

- Advanced course: Efficient use of water in the olive grove in a context of climate change.
- Workshop on the carbon balance of the olive sector as part of the solution against climate change.

The carbon balance of the olive grove and of olive oil



- World production area was **10.272,860 Ha**
- World olive oil production was **3.198.561.905 lt**

Potential soil carbon
storage capacity of the
world's olive grove



47.082.831 tCO₂/year

- **1 Ha** of olive grove removes and stores in soil **4,58 tCO₂/year**
- 1 Lt of bottled olive oil absorbs 10,65 kg of CO₂eq through its life cycle



The olive grove's challenge in the face of climate change:
being part of the solution

The olive grove is a CO₂ sink that
stores carbon in the plant and in
the soil in a stable and permanent
manner.

EFFECTS OF CLIMATE
CHANGE

Increased CO₂ concentration

- Increased respiration rate
- Increased water demand

Increased average temperatures

- Early and asynchronous flowering
- Early ripening with lower yields
- Lower accumulation of chilling hours
- Appearance of new pathogens

Increased probability of occurrence of
extreme events (drought)

- Decreased production

THE ROLE OF THE
OLIVE TREE

Evapotranspiration

- Olive trees capture CO₂ from the atmosphere.
- Increase in biomass (branches, leaves, fruit, trunk).

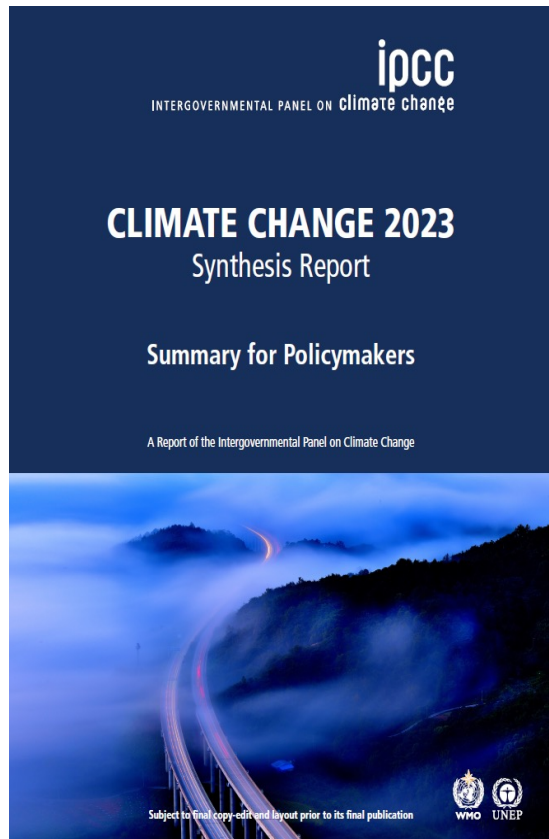
Sustainable agronomic practices

- Incorporation of biomass into the soil (leaves, pruning residues, compost).
- De-carbonization operations

The balance:

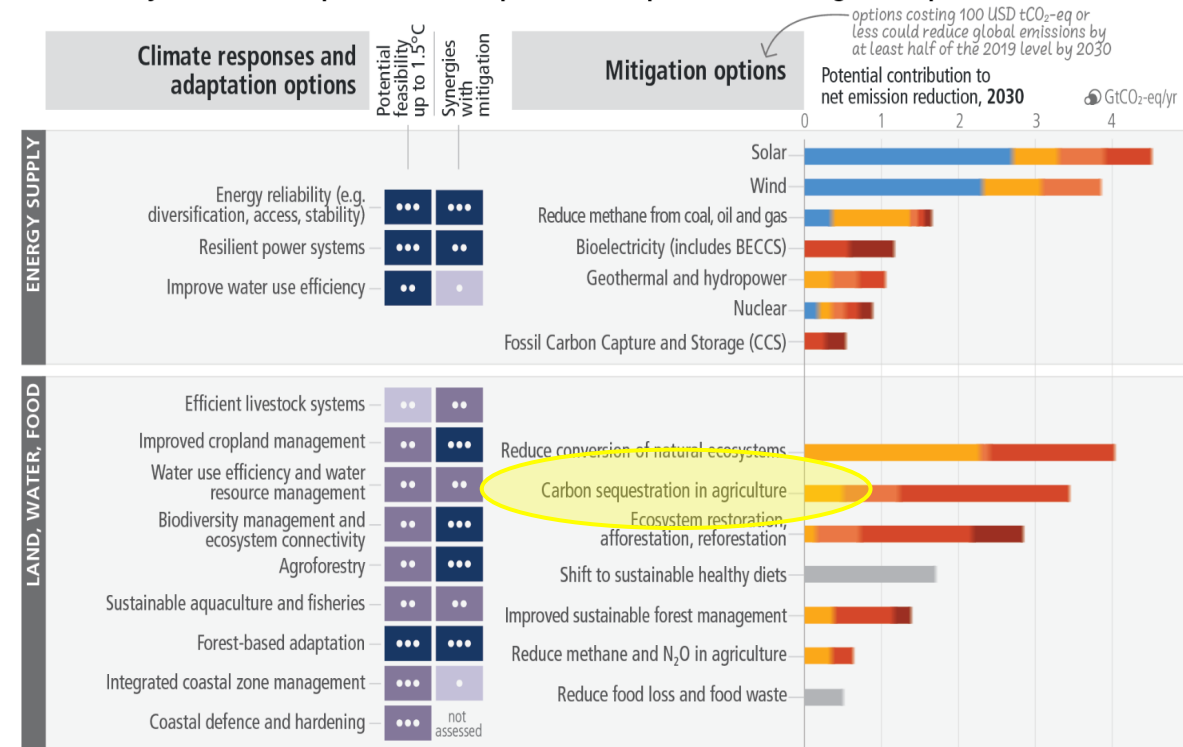
- Net balance between removals and emissions is positive.
- Increase of MO in soil improves soil health.

The 2050 UN neutrality targets: agriculture is needed

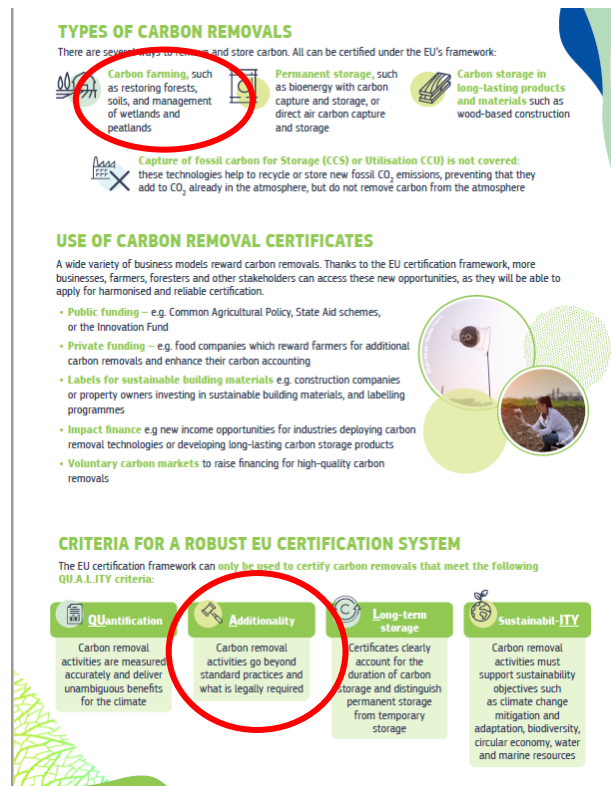


There are multiple opportunities for scaling up climate action

a) Feasibility of climate responses and adaptation, and potential of mitigation options in the near-term



The voluntary certification framework for carbon credits in the EU



WHAT ARE THE NEXT STEPS?

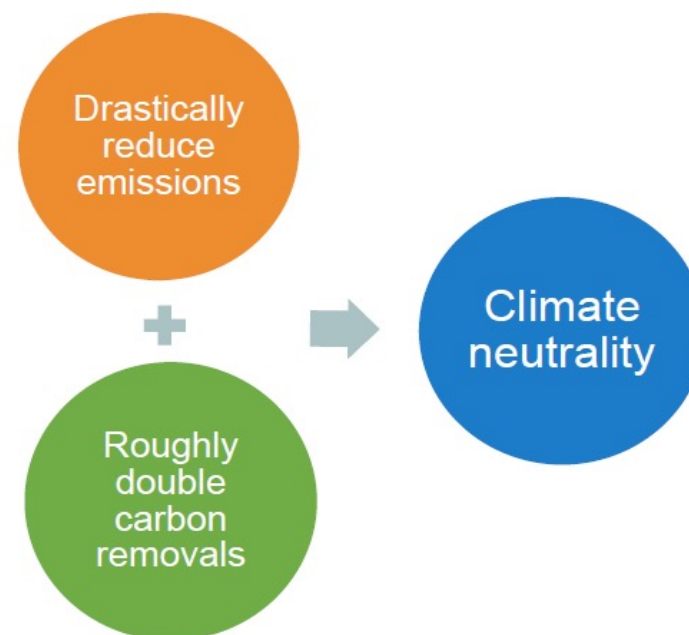
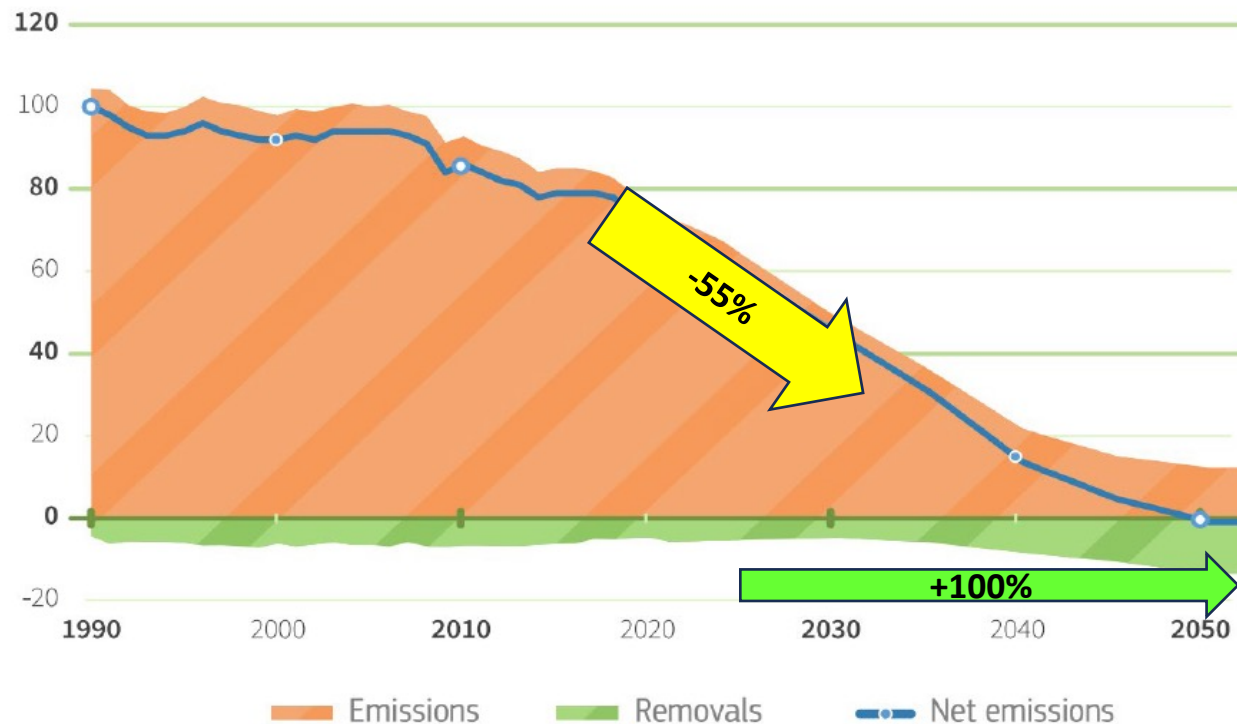


HOW DOES IT WORK?



All the relevant information on the certified removals will be publicly accessible preventing the risk of double-counting and fraud, and help the providers of carbon removals to access different types of financing opportunities.

Towards climate neutrality in the EU: agriculture is needed



■ Mapping the path ahead

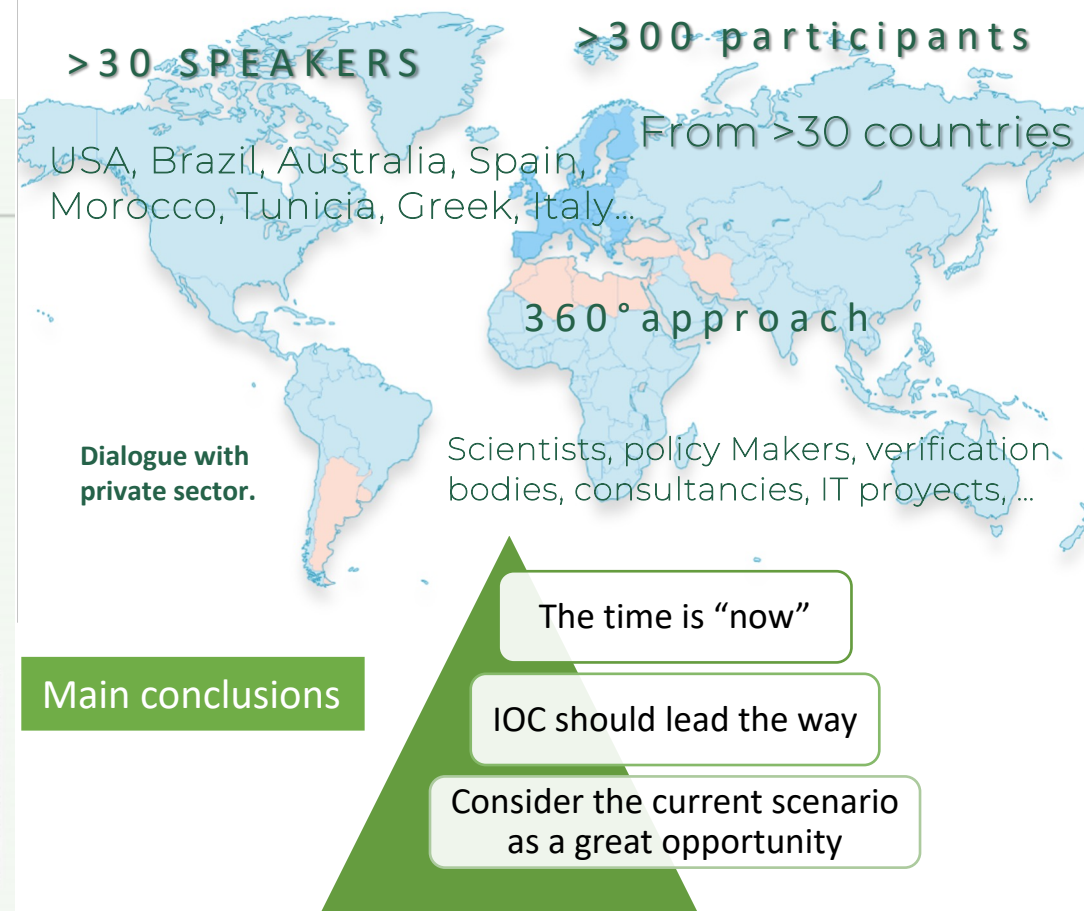
International Olive Council
17-19 October 2023



www.internationaloliveoil.org

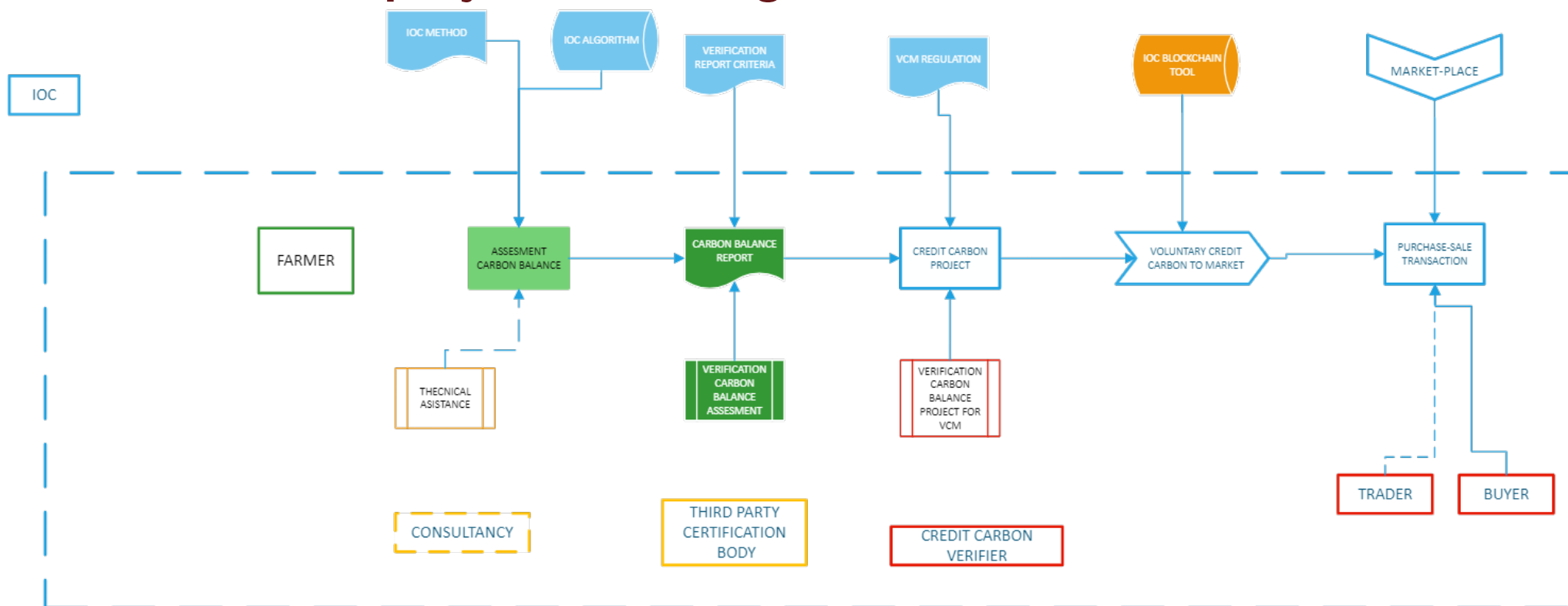
International Workshop

Carbon balance of the olive sector: part of the solution against climate change





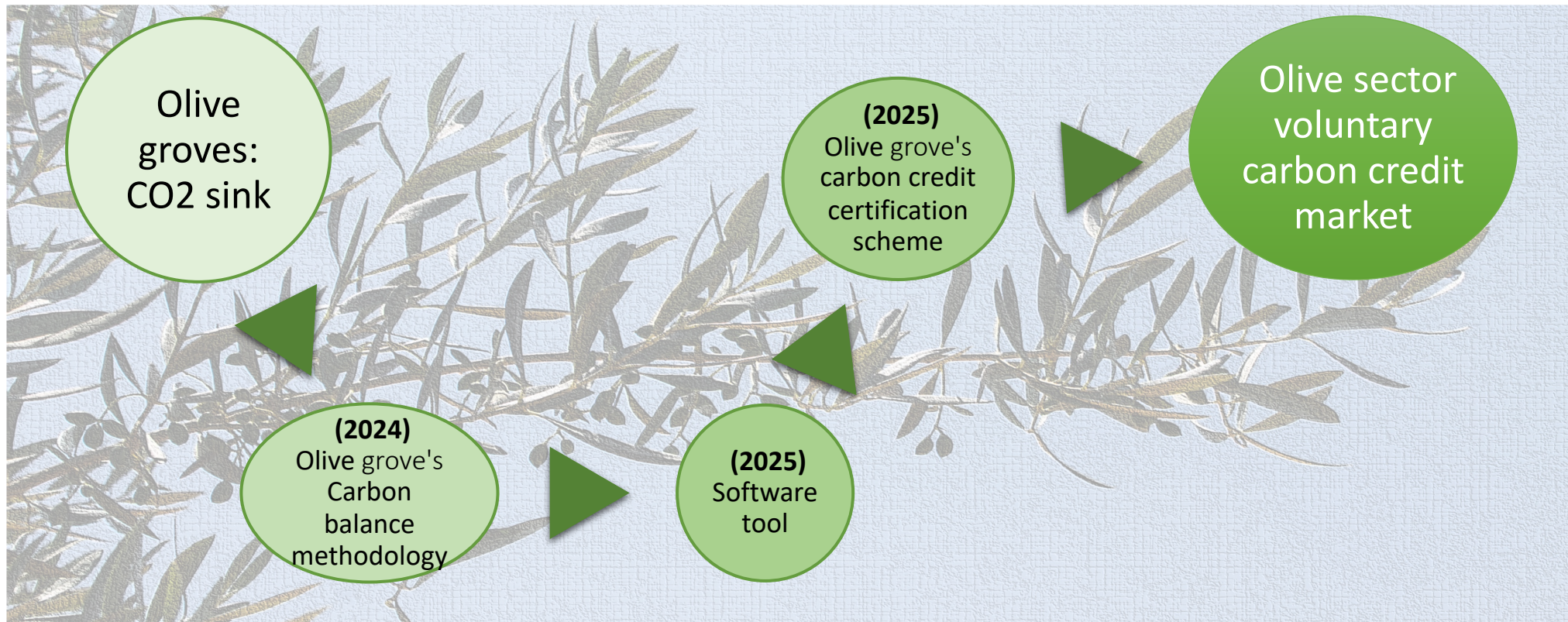
What role should the IOC play in the cycle of a carbon credit project in olive groves?





ROAD MAP 2024-2025:

Towards a voluntary certification scheme for carbon credits in the olive sector





*Taste it, enjoy it.
it's olive oil.*

**Olive oil is good for your
health and for the planet!**

Thank you!

Juan Antonio Polo Palomino
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Department

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