

# Environmental Hotspots in the Italian Wine Industry

## Pouring Over Key Facts



**N°1**  
Wine Producer Worldwide



**7,67 Million**  
Tonnes of grapes harvested

**37%**  
wine exported

More than  
**310,000**  
wineries



**5,66 Billion**  
Litres of wine produced



**7.56 Billion**  
Bottles of wine produced



**695,000**  
Hectares of Vineyards

Data: 2018

# A Maestro of Modern Wine

Italy is one of the world's most ancient wine-making countries. The country boasts an enormous wealth of expertise, diversity (more than 2000 varieties and vintages of grapes) as well as some of the finest wines in the entire globe. Viticulture in this country dates back more than 4000 years. Italy is the leading wine producing country in the world both in terms of volume and exports. Today, Italy's geographical territory spans 20 wine-producing regions such as Veneto, Apulia, Emilia-Romagna and Sicily leading in terms of wine production.

Italy has enjoyed significant growth in its wine industry since 2014. Volume produced has increased by around 34% in the past five years (from 4.2 billion litres to 5.6 billion litres). While the country is a global leader today, the Italian wine industry faced considerable challenges in the early 20th century, mainly due to maintaining high production standards. Nevertheless, Italy overcame these issues through the implementation of strict regulation, authenticity and labelling requirements.

The most important regulation in this domain was enacted in 1963, the Denomination of Origin (*Denominazione di Origine Controllata, DOC*) Law. The introduction of these regulations led Italy into a golden age of winemaking. Over the past 50 years, these regulations have dramatically improved the quality of grapes.

## World-leader continues to push ahead

In 2018, Italy produced around 19% of the world's wine, an increase of 29% from 2017. With this market dominance and impressive growth, the Italian wine industry has played a pivotal role in Italy's overall economic development. Today, the country's wine industry is undoubtedly prosperous, growing its revenues from €5.9 billion in 2017 to €6.2 billion in 2018. In addition, the industry has succeeded in increasing the overall value of Italian wine by 70% over the last decade, giving wine producers a greater revenue per bottle. The sector currently provides more than 1.3 million jobs, directly and indirectly, while this number is constantly increasing as the sector continues to grow. The wider wine industry – including tourism, manufacturing, processing and marketing – posted a €10.6 billion turnover in 2017, with a 5-percent increase year-on-year.

## Top importers of Italian wine, in 2018

|                |         |
|----------------|---------|
| Germany        | 26,19 % |
| United States  | 17,04 % |
| United Kingdom | 14,89 % |
| France         | 4,44 %  |
| Canada         | 3,99 %  |
| Switzerland    | 3,69 %  |
| Sweden         | 2,40 %  |
| Netherlands    | 2,36 %  |
| Russia         | 2,17 %  |

## Environmental Touchpoints in the Italian Wine Industry

The Italian wine industry is booming. The winemaking process involves many different phases: from grape cultivation, to wine production, bottling and distribution. Many of these processes, in varying degrees, may contribute towards negative impacts on the environment. The main environmental touchpoints of the Italian wine industry are detailed below:

### Energy Consumption & Air Emissions – A Question of Purity

Bottling and storage are the final stages in the winemaking process, which require the consumption of large amounts of energy. Since the Italian energy system is still dominated by fossil fuels, the release of carbon dioxide and other Greenhouse Gas Emissions (GHG) from this industry have attracted a great deal of attention.

The most energy-intensive activities are due to the use of cooling systems and electrical motors. Wine conservation and aging also represent one of the main factors of energy consumption for the Italian wine sector, as wine should be stored at the correct temperature to ensure a wine's flavour and balance remains.

In the largest wine-producing countries, such as Italy and France, wine is mainly packaged in glass bottles. The use of glass bottles are considered to be the only suitable packaging for storing and marketing good-quality wine. However, the production of glass is responsible for burdening the environment with a wide range of air emissions such as sulphur oxides, carbon dioxide and arsenic, among others. Although air emissions are the major environmental threat from the production of glass, glass manufacture is also a high-temperature, energy-intensive process.

While alternative packaging such as paper products, aluminium and polythene are available, they are reported to release unwanted substances into wine. In addition, they also may modify the taste of the wine through a process known as "flavour scalping". This process, in scientific terms, occurs when wine absorbs volatile organic compounds. For this reason, the Italian wine industry is currently trying to switch to lightweight glass bottles. This switch will result in substantial reductions in emissions in the production stage and will also reduce emissions at the transport stage.

Italian winemakers have also started to install solar PV systems, embracing solar energy, with the aim to minimize their carbon footprint. Emissions, however, from the Italian Wine sector also originate from transportation, as the industry currently exports 213.6 million bottle cases per year.

### Soil Erosion & Biodiversity Loss – Grounds for Improvement

The pressure to increase grape production can put a strain on the soil across Italy's vineyards. The production of wine in northern Italy is contributing to the erosion of some 400 million kilograms of soil every year, while the southern part of the country is also facing similar challenges.

The agricultural land designated for the cultivation of grapes has seen an increase of approximately 50.000 hectares in the last 4 years and is still increasing. This introduction of new vines to the soil is one of the reasons for soil erosion, as recently planted vines have shown higher soil erosion rates than older ones.

In addition, when the land used for vineyards continues to grow, eventually consuming plots of natural forest, the wine industry may create an additional negative impact: this translates practically into a biodiversity loss.





## Wastewater Generation & Irrigation Water – A Murky Issue

A significant by-product of the winemaking industry is [wastewater](#). The period of harvest up until the final packaging of wine is also known as the vintage period. This process is responsible for a very high wastewater generation (60-75%) of the whole product. Significant wastewater quantities are also being produced when cleaning machinery and equipment used during the conversion of grapes into wine. The bottling process is considered the last stage in which a significant amount of wastewater is produced. In terms of figures, the average water consumption by a winery is between 1.75 to 2.65 litres of water per litre of wine, which is a considerable quantity if multiplied with the number of litres produced in the entire country.

Many European countries such as Italy, Spain, Belgium, Portugal and Greece are currently facing high water shortages, with water scarcity only set to worsen with climate change. In many parts of Italy, particularly in the south, it has become more difficult to supply the demand required for water. In addition, Italy has become one of the top ten countries making the use of groundwater for agricultural irrigation, as 83% of the agricultural production value comes from irrigated territories.

However, a large amount of water in the winemaking process (up to 40%) is wasted due to leakages and poor irrigation practices. Italian farmers, for the above reason, have already started making extra efforts for more efficient practices by introducing drip and micro irrigation.

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- ✓ **57 Audited Wineries** between 2017 and 2019
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