

# 3<sup>rd</sup> MEDITERRANEAN FORUM

FOR PHD STUDENTS AND YOUNG RESEARCHERS

Understanding Mediterranean Agriculture Food Systems and their Supply Chain Actors Under Local, Regional and Global Uncertainty



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## BY-PRODUCT VALORIZATION STRATEGIES IMPLEMENTED BY SMALL MEDITERRANEAN OLIVE OIL FARMERS

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## CONTEXT & FIELDWORK METHODOLOGY

Regió Mediterrània



The region:

- 2nd most important in olive oil production
- Different varieties of olive trees and landscapes

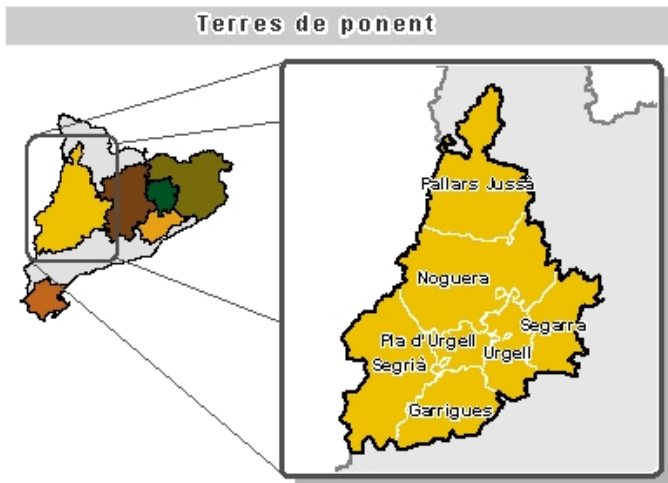
Fieldwork methodology:

- 60 cases.
- In-depth interviews
- Information on resources and perceptions.

The farmers & informants:

- Small family farms
- Diversified production
- All are olive farmers, some are olive oil producers

COLIVE project (funded through ARIMNet2 (ERA-NET grant no. 618127)).



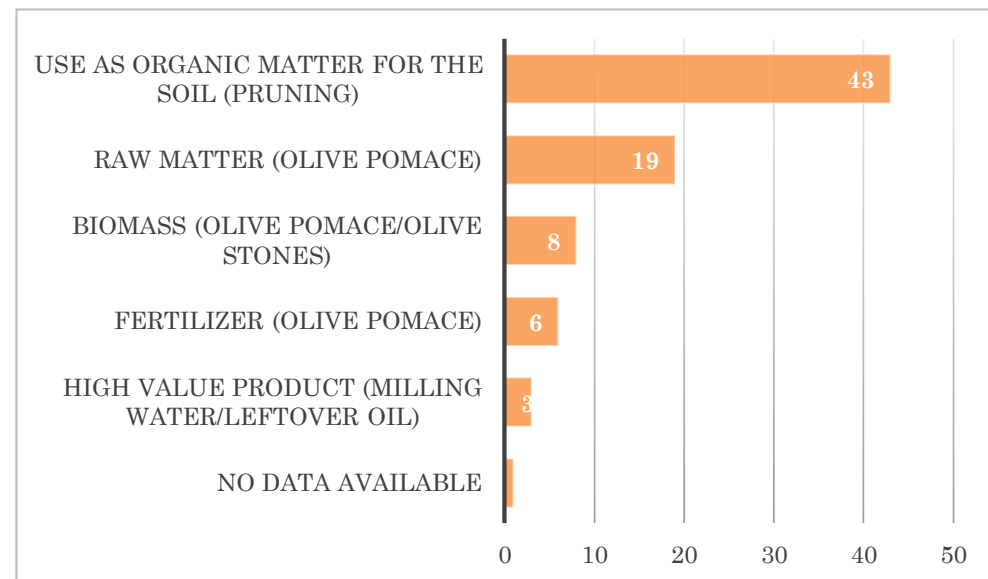
# IMPLEMENTATION OF CIRCULAR ECONOMY PRACTICES

83,33% of olive farmers in the sample engage in some sort of valorization strategy, including on-farm and olive oil mill by-products. *But*, we found individual practices rather than circular production models.

This is mainly due to the low level of integration between olive farming and extensive cattle farming and the limitations in infrastructure and logistics for small olive oil mills.

The most common strategies for by-product valorization are low value uses, that is energy production and compost.

Olive farming and olive oil by-products valorized



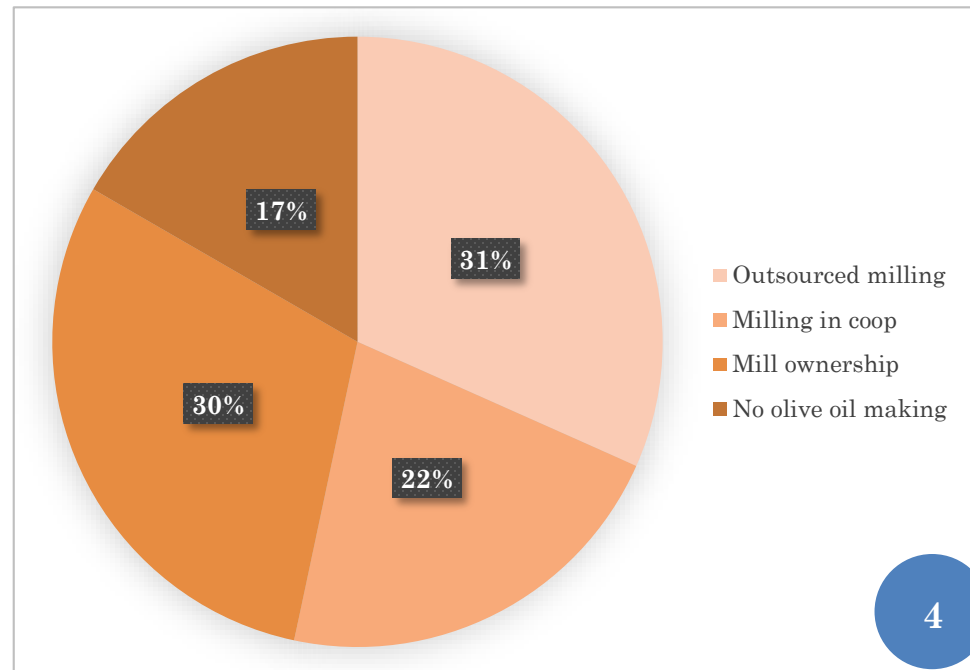
## IMPACT OF MILL ACCESS ON BY-PRODUCT MANAGEMENT

Importance of differentiating between olive farmers involved with olive making and olive farmers who are only olive producers – 48% of olive farmers have control over the milling process.

Strategies for mill access among farmers involved in olive oil production

On-farm olive production and olive oil production process yield different by-products and different valorization strategies.

The type of mill access determines the olive farmers' ability to manage olive oil waste and therefore, their possibility to implement circular economy strategies.





# OLIVE TREE PRUNING BIOMASS

Use of olive tree pruning biomass as organic matter for the soil – the *norm*, implemented by 71,67% of olive farmers.



Source: Cal Sileta

Generally, the use of OTPB as organic matter is perceived as “*one option among others*” and as a relatively new “*trend*” and its use is determined by:

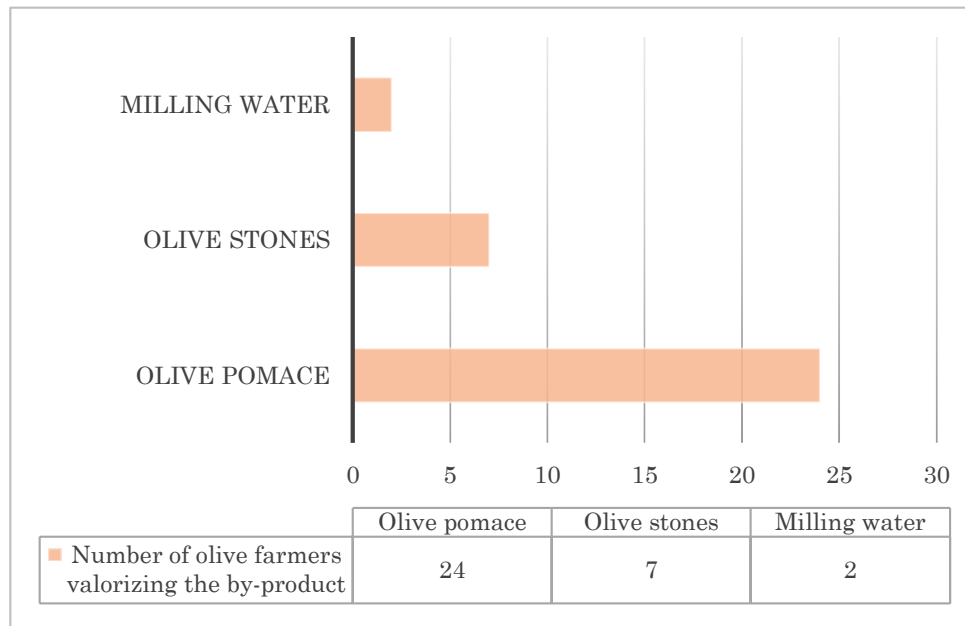
- Access to machinery.
- Perception of risk from xilophagous plagues.
- Stricter regulations on scrub burning.

Use of olive tree leaves and pruning biomass as cattle fodder – the *exception* only one case was found.

# OLIVE OIL MAKING BY-PRODUCTS

Almost all olive oil mills in the sample are two phase mills, which means the **main by-product is olive pomace**. Olive stones are also a possible by-product that can be valorized.

By-products of olive oil making process being valorized.



We have identified **four valorization strategies**:

- Selling waste as raw matter.
- Using waste as biomass for energy generation.
- Using waste as fertilizer.
- Using waste to make high value products.

# OLIVE OIL MAKING BY-PRODUCTS

## ***Olive pomace valorization:***

Selling the olive pomace to a refinery is not perceived as a valorization strategy, but rather as a **waste management practice** and olive oil production waste is perceived as difficult to manage.

They describe the conditions and management of olive pomace as a **“drama”**, a situation in which they are forced to **“just give it away”**.

## ***Olive stones valorization:***

It is a practice that shows an **upward trend** and it is very well perceived by farmers. Limited by the needs of a **costly investment** on machinery and infrastructure.





## CONCLUSIONS

- There is a widespread inclusion of circular economy strategies, but implementation of circular business models is exceptional.
- The most common valorization practices, both on-farm and in olive oil mills, are low value strategies (energy & compost).
- Circular economy practices are perceived by farmers as waste management practices rather than valorization strategies.
- Olive oil farmers by-product valorization strategies are limited by their dependency to other agents in the chain, access to technology and the costly investment requirements.