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## **CIRCULAR ECONOMY. BUSINESS MODELS AND GOOD PRACTICE MODELS. WASTE USES OF WINE PRODUCTION**

BY

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**Abstract.** Seen as part of the solution to the crisis of natural and ecological resources, the Circular Economy has become a development priority both in the European Union economy and in the world. In a circular economy natural, raw materials are used to their full potential and waste is reintroduced into the circuit for sustainable reuse and thus it becomes a solution and an opportunity to transform the current economy into a sustainable one. Like any other industry and the wine industry is a producer of waste but some of them can become by reuse raw materials needed and used in other industries. Any wine producer can become part of the circular economy, thus increasing their income and reducing pollution or consumption of natural resources. In some European countries, massive investment has been made in recycling and reducing waste from wine production.

**Keywords:** producers, transformation, sustainable economy, resources.

### **1. Introduction**

Becoming a development priority of the European Union The circular economy (EC) is an integral part of industrial strategies and more. The circular economy makes a key contribution to the efforts to develop a sustainable, low-carbon and resource-efficient economy.

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The business world and the academic world have tried and come up with definitions of the concept of circular economy. In short, the circular economy can be an industrial model, an industrial system, an economic system or a new business and development model.

Like any other industry, the wine industry aligns with efforts to implement digitization, have little reusable waste, and has connections with other industries that have an impact on the environment.

## 2. The Circular Economy

Emerged in the second half of the last century, the ideas and then the realization of the circular economy became a major concern in world industrial and business activity. The spread was also facilitated by globalism, so that the circular economy became a widely known concept and thus became global.

Many researchers have tried to synthesize and concentrate the definition of the circular economy, and some of them have found only less than 114 valid forms (Kirchherr *et al.*, 2017).

The circular economy is defined by Ellen MacArthur Foundation „a systems solution framework that tackles global challenges like climate change, biodiversity loss, waste, and pollution”.

The circular economy is based on three main principles:

- Dispose of waste and pollution
- Circulate products and materials (at the highest value)
- Regenerates nature

(Foundation Ellen MacArthur, 2022).

Therefore, we can say that the circular economy is an economic system created to introduce waste into the circuit and to ensure the continuous use of resources by repairing, renovating, recycling and reusing obsolete materials and products.

## 3. Business Models and Good Practice Models

<<Accenture>> a multinational management consulting, technology solutions and outsourcing company, in 2014 presented in the brochure “Circular Advantage” five types of business for the circular economy (Accenture, 2014).

The OECD developed a guide entitled “Business Models for the Circular Economy, Opportunities and Challenges for Policy” in which it presented a classification of business models much more detailed and layered (Circular Business Models, 2019).

From these sources and others examined, we distinguish five major circular business models.

**Circular Supplies:** Provide renewable energy, bio based-or fully recyclable input material to replace single-lifecycle inputs.

**Resource Recovery:** Recover useful resources/energy out of disposed products or by-products.

**Product Life Extension:** Extend working lifecycle of products and components by repairing, upgrading and reselling.

**Sharing Platforms:** Enable increased utilisation rate of products by making possible shared use/access/ownership.

**Product as a Service\*:** Offer product access and retain ownership to internalise benefits of circular resource productivity.

\* Can be applied to product flows in any part of the value chain.

#### 4. Waste Uses of Wine Production

Wine technology is a fairly expensive process because it uses about 70% of the raw material, 30% being losses, called waste or by-products. The wine industry results in a series of by-products, such as: bunches, pomace, seeds, yeasts, sediments and others. (Balan *et al.*, 2020).

Nowadays the environmental policies are directed towards sustainable waste management methods and technologies in accordance of this trend is encouraging the waste capitalization and implementation of circular economic concepts. (Vișan *et al.*, 2018).

Only at European level we can give as examples of good practices but also of organization and practice in sustainable viticulture two large associations of producers. One is **CAVIRO - Italy** (Gruppo Caviro, 2022) which works every day to preserve the value of natural resources. Recycling and regeneration of products and materials allow us to reduce the use of raw materials and energy at source.

Thanks to this approach, we respond to the needs of today's generations, without compromising the possibilities of future ones. The second example comes from France and is called **Grap'Sud** (Grapsud, 2022). It is a sustainable player in the agricultural co-production sector to develop innovative and economically viable solutions for our strategic markets.

The recycling and recovery activities of the winemaking co-products carried out by the **Grap'Sud** group are fully integrated into a circular economy, whose objective is the production of goods and services in a sustainable way, limiting the consumption and waste of resources as well as the production of waste.

#### 5. Conclusions

In 2020, in Romania there were 596 companies whose object of activity was the production of wines and / or the cultivation of grapes, with 0.8% more compared to 2019 and increasing by 41% compared to 2010, shows an analysis KeysFins (Toader, 2021).

Vinification wastes cause ecological problems because the neutralization and use of fermentative wastes mixed with different compounds present a danger to the environment and to the health of the population. The ecological measures of protection of the environmental factors are very important, especially the economic efficiency obtained through the recovery of the by-products. The valorisation of these by-products leads to obtaining very valuable products both from a nutritional and industrial point of view (Soceanu *et al.*, 2021).

The issue of wine by-products draws the attention and interest of researchers, regulators, industry and consumers and has urged the European Community to a zero-waste economy by 2025. Taking into account that currently only around 30 to 40% of wine by-products are used worldwide, mainly as feed or fertilisers, the recovery strategy needs to be rethought so that, properly managed, secondary wine products are reused and exploited to obtain value added products. The analysis of the physico-chemical composition of different categories of wine waste shows that they have a wide range of extractable compounds, which are of interest to the food industry, pharmaceuticals, etc. The use of by-products derived from the wine industry would allow to reduce to a minimum the amount of residues and to obtain valuable extracts of bioactive compounds, with multiple fields of application (Musteață *et al.*, 2021).

The main problem in Romania is that at present there is no cluster of producers in the wine sector, although several such projects have started. It should be mentioned that there are still Organic Agriculture Clusters involved in the development of agriculture, food industry and trade in organic, natural and traditional products (BioNEst Cluster, 2019) and we can give as examples: Clusterul Bio Concept Prahova Valley, Bio Cluster Danubius, AgroTransilvania Cluster etc.

Almost exclusively, producers (according to the legislation) use the neutralization of the main waste that thus becomes unusable, very few of them have concerns in the organic cultivation of vines (Recaș wineries and others) or have concerns in activities in the field of social responsibility or digitization in the field vineyards and winemaking.

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ECONOMIA CIRCULARĂ. MODELE DE AFACERI ȘI MODELE DE BUNE PRACTICI. UTILIZĂRI ALE DEȘEURILOR PRODUCȚIEI DE VIN

(Rezumat)

Privită ca parte a soluției la criza resurselor naturale și ecologice, economia circulară a devenit o prioritate de dezvoltare atât în economia uniunii europene, cât și în lume. Într-o economie circulară materiile prime naturale sunt folosite la întregul potențial,

iar deșeurile sunt reintroduse în circuitul de reutilizare durabilă și astfel devin o soluție și o oportunitate de a transforma economia actuală într-una durabilă.

Ca orice altă industrie și industria vinicolă este un producător de deșeuri, dar unele dintre ele pot fi valorificate prin reutilizarea ca materii prime utilizate în alte industrii. Orice producător de vin poate deveni parte a economiei circulare, crescându-și astfel veniturile și reducând poluarea sau consumul de resurse naturale.

În unele țări europene, s-au făcut investiții masive în reciclare și reducerea deșeurilor din producția de vin.