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FARMING SYSTEM **RESILIENCE** IN THE TERRITORY OF **OSTUNI**

Based on Olive trees cultivation

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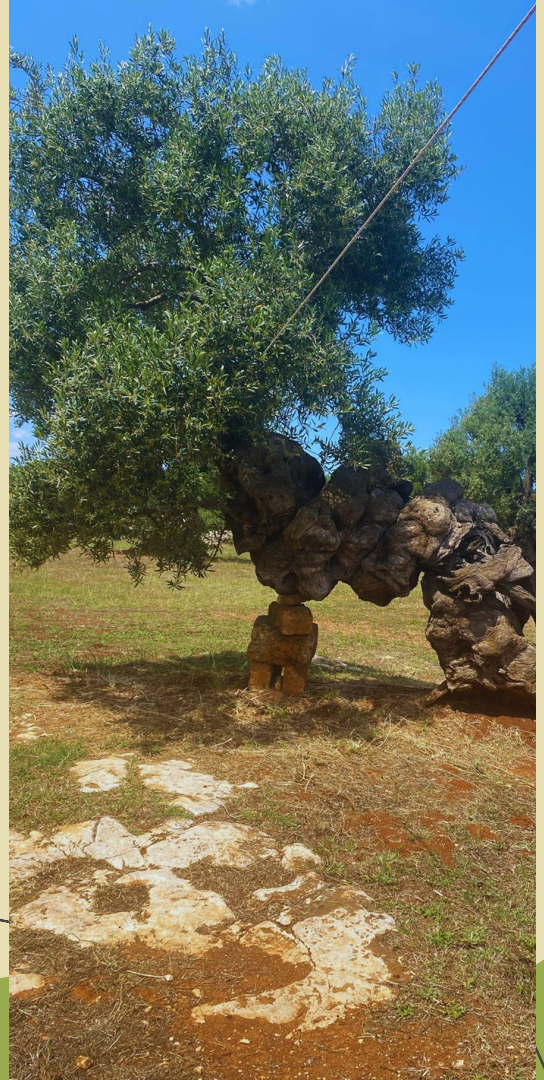
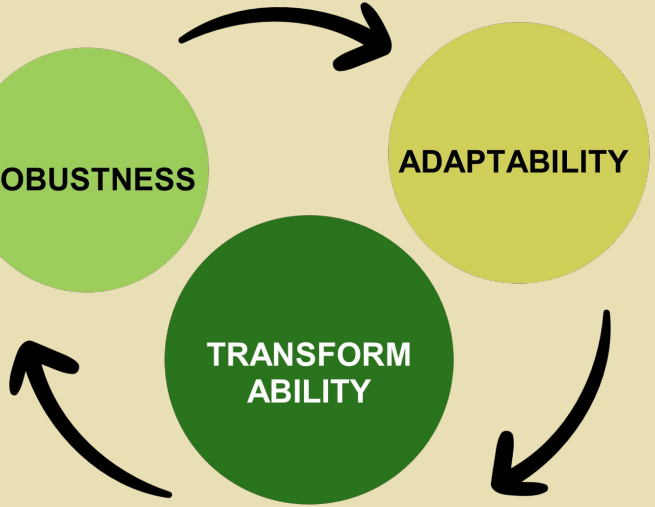
What is a **Farming System ?**

A farming system is a holistic approach to agriculture that considers all aspects of **farm management, including crops, livestock, soil, water, biodiversity, and socio-economic factors**. It's a combination of various components used by farmers to achieve their production goals. Essentially, it's the way a farmer manages their farm, encompassing both the physical resources and the decision-making process.



How can we define **Resilience** ?

The ability of a farming system to absorb shocks and disruptions while maintaining productivity and functionality. To adapt to long term changes and, when necessary, transform its practices.



Overview on **Ostuni**

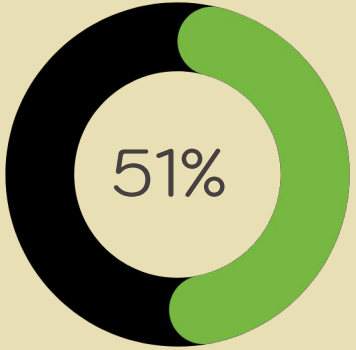
- **Annual** average rainfall ranges between **550 and 650 mm,** concentrated in autumn and winter.
- Average winter temperatures range between **8-10°C**. The dry season lasts from **May to October.**

Overview on **Ostuni**

13,699.16 ha Utilized Agricultural Area,
10,274.37 Ha Olive Trees which is 75% of UAA , 1% of UAA is Vineyards

4,794 Farms operate in Ostuni

Ogliarola Salentina



Cellina di Nardò

Our Objective

Our goal is to understand the resilience of Ostuni’s olive-based farming system How it faces challenges and adapts to changes, while preserving its unique agricultural heritage

How did we collect **our data ?**

Expert Interviews

In-depth conversations with key stakeholders to gather insights on institutional support and strategies.

- Gianfranco Ciola (GAL Alto Salento)
- Luigi D'Amico (Farmers Confederation)
- Thematic presentations from experts

Field Observations

On-site visits to observe practices, processes, and spatial arrangements firsthand.

- Institutional sites (GAL HQ, Water facility)
- Production sites (Olive oil mills)
- Farm visits and territory transect walk

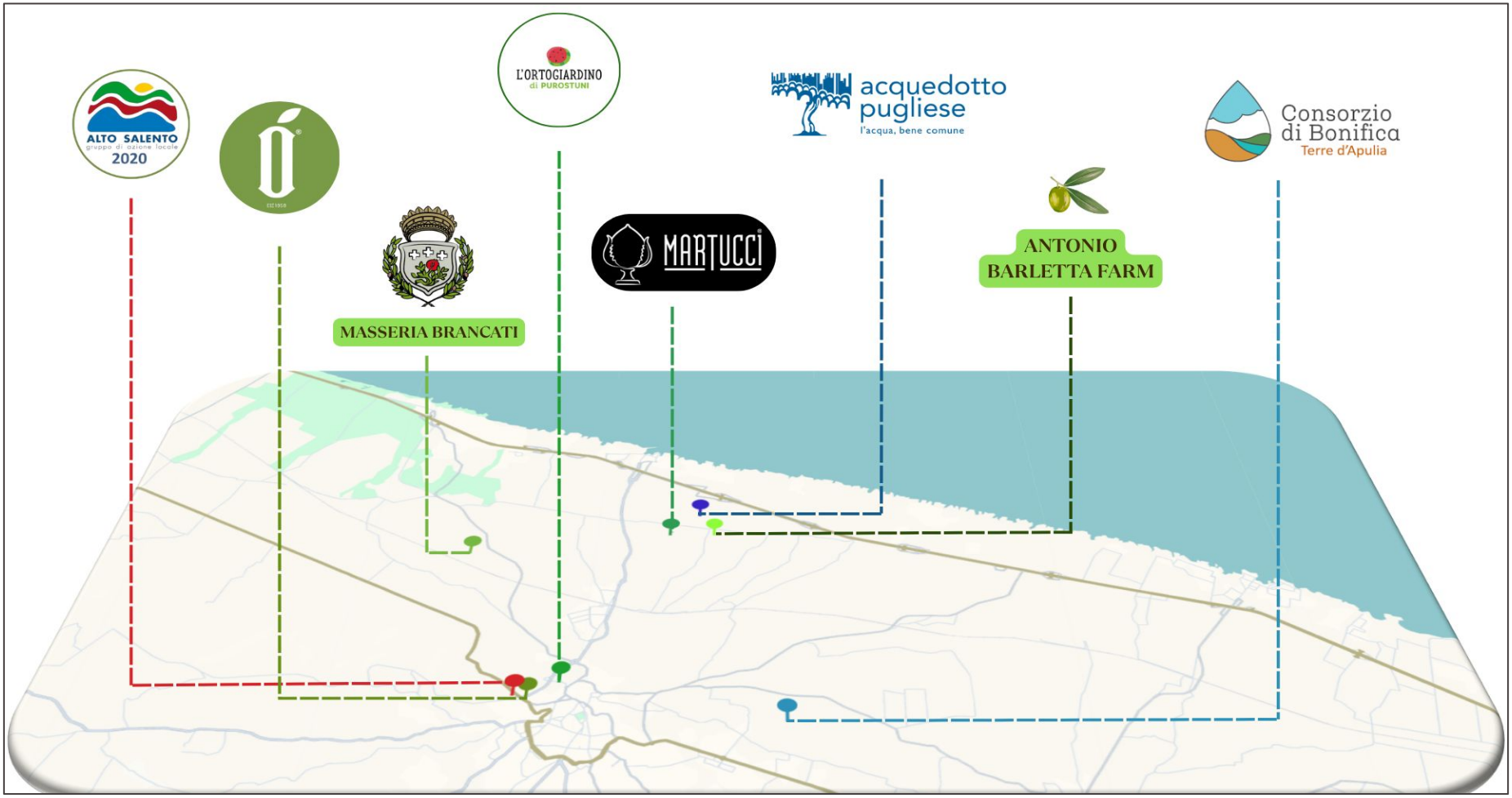
Document Reviews

Analysis of academic literature and reports on climate adaptation and resilience.

- Climate Change Adaptation studies
- Resilience framework assessments
- FAO and World Bank farming reports

Logbook Maintenance

Every team member maintained daily records of observations, reflections, and key insights throughout the study tour, contributing to a comprehensive understanding of Ostuni's farming system.


ALTO SALENTO
gruppo di azione locale
2020
L'ORTOGIARDINO
di PUROSTUNI
acquedotto
pugliese
l'acqua, bene comune
Consorzio
di Bonifica
Terre d'Apulia
MARTUCCI
MASSERIA BRANCATI
ANTONIO
BARLETTA FARM

Characterization of Olive Farming System in Ostuni

Monumental Olive Groves

Known for their ecological, cultural, and historical value. They serve as biodiversity hotspots, living monuments, attracting many tourists
Important for the landscape

Mixed Groves

Combination of millenial and Xylella resistant varieties , as well as other types, to diversify oil production and better meet customer needs.
Like Corantina trees 40/50 years old

Olive cultovation mixed with Horticultural Crops

Agroforestry approaches integrating vegetable production

Irrigation Sources

- Farmers typically obtain irrigation water from two main source :

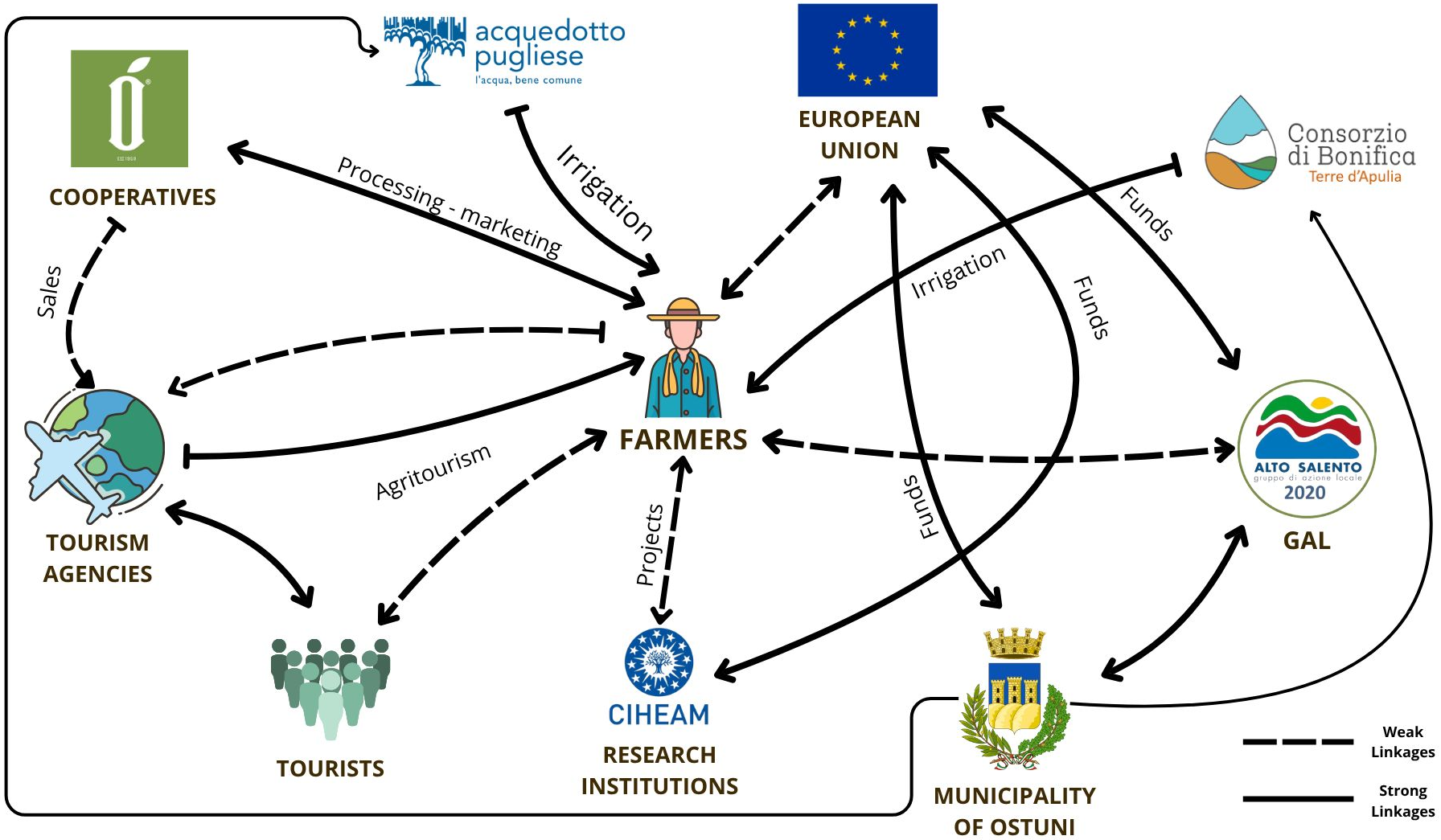
- Some have their own wells located directly on their farms,

- Others rely on community-managed systems, such as the water consortium a and the Acquedotto Pugliese,

Soil Tillage Practices

- No-tillage methods, which minimize soil disturbance. This approach helps reduce evapotranspiration by maintaining soil moisture, improving water retention and reducing erosion.

- Others adopt minimum tillage, which involves limited soil turnover to balance weed control and soil health.


acquedotto pugliese
l'acqua, bene comune
EUROPEAN UNION
Consorzio di Bonifica
Terre d'Apulia
COOPERATIVES
Processing - marketing
Irrigation
Sales
Irrigation
Funds
Funds
FARMERS
Agritourism
Funds
Projects
ALTO SALENTO
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2020
GAL
TOURISM AGENCIES
TOURISTS
CIHEAM
RESEARCH INSTITUTIONS
MUNICIPALITY OF OSTUNI
Weak Linkages
Strong Linkages

Evolution of the Farming System

Distant Past

- Heatwaves & prolonged drought
- Water scarcity
- Underground water salinization
- Market price fluctuations
- Dominance of monemental trees
- Corantina intensification

Past

- Rainfed irrigation
- **Lampante** olive oil production and exportation

Xylella fastidiosa outbreak

(2010/2013)
Xylella-resistant olive varieties

Covid-19 pandemic (2020)

Increase online sells

Present

- Increased climate variability (heatwaves)
- Labor shortages
- Using Treated water
- Rise of diversification (other crops, agrotourism)
- Introducing new varieties to satisfy costumers needs

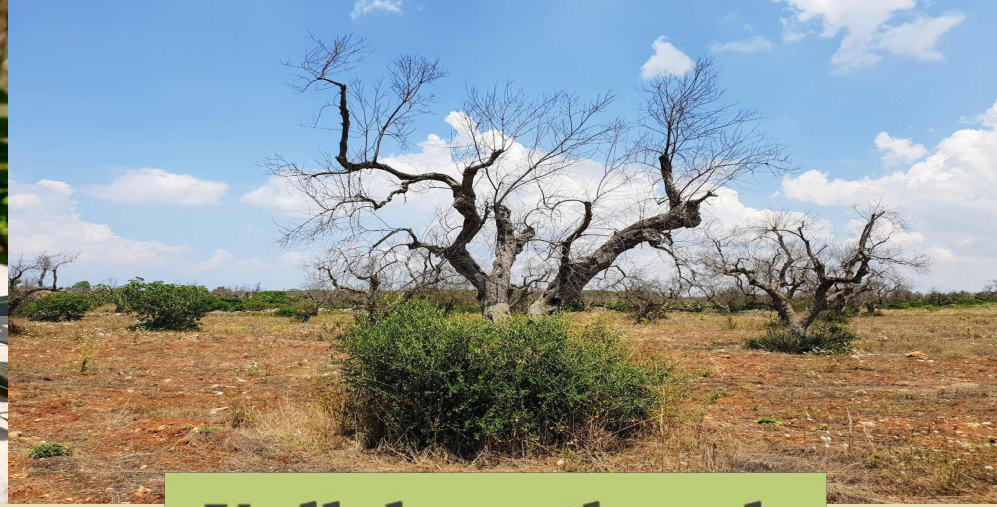
Future

- Climate change Intensification
- Economic Pressures
- Labor Issues

What are the main challenges for the Olive Farming Systems in Ostuni?

Market

- Limited market access
- Many rely heavily on tourism and agritourism to sell their olive oil
- There is a lack of stable consumer connections and long-term buyer relationships.
- Strong competition from other countries
- Not all farmers are part of cooperatives



Xyllela outbreak

- Led to the destruction of thousands of ancient olive trees.
- Cultural loss for farming families
- Resistant varieties like *Leccino* and *FS17* are introduced, but they don't have the same identity or market value as traditional varieties.
- Xylella also increases production costs due to tree removal, soil management, and replanting.

Water Scarcity

- Groundwater increasingly saline, especially near coastal areas
- Limited use of treated wastewater due to infrastructure gaps
- High energy and financial costs for irrigation systems

Climate Change

- Higher temperatures increase the spread and severity of diseases like *Xylella fastidiosa* and other pathogens.
- Harvest dates are shifting, disrupting traditional farming calendars and labor planning.
- Olive trees that once survived without irrigation now require regular watering
- Extreme weather events are becoming more frequent, damaging trees and reducing yield stability.

How Are Farmers Dealing with the Main **Challenges** in the Olive Farming System?

Xylella fastidiosa

1

Integrated Pest Management

Community effort to prevent pest spread proactively.

2

Eradication Program

Government-led initiative to remove infected trees reactively.

3

Planting Resistant Varieties

Farmer-driven strategy to prevent infection through resistant varieties

Like Leccino and Favolosa

4

Grafting Millennial Trees

Farmer's reactive measure to mitigate infestation impact.

Expanding markets

Farm Shops

Establishing physical retail
spaces for direct sales.

Expanding Global Presence

Increasing presence in international markets via export initiatives and partnerships and fairs participation

Certification schemes

DOP and organic labels

1

2

3

4

5

Online Platforms

Leveraging digital stores for broader reach.

Cooperative Networks

Reducing production costs, increasing traceability of products

Dealing with Water scarcity?

Irrigation

Using treated wastewater and water from the consortium

Soil and Water Conservation Practices

Employing ground cover and green manuring strategies to retain soil moisture and preserve fertility.

Resilient Olive Varieties

Maintaining monumental olive trees that are deeply rooted with strong drought resistance able to withstand prolonged water stress.

Other practices that have enhanced the resilience of the Otsuni Farming System

Use of Machinery

Shakers and Fruit pickers amidst a skilled labour shortage

Diversification into horticultural crops

Income Diversification

Agro-tourism & didactic activities

Value addition: Cosmetics

Innovative Collaborations

Cooperatives, LAGs, Local Authority

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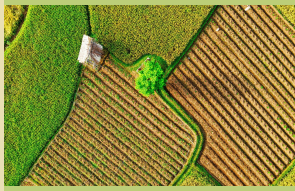
EU

Conclusion

- The farming system in Ostuni, centered on monumental olive trees, embodies cultural heritage, ecological richness, and economic value.
- It faces critical challenges, including climate change, disease outbreaks like Xylella fastidiosa, labor shortages, and evolving market conditions.
- Resilience in Ostuni's agriculture is dynamic and constructed through a blend of tradition, innovation, and community collaboration.
- Adaptation includes new olive varieties, water reuse, crop diversification, and agri-tourism.
- Balancing heritage with innovation is key to long-term sustainability.
- Support for youth, training, and local cooperation is essential for future resilience.

Recommendations



Promote the dialogue with stakeholders about supporting crop diversification and modern farming techniques to reduce costs.

Subsidy programs should be offered to farmers in **monumental** olive culture as they involve extra maintenance costs

Green Cooperatives & Digital Markets:
Empower farmers through cooperatives equipped with digital platforms for direct sales, shared resources, and knowledge exchange, enhancing market access and community bonds.

Labour Shortage:
Engage with labor and migration authorities to leverage seasonal employment programs.

Empower cooperatives to train new workers, preserving skills and knowledge essential to olive cultivation.

Grazie per l'attenzione