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# MINORITY GRAPEVINE VARIETIES: KEY FACTOR TO CLIMATE ADAPTATION & GIs COMMERCIAL GROWTH



- Spain has the greater vineyard extension in the world: **945.000 ha.**
- Third largest wine producer country: **28.300 hl.**

- Castilla & Leon: 3<sup>rd</sup> largest region in Europe: **94.222 Km<sup>2</sup>.**
- **85.000 ha** hectares of vineyards: 92% under GI.
- **17 wine GI.**
- 13 Protected Designation of Origin (**PDO**) + 3 estate wine (**VP-Vino de Pago**) + 1 Protected Geographical Indication (**PGI**).

**56 authorized varieties: 5 varieties → 88% area**

# VITICULTURE AND CLIMATE CHANGE: ISSUES



## IN GRAPES

- Greater difference between technological maturity and phenolic/aromatic maturity.
- Higher sugars concentration.
- Lower acidity (higher pH), lower malic acid.
- Lower concentration of organic nitrogen compounds.



## IN WINE

- Higher alcohol content.
- Higher concentration of residual sugars.
- Lower acidity (higher pH).
- Variation in color.
- Fewer flavours.

## MINORITY GRAPEVINE IN PROTECTED GIs

**Why are they  
a minority or  
are almost  
extinct?**

- Decades ago, these varieties did not complete their vegetative cycle → **they did not ripen.**
- Some of them were **unproductive.**
- They did not meet the old **quality standards.**

**Why are  
they so  
interesting?**

- Perfect **adaptation** to the environment (native).
- **Rusticity.** Resistance to diseases and extreme weather conditions.
- **Long vegetative cycles.**
- **Lower alcohol content.**
- High levels of total acidity, low pH and **freshness sensations** in finished wines.
- Interest in protected **GIs and PDO.**
- **Final consumer** interested in them.



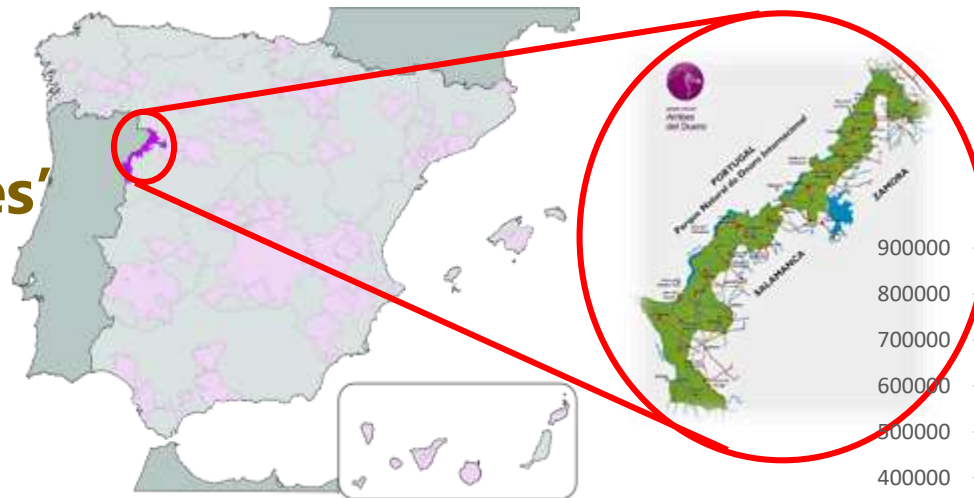
OPPORTUNITY!

# ADVANTAGES OF MINORITY VINE VARIETIES IN GIs AND PDOs

- Typical features adapted to the origin area: **Link to the land.**
- Different and unique wines: **Increase in the price** of wine.
- **High quality wines** (high scores from specialized guides).
- **Growth of the GI:** Vineyard area, sales, exports...

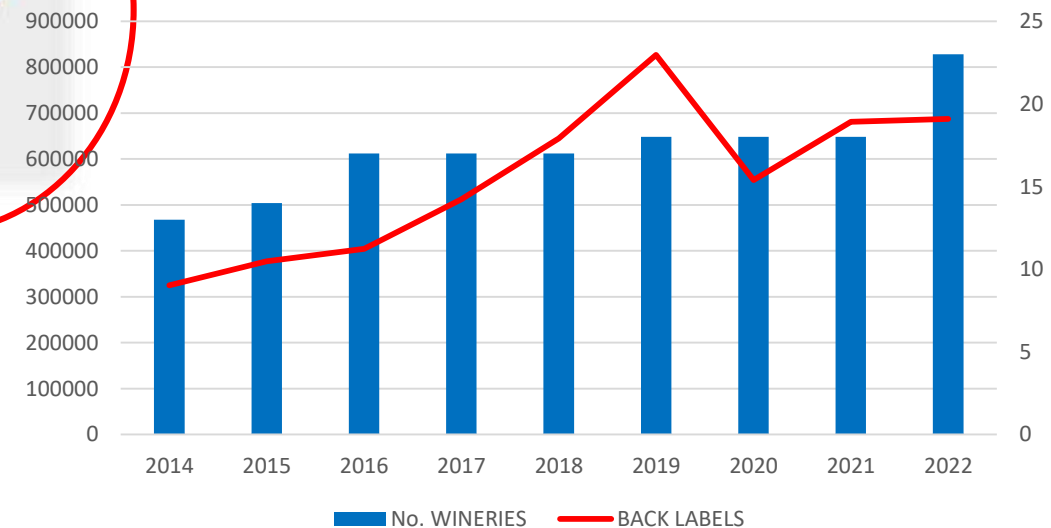


## E.g.: "DO Arribes"



- 320 ha.
- Unique, native and minority varieties.
- Production model: Small family wineries (average production: 29,000 bottles/year).

EVOLUTION IN THE DO "ARRIBES"



## E.g.: "DO Arribes" (Spain-Portugal border)



- **Climate:** Mediterranean climate.
- **Altitude:** Between 400 - 725 meters above mean sea level.
- **Soil:** Poor, mainly sandy, coming from granite.

# CONCLUSIONS

## MINORITY GRAPEVINE VARIETIES

KEY FACTOR IN  
SUSTAINABILITY

### ECONOMIC SUSTAINABILITY



- ✓ High quality, unique wines.
- ✓ Differentiation & typicality of GIs.

### ENVIRONMENTAL SUSTAINABILITY



- ✓ Climate adaptation: rustic and resistant varieties.
- ✓ Long vegetative cycles.

### SOCIAL SUSTAINABILITY



- ✓ GI growth: hectares, number of wineries, number of bottles, sales.
- ✓ Stopping the demographic decline in rural areas.

## LOOKING BACK TO PAST TO BUILD A HOPEFUL FUTURE



Food and Agriculture  
Organization of the  
United Nations

Interreg



Cofinanciado por  
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Minorsens

**GRACIAS**  
**THANK**  
**YOU**  
**MERCI**  
**GRAZIE**

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KEY FACTOR FOR CLIMATE  
ADAPTATION AND FOR GIS  
COMMERCIAL GROWTH**

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