



Impact on climate change on fruit and vegetables production and cooperatives in Italy, Spain and Greece

Civil dialogue
group agricultural
markets: F&V

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copa***cogeca**
european farmers european agri-cooperatives

Tomatoes – Italy: trends in production & yields

Pomodoro – produzione conferita all'industria conserviera in Italia (in 1.000 kg)							
	2019	2020	2021	2022	2023	Var. 2023 vs 2022	2023 vs media 2020-22
ITALIA	4.801.990	5.174.550	6.063.444	5.476.496	5.403.840	-1,3%	-3,0%
Bacino Nord	2.370.087	2.750.403	3.094.768	2.884.888	2.798.312	-3,0%	-3,8%
Bacino Centro-Sud	2.431.903	2.424.147	2.968.676	2.591.608	2.605.528	0,5%	-2,1%
	Quota percentuale della superficie coltivata						
Bacino Nord	49%	53%	51%	53%	52%		
Bacino Centro-Sud	51%	47%	49%	47%	48%		

Fonte: elaborazione ISMEA

	POMODORO DA INDUSTRIA - EVOLUZIONE RESA Ton/ha						
	anno	anno	anno	anno	anno	Var. %	Var. %
	2019	2020	2021	2022	2023	2023/2022	2023/2019-22
Bacino Nord	64,76	74,19	80,13	77,92	71,88	-7,75	-3,19
Bacino Centro-Sud	86,79	84,87	91,15	92,04	88,15	-4,23	-0,64

Tomatoes–Italy: impact of climate change



Effects on yields

- Yield decline in 2023
- Delay in transplanting (due to spring rains)
- Diseases such as downy mildew & alternaria

Effects of extended high temperatures on the tomato crop (open air)

- Reduced plant growth
- Poor quality of the berries with lower sugar content and altered skin colour
- Apical rots caused by lower calcium uptake from the soil

Effects of humid condition on tomato crops (Greenhouse)

- increased vegetation
- wilting
- Sensitivity to cryptogamic attacks
- increased blossom drop, proliferation of insects, virus and bacterial attacks.

Tomatoes – Italy: compensation tools



EU level

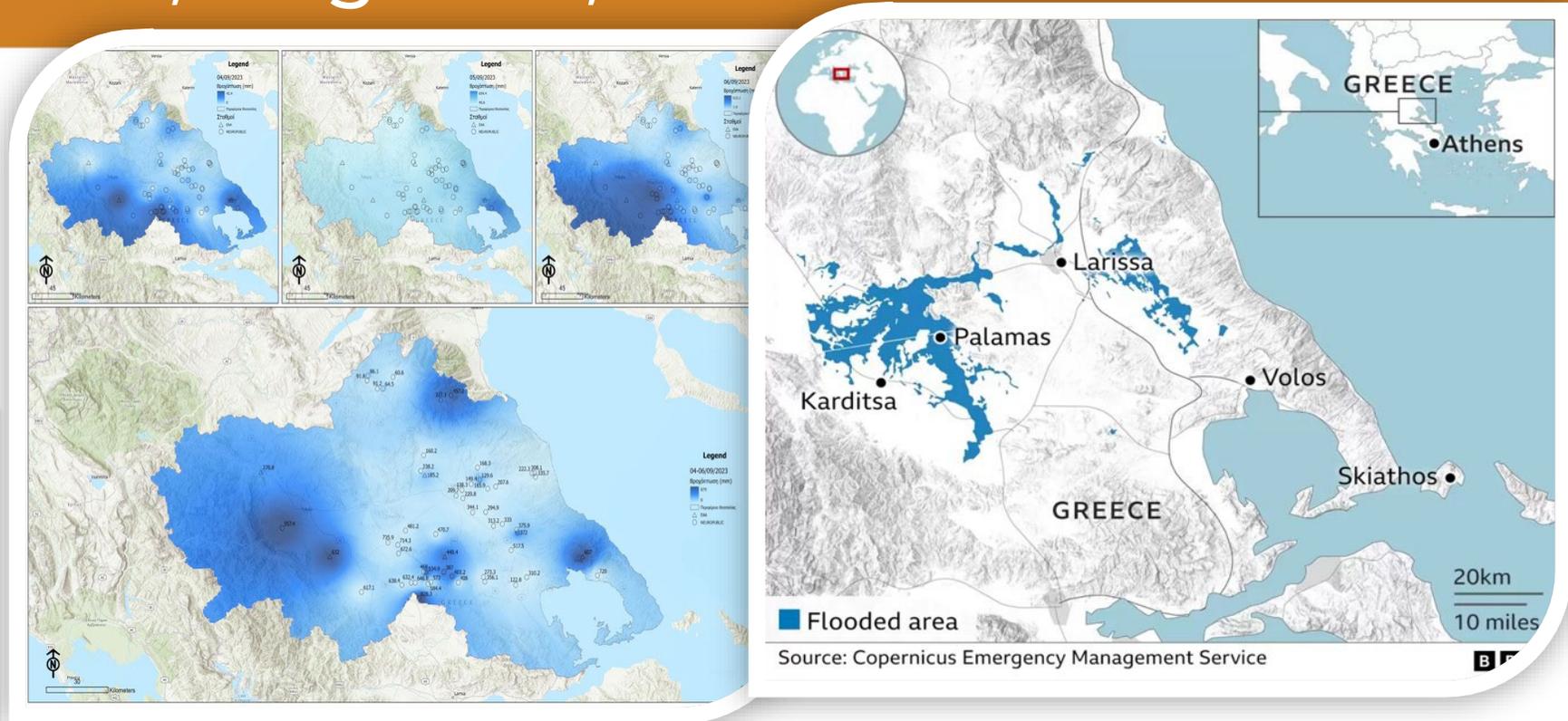
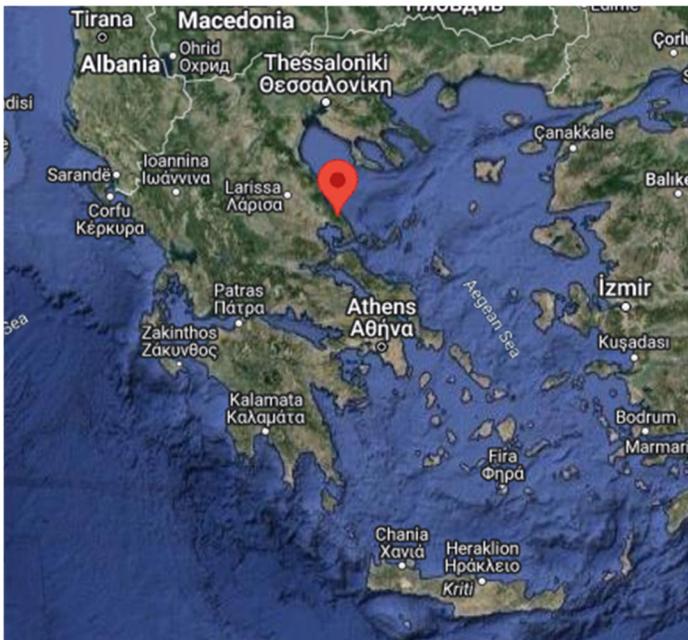
- Regulation (EU) 2023/1465
- Regulations 1619/2023 and 1620/2023

National level

- Decree 61/2023 (Flood Decree)
- Decree No. 0315386 of 06/16/2023 (derogations to to Pac Aid, coupled aid and PO operational programs.)
- Decree No. 594120 of 25.10.2023 (allocation of 100 mln through the crisis reserve and related national co-financing - spring 2023 flood events)
- Legislative Decree 102/2004 (national Solidarity Fund Puglia region)

Case: A.C. of Zagora-Pilio Zagora Pelion, Magnesia, Greece

Phenomenon:
Floods
Sept.2023



POs encountered 3 major disasters

1. Losses of fruit on the trees
2. Damages to plant capital as fields flooded
3. Extensive damages to road infrastructure

Case: A.C. of Zagora-Pilio Zagora Pelion, Magnesia, Greece

The Agricultural Cooperative of Zagora-Pilio has a turnover of 20.579.000€ (2018) and about 702 PDO apple producers

- * Phenomenon occurred during harvest, resulting in 30% production loss.

Current Situation:

- * Producers still recovering.
- * Organization's exports unaffected; alternative transportation methods found.
- * Prices unaffected; absorbed any increases.
- * Challenges in road infrastructure for heavy vehicles persist.
- * Some fields abandoned or destroyed due to sloping soils, reducing cultivated land.
- * Producers received satisfactory advance payment from ELGA, but not all losses compensated.
- * Major concern: damage to irrigation networks.
- * Significant apprehension of recurring event before full recovery, considered probable.



PO of Agricultural Cooperative of Episkopi “Alexandros”, Episkopi, Imathia, Greece

Phenomenon:
Frost
Spring 2023

- * Spring frost inflicted damage on early varieties of peaches, apricots, and cherries.
- * Unseasonal rainfall during the flowering period resulted in incomplete pollination of stone fruits, leading to fruit loss.
- * Following the rains during fruit set, the remaining production faced challenges as the fruit did not exhibit normal growth.
- * Recurring rainfall, had further consequences on the quality and characteristics of the fruit.
- * Continuous hailstorms also contributed to rot and infections, which progressively affected cultivation over time.
- * Significant damage was observed in early varieties of stone fruits, mid-early and late varieties maintained high quality.
- * Producers experienced a 30% loss in production.
- * Producers are awaiting compensation from the Hellenic Agricultural Insurance Organization (ELGA)

Producers confront such phenomena approximately every two years and are actively seeking solutions.



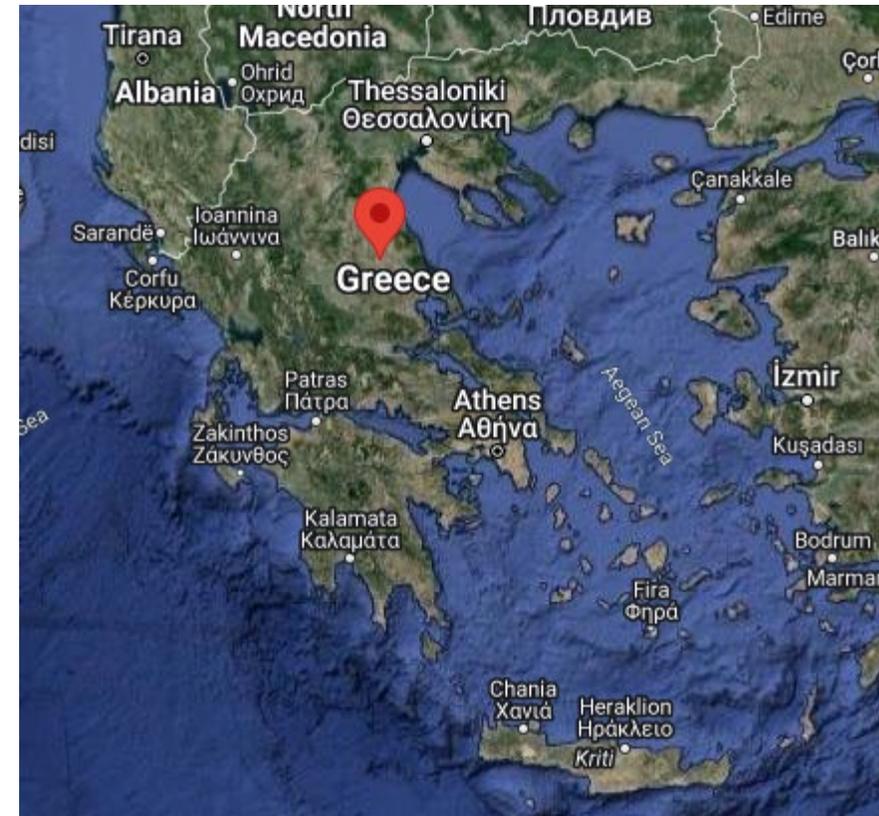
Organization of Industrial Tomato Producers "THESTO"- Farsala, Larissa, Thessaly

Phenomena:

1. Unpredictable precipitation
2. Heatwave
3. Flood 2023

Industrial tomato cultivation faced moderate challenges in 2022-2023, but these challenges had a cumulative impact throughout the year:

- * Prolonged attacks from downy mildew (*Phytophthora infestans*) due to heavy rainfall and humidity in May and June.
- * Prolonged heatwave during the summer period.
- * Floods from storms Daniel and Elias in the autumn.
- * Downy mildew affected 2000 stremmata, resulting in reduced production.
- * ELGA does not provide compensation > secondary damage, producers seek a change in policy.



Organization of Industrial Tomato Producers "THESTO"- Farsala, Larissa, Thessaly

- * July 13, 2023, soil temperature in the Thessaly plain reached approximately 55°C.
- * Extreme temperatures destroyed fruit development and fruit set, leading to further production reductions.
- * Flooding affected 2,500 to 3,000 stremmata out of 19,500 stremmata, particularly impacting late varieties.
- * An estimated 30,000 tons of product were lost.
- * Around 10% of producers were affected several experiencing degraded quality and some facing complete crop loss.
- * Some fields remain flooded despite the subsequent dry spell.
- * ELGA provided a prepayment to producers; the assessment of the disasters is still ongoing.
- * Producers and processing units in the area suffered equipment losses

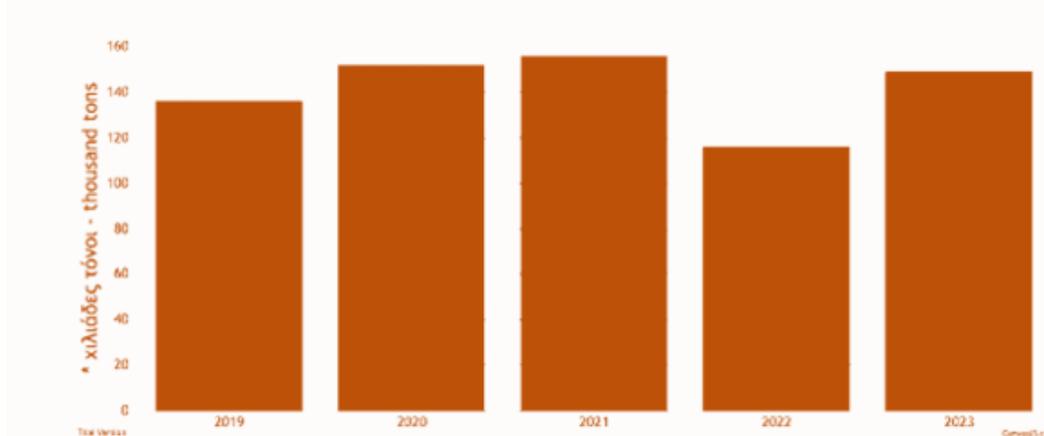


Fig. 1 Evolution of production of the Producer Organization THESTO (<https://www.thessto.gr/>)

Notable shift of producers towards tomato cultivation from other crops such as cotton and maize in the region, resulting in a 4,500-stremmata increase in cultivation areas.

Stremmata = 1,000 square meter

CITRUS – Spanish case

Spain: Climate change. Consequences in citrus. Decrease in production and the knock-on effects

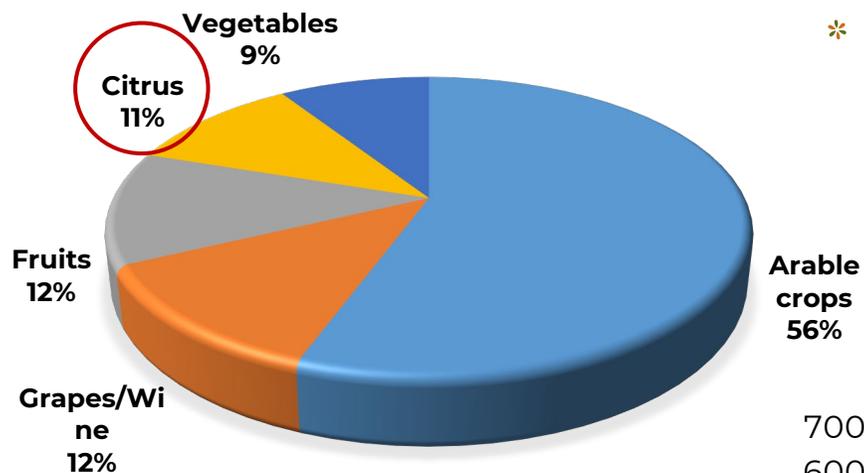
- * The drought and extreme climatic conditions recorded in 2023 have been decisive for the bad results, mainly due to the lack of **water availability**, the **abnormally high temperatures** recorded during the flowering and fruit setting phases, and the **heat waves** in later stages that have required irrigation restrictions in some regions.
- * **Production of 5.75 million tons of citrus fruits in the 2023/2024 campaign. 14.4% below the average of the last five campaigns.**
- * Lower production leads to **job losses** linked to production itself, eliminate direct jobs in handling, preparation, packaging and marketing, decrease business volume and value including exports, impact on the transport sector
- * **Ecological impact** due to the abandonment and degradation of hectares of surface today key for the absorption of hundreds of thousands of tons of CO₂, among others.



CITRUS – Spanish case

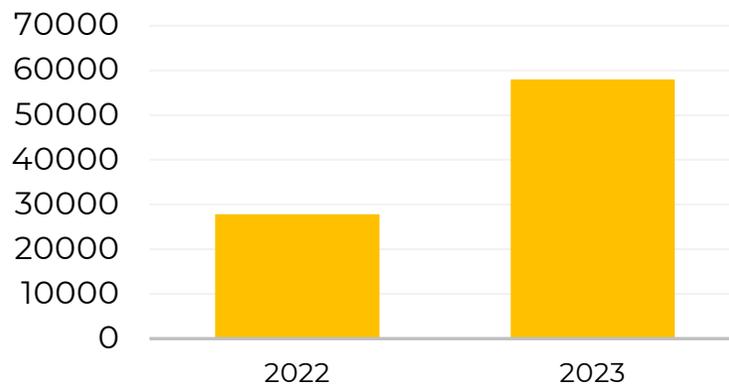
Damage assessment

DAMAGES BY CROP. 2023. SPAIN



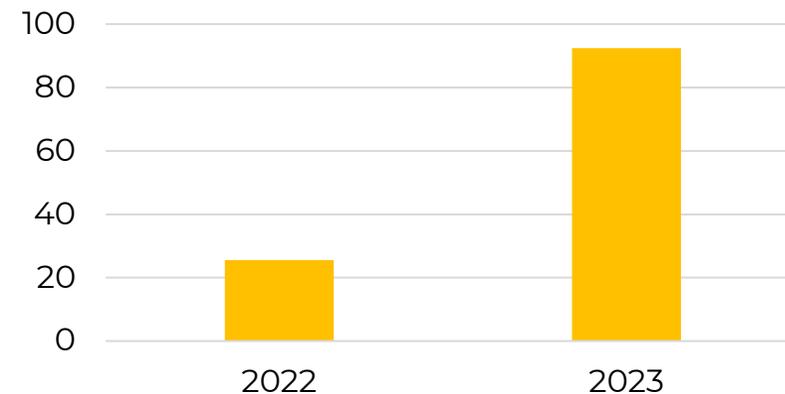
- * Citrus area in Spain: 306,703 hectares. Insured area 122,496 hectares (2023) (approx 40 %)
- * The area damaged in Spain due to the different risks that have occurred amounts to 27,804 hectares of citrus trees in 2022. (compensation € 25.54 million) In 2023 it amounted to 57,956 hectares. (€ 92.42 million) In the Valencian Community, more than 11,000 accidents were declared).

Citrus: Spanish damaged surfaces (ha)



Increase: 108,4 %

Citrus: Compensation for damages (M€)



Increase: 262,13 %

CITRUS – Spanish case

Entry schedule of new citrus pests (2000-2022)

Anatrachyntis badia (first observed in Alicante (Comunidad Valenciana) in 2002.

Eutetranychus orientalis first observed in 2001 in Málaga province (Andalucía); now present in Andalucía, Murcia and south of Comunidad Valenciana.

Trioza erytreae (first found in 2002 in Las Palmas, Gran Canaria (Islas Canarias).

Toxoptera citricidus : first found in 2002 in Asturias; now present in Asturias, Cantabria, Galicia, País Vasco.

Unaspis yanonensis : first observed in 2003 in the province of Girona (Cataluña)



Coccus pseudomagnoliarum

2002 C. Valenciana
2018 Andalucía



Penthimiola bella

2012 Portugal
2020 Spain



Delottococcus aberiae

2009 C. Valenciana
2019 Cataluña



Pezothrips kellyanus

2007 C. Valenciana
2015 Andalucía



Sophonia Orientalis

2018 Málaga
2020 Portugal



Scirtothrips dorsalis

2016 C. Valenciana
2016 Canarias
2019 Andalucía
2020 Murcia



Chaetanaphotrips orchidi

2016 Cataluña
2017 C. Valenciana
2019 Andalucía
2023 Murcia

Scirtothrips aurantii

2021 Andalucía



Source: ASAJA compilation

Risks for EU citrus



Trioza eritreae.
HLB vector



Bactrocera
dorsalis



Anoplophora chinensis



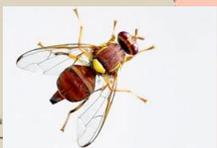
Thaumatotibia leucotreta



Diaphorina citri
HLB vector



Phyllosticta citricarpa



Bactrocera zonata



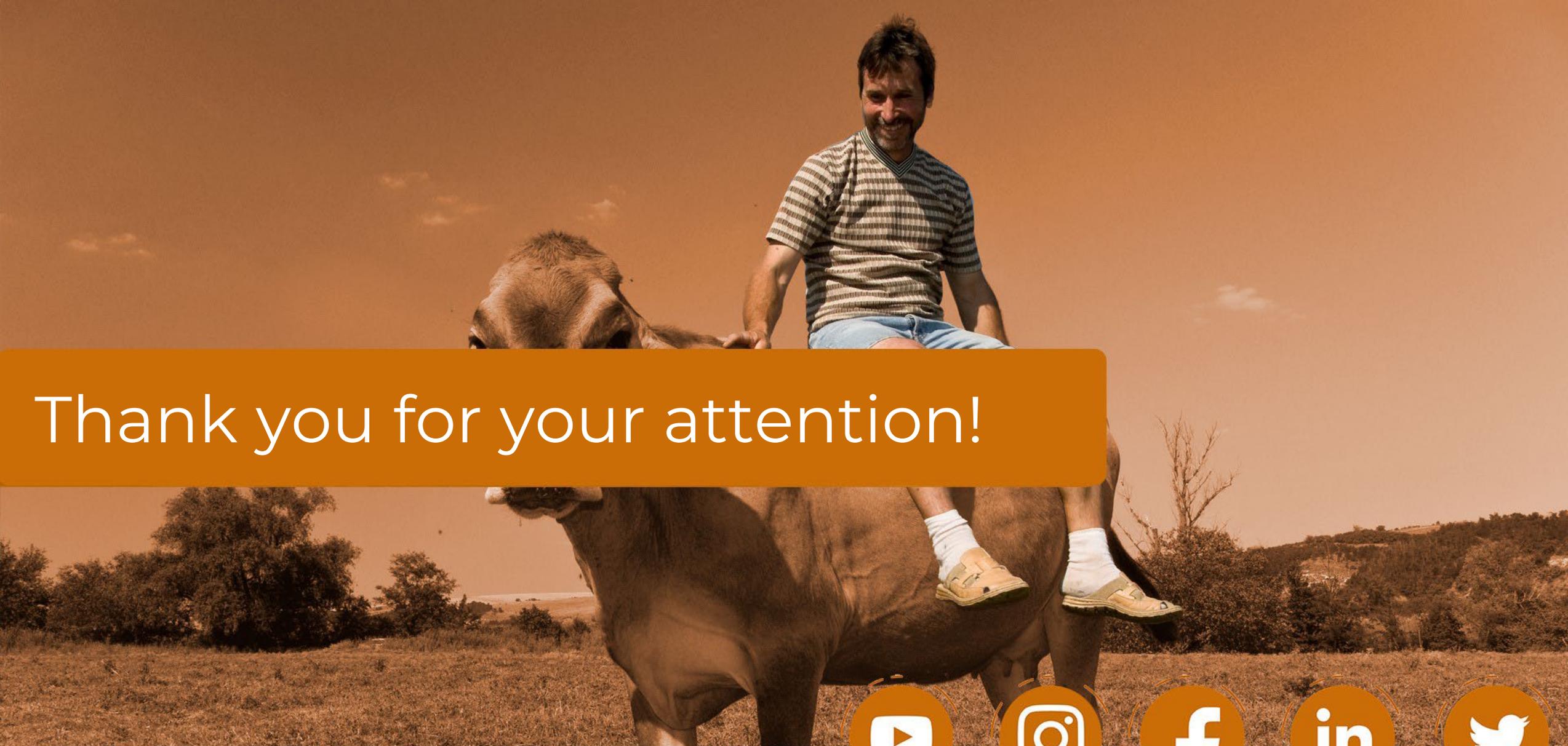
Mediterranean
Xylella fastidiosa



Suggested adaptation measures

- * Many **damages caused by climate change are excluded from citrus insurance guarantees.** In the current circumstances, it should be studied how to compensate for these losses, **which are going to become more and more frequent**
 - * Increasing of the co-financing rate of expenses incurred for the interventions need to face natural disasters
 - * Provision compensation through operational programs for the benefit of farms affected by disasters
- * **Support efficient irrigation systems**
 - * Reduction of administrative burdens for financing investments in irrigation facilities (i.e. by partially derogating from the requirements of Article 11 of EU Reg. 126/2022)
 - * Increasing of the types of interventions that can be financed by operational programs for water-saving measures (drip irrigation)
- * **Increasing integrated crop protection means**
 - * Promotion of active crop defense systems and additional resources for insurance policies raising the co-financing rate of these interventions
 - * Select and test new plant reproductive material for example citrus rootstocks which have a potential tolerance to HLB and more extreme climate patterns in the Mediterranean region





Thank you for your attention!

