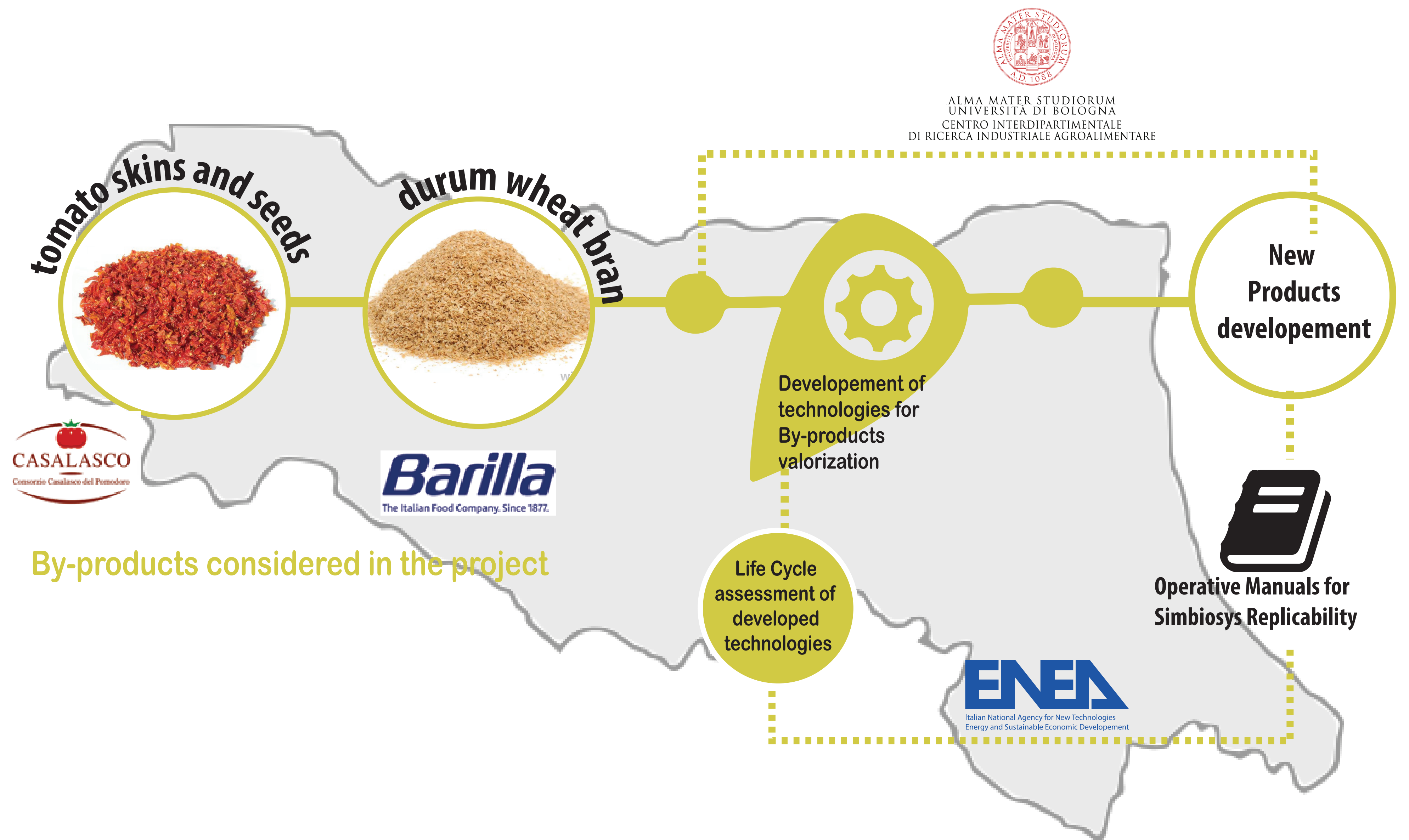


THE FOOD CROSSING DISTRICT PROJECT: INDUSTRIAL SYMBIOSIS FOR THE AGRIFOOD SECTOR IN THE EMILIA-ROMAGNA REGION IN ITALY

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Food Crossing District project aims to detect technological and system solutions that can help activating symbiosis paths among regional enterprises in order to valorise by-products and waste, and obtain new products using low environmental impact technologies.

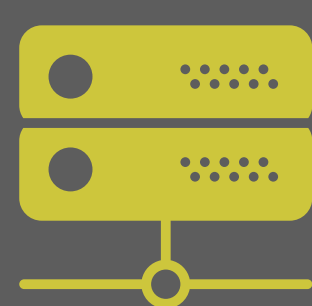
- 1 The project particularly focuses on selected typologies of **agrifood by-products**, such as tomato skins and seeds, and durum wheat bran, coming from two industrial chains that are well developed in Emilia-Romagna and have a great strategic relevance at national level.
- 2 Study and development of **new products** using low environmental impact technologies.
- 3 Development of **Operative manuals** for the realization of individuated symbiosis paths as a support to companies.
- 4 **Mapping of strategic companies related to the project** to understand the symbiosis paths potentials in the Region in terms of economic and environmental opportunities and feasibility.



The project will end by March 2018 and gathers two different industrial research labs: the University of Bologna - Interdepartmental Centre for Industrial Agrifood Research (CIRI AGRO), whose expertise is focused on agrifood products and processes and ENEA- Italian National Agency for New Technologies Energy and Sustainable Economic Development - Laboratory for the Environment, whose expertise is focused on industrial symbiosis and environmental impact evaluation, mainly through Life Cycle Assessment. The labs work in synergy with two important agrifood companies of the Emilia-Romagna territory, Consorzio Casalasco del Pomodoro and Barilla. This collaboration is aimed at detecting solutions for the valorisation of some by-products.

Activities

Database construction



A **database with contacts of about 120 different companies from the Emilia-Romagna region in diverse industrial sectors has been created**. The companies have been invited via email to participate to a resource mapping. The mapping has been done by preparing a module where companies had to fill in information about inputs and outputs of their productive process, in order to identify possible exchanges of materials, energy, spaces and competences among companies in the region. This activity has seen in the first phase the direct involvement of a sample of companies through individual meetings and collective tech tables. It has allowed detecting some interesting synergies such as shared management of some resources common to all met companies.

Mapping of strategic companies related to the project



The activities are focused on the **mapping of the companies of the agrifood sector which are the object of the present project** (olive oil mills, tomato production/storage companies, milling industries). This will allow **understanding the quantity of by-products** that are present in the region as well as the average dimension of the related companies. The aim is to **design and size the final plants** (after the experiment) **coherently with the quantity of the available by-products**, as well as the capacity of the single companies to individually implement the technology.

Operative manuals



The operative manuals related to some detected symbiosis paths are developed. These documents have the objective to **collect indications useful to the companies that intend to implement the valorisation of the analysed by-product**. They include the description of the context and conditions that make the specific symbiosis interesting. In particular, the documents **contain different aspects concerning regulation, technology, logistics, economic and environmental issues that have to be considered during the implementation of synergies**. Actors who have to be involved are defined. A brief introduction is also given to the use of the platform, where companies can verify the presence and the location of other enterprises in the territory which could be partners to implement symbiosis initiatives.

Industrial simbyosis platform

The platform is the tool for supporting territorial analysis and to exploit the replicability potential of the method. The platform **is available on line and can be used by companies to upload information about their by-products, which could be shared with others companies, and their requests for resources, which could be fulfilled with by-products of other industries**. The platform also allows its administrators to highlight potentials for interactions on the territory which are not explored yet, also in relation to new technologies and inter sectoral collaborations.



The symbiosis platform, which is now being updated, wants to extend and improve functions and stability of the existing ENEA platform which is available **on-line at www.simbiosiindustriale.it**

The objective of the platform is to create a **network of users who can geo-localize their activity, upload their resources (input/output) in the database and detect symbiosis paths by using this information**. The current development activity aims in particular to improve the usability of the tool and wants to enhance some functions related to the management and implementation of the database. It also aims to further elaborate the input/output relation tables with the objective to detect the symbiosis synergies.