

## EcoGreenRoof – EGR: eco-materials development for green roofs

V. Pinheiro (1), I. Lima (2), A. Ribeiro (1), T. Teixeira (3), J. Ribeiro (3), M. Abreu (2), J. Almeida (4), P. Palha (5), I. A. P. Mina (2), F. Castro (2, 3)

(1) CVR – Rua de Francos, n.º 350, 4800-058, Guimarães, Portugal

(2) University of Minho

(3) W2V – Ruas das Alminhas, 900, Calvos, 4810-608, Guimarães, Portugal

(4) Itecons – University of Coimbra, Polo II, Rua Pedro Hispano, 3030-289, Coimbra, Portugal

(5) Neoturf – Rua das Amoreiras, 155, 4460-227, Senhora da Hora, Portugal

### ABSTRACT

The project EcoGreenRoofs - EGR aims to develop ecological substrates for application in green roofs, which include in their formulation industrial waste of organic and inorganic base. The substrates are tentatively produced exclusively from industrial waste and / or materials derived from waste treated, and tested at a facility to be studied, developed and built on pilot scale. The substrates produced will be tested under real conditions for their validation and inherent production process. This project aims also to evaluate the commercialization of substrates by analyzing the technical, economic and environmental components. The project is being carried out in co-promotion by two enterprises, one with know-how in the execution of green roofs (Neoturf – Fig. 1) and the other with knowledge to implementation of industrial solutions aiming waste management (W2V – Fig. 2), and by two SI & I entities with the knowledge and means to develop waste recovery studies (CVR – Fig. 3) and roof solutions (Itecons – Fig. 4).



Fig. 1 – Neoturf logo



Fig. 2 – W2V logo



Fig. 3 – CVR logo



Fig. 4 – Itecons logo

### PROPOSITION

The process proposed in the EGR project began with the selection of organic and inorganic wastes and aimed the commercialization of validated eco-substrates (Fig. 5) by the assays to be performed.

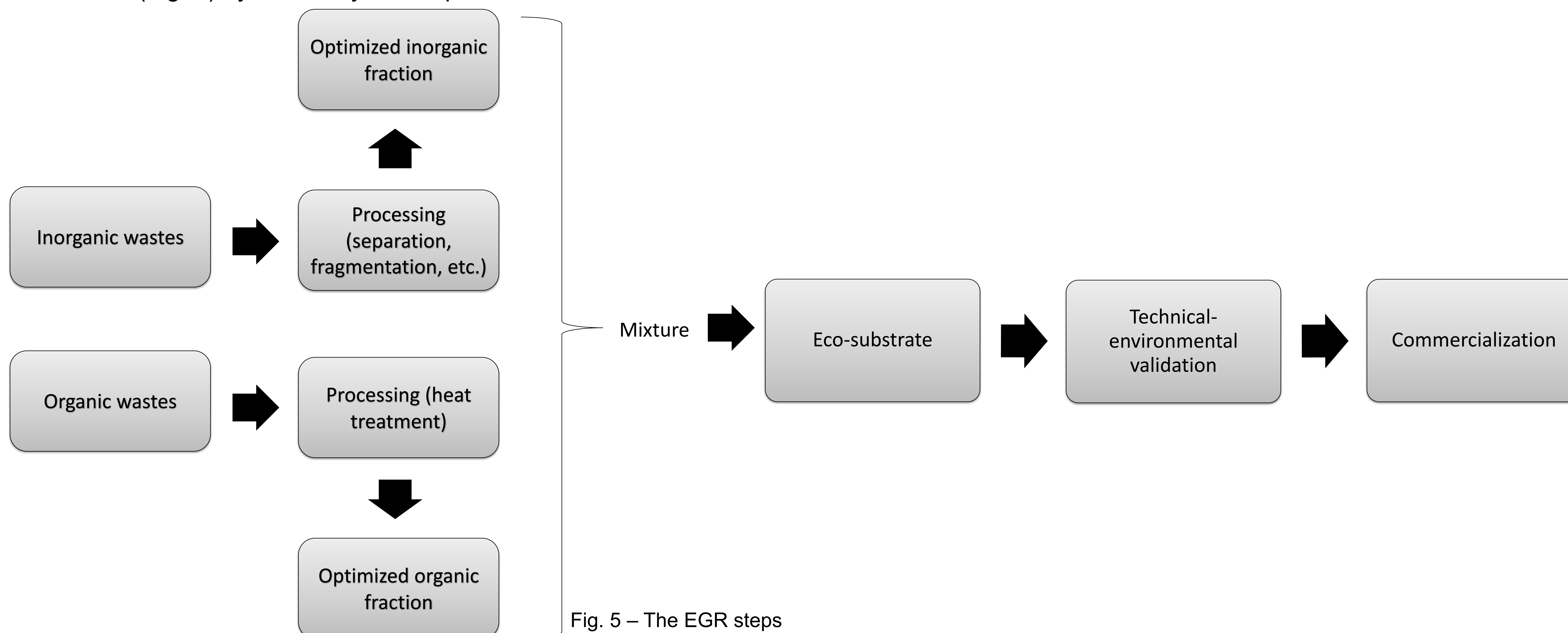


Fig. 5 – The EGR steps

### Acknowledgements

This work has been co-financed by Compete 2020, Portugal 2020 and the European Union through the European Regional Development Fund – FEDER within the scope of the project EGR - EcoGreenRoof: Desenvolvimento de eco-materiais para coberturas verdes (POCI-01-0247-FEDER- 033728).

### References

- [1] P. Palha, Coberturas ajardinadas: uma solução para as cidades? Revista da Associação Portuguesa de Horticultura 106 (2011) 26-31.
- [2] U. Berardi, A. Ghaffarianhoseini, A. Ghaffarianhoseini (2014) State-of-the-art analysis of the environmental benefits of green roofs. *Appl Energy* 115: 411–28.
- [3] Regulamento UE n.º 305/2011 do Parlamento Europeu e do Conselho de 9 de Março de 2011.
- [4] FLL (2008) Guidelines for the Planning, Construction and Maintenance of Green Roofing – Green Roofing Guideline. Forschungsgesellschaft Landschaftsentwicklung Landschaftsbau e. V., Bonn, Germany.