ZEROW
innovations for zero food waste

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Modeling the Economics of Food Loss and Waste from Farm to Fork

Reducing food loss and waste at one stage of the supply chain has effects on other stages in the supply chain. Intuition predicts, for example, that when a household reduces its food waste, it should buy less food, thus affecting the retail sector.

As a result, the retailer would need less input from the processor and so on. However, the economic literature on food waste shows that this effect does not necessarily have to happen and that a reduction in food waste might actually increase food purchases, which eventually can cause an increase in food waste. It all depends on the demand elasticities of consumers.

In ZeroW project Work Package 1, we aim to model the effects of reducing food waste at one stage of the supply chain on other stages. We distinguish between avoidable food waste (such as leftovers) and unavoidable waste (such as bones or hides), and our model also includes pre-harvest losses.

Our framework can be used to predict the effects of food waste reduction interventions developed by the Systemic Innovation Living Labs (SILLs) of the ZeroW project and show which stages of the supply chain might benefit (or lose) from these interventions or policies proposed by policymakers. ■