

### DairyMix: Multi-criteria assessment, decision support and management tools for sustainable circular mixed farming systems for dairy production

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### DairyMix: Multi-criteria assessment, decision support and management tools for sustainable circular mixed farming systems for dairy production <sup>1</sup> Teagasc, Agricultural Economics and Farm Surveys Department, Athenry, Ireland <sup>2</sup> Institut National de la Recherche pour l'Agriculture, l'alimentation et l'Environnement, UMR SAS, Rennes, France <sup>3</sup> University of Zielona Góra, Zielona Góra, Poland Mary Brennan<sup>1\*</sup>, Lorraine Balaine<sup>1</sup>, Souhil Harchaoui<sup>2</sup>, Joanna Fratczak-Muller<sup>3</sup>, Xabier Díaz de Otálora<sup>4,5</sup>, <sup>4</sup> Basque Centre for Climate Change, Leioa, Spain <sup>5</sup> Leibniz-Institute for Agricultural Engineering and Bioeconomy, Potsdam, Germany Cathal Buckley<sup>1</sup>, Dominika Krol<sup>6</sup>, Emma Soule<sup>2</sup>, Aurélie Wilfart<sup>2</sup>, Federico Dragoni<sup>5</sup>, Barbara Amon<sup>3,5</sup> <sup>6</sup> Teagasc, Crops, Environment and Land Use, Johnstown Castle, Ireland

## 1.Introduction

The DairyMix project aims to contribute to the development of more sustainable circular mixed farming systems for dairy production that reduce external inputs and develop decision support and management tools.

DairyMix will be a major step forward in achieving greenhouse gas mitigation and circularity between cropping systems and dairy production systems with flexible and context specific solutions being developed for key European areas and for Latin America.

# 2. A focus on circularity

Circularity refers to the concept of creating closedloop systems where resources are used efficiently and waste is minimized.

Circularity assessment is important for agriculture due to its resource use and energy intensive nature.

The majority of dairy production systems rely heavily on external inputs, resulting in limited circularity.





## 4.Next stage of research



Establish circularity performance of case study farms with circularity index.

Compare index with sustainability indicators to identify trade offs and synergies.



Incorporate results in DairyMix information platform to inform farmers and stakeholders.



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