Developing Standardized Food Loss Audit Protocols for Agricultural Producers

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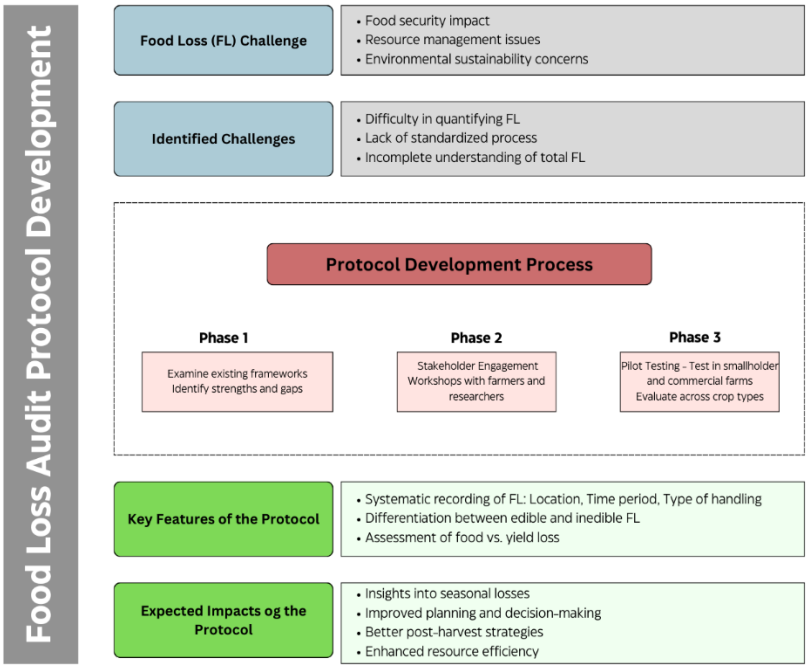
Food loss (FL) is a significant global challenge, with substantial implications for food security, resource management, and environmental sustainability. The Food and Agriculture Organization (FAO) estimates that approximately one-third of all food produced worldwide is lost or wasted, resulting in economic losses exceeding $940 billion annually (FAO, 2019). Awareness of the of the issue within the primary sector suffers from numerous shortcomings, primarily due to major difficulty and complexity in quantifying losses. The total volume of FL across the production chain has not yet been definitively established (Hoehn et al., 2023). This, combined with the lack of a standardized quantification process, makes understanding and addressing the problem even more challenging. To address this gap, a simplified audit protocol specifically tailored for agricultural producers has been developed. This protocol enables producers to systematically record FL quantities as well as relevant data such as location, time period, production stage, and type of handling. Special emphasis is placed on distinguishing between edible and inedible losses, and on examining the relationship between food and yield loss (Gurrala & Hariga, 2022). The protocol's development process is divided into three phases. Firstly, a comprehensive review of existing FL assessment frameworks was carried out to identify strengths, shortcomings, and areas for innovation. Second, workshops and surveys were organized with a diverse group of stakeholders, including agricultural producers, industry professionals, and researchers to ensure that the protocol is practical, scalable, and user-friendly. Thirdly, the draft protocol was pilot-tested in various farming scenarios, including smallholder and commercial operations, and across different crop types, to evaluate its effectiveness and adaptability. Preliminary findings from the pilot testing have demonstrated the substantial losses occurring at the farm level. Farming techniques implemented and the seasonal fluctuations of crops have shown to significantly affect the rates of FL. Furthermore, the approach let producers measure both edible and inedible losses, resulting in a better understanding of how both affect overall yield. The results from implementing a common audit protocol at the production stage can provide critical insights into seasonal losses, enhance producers' planning, and support decision-making for post-harvest measures, such as utilizing FL in processing industries. This standardized approach holds the potential to improve resource efficiency and mitigate environmental impacts within agricultural systems. By standardizing the data collection process, it addresses a key barrier in understanding FL and lays the groundwork for transformative improvements in agricultural sustainability.

Keywords: Food loss (FL), Primary sector, Audit protocol, Agriculture, Data recording, Resource efficiency



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