



Research School for Operations
Management and Logistics

Fork to Farm to Fork' (3F): Informing and nudging consumers to make better choices through reverse (dietetics) and forward (FLW, sustainability, affordability) optimization

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This research aims to reduce food waste at household level by formulating meal plans. One-third of global food production is lost or wasted along the supply chain. This is a problem because food waste is indirectly accompanied by many environmental impacts. Food waste is a significant contributor to climate change, as food waste is estimated to generate 8% of global greenhouse gasses. Of the total food waste in Europe, about 50% is caused by households. One of the reasons for household food waste is poor planning. Poor planning leads to the wastage of food because of, among others, difficulties consumers face with inappropriate packaging sizes and managing leftovers. Diet modelling has proven to be an effective method for solving food planning problems. However, diet modelling has not yet been considered for reducing household food waste. This research aims to develop a dietary meal planning model to estimate to what extent food waste can be reduced at household level when planning is optimized. The model also considers perishability, costs, overall environmental impact, and nutritional value. The results can be used to inform on meal planning and to select and promote recipes that are affordable, healthy, and have a low environmental impact.