

## **Measuring the environmental performance of a territorialized brewery sector**

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The territorialisation of food chains is now a challenge in the context of food transition. A territorialised industry is made up of a set of actors, economic or otherwise, involved in the marketing of an agri-food product at all stages of the value chain, organised in such a way that some or all of the stages of the value chain: agricultural production - processing - distribution - consumption are located within a territorial perimeter claimed by these actors. The key to the success of the sector is coordination between upstream and downstream. It is based on the choice of location, on the size, on the planning and on the choice of technology. The environmental performance of territorialized chains is little addressed by scientific research.

Life cycle assessment has recently been able to show for food systems that increasing production yields reduces the environmental impacts of products by means of an economy of scale phenomenon. Furthermore, it seems that the choice of geographical location of cultivation areas as well as the logistical choices of value chains strongly influence the environmental impacts of a given food system.

The objective of this study is to compare the organisational and technological choices that can be made along the supply chain and to study their environmental impacts, in the case of the territorialized brewery sector, a sector in full expansion. Life cycle assessment was used to compare several scenarios varying i) the choice of container, ii) the sizes of the structures, iii) the degree of locality of the chain, iv) organic or conventional production.

The study of the classical brewery chain scenario allows to identify the most influential processes on different environmental impact indicators and to look at the possible choices to reduce these impacts. In order to improve the environmental performance of a territorialized brewery sector, the first point to work on is the choice of container. Other solutions are more nuanced: producing organic beer, or producing in a brewery with large volumes could reduce some of the environmental impacts of the sector.