

Food loss and waste in a European upstream supply chain through retailer product specifications and practices - results of a survey and potential for action

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Abstract

The way we feed ourselves is the single largest cause for the overuse of the world's biocapacity. Making the world's food system more sustainable would thus reduce human pressure on planetary boundaries. An important aspect in this process is to reduce food losses and waste along the farm to fork continuum. In a country like Germany, where the food retail market is characterised by an oligopoly of a handful of large, powerful companies, a key starting point for these desired changes are the processes and modes that underly modern retailers' supply chain coordination. Current scientific findings suggest that the product requirements and standards of various food retailing companies for fruit and vegetables go beyond the equally binding requirements and thus provoke food losses in the upstream supply chain. However, the quantification of losses of certain crops caused by particular product specifications is still lacking in the scientific debate. The present study analysed the impact of quality standards as well as practices currently applied by a German food retailing company within their European fruit and vegetables supply chain on the occurrence of food losses. These quality standards and practices include the appearance, packaging, and pesticide residue limits of products as well as exclusive supply contracts, communication and ordering processes. The quantification of losses was carried out for exemplary fruit and vegetable crops. For the assessment and evaluation of losses and possible adjustments to the company-specific quality standards and practices, a standardised survey has been conducted at relevant loss points in form of quantitative questionnaires. While we talked to all key actors involved in the upstream supply chain, a focus of the quantitative survey was put on a particularly relevant loss point, namely the producers and suppliers of fruit and vegetables in the retailer's main sourcing areas in Germany, Italy, and Spain. Moreover, we put our findings in the context of the reduction potential of losses and suggest specific options for action in the supply chain that encompass both, direct changes in company-specific quality standards, as well as the supply chain's framework conditions.

Keywords: food loss and waste, modern food retail, fruit and vegetables, supply chain governance, quality standards