UN environment programme

1972-2022

FOOD WASTE INDEX REPORT 2021

ISBN No: 978-92-807-3868-1

Job No: ROW/2366/BA

Suggested citation

United Nations Environment Programme (2021). Food Waste Index Report 2021. Nairobi.

ACKNOWLEDGEMENTS

Authors: Hamish Forbes (WRAP), Tom Quested (WRAP), Clementine O'Connor (United Nations Environment Programme)

Peer reviewers (modelling): Carola Fabi & Sharon Mayienga (FAO), Gang Liu (University of Southern Denmark), Julian Parfitt (Anthesis Group), Gustavo Porpino (Embrapa), Felicitas Schneider (Thünen-Institut).

Other contributors and reviewers: Martina Otto (UNEP), Dany Ghafari (UNEP), Ludgarde Coppens (UNEP), James Lomax (UNEP), Jean-Pierre Sfeir (UNEP), Richard Swannell (WRAP), Billy Harris (WRAP), Sam Gillick-Daniels (WRAP), Andrew Parry (WRAP).

The UNEP Food Waste Index Report was developed in the context of the One Planet Network's Sustainable Food Systems Programme, whose Core Initiative on Food Loss and Waste aims to provide tools and build capacity for food waste measurement and action at national level

FOREWORD: UNEP FOOD WASTE INDEX REPORT

If food loss and waste were a country, it would be the third biggest source of greenhouse gas emissions. Food waste also burdens waste management systems, exacerbates food insecurity, making it a major contributor to the three planetary crises of climate change, nature and biodiversity loss, and pollution and waste. This is why Sustainable Development Goal 12.3 aims to halve food waste and reduce food loss by 2030.

In support of this vital target, UNEP's first Food Waste Index report provides insights into the scale of food waste and a methodology that enables countries to measure baselines and track progress in meeting the SDG target. The report estimates that food waste from households, retail establishments and the food service industry totals 931 million tonnes each year. Nearly 570 million tonnes of this waste occurs at the household level. The report also reveals that the global average of 74 kg per capita of food wasted each year is remarkably similar from lower-middle income to high-income countries, suggesting that most countries have room to improve.

It is fitting that this report is being launched just after the fifth United Nations Environment Assembly, which at its previous meeting urged Member States to establish mechanisms for measuring food loss and waste, and requested support in providing technical assistance that would allow countries to make measure and make progress. The report is a first step in meeting this request. In April, we will establish regional food waste working groups in Africa, Asia Pacific, Latin America and the Caribbean, and West Asia to support member states in developing food baseline baselines and strategies – bringing the report to life. The report is also part of UNEP's offer to the UN Food Systems Summit process, with the aim of encouraging the widespread adoption of a Target-Measure-Act approach to food waste reduction.

Some countries and private sector actors have already taken the SDG12.3 commitment to heart. There is growing evidence of success in reducing food waste – though not at the scale needed to achieve the target. Much more can be done. We need, for example, to address the role of consumer behaviour, in all cultural contexts, in achieving the target. Let us all shop carefully, cook creatively and make wasting food anywhere socially unacceptable while we strive to provide healthy, sustainable diets to all.

Inger Andersen

Executive Director
United Nations Environment Programme,
March 2021

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF BOXES

EXECUTIVE SUMMARY

Food waste reduction offers multi-faceted wins for people and planet, improving food security, addressing climate change, saving money and reducing pressures on land, water, biodiversity and waste management systems. Yet this potential has until now been woefully under-exploited.

This potential may have been overlooked because the true scale of food waste and its impacts have not been well understood. Global estimates of food waste have relied on extrapolation of data from a small number of countries, often using old data. Few governments have robust data on food waste to make the case to act and prioritize their efforts.

Sustainable Development Goal 12.3 (SDG 12.3) captures a commitment to halve food waste at the retail and consumer level and to reduce food loss across supply chains. This Food Waste Index Report aims to advance progress on SDG 12.3 in two ways:

- Firstly, it presents the most comprehensive food waste data collection, analysis and modelling to date, generating a new estimate of global food waste. Country-level food waste estimates have been calculated, and while confidence intervals for estimates vary by region and by sector, they offer new insight into the scale of the problem and into the substantial prevention potential in low-, middle- and high-income countries.
- Secondly, this report publishes a methodology for countries to measure food waste, at household, food service and retail level, in order to track national progress towards 2030 and to report on SDG 12.3. Countries using this methodology will generate strong evidence to guide a national strategy on food waste prevention, food waste estimates that are sufficiently sensitive to pick up changes in food waste over two- or four-year intervals, and that enables meaningful comparisons among countries globally.

In complement to the Food Loss Index, developed by the Food and Agriculture Organization of the United Nations (FAO), the Food Waste Index covers the later stages of food's journey – food waste – occurring at household, food service and retail level.

KEY FINDINGS

This report estimates that around 931 million tonnes of food waste was generated in 2019, 61 per cent of which came from households, 26 per cent from food service and 13 per cent from retail. This suggests that 17 per cent of total global food production may be wasted (11 per cent in households, 5 per cent in food service and 2 per cent in retail)[1].

Household per capita food waste generation is found to be broadly similar across country income groups, suggesting that action on food waste is equally relevant in high, upper-middle and lower-middle income countries. This diverges from earlier narratives concentrating consumer food waste in developed countries, and food production, storage and transportation losses in developing countries.

Previous estimates of consumer food waste significantly underestimated its scale. While data doesn't permit a robust comparison across time, food waste at consumer level (household and food service) appears to be more than twice the previous FAO estimate (Gustavsson et al., 2011).

There is insufficient data on the edible fraction of food waste to allow comparative analysis across country income groups, **but even if inedible parts (bones, pits, eggshells, etc.) predominate in lower-income countries, there is sufficient total food waste in these areas for circular approaches or other food waste diversion strategies to be important.**

Table 1: Average food waste (kg/capita/year) by World Bank income classification, averaging medium and high confidence estimates for countries

Income group	Average food waste (kg/capita/year)		
	Household	Food service	Retail
High-income countries	79	26	13