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Distribution of Food Waste Across the Stages of the Supply Chain – the Case of Greenhouse Cucumbers and Tomatoes

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Abstract

Since 2019, Finland has been developing a systematic monitoring system for food waste. The aim is to establish a standardized framework that enables comprehensive and reliable measurement of food waste generated throughout the food supply chain. In primary production, data have been collected for 17 indicator products representing key food items produced in Finland. In the food industry, data has been gathered from major sectors, and in food services from various types of restaurants. From the highly concentrated retail sector, data coverage is the strongest, representing 96% of total retail sales volume. For households, data have been collected through sorting studies conducted by the waste management facilities of Finland's three largest cities. This presentation examines, through two case products — greenhouse cucumbers and tomatoes — how the relative share of food waste is distributed across different stages of the supply chain. It also describes the methods used to measure food waste and the challenges associated with these measurements. Furthermore, it highlights development needs and areas that require attention in the future. In addition to waste, the analysis considers sustainability aspects, particularly the carbon and water footprints. The greenhouse cucumbers and tomatoes are among others the most popular vegetables in Finland. Thanks to improved varieties and more efficient production, yields—especially for cucumbers—have increased even though the number of farms and the cultivated area have decreased. LUKE has collected data on waste generated in the cultivation of greenhouse cucumbers and tomatoes in 2020 and 2024.

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Keywords: food waste, measuring, monitoring, vegetables

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