WATER FOOTPRINT OF THE WINE CHAIN:
COMPARISON BETWEEN TWO PORTUGUESE CASE STUDIES

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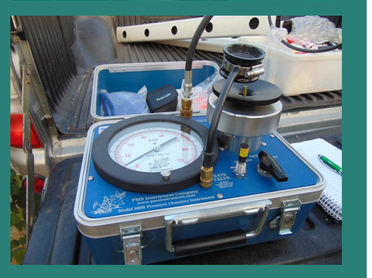
Vineyard water footprint

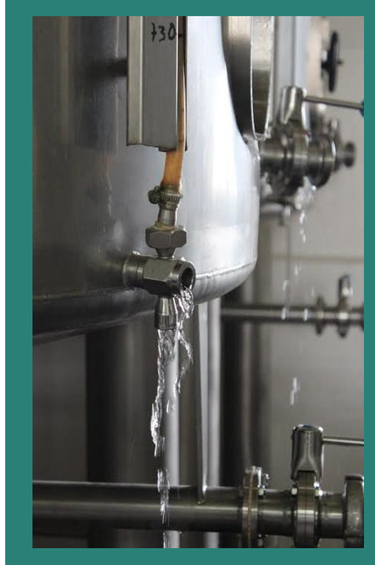
- **Account green water footprint**
  - vine evapotranspiration estimation through field measurements and satellite imagery
- **Account blue water footprint**
  - monitoring of irrigation water delivery, distribution uniformity and efficiency
- **Account grey water footprint in each experimental field**
  - quantification of nitrate loads in percolated water
- **Water footprint assessment**





Winery water footprint

- **Account blue water footprint**
  - best available technics (BATs)
  - water counters at key points
- **Account grey water footprint**
  - wastewater flow quantification and characterization
- **Water footprint assessment**



Water footprint sustainability

- **Environmental sustainable criteria for identifying hotspots**
  - life cycle inventory (LCI)
  - water footprint indicators
- **Sustainability of wine water footprint**
  - scenarios, product and system changes
  - best practices selection

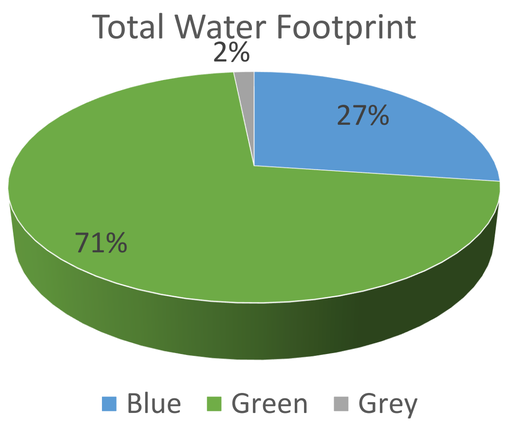
OBJECTIVES

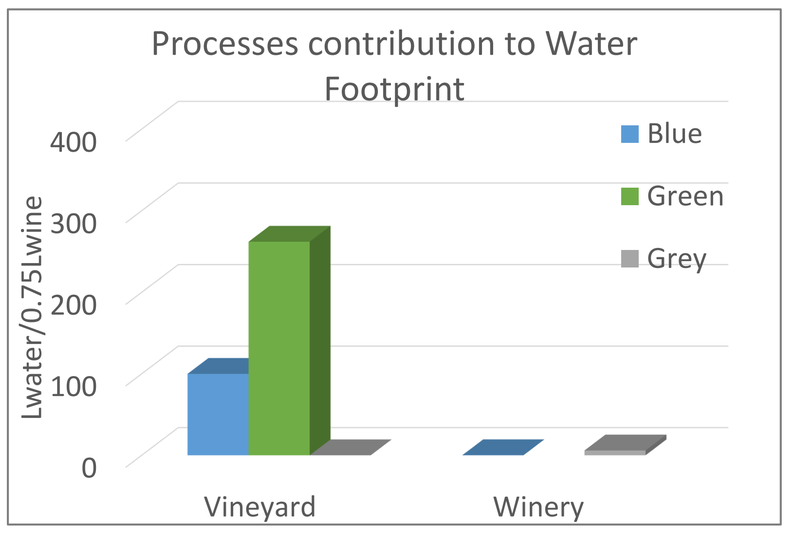
The WineWaterFootprint project evaluated the water footprint in the wine industry through the development of a methodology applied to two case studies, along two years of monitoring in Tejo and Alentejo regions. The evaluation of the sustainability of the water footprint through life cycle analysis, also allowed the identification of hotspots.

RESULTS

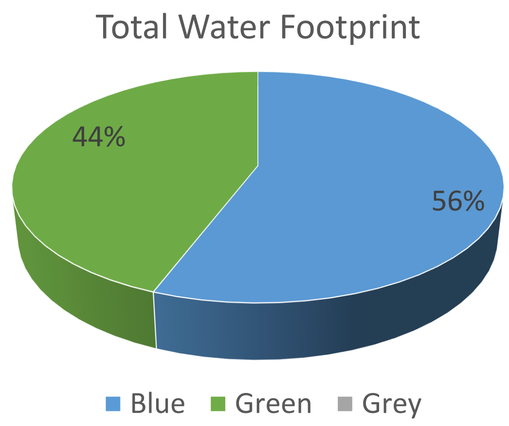
The results show that vine growing is the production phase with the greatest impact in Water Footprint, representing more than 98% of the total value. In the case study I (Tejo region) the green water footprint was the most relevant component, accounting for 71%, while in the case study II (Alentejo region) was the blue water footprint, accounting for 56% of the total value. Overall, the water footprint ranged from 370 to 610 L of water per bottle of wine produced (0.75 L) and is therefore similar to other studies reported in the Mediterranean region.

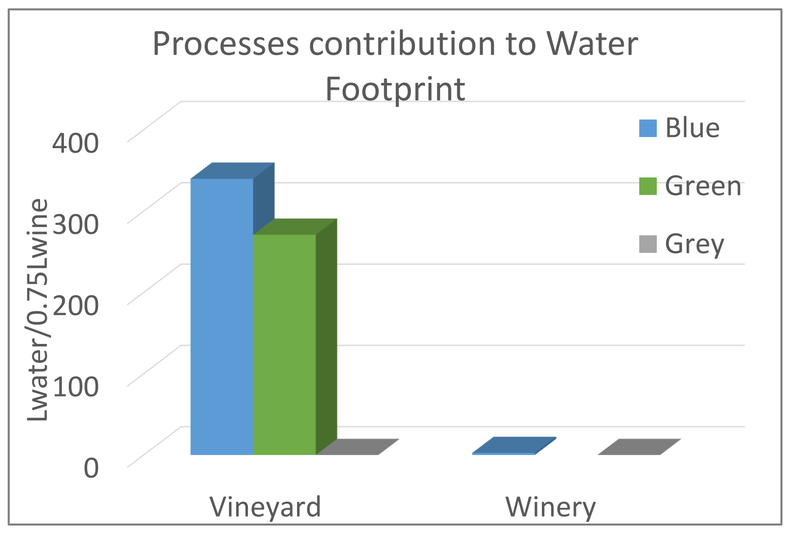
CASE STUDY I – Tejo region





CASE STUDY II – Alentejo region





CONCLUSIONS

Although the obtained results for one of the case studies was lower than some reported studies, there are still room for improvement in both case studies.

At the winery, it was possible to identify some hotspots that may allow improvements, of easy implementation and low cost, such as the installation of water guns in the hoses and the specific training of the workers.

At the vineyard, the spatial distribution of the irrigation water can also be improved, thus increasing the overall efficiency of its use.

Edaphoclimatic conditions have a important impact on the distribution of water footprint components.

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