

FOLOU Project: Developing a new Methodological Framework for the Quantification of Food Loss in Primary Production in Europe

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Abstract

Food loss (FL) and waste are environmental and social challenges. Despite a consensus on the urgency of reducing their magnitude, there is still lack of definite numbers on the current situation. The European Commission has implemented reporting requirements for food waste. Yet, there is a lack of an official framework on how to estimate and report FL. Currently, there are no European reporting obligations for FL in primary production, and only a small percentage of countries internationally report FL to the FAO. Furthermore, the definition of FL varies widely in literature and working documents, making it challenging to compare studies. Establishing a common understanding of FL and developing a standardized measurement approach would increase the knowledge on the nature and magnitude of the problem, leading to more effective policy interventions. FOLOU EU-funded project (<http://www.folou.eu/>) aims to develop a comprehensive methodological framework, including a shared definition, for quantifying FL in primary production across Europe. A systematic review including grey literature was conducted in Scopus and Google Scholar. Additionally, records were included through snowballing. Once the review was completed, interviews were conducted with international stakeholders including academics, researchers on similar initiatives, producers, and public officials. The purpose of these interviews was to validate preliminary findings and gather further insights. The FOLOU project is currently on development and the framework will continuously be updated through the project, which extends December 31st, 2026, to ensure its usefulness for quantification. Out of the initial 754 records found, 117 publications were included in the review. The main topics covered in these publications incorporated quantification experiments, life-cycle assessments where FL was recorded, measurement guidelines, and literature reviews. Primary methods identified for FL quantification were surveys conducted with producers, direct weighing, and pre-existing data sources, predominantly administrative data. Surveys were the most used method, despite their tendency to underestimate FL value, as direct weighing poses

logistical challenges in terms of cost. In some instances, a combination of surveys and direct weighing was employed. It is worth noting that FL was recognized as a heterogeneous problem, requiring specific methodologies for different food commodities. Administrative data seemed to be a useful tool, particularly for certain commodities like animal products and aquaculture. These initial conclusions were validated by experts. Additional insights were obtained, emphasizing the importance of developing a practical methodology guideline, including specific definitions for the different commodities, that complements existing efforts and contributes to the construction of a comprehensive FL framework. A common FL definition is crucial to develop a useful quantification methodology. Our results build upon the existing efforts and seek to establish a European framework. If this framework were to be accepted, it would homogenise the collection of results, generating more robust FL estimators. While this project is still in development, it is crucial for the framework within the FOLOU project to adopt a practical approach. Furthermore, it should take into consideration the unique characteristics of different food commodities and production systems and incorporate existing efforts to ensure its usefulness and contribution to research on FL.

Keywords: food loss, food security, primary production, measurement methodology, waste reduction

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