

REPORT FOR PUBLIC AUTHORITIES

Deliverable No.: D1.D14

Document Version: RV.1

Document Revision Date: 30.09.18

Responsibility: Gresmalt - Coordinating Beneficiary

1.INTRODUCTION

Force of the Future (FORTURE) is a project aimed at developing a sustainable manufacturing model to produce ceramic tiles. The project focuses to integrate environmental (Life Cycle Assessment), economic (Life Cycle Costing) and social (Social Life Cycle Assessment) impact assessment tools into company's business model. On the production side, the model will be able to monitor the environmental, social and economic performance of the product, as well as prescribe corrective actions on the ceramic production process in the in case of deviations from the planned sustainability targets. Thanks also to this integration it will be possible to add sustainability parameters to the company quality system to create products with a lower environmental, social and economic impact.

2.PROJECT OVERVIEW

Although technological development and the introduction of new technologies have contributed to reducing the environmental impact of the ceramic sector, the environmental variable has not yet been fully incorporated into production processes. All strategies and actions aimed at improving the environmental and technological performance of ceramic products are in fact generally tested using methodological tools (LCA - Life Cycle Assessment, LCC - Life Cycle Costing, S-LCA - Social Life Cycle Assessment) that operate in the upstream or downstream phases of the decision-making processes in which the environmental loads have already occurred. In fact, these methodologies have so far been used for "ex post" impact assessments, and it takes a long time to collect data, especially for complex processes and products such as ceramics.

Two critical issues arise:

- inability to use life cycle tools (LCA-LCC-SLCA) for rapid corrective actions on the process and the product, because the assessment of the impact was based on data from historical series, and therefore to impact already occurred;
- difficulties in collecting data to carry out impact assessments.

The project is expected to last 36 months from 01/10/2017 to 30/09/2020.

3. MAIN OBJECTIVES OF THE PROJECT

The project intends to solve these critical issues through the pursuit of the following objectives:

1. Integrate all three pillars of sustainability (environment, economy and society) into the business model of the company.
2. Transform impact assessments from static actions on final results (looking back, on the basis of historical series) into an analysis carried out moment by moment (looking forward) in a dynamic way and on the basis of current data.
3. Add sustainability parameters to the company quality system to produce products with lower environmental, social and economic impact.
4. Validate the model by designing and producing a new collection of ceramic tiles with a high level of sustainability.
5. Transfer the results of the technological innovation developed in the project to the European ceramic industry and, more generally, to the building sector.

4. PROGRESS OF THE PROJECT

During the first year of activity, the project team has already achieved significant results.

First of all, the preliminary activities of identifying and mapping the Stakeholders were completed. Then an initial environmental and economic impact assessment was carried out in the aggregate form of the Sassuolo ceramic district in order to construct a reference benchmark.

On this basis, a detailed inventory analysis of the Gresmalt production process was carried out, isolating each production phase to identify the critical environmental nodes. With these data a first environmental impact assessment (LCA) of the ceramic production of gresmalt was carried out using a commercial calculation software (SimaPro). The purpose of this assessment was to create a reference benchmark for the utlie calculation system for the following step.

Based on the mapping of the process phases and the environmental criticalities detected, a "simplified" spreadsheet was developed for the customized environmental impact assessment for the ceramic process. It was then tested by introducing the data used with the commercial software to obtain a fully comparable impact assessment.

Finally, a schematic representation of Gresmat's current business model has been elaborated using the Business Model Canvas proposed by Alexander Osterwalder on the basis of his book: Ontology of the business model. It is a strategic tool that through the visual language allows you to visually represent the way in which a company creates, distributes and captures value.

With this tool it has been highlighted that Gresmalt, like many other ceramic companies, adopts a linear business model where the product is the source of value creation; profit margins are based on the difference between the market price and the cost of production; to increase profits we aim to sell more products and make production costs as low as possible.

In this environment of a linear economy, technological innovation aims to make products quickly obsolete and to stimulate consumers to buy new products. Short-life products are preferred because they are cheaper, and longevity and repair are avoided because it is more profitable to sell new products than to maintain and repair old ones.

The next step will be the transition to a circular economy where products are part of an integrated and circular business model, also focused on the provision of a service as well as a product. In this environment, competition is based on the creation of an added value of the service of a product and not only on the value of its sale. Products are part of the company's assets and extended producer responsibility drives product longevity, reuse, reparability and recyclability.

This result will be achieved, as foreseen by the project programme, through the implementation of economic and social environmental sustainability in business processes. Therefore, the next few months will be dedicated to the integration of the simplified environmental impact spreadsheet into the company's ERP (Enterprise Resource Planning), as well as the economic and social impact assessment tools.