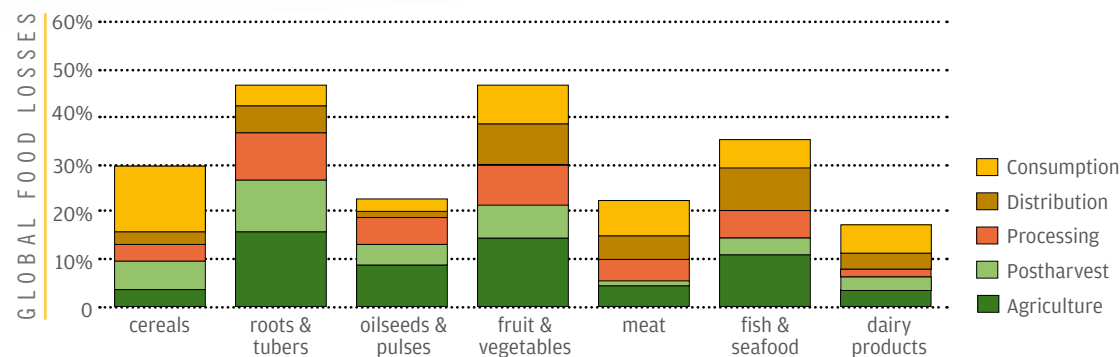


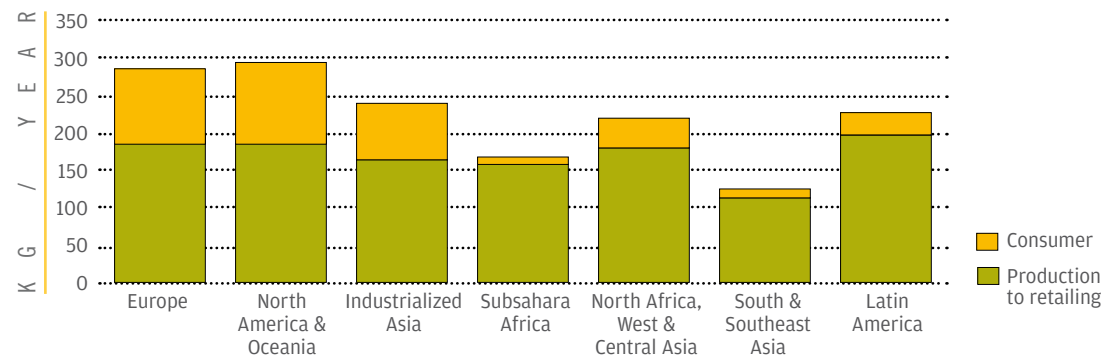


FOOD WASTAGE FOOTPRINTS

PART OF THE INITIAL GLOBAL PRODUCTION LOST OR WASTED



PER CAPITA FOOD LOSSES AND WASTE, AT CONSUMPTION AND PRE-CONSUMPTION STAGES



DID YOU KNOW?



SOCIAL

Today, there are 900 million hungry people worldwide and one billion people overfed. Under the current production and consumption trends, global food production will need to increase by 60 percent by 2050.



ECONOMY

The global economic cost of food waste, based on 2009 producer prices, is USD750 billion, approximately the 2011 GDP of Turkey or Switzerland. The lost grain in sub-Saharan Africa only could meet the minimum annual food requirement of 48 million people.



ENVIRONMENT

Lost and wasted food represents a missed opportunity to feed the growing world population. It also comes at a steep environmental price, as land quality, water quantity, biodiversity are adversely affected. Wasted food also has a strong impact on global climate change.



GOVERNANCE

Food lost after harvest and food wasted along the distribution and consumption chain, or food waste, has a dual negative environmental impact: undue pressure on natural resources and ecosystem services and pollution through food discards. Within the global context of increasingly scarce natural resources, more than one-third of the food produced today is not eaten, which is about 1.3 billion tonnes per year.



WHY DOES FOOD WASTAGE MATTER FOR SUSTAINABILITY?

LAND

Intensive farming, without allowing fields to lie fallow and replenish, diminishes soil fertility. Not using roughly one-third of the food produced globally means that soil is unnecessarily pressured. Decreased soil quality leads to further use of synthetic inputs that cause pollution and eventually, loss of arable land.

- In 2007, almost 1.4 billion hectares of land were used to produce food not consumed. This represents a surface larger than Canada and India together.
- Major contributors to land occupation of food wastage are meat and milk, with 78 percent of the total surface, whereas their contribution to total food wastage is 11 percent.

WATER

Agriculture already uses 70 percent of the global freshwater withdrawal and any increased production will likely mean more water use. Water will be a key constraint to global security and when food is wasted, the water is squandered.

- In 2007, the global blue water footprint for the agricultural production of food wastage was about 250 km³; 3.6 times the blue water footprint of total USA consumption. In terms of volume, it represents almost 3 times the volume of Lake Geneva, or the annual water discharge of the Volga River.
- Cereals, fruits and meat are major contributors to the blue water footprint of food wastage.

CLIMATE CHANGE

Food and agriculture systems heavily depend on fossil-fuel energy. Petroleum is used in almost every aspect of food production, from creating fertilizers, to mechanized planting and harvesting, irrigation, cooling and transportation. Furthermore, when food is discarded in a landfill and decomposes anaerobically, it yields methane emissions, a gas more than 25 times as potent as carbon dioxide at trapping heat.

- In 2007, the global carbon footprint, excluding land use change, of food waste has been estimated at 3.3 Gtonnes of CO₂eq. This amount is more than twice the total GHG emissions of all USA road transportation in 2010.
- If integrated into a country ranking of top emitters, food wastage would appear third, after USA and China, according to the latest data available.
- Food is the primary source of landfill gas and the largest component of materials sent to landfills. In USA, landfill gas is responsible for 17 percent of USA methane emissions.

BIODIVERSITY

The food not eaten is one of several factors that contributes to biodiversity loss through habitat change, overexploitation, pollution and climate change.

- Prompted in part by global food production inefficiency, 9.7 million hectares are deforested annually to grow food; this represents 74 percent of total annual deforestation.
- Food wastage contributes to agricultural expansion into wild areas and increased fishing efforts that unduly overexploit forest and marine habitats. This results in loss of wildlife, including mammals, birds, fishes and amphibians.
- Up to 70 percent of all fish caught by certain types of trawling is discarded.





HIGHLIGHT

SAINSBURY'S ZERO FOOD-WASTE-TO-LANDFILL POLICY

In 2011, Sainsbury's became the first British supermarket to send no food waste to the landfill. The majority of the retailer's excess food is now used to create energy via anaerobic digestion. As of 2011, Sainsbury's was the largest British retail anaerobic digestion user after signing a three-year agreement with Biffa waste management. The grocer made its zero-food-waste-to-landfill pledge in 2009. With this policy, Sainsbury's helps Britain fulfill the EU Landfill Directive mandating reduction of biodegradable waste to landfill to 50 percent of 1995 levels by 2013.

Sainsbury's has also made efforts to reduce its food waste through better inventory control and sales forecasting and by donating edible but unsellable food to the hungry through charities like FareShare. The grocer has been working with the charity for more than 17 years and provided millions of meals.

In addition to reducing their in-store waste, Sainsbury's also helps customers trim their home waste. The chain provides advice on how to properly store produce and launched a Love Your Leftovers campaign, which includes a page on their web site providing recipes and ideas on how to utilize leftover food.

Sainsbury's also unveiled new labeling on its food items advising shoppers on how to use their freezers to extend the life of their food.





PRODUCERS

- Harvest all that is grown, at the optimal time.
- Invest in better storage technology.
- Compost/mulch unavoidable organic waste.

CONSUMERS

- Don't buy more food than what is necessary, by planning meals, creating a detailed shopping list and shopping more frequently, buying less each time.
- Store food properly, whether in air-tight containers or in refrigerators.
- Understand expiration dates and treat them as a suggestion, not the law.

HOW CAN YOU HELP?

FOOD INDUSTRY

- Allow consumers to customize the amount of food they buy.
- Donate unsellable, edible food.
- Expand definition of acceptable food and sell imperfect items at a discount.

POLICY MAKERS

- Set binding food waste reduction goal.
- Discourage sending food waste to landfill and enable growers to harvest all they grow.
- Fund or create an awareness campaign to reduce food waste.

RESEARCH REQUIREMENTS

- Improve the calculation of footprints related to food waste, mostly those occurring in non-agricultural phases.
- Full cost accounting of the global environmental and social impact of food waste.
- Calculate the opportunity cost of food waste mitigation measures taking into consideration environmental and social costs.



Building on FAO's long experience on post-harvest food losses and the assessment of global food loss and waste, the results of Phase 1 of the Food Waste Footprint model, focusing on the carbon, water, land and biodiversity footprints, have been published in 2013 together with an online database and a Toolkit on reducing the food waste footprint. A Phase 2 is currently underway defining methods for the economic valuation of the environmental and social costs of food waste.

For more details: www.fao.org/nr/sustainability/food-loss-and-waste