

# THE STORY OF REWINE

The reWINE project shows the best way to enjoy wine, one sip (or reuse) at a time.

ZERO WASTE CONSUMPTION & PRODUCTION

## # 8

What's your favourite wine?  
Red? White? Fruity? Dry?  
We like them all, as long as they come in  
reusable packaging.  
Get ready for the tasting tour!



Waste management is, unquestionably, one of the biggest global challenges of our time. As waste generation is increasing at an alarming rate, global leaders and local communities are eagerly looking for solutions to fix our so-called “throwaway culture.” **In Europe, from all the municipal waste produced in 2019, 36% is packaging.**<sup>1</sup> In fact, there was a rapid and continued growth in the amount of packaging waste generated:<sup>2</sup> 88.4 million tonnes of packaging were placed in the market in 2017, compared with 81.5 million tonnes in 2007. This corresponds to 8.5% growth in just 10 years. To continue living on this trend is unsustainable and leads to serious environmental, economic, and social impacts. There’s a pressing need to change current production and consumption patterns towards prevention and reuse of materials, including packaging.

In the wine industry, single-use glass is heavily used for packaging. According to a recent study<sup>3</sup> on the life cycle assessment (LCA)<sup>4</sup> of different packaging materials, **single-use glass has the greatest environmental impacts compared to other packaging materials** (i.e. PET, aluminium, and beverage carton). This is attributed to glass production, which is extremely energy intense. For this reason, we should do what we can to prevent it from becoming waste. On the other hand, glass is 100% reusable and 100% recyclable at the end of its life cycle, and is an inert material, which makes it more suitable as a food contact material.

The reuse of packaging offers great environmental benefits.

By extending the life of materials, there is a great reduction in CO<sub>2</sub> emissions as well as the pressure on natural resources and ecosystems. In fact, the aforementioned study has also proven that **reusing a glass bottle just five times can already reduce the overall environmental impact by over a third compared to single-use glass bottles.** But the benefits go far beyond the environment. The reuse of packaging also brings overall benefits for the society and economy, including cost savings for municipalities (e.g. street cleaning and waste management), creation of local jobs, as well as multiple advantages for retail and hospitality businesses - thus helping to drive loyalty, consumer engagement, and offering an overall better user experience.

Nevertheless, in spite of being a priority in the European waste hierarchy, reusable packaging is undergoing a downturn in recent years.<sup>5</sup> In the context of this case study, in Catalonia (Spain), refillable glass bottles only represent 19% of the total amount of glass bottles on the market and this is limited to the sector of the HORECA (for hotels, restaurants and cafés), basically with bottles of beer, soft-drinks and water.<sup>6</sup>

In fact, in the majority of European countries, wine bottles are not reused, which makes it crucial to develop initiatives to bring reusable systems into the market - and that’s how reWINE was born.

**The reWINE project proves that a circular and more sustainable way of consuming wine is possible. Let’s start the tasting tour!**

<sup>1</sup> Eurostat, “Municipal waste statistics”, 2021. [Online]. Available at: [ec.europa.eu/eurostat/statisticsexplained/index.php?title=Municipal\\_waste\\_statistics](https://ec.europa.eu/eurostat/statisticsexplained/index.php?title=Municipal_waste_statistics)

<sup>2</sup> ibidem.

<sup>3</sup> Reloop Platform and Zero Waste Europe, “Reusable vs Single-Use Packaging - a review of environmental impacts (Executive Summary)”, 2020. [Online]. Available at: [zerowasteurope.eu/wp-content/uploads/2020/12/zwe\\_reloop\\_executive-summary\\_reusable-vs-single-use-packaging\\_a-review-of-environmental-impact\\_en.pdf](https://zerowasteurope.eu/wp-content/uploads/2020/12/zwe_reloop_executive-summary_reusable-vs-single-use-packaging_a-review-of-environmental-impact_en.pdf)

<sup>4</sup> Life cycle assessment (LCA) is a methodology for assessing environmental impacts associated with all the stages of the life cycle of a product, process, or service.

<sup>5</sup> Reloop Platform, “What we waste”, 2021. [Online] Available at: [www.reloopplatform.org/wp-content/uploads/2021/04/What-We-Waste-Reloop-Report-April-2021-1.pdf](https://www.reloopplatform.org/wp-content/uploads/2021/04/What-We-Waste-Reloop-Report-April-2021-1.pdf)

<sup>6</sup> Data from ADISCAT (Association of Logistics and Beverage and Food Distribution Companies of Catalonia)



## reWINE in a nutshell

### Key info

- Duration: 2016-2020.
- Location: Catalonia region, Spain.
- Main partners: UAB Research Park, Rezero, Inèdit, Catalan Waste Agency, Cooperativa Falset Marçà, Torres, Infinity.
- Number of stakeholders involved: 99
  - » 7 Catalan wineries
  - » 32 shops/stores
  - » 54 restaurants;
  - » 2 logistic operators
  - » 3 municipal waste collection points of the Consortium for the Management of Waste from Vallès Oriental;
  - » 2 washing plants (with one of said washing plants belonging to one of the wineries).
- Website: [www.rewine.cat](http://www.rewine.cat)

### Main findings

- Reusing a glass bottle only eight times (seven washings) could already save between 1.7-2.6 kg of CO<sub>2</sub> eq/bottle.
- In this project, a total of 82,239 glass bottles were reused and 171,058 tonnes of CO<sub>2</sub> eq were saved (which is equivalent to the emissions that a vehicle would produce while traveling 11 times around the world).
- Deposit Return Schemes (DRS) is the most effective way of guaranteeing the return of bottles (up to 95% return rate).
- In this project, more than 21,756 tonnes of waste were prevented with the reuse and refill of wine glass bottles.
- The distance between the washing facility and the winery is of prime importance when optimising the economic costs of reusable packaging. In Catalonia, the optimal distance between the winery and the washing plant is 60 km, sufficient to cover the areas of each Protected Design of Origin (PDO).
- The bottle refillable system could create around 330 green jobs (nine times more jobs than a one-way bottle).



## Background and history

reWINE is a refillable wine project developed and carried out in the Catalonia region in Spain. It was carried out from September 2016 to December 2020 with the purpose of identifying the opportunities of, and barriers to, the implementation of refillable packaging systems in the Catalan wine industry; as well as to demonstrate its technical, environmental, and economical viability.

The project gathered all the key actors of the wine value chain - including wineries, waste collection centers, bars, restaurants, retailers, shops and consumers - and took into account the entire process that the reuse/refill of bottles entails: from the washing, labelling, bottling and distribution on the market, up to their collection.

The idea of the reWINE project was conceived in 2014 by the Spanish entities Rezero (waste prevention and sustainable consumption organisation) and Inèdit (an eco-innovation agency), with a common vision to put in practice the waste hierarchy goals, which prioritise waste prevention and reuse.

The project was supported by the European Union LIFE+ Programme and several partners, namely: the university UAB Research Park (Autonomous University of Barcelona, coordinator of the project); the Catalan Waste Agency (regional local authority); Rezero; Inèdit; Falset Marçà Cooperative (medium size winery); Bodegas Torres (large size winery); and the Infinity washing plant.

The reWINE project has successfully demonstrated the viability of a sustainable system for the reuse of glass bottles in the Catalan wine industry, and since its conclusion at the end of 2020, the Catalan Government has been keen on taking it forward with wine stakeholders in the different catalan wine producer regions. Moreover, due to its success and good results, reWINE has greatly supported the new Catalan Waste Law<sup>7</sup> to implement measures towards waste prevention and the reuse of materials.

## Project development and main challenges

The reWINE project sought to identify the opportunities

of, and barriers to, the reuse of glass bottles in the wine sector in Catalonia through experimental data that verified its technical, environmental, social, and economic viability. To achieve this, the following steps were taken:

1. **Market study:** To kick-start the project, a market study of the relevant stakeholders was undertaken, including wineries, Catalan Protected Designations of Origin (PDO)<sup>8</sup> for wine, retailers, and restaurants. The municipal waste collection points in the region were also studied. In addition, an assessment of the perception of refillable wine bottles by the actors involved (wineries, retailers, restaurants, municipalities, consumers) was also carried out, including their views on the challenges and opportunities for the implementation of the project.
2. **Design of the washing process:** Before defining and setting up the logistics to run the project, a preliminary test of all the technical aspects for the washing of glass bottles was performed. The two wineries participating in the project (Falset Marçà Cooperative and Bodegues Torres) sent more than 5,000 empty bottles to the washing plant. These bottles were washed up to ten times. The wineries then submitted the bottles to an industrial testing to evaluate their microbiological quality and production controls. Sommeliers and consumers were also consulted on this quality assessment phase. According to visual aesthetic criteria, the stakeholders set the ideal number of washing cycles as seven cycles (eight uses).
3. **Pilot test:** The pilot testing of the project comprised the actual operational phase of the refillable system across the Catalonia region. However, before setting it up, several case studies were analysed in order to identify the existing scenarios for the collection, transport, washing, refill, and distribution of the wine bottles; and what would be the optimal logistic for the 98 stakeholders involved (wineries, waste collection centers, restaurants, and shops). A total of five different scenarios were analysed:
  - i. Medium and large wineries supplying to the HORECA sector (both direct distribution and indirect through wine wholesaler), and complemented with some small retails;

<sup>7</sup> Law on the prevention and management of waste and the efficient use of resources in Catalonia, which is currently being drafted.

<sup>8</sup> Protected Designations of Origin (PDO) is a label that wine producing regions give to certify that the wine is effectively from that region and there is no counterfeit.



- ii. Medium and small wineries supplying to large retailers (supermarket chains);
- iii. Small wineries delivering to small retailers and restaurants;
- iv. Winery with integrated washing facilities; and
- v. Wineries supplying to supermarket chains, ensuring the return of bottles to municipal waste collection points.

Due to the diversity of stakeholders involved - including the wine brands (31 in total), the models of wine bottles (19 types in total), and their locations (widely spread across the Catalonia region) - different logistics had to be implemented for each stakeholder. Further details on the pilot project are described in the 'Unwrapping reWINE's piloting test' section further below.

4. **Consumer engagement:** During the pilot phase, a campaign for consumers was carried out to encourage their participation, with positive messages such as 'every bottle matters'. Several communication tools, including door stickers, posters, displays, and banners were designed to disseminate the project in the participating wineries, shops, and restaurants.
5. **Validation of the viability of the project:** After the pilot phase, a study was carried out to identify the technical, environmental, social, and economic viability of refillable wine systems in the Catalonia region. The environmental feasibility study has been carried out using the Life Cycle Assessment (LCA) methodology, and the economic feasibility study was developed using unitary cost per reused bottle compared to the cost of the acquisition of a new bottle. As expected, the success of the pilot phase proved the technical, economic, and

environmental feasibility of the reWINE project. More details on the nature of the studies are reported in 'Results' further below.

Overall, the three main challenges observed during the project launch were:

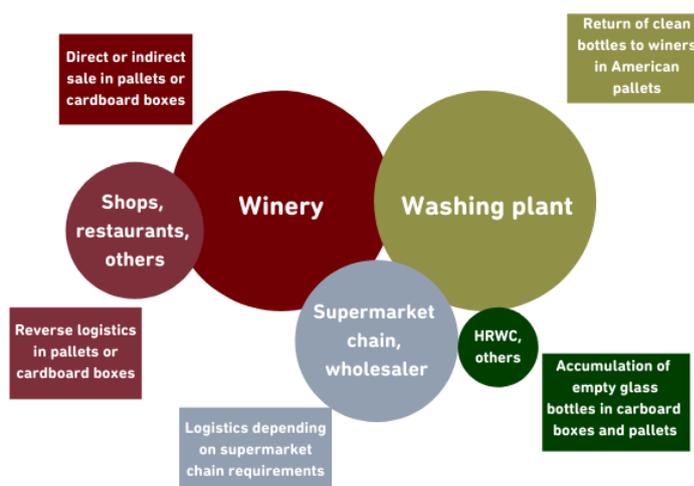
- **The complexity of designing logistics** adapted to different stakeholder scenarios, as well as the monitoring system of the project;
- **Getting large retailers onboard**, since big structures are reluctant a priori to include new processes that change their protocols and organisation. As such, the decision-making process and securing their engagement were more challenging and took more time;
- **The lack of washing facilities in Catalonia** available to clean post-consumer reusable bottles. The bottles ended up being washed in another region (Villena), with the exception of the ones from the winery that had its own integrated washing plant.

#### Unwrapping reWINE's pilot testing

The project's pilot was carried out with multiple stakeholders from wineries, municipal waste collection and recycling centers, restaurants, shops, and retailers.

**A total of 99 participants were involved in the pilot test phase**, as detailed below:

- 7 Catalan wineries (Cooperativa Falset Marçà, Bodegas Torres, Albet i Noya, La Viñeta, Talcomraja, Vins Pravi, and Joan Ametller);
- 32 shops/stores (including both small retailers and three large supermarket chains, such as Veritas, Ametller Origen, and Caprabo);
- 54 restaurants;



Stakeholders involved in the reWINE pilot test phase

- 2 logistic operators (a wine wholesaler and a social cooperative that collected bottles from a supermarket chain);
- 3 municipal waste collection points of the Consortium for the Management of Waste from Vallès Oriental; and
- 2 washing plants (with one of said washing plants belonging to one of the wineries).

Logistics

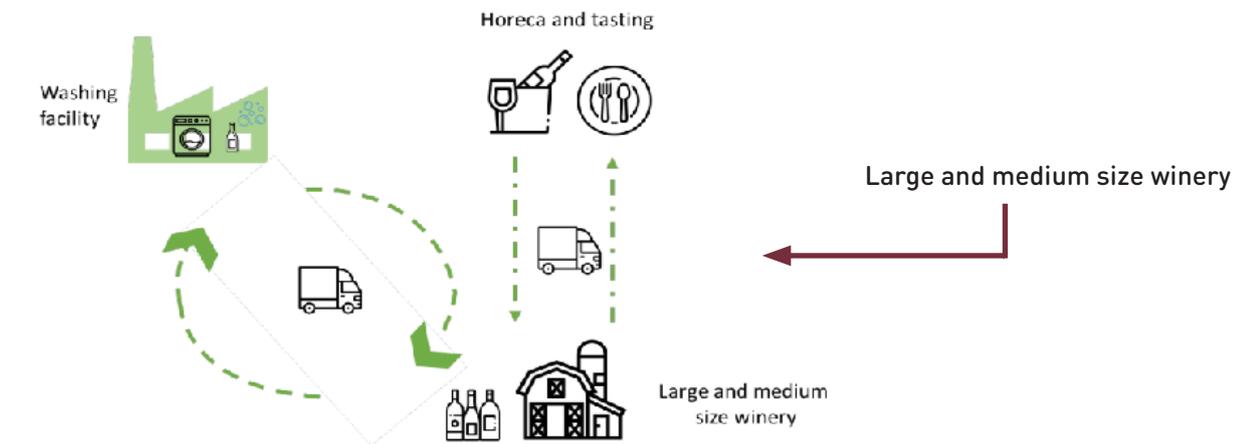
Due to the diversity of the wineries' business models, different logistics had to be in place for each stakeholder. The following different logistic scenarios were implemented:

1. Large retailers where consumers returned the bottles (e.g. supermarkets/stores such as Veritas and Ametller Origen).
2. Supermarkets collected the empty bottles returned by consumers, transported them to their logistical plant through reverse logistics, and stored them (e.g. Ametller Origen).

3. Stores such as Veritas required an external logistic operator (social cooperative) that collected the empty bottles from their supermarkets and stored them, while participants like Ametller Origen could do it themselves.
4. Waste collection points, such as Caprabo, participated in the pilot test, in collaboration with municipal waste collection centres, as return points of the empty wine bottles.
5. The bottles from some restaurants were collected by the wineries themselves (when direct selling occurred), while at other restaurants the collection was performed by wine distributors.

Incentive to return

One of the key elements for an efficient reusable/refilling packaging system is the return of bottles. Incentives to promote the return of reWINE bottles were specifically designed for each winery. A total of three different incentives were implemented: Economic



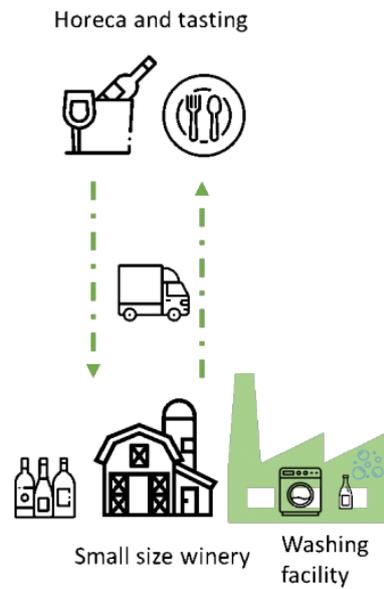
Small retail and small wineries



Retail



Small size winery and integrated washing



Rewards (ER), Deposit Return System (DRS), and Raffles (R). For instance, several Veritas and Ametller Origen stores paid 0,10 EUR to consumers who returned an empty reWINE-labelled bottle. Caprabo establishments rewarded consumers with a raffle of wine experiences after returning reWINE bottles, as well as collecting points.

Labelling and consumer awareness:

Another key element to enable a smoothly-run refillable system is a harmonised label, as well as consumer awareness/educational programmes - , particularly in this project, which comprised 19 different types of bottles and 31 brands of wine. All participant wineries marked the bottles with a reWINE label to facilitate their identification as reusable. A campaign promoting the project for consumers was carried out in parallel.

**Results and key findings**

The pilot phase of the project started in July 2018 with the collection of reWINE bottles in grocery stores and restaurants. One year later, supermarket chains and municipal waste collection points got involved, with the full process lasting until December 2020.

The reWine project concluded with 150,294 bottles sold and 82,239 recovered. The average return rate of the reWINE bottles was 54,7%. However, these rates greatly varied between the HORECA sector and retailers, grocery stores, and supermarkets. This depended on the

sector, logistics, and incentives put in place:

- The average return rate in the **grocery stores sector** was **21%**. From 83.147 reWINE bottles sold, 17.586 were recovered.
- Bottles recovered in the **HORECA sector** reached an average of **96%**. From 67.147 reWINE bottles sold, 64.653 were recovered.
- When it came to incentives, the economic rewards registered an average return rate of between 2-22%, similar to the raffles (12 – 18%); whereas **deposit return systems (DRS) achieved higher return rates (between 85-95%)**.

One of the biggest challenges, and **most relevant aspects of the reusable system, is the return of bottles.**

The logistics of bottle collection must be convenient and simple for both the points of sale/return as well as consumers. HORECA is already used to refillable bottles, since some beverages (like beer, soft drinks, and water) have been mostly refillable in the past years in this sector, and it is a closed loop where bottles remain among restaurants, hotels, and cafés. This concept, however, is less predominant in the retail sector, and it depends on consumer action to ensure the return of empty bottles. As shown above, the reWINE project has proved that **(DRS) is the most effective way of guaranteeing the return of empty bottles to establishments by consumers - far above other incentives.**

During the 20 months of the reWINE project, a series of studies on the technical, environmental, social, and



economic viability of the project was also performed. **Their findings have shown that the reuse of bottles in the wine sector is technically and economically feasible, as well as more environmentally friendly.**

#### Technical and economic feasibility

During the pilot test, the project analysed the technical and economic feasibility of implementing the reuse system in the wine sector. It found that key aspects need to be assessed for an effective system operation, such as: the characteristics of the glass bottles (e.g. aesthetic aspects); transport and collection of glass bottles; distance between washing plant and collection point; storing capacity and conditions; and incentive systems for the return of bottles. In addition, logistics need to be adapted to each situation (wineries, wine wholesaler, restaurants sector, shops, supermarket chains, waste collection centres, etc.) to ensure the most efficient outcome.

On the economic aspect, the cost of reusing a wine bottle is currently slightly higher than that of a new bottle. This has to do with two factors:

1. The first one, and the most essential factor, is the distance of the washing facility and the cost of cleaning the bottles. For this project, the cost of a reused bottle was slightly higher than that of a new bottle because of the lack of availability of washing plants for post-consumption wine bottles in Catalonia. In this sense, optimising the distance to the washing plant makes the cost of the reusable bottle comparable to that of the new bottle.
2. The second factor is the low Extended Producer Responsibility (EPR)<sup>9</sup> fees applied to single-use bottles, which fail to reflect the fact that disposable glass is the type of packaging with the highest

environmental impact. In fact, EPR fees for all packaging materials are low and do not comprise the real costs of managing them at the end of their life cycle.

#### A note on single-use vs. reusable system costs

While the cost of a single-use bottle system is based on the price of a new bottle (with a very intensive production process when it comes to energy consumption and CO<sub>2</sub> emissions), the cost of a reusable bottle system is based on the washing and logistics (transport and labour for the handling; storage; and transport of empty bottles collected). As such, shifting from single-use to reusable bottles means a transfer of costs from material production to labour linked to washing and logistic processes.

#### **Key takeaways from the technical and economic feasibility studies include:**

- Six determining factors for the implementation of reusable wine bottle systems, namely:
  - » Characteristics of the bottle (model, label, and capping system);
  - » Transportation;
  - » Distance to the washing facility;
  - » Storage capacity;
  - » Hygienic storage conditions;
  - » Incentives for returning empty bottles.
- In this particular project, the ideal number of (re) use iterations is **eight cycles**, considering the aesthetic and hygienic assessment of the bottle. These trip rates are feasible since reusable glass bottles can reach an average of 25-30 cycles.<sup>10</sup>
- **Deposit return system (DRS) is the most effective instrument to guarantee the return of empty bottles** to establishments by consumers.

<sup>9</sup> EPR is a policy instrument, which applies the 'polluter pays principle' by placing the responsibility of a product's entire life cycle – from designing environment friendly and low-impact products to managing their end-of-life(EoL) – onto the producers. EPR essentially aims to internalise the negative environmental costs of and shift the responsibility for managing the products' EoL, and waste(s) arising from it, from taxpayers to producers.

<sup>10</sup> Reloop Platform and Zero Waste Europe, "Reusable vs Single-Use Packaging - a review of environmental impacts", 2020. [Online]. Available at: [https://zerowasteurope.eu/wp-content/uploads/2020/12/zwe\\_reloop\\_report\\_reusable-vs-single-use-packaging-a-review-of-environmental-impact\\_en.pdf](https://zerowasteurope.eu/wp-content/uploads/2020/12/zwe_reloop_report_reusable-vs-single-use-packaging-a-review-of-environmental-impact_en.pdf).



- The **distance** between the washing facility and the winery **is of prime importance in optimising economic costs.**

#### Environmental feasibility

During the pilot test, the project also analysed the entire life cycle of the glass bottle: manufacture, labelling, distribution, collection, washing, and refilling. An LCA methodology was used to compare bottles reused up to eight times (the optimal number of uses stipulated for this project considering aesthetic aspects) to the use of eight new (single-use) bottles.

The findings concluded that:

- **Reused wine bottles are more environmentally friendly than single-use bottles** in terms of their carbon footprint;
- Reusing bottles could reduce Catalonia's wine sector's carbon footprint by up to 28%. **The savings from reused bottles are estimated between 1.7 and 2.6 kg of CO<sub>2</sub> eq per bottle after eight reuses (seven washes).** With the total amount of 82,239 bottles reused during the pilot phase, more than 170,000 kg of CO<sub>2</sub> eq were saved (which is equivalent to the emissions that a vehicle would produce while traveling 11 times around the world!);
- **Reusing wine bottles in the Catalan wine industry could imply savings of more than 21,756 tonnes of waste;**
- The **environmental benefits could be increased even more by reducing the distance between wineries and washing facilities, and by increasing the number of cleaning cycles.**

The benefits of reuse systems on climate change mitigation are also backed by recent studies on the efficiency of reuse systems<sup>11</sup> which prove, for instance, that moving 50% of the food and beverage containers sector to reusables by 2030 could save up to 2.6 million tonnes of CO<sub>2</sub> equivalents.

#### A note on the transport distance

reWINE identified that, in the Catalonia region, the optimal distance between the winery and the washing plant - in terms of environmental impact - is 60km (which is sufficient to cover the areas of each Protected Designation of Origin - PDO). Nevertheless, even if the washing facility for the piloting phase was located more than 400 km away from the different wineries, there was still a proven carbon footprint saving. Surely, if washing plants were ideally located near the wineries, that would further reduce the reuse carbon footprint and increase savings up to 40- 50%. This means that having a washing facility in each PDO, or shared between nearby PDOs, would enable systems to cover bottle transport distances of about 60 km, and thus increase the environmental benefits of the reuse system.

#### A note on the number of (re)uses/cycles of the wine bottles

As mentioned above, although the reusable glass bottles can reach an average of 25-30 cycles, the wineries involved in the project set the ideal number of washing cycles as seven cycles (eight uses) due to marketing and aesthetics/visual standards. Nevertheless, the consumer study performed during the project concluded that consumers were not able to differentiate a bottle that was washed/reused one time from a bottle that was washed/reused ten times.

<sup>11</sup> Rethink Plastic Alliance, "Realising Reuse", 2021.[Online] Available at: [rethinkplasticalliance.eu/wp-content/uploads/2021/07/Realising-Reuse-Final-report-July-2021.pdf](https://rethinkplasticalliance.eu/wp-content/uploads/2021/07/Realising-Reuse-Final-report-July-2021.pdf)



### Further considerations and next steps

The reuse of wine bottles has not only proven to be technically feasible and environmentally beneficial, but also to be able to enhance and have positive impacts in other areas - such as savings for wineries and public administration - as well as enhance job creation and improve consumer experience.

The reuse of wine bottles can offer great potential economic savings for wineries (with the system implemented at a large scale and through the optimisation of washing and logistics costs) and for municipalities (due to the minimisation of collection and treatment costs of waste which they would no longer manage).

When it comes to job creation, the implementation of a reuse system in the wine sector has the added value of promoting green jobs and social reintegration, especially when linked to logistics and washing. Jobs could be created in several sectors, such as in industries of washing plants, logistics (collection, transport, and storing of empty wine bottles collected in places like restaurants and grocery stores), retail (handling of

bottles returned to points of sale, warehouse storage), municipal waste collection centers (handling returned bottles). As an estimation, considering the consumption and production market for bottles in Catalonia (over 48 million wine bottles), the recycling system in the wine sector creates about 37 jobs, whereas **the reuse system could create a total of 330 (nine times more jobs than a one-way bottle)**. Also, in Germany, it is estimated that reusable bottles create 5 times more jobs for beverage volume than a system based on single-use bottles.<sup>12</sup>

Apart from potential job creation, reWINE also helps to raise awareness among different sectors (industry, distribution, consumers, municipalities) and, at the same time, offers the opportunity to consume responsibly without generating waste. Reuse is an increasing trend of consumption and is expected to remain so in the next few years, steering the production sector. This context can open opportunities for extending the reWINE experience in years to come.

Furthermore, reusable wine bottles would also promote consumer loyalty and provide added value to a brand linked to their sustainability commitment. In addition, when considering the retail sector as a return point, the

<sup>12</sup> Pricewaterhouse Coopers AG WPG. "Reuse and Recycling Systems for Selected Beverage Packaging from a Sustainability Perspective - An analysis of the ecological, economic and social impacts of reuse and recycling systems and approaches to solutions for further development", June 2011



consumer normally takes advantage of the journey to make new purchases (of wine or other products), which can entail further economic benefits.

The reWINE project finished at the end of 2020. The Catalan Government is currently studying the continuity of the project with wine stakeholders in the different Catalan wine producer regions, in order to define the best locations where washing plants should be implemented, as well as the required logistics and structure.

### Main challenges and recommendations

The reWINE project successfully proves that the implementation of refillable systems for wine is not only technically feasible - across all big, medium, small, and micro wineries with diverse bottle designs and systems, as well as different stakeholders (HORECA, retailers) - but also economically, environmentally, and socially beneficial.

The project also identified the key challenges that need to be overcome to make such a reusable system even more effective and successful. The main challenges faced during the implementation of the project were logistics (e.g. return of bottles) and transportation. On

the transportation aspect, according to a recent study on the LCA review of environmental impact of reusable versus single-use packaging,<sup>13</sup> transportation is the most impactful stage of a packaging life cycle (due to its emissions). The impact of transportation is influenced by three interconnected variables: transport distances and backhauling; weight and volume of the packaging; and mode of transport.

Therefore, and given the weight of glass bottles, travelling distances need to be optimised as much as possible. This could be done by implementing pooling systems and decentralised logistics models. In other words, the (PDOs) would need to have shared washing plants with capacity to wash a large volume of bottles in order to optimise the economic and environmental cost of transport. This could be achieved through targeted public and/or private investments.

When it comes to e logistics, although bottle diversity was not a barrier for the pilot test, using a standardised model (or models) of wine bottles would facilitate logistics and optimise costs. Standardisation is a key element of success, as it not only streamlines the packaging formats, but also the entire infrastructure,

<sup>13</sup> Reloop Platform and Zero Waste Europe, "Reusable vs Single-Use Packaging - a review of environmental impacts". 2020. [Online]. Available at: [https://zerowasteurope.eu/wp-content/uploads/2020/12/zwe\\_reloop\\_report\\_reusable-vs-single-use-packaging-a-review-of-environmental-impact\\_en.pdf](https://zerowasteurope.eu/wp-content/uploads/2020/12/zwe_reloop_report_reusable-vs-single-use-packaging-a-review-of-environmental-impact_en.pdf)



making them interoperable. As such, the standardisation of bottles can facilitate logistics and collaboration of value chain actors by making it more accessible; creating economies of scale; and largely improving the overall environmental and economic benefits of the system.

Another crucial operational element for a successful system is the return of the bottles through DRS, which, as proven by the reWINE project, is the most effective way of guaranteeing the return of empty bottles to establishments by consumers, far above other incentives.

**In conclusion, the reWINE project revealed that refillable systems for wine are possible and, if scaled up, would make a formidable contribution to the environment and circular economy objectives.** However there is a clear need for policy to support this transition - for instance, by putting in place regulatory measures (e.g. reuse targets, packaging format harmonisation, economic incentives) and instruments to facilitate and optimise the transition towards reuse; but also through investments in reverse logistics infrastructure.

For more information visit:

[www.zerowasteurope.eu](http://www.zerowasteurope.eu)

[www.facebook.com/ZeroWasteEurope](https://www.facebook.com/ZeroWasteEurope)

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Sources

reWINE project, [www.rewine.cat](http://www.rewine.cat)

Rezero - Fundació per a la Prevenció de Residus i el Consum Responsable, [www.rezero.cat](http://www.rezero.cat)

Inèdit, [www.ineditinova.com](http://www.ineditinova.com)

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reWINE Project



Zero Waste Europe is the European network of communities, local leaders, experts, and change agents working towards the elimination of waste in our society.

We advocate for sustainable systems and the redesign of our relationship with resources, to accelerate a just transition towards zero waste for the benefit of people and the planet.

Case study by Larissa Copello

Editors: Marta Beltran, Joan Marc Simon, Justine Maillot,

Nathan Dufour, Ana Oliveira

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