

Potential environmental savings through food waste reductions: a new method

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About one-third of food produced for human consumption is lost or wasted globally. Besides food losses and waste itself, this also means that a significant amount of natural resources used for producing the lost and wasted food are wasted, and the associated greenhouse gas emissions are also emitted in vain. To accurately quantify the environmental saving through eliminating food losses and waste, this paper proposes a new method where the environmental savings are calculated as the environmental footprint difference between the original situation and the hypothetical situation where the food losses and waste are avoided. Our results show that 10.3% of the food products could be saved through eliminating food losses and wastes. Consequently, 2.7% of the GHG emissions, 8.1% of the land use, 4.6% of the material use, and 9.2% of the blue water use for satisfying household consumption could be saved. Food losses and wastes elimination in North America& Oceania could achieve the largest environmental savings. This study can not only raise the public's awareness for eliminating food losses and waste, but also show that reducing food losses and waste is a cost-effective way to combat hunger and improve food security as well as protect the environment.