

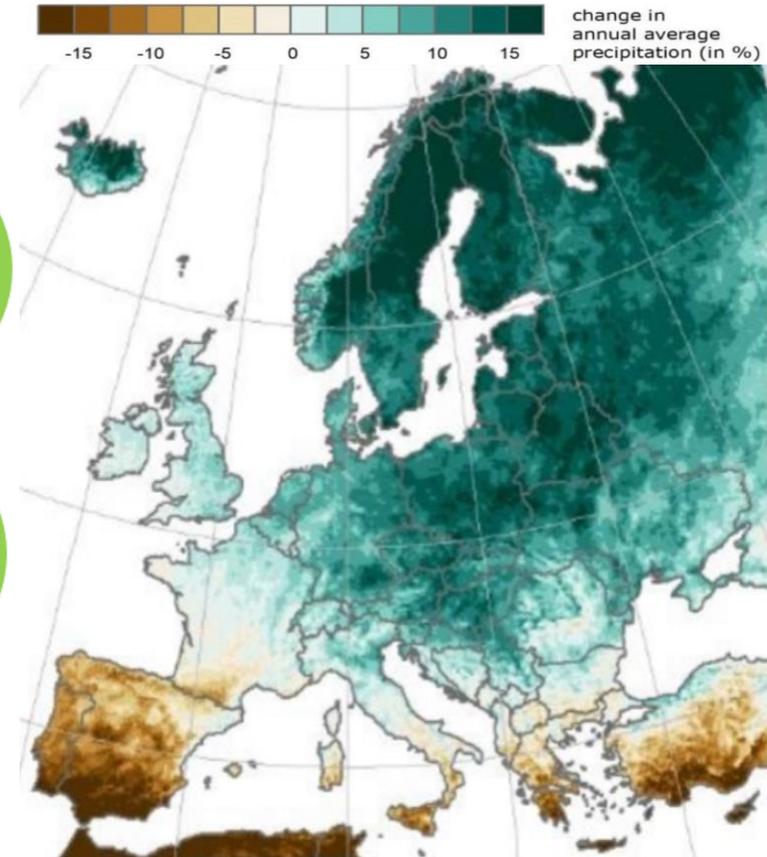
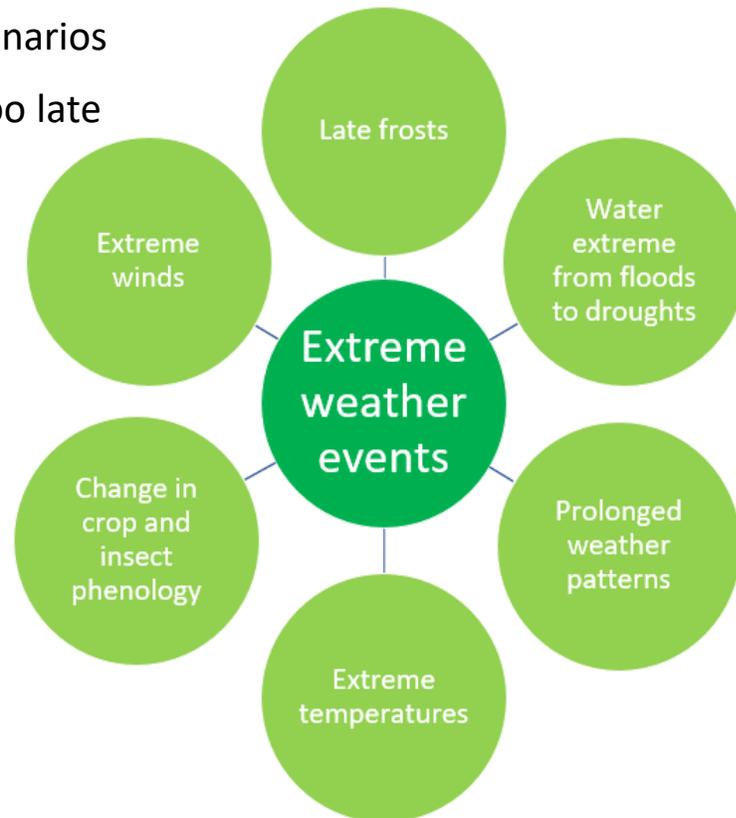
Impact of climate change in Fruit and vegetables sector

 **Spoiler alert: its huge
Time is against us**

Foto: reservoir of Grau, Catalonia, Spain. November 2023

Why should the fresh produce sector care?

- Sector already suffering a sustained decrease of productivity
 - Production perspectives suffer a drop of 20% in the best and a 90% in the worst scenarios at ([JRC PESETA V Report](#))
 - Viability is at stake
 - Food security may not be guaranteed under these scenarios
 - Adaptation measures may not suffice, if carried out too late
 - Lack of funding capacity and limited investments
 - Issue still perceived as a secondary priority
 - Regional diversity of problems
- ⇒ Extreme precipitations vs. Extreme droughts
- ⇒ No one size fits all solutions





Lack effective support from CAP

- CAP has too fragmented requirements
- €103bn CAP spending in environment actions but GHG emissions stable
- Better feedback from sector to authorities needed to obtain results



Reduced plant protection toolbox

- EU exposed to new pests due to global warming
- Less legal active substances and pesticides
- Higher public- private requirements => higher costs vs. stable prices



Lack of access to water

- General decrease of precipitations in the EU
- Productive areas of Southern Europe will lose 40% of water resources
- Recent examples in the Spanish droughts this autumn



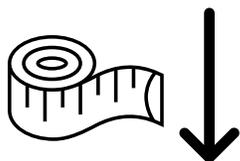
Food security in the EU

- Less availability: reductions of crops from 20% to 80%
- Less access: higher prices
- Less utilisation: reduction in demand
- Less stability: disruptions in transport and change in weather patterns



Weather induced crop shortages

- Increasing difficulty securing diversity of product
- Citrus production has already fallen a 30% since 2011
- Many of the future studies might be underestimating the impacts



Impact on quality

- Smaller size and lower quality
- More volume for processing
- Different taste (acidity, sugars)
- Pest damage



Geographic distribution of the production and specialisation



The redistribution of productive areas is a viable and recommendable solution



European Green Deal, CAP and other EU legislation



Key CAP measures to cope with climate change: the greening initiatives, the cross-compliance rules and the voluntary rural development schemes



Digital transition as an opportunity



Farmers can create collaborative data banks, which combined with AI can create more sustainable processes and procedures



Research and development in agriculture

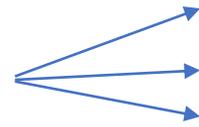


More resources are needed
Research should shift from a theoretical advance frame to a practical and results driven philosophy to assist the industry in this transition

Strengths... but not really...



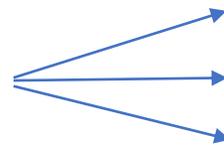
Strength in demand



- Demand expected to grow in the EU and the world
- Shift from animal-based to plant-based diet
- Impact other regions of the world with more severity: competitive advantage



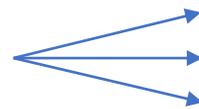
Adaptability



- New solidarity and disaster relief funds
- Need for financial adaptation: insurances, mutual funds, hedging and pooling.
- More business cooperation and boost in associationism

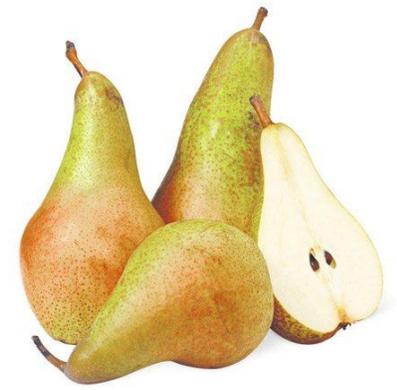


Finance



- Lower volume compensated by higher prices – volatility production & prices
- Lower quality : changing ratio fresh/processed and market return
- Winners and losers on fresh market
- Better accountability and awareness through CSRD
- Insurance but higher premium according to risks

Case study: pears



Italy production unprecedented decline

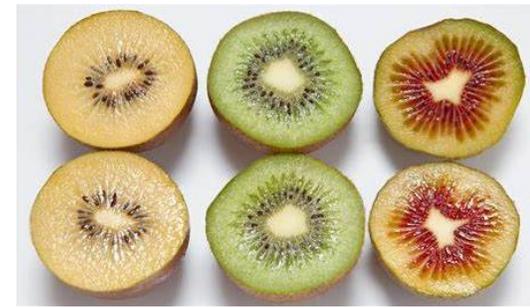


Diversity of incidents

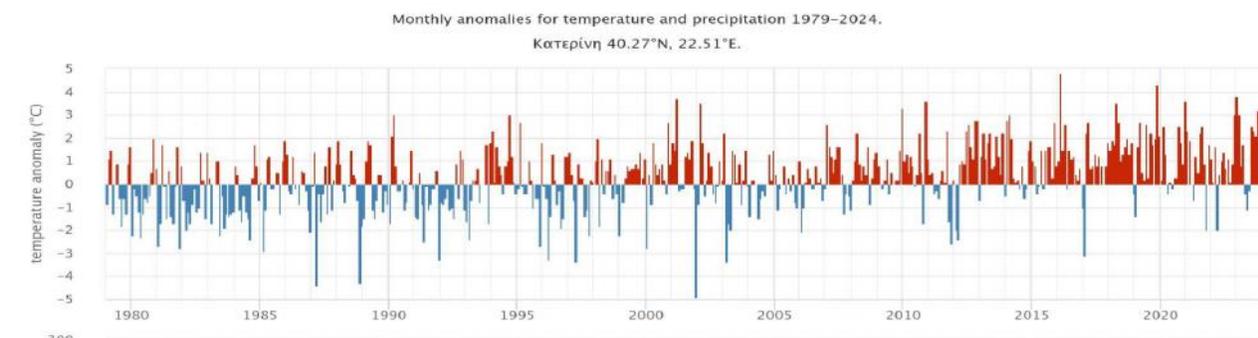
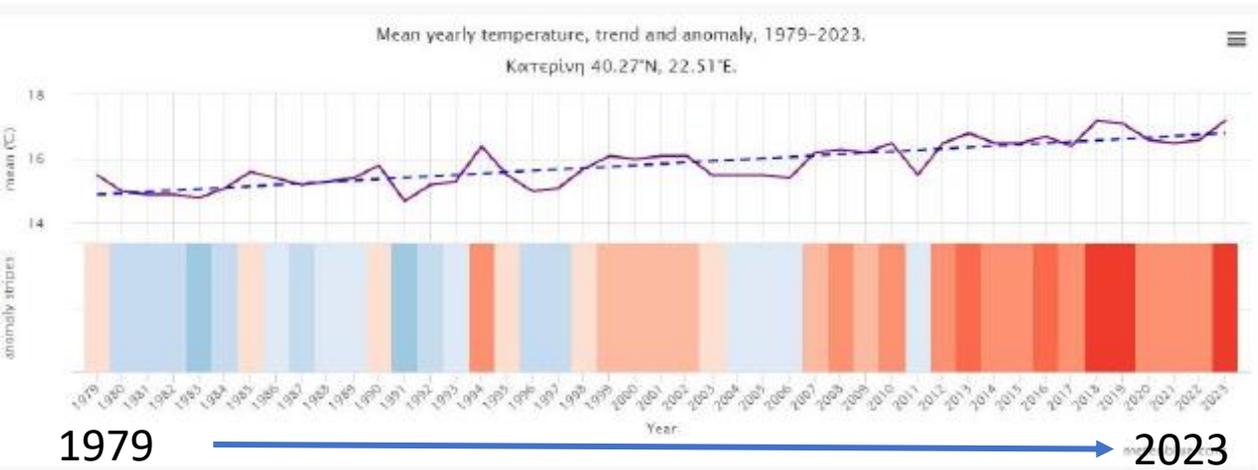
- **Floods:** Intense floods have affected pear orchards.
- **Hailstorms:** Hail has damaged pear crops.
- **Record-High Temperatures:** Extreme heat has taken a toll on yields
- **Non-Native Insect Attacks:** Insects have further impacted production like stink bugs and limited mitigation instruments in the toolbox

Far reaching impact

- **Productivity:** Italian pear yields are down and production in 2023/2024 season is only 25% of its orchard potential
- **Financial consequences** of growers with lost of income ranging from 250 to 400 Mio €
- **Varieties** : Sharp decline of emblematic exclusive Abate Fetel
- **Winners and losers:** Other EU regions also impacted in France and Spain while better return elsewhere in North



Weather changes



Diversity of impact : Greece

- **Greece:** Piera -Katerini regions
- **Mean temperature :** 15.5 degrees (2020) while in 17.2degrees (2023)
- **Warmest decade:** The past 10 years (in red) have been the warmest years since 1979 and the coolest in blue
- **Increase in warmer months sequence: over the years:** it reflects global warming associated with climate change.
- **Other issues:** last summer heavy floodings in the region of Thessalia
- **Productivity impact:** While acreage was at peak last season (320,000 T), crop is down by 25% to 240,000 T for 2023/2024 due to climatic havocs

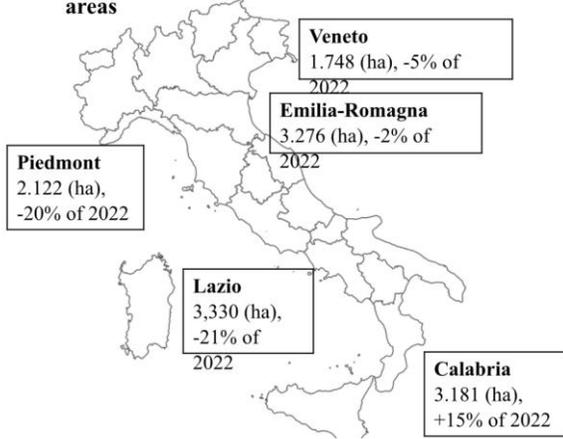
Case study : kiwifruit



Diversity of impact : Italy

- **Assessment of location** : maintain EU production leadership and adapt to climate change, for now.
- **Relocation of production:** to the South, mainly Calabria, decline Lazio and Piedmont due to increasingly adverse climate conditions
- **Main impacts:** droughts, floods, late frosts and sting-bugs
- **Vulnerability:** 2023 production declined due to the extreme weather conditions a 49% in the last 5 years
- **Elsewhere in EU:** Portugal, Spain, France contribute to the 20% in 2023/2024 season compared to orchard potential

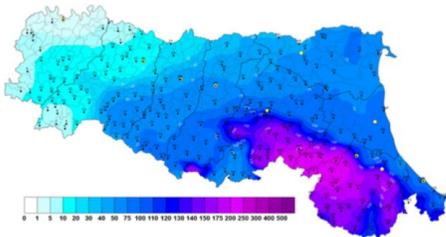
Green kiwifruit main production areas



16-17 May 2023 Minerva cyclone positioned on Italian territory

Relevant Events

- Weather/Climate change impact



Emilia-Romagna region: mm of rain that fell on 16 - 17 May 2023



Case study: blueberries



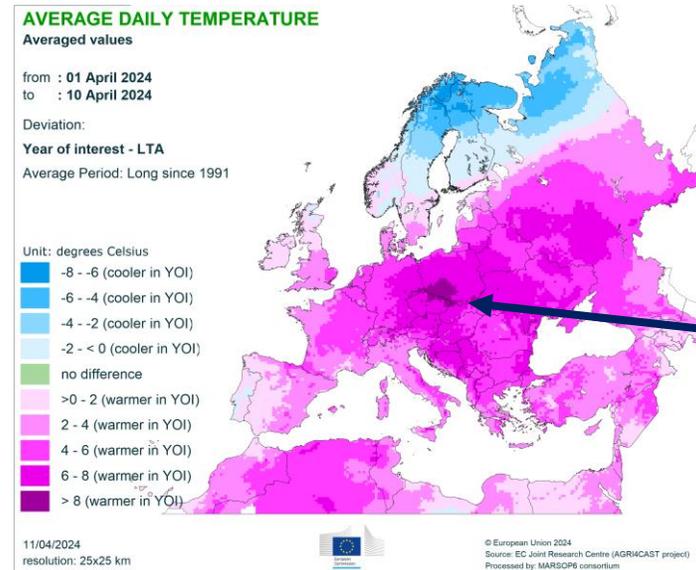
Weather changes : earlier flowering

Year	Patriot	Duke and Earlyblue
2018	3 May	8 May
2019	6 May	10 May
2020	30 April	6 May
2021	1 May	5 May
2022	4 May	9 May
2023	3 May	6 May
2024	7 April	8 April*



Blueberries production in Poland

- **Warm weather:** March and early April 2024
- **Acceleration of vegetation:** Significant earlier development for early plants
- **Flowering :** never happened so early
- **Exposure:** risk of late frost or cooler temperature end April



Conclusions

- ✓ **Climate targets:** unlikely to be met in EU nor in RoW
- ✓ **Narrow window:** still opportunity to act, adaptation measures must be put in place
- ✓ **Food security:** Forms of guaranteeing supply and quality must be found
- ✓ **Resources management:** Coping with scarcity or excess of resources
- ✓ **Public-private partnership:** Consensus & common path must be reached between the sector and the competent authorities for the success of the transition with the good catalogue of tools
- ✓ **Public- private investment:** must be directed towards practical research and development and a decisive application of technology that allows growing production and lower costs
- ✓ **New business environment:** pressure and incentive placed on sector to act: insurance rate rise, CSRD climate reporting



Thank you!