ENVIRONMENTAL AND ECONOMIC SUSTAINABILITY
OF AGRICULTURAL WASTE COLLECTION AND VALORIZATION

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Today it is estimated that 20% of the food produced in Europe is wasted (ASVIS, 2021). In particular, about 14% of food is globally lost after the harvesting phase, before reaching the retailing one, during operations carried out on farms or during storage and transport (Food and Agricultural Organisation, 2019). The causes are various such as unsuitable techniques and equipment, poor management skills, bad weather conditions or excess of stocks. This situation is certainly not in line with the Sustainable Development Goals signed by the United Nations in the 2030 Agenda and several actions to reduce waste should be taken yet (United Nations Development Programme, 2022).

What could be the solutions? To answer this question, this study aims at carrying out a review of the possible strategies and technologies to reduce food wastage in agriculture or to valorise wasted raw materials taking into account the industrial technical feasibility and their environmental impact.

The Scopus scientific database is used to perform the analysis, identifying articles and reviews published in English around the world in recent years, related both to pilot plants and industrial applications.

A literature analysis has been firstly carried out to verify whether this issue has gained interest over the years, which are the main sources of publication and the main authors of research on food waste reduction and valorisation, always by considering only the agriculture and post harvested phases. Then, the main methodologies and strategies adopted in recent years, or under development today, to enhance food waste will be presented, deepening their characteristics, applications, advantages and disadvantages.

The results of the review will be useful not only for researchers or companies to get an overview of the available technologies, but also for municipalities, for example, to understand which choices are the most sustainable from an environmental and economic point of view.