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IMPACT REPORT

// LES MOULINS DU VAL DIEU

INTRODUCTION

This report presents the results of an innovation track within the European Interreg project Wanderful.stream (2020-2023). In this project, seven organisations in the Meuse-Rhine Euroregion pool their knowledge, strengths and resources to jointly support small and medium-sized enterprises in making the transition to a more circular economy.

Wanderful.stream offers companies free advice and support for the valorisation of their residual waste streams but also initiates and facilitates the co-creation of circular prototypes with technology, design and business experts in innovation tracks.

This report focuses on the results of the innovation track of the company Les Moulins du Val Dieu.

INNOVATION TEAM

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LES MOULINS DU VAL DIEU

Les Moulins du Val Dieu is a Belgian company that was taken over in autumn 2020 by four agricultural investors. Their objective is to develop one of the last traditional mills in Wallonia by producing high quality flour, in short circuit and from sustainable agriculture. The company produces a range of artisanal white and integral flours, as well as flour and seed mixtures. The success of these flours can be explained by the quality of the wheat used, which gives the preparations an exceptional taste. The company buys about 7,000 tonnes of wheat per year for milling, which is a relatively small amount compared to the total wheat production in Belgium, which amounts to 900,000 tonnes.

During the production of flour, the outer layer of the wheat grain, called the "bran", is removed. Les Moulins du Val Dieu produces between 1,500 and 2,000 tonnes of wheat bran per year. Rich in dietary fibre, this co-product is currently mainly used in animal feed on a very local scale. Les Moulins du Val Dieu has joined the Wanderful.stream project to explore other ways of using the product, with higher added value for the company.

The challenge is to find an application that limits transport, as the cost and environmental impact can quickly increase with the distance travelled to transport the sound. Using this resource on a local scale can also increase the resilience of the territory. In the circular economy, these parameters are crucial in the thinking.

www.lesmoulinsduvaldieu.be

The company produces between 1,500 and 2,000 tonnes of wheat bran per year

CHALLENGES

01. A high value-added recovery solution

02. A compulsory local recovery solution

03. A sustainable and resilient recovery solution that is in line with future trends

INNOVATION PROCESS

STEP 1

Identification of key possible ways of valorisation

A synthesis of existing knowledge was carried out as well as a literature review and interviews with potential users, professionals and experts from various fields such as nutrition, construction or cosmetics.

The purpose of the interviews was twofold: to understand the potential uses of wheat bran and to identify emerging trends and challenges in the various fields. The design approach used here is called "foresight": it aims to anticipate future changes in society, technology, the environment or other relevant fields to design more sustainable and resilient solutions.

Based on the information gathered, various promising areas of future development have been identified: gut well-being, energy, biosourced materials, etc.

STEP 2

Identification and prioritisation of the possible ways of valorisation

Two participatory workshops on valorisation axes were organised. This method of co-reflection in the form of a workshop brings together a group of people with different perspectives and experiences to work together on a specific challenge or problem. Professionals and experts in design, agri-food, circular economy, construction, etc. were present.

These workshops, which were designed to explore areas of development, led to the emergence of relevant ideas for Les Moulins du Val Dieu. Work with the company then made it possible to prioritise the actions to be taken to explore these potential applications.

STEP 3

Search for partners and development

This step aims to develop the selected applications: contact with the actors of the concerned sectors, search for partnership(s) to carry out the first tests, evaluation of the financial viability of the envisaged solutions, etc.

RESULTS

Many ideas and creative solutions were quickly generated through the workshops. Amongst these, food sector leads emerged: optimising the use of sound in bakery, healthy snacks / burger buns and sound-based drinks. In other sectors, the opportunity to use sound in construction (bio-based wood glue, insulation), packaging and cosmetics/pharmaceuticals was identified.

The optimisation of bran in baking is already practised by Les Moulins du Val Dieu, which includes it in the composition of some of its flours. During the project, the company also tested recipes for pastries and snacks with a partner baker. The tests were conclusive in terms of taste.

The construction and packaging sectors were also investigated as part of this project, as they could be implemented in the longer term. Contact with experts in these sectors has made it possible to identify possible applications. For construction, the insulation track is currently being tested by Les Moulins du Val Dieu, which has produced insulation boxes based on advice from technical partners. For packaging, a Finnish project to develop paper made partly from oat bran serves as inspiration. Les Moulins du Val Dieu is now seeking to initiate contact with a local paper mill to gauge interest in launching initial tests.

CONCLUSION

The project identified several possible applications for the wheat bran of Moulins du Val Dieu. The company was very agile and quickly carried out tests for these different solutions. In the agri-food sector, the tests have already been able to benefit from initial feedback from users, unlike the construction and packaging tests, which have just been set up or are not yet in place.

IN THE SHORT TERM

- Technical analyses on the results of food product trials to assess the level of residues of phytosanitary products
- Beginning of marketing of products via partner bakeries.
- First technical analyses of the performance of the insulation boxes and study of the economic feasibility.
- Survey of the interest of a local paper mill to carry out tests on wheat bran-based paper.

IN THE MEDIUM TERM

- Possible paper mill tests to validate the feasibility of this application.
- Development of food products.

ULTERIOR OBJECTIVES

- Possibility of developing a paper composed partly of wheat bran and/or an insulator.
- In the longer term, developing other applications for wheat bran within R&D projects is also possible (e.g. biosourced glue, cosmetics, etc.)

Interreg
Euregio Meuse-Rhine
European Regional Development Fund

EUROPEAN UNION

Interreg EMR transcends borders by enabling collaboration between regional areas in different countries. We are investing in projects on innovation, the economy, social inclusion and training, and territorial cohesion. By encouraging cross-border collaboration, we strengthen the economic and social fabric in the border region between Belgium, Germany, and the Netherlands.

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