



Food waste and losses are intolerable at a time when 795 million people are suffering from undernourishment (FAO, 2015). In addition, they come at a high environmental cost: The carbon footprint of food wastage was 3.3 Gt CO<sub>2</sub> equivalent in 2007. If food wastage were a country, it would be the third biggest emitting country in the world. The use of land, soils, water, and energy used to produce food that is not consumed is considerable. According to the FAO, in 2007, 28 percent of the world’s agricultural land was occupied with crops that were lost or wasted. Hereby, lost production of meat and dairy products contributed the most. Irrigation water wasted in growing these crops totaled around 250 km<sup>3</sup>, with cereals having the greatest share. The loss in biodiversity and forest and marine habitats is incomplete and difficult to quantify. FAO estimates that the costs amount to approximately USD 32 billion / year, of which the largest costs are associated with overfishing costs for lost and wasted fish, followed by the loss of pollinators, and damages caused by nitrogen runoffs into protected areas. Impacts on social well-being include health damages due to exposure to pesticides as well as conflicts and losses of livelihoods owing to soil degradation. Finally, the economic costs of food waste are high: According to the FAO, the cost - based on 2012 market value - of food wastage is approximately 936 billion USD (equivalent to Netherlands’ GDP) on a global scale, of which vegetables, meat and fruits take up the largest share.

The Sustainable Development Goals (SDGs) address food losses and waste in Target 12.3, which states that by 2030 per capita global food waste at retail and consumer levels should be halved and food losses along production and supply chains (including post-harvest losses) should be reduced. The proposed global indicator for this target is the global food loss index which factors losses occurring on farm, during transport, in storage, and during processing. However, food waste at the retail and household level is not covered by this index, thereby making it difficult to track progress in countries with high amounts of food waste.

In line with SDG target 12.3 the FAO carried out a scenario analysis and modelled a 50% global food waste reduction, along with assumptions on feasible food loss reduction ratios for each commodity group. The results of the analysis are presented in Table 1 below. The scenario analysis also found that achieving target 12.3 of the SDGs would globally reduce the food wastage carbon footprint by 38 percent- or 1.4 Gt CO<sub>2</sub> equivalent / year (equivalent to the Green House Gas emissions of Japan).

Table 1: SDG Target 12.3 Scenario analysis

<b>Assumptions for food wastage reduction ratios achievable by 2030</b>
<b>Phases "Agricultural production" and "Processing"</b>
<ul style="list-style-type: none"> <li>• 5% reduction of 2011 food wastage in developed countries</li> <li>• 15% reduction of 2011 food wastage in developing countries (a larger progress margin is assumed for developing countries)</li> </ul>
<b>Phase "Post-harvest handling and storage"</b>
<ul style="list-style-type: none"> <li>• 5% reduction of 2011 of food wastage in developed countries</li> <li>• 54% reduction of 2011 food wastage in developing countries (reduction estimated to be needed to reach the average percentage of wastage observed in developed countries for most commodity groups)</li> </ul>
<b>Phases "Distribution" and "Consumption"</b>
<ul style="list-style-type: none"> <li>• 50% reduction of 2011 food wastage amounts in all regions</li> </ul>

Source: FAO

## DISCUSSION

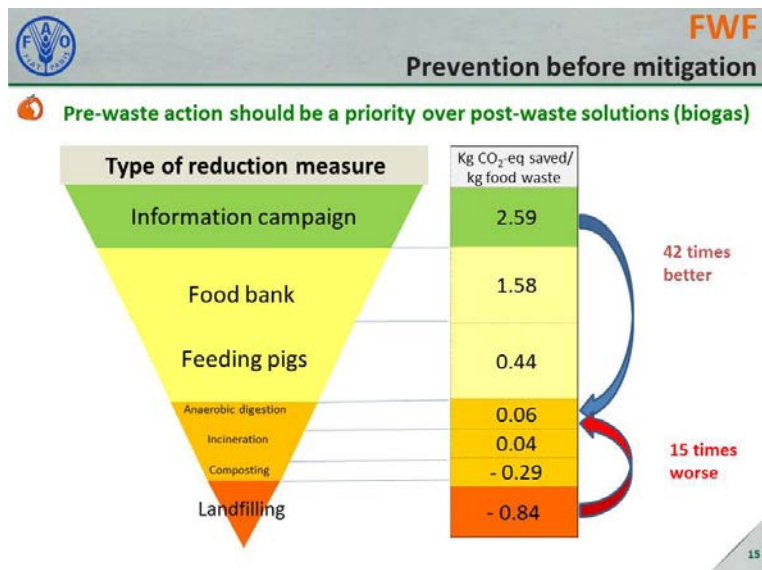
This interactive forum was designed to discuss what measures and incentives are required to achieve SDG Target 12.3, with focus on food waste at retail and consumer levels. The guiding questions for the discussion were: (i) What measures and incentives are required to halve global per capita food waste by 2030? (ii) How can we monitor the achievement of this goal? (iii) What best-practices exist (e.g. regulatory measures, food redistribution schemes, or practices at the consumer and retailer level) that

could promote a significant reduction in per capita food waste? (iv) How can partnerships and mutual learning be used to facilitate global transformations to more sustainable consumption patterns?

## 1. Measures to address food waste

Different measures to reduce food waste exist, ranging from awareness campaigns, redistribution schemes, laws, etc. These are not equally effective in countering negative impacts of food waste; e.g. Figure 1 demonstrates impacts of some prevention measures on greenhouse gas emissions.

Figure 1: Comparison of the impact of food waste prevention measures on savings of greenhouse gas emission. Source: FAO

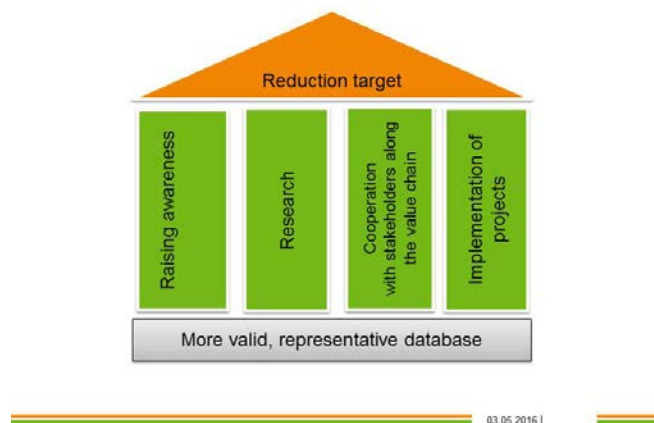


### 1.1 Information campaigns

During this dialogue forum the German Ministry of Food and Agriculture (BMEL) presented the initiative *Too good for the bin!* and next steps towards the national Food Waste Reduction Strategy (figure 2). In Germany, approximately 11 million tons of foods are wasted annually, of which 6.7 million tons in private households. This corresponds to 82 kg per capita per year. Germany is currently working on a national Food Waste Reduction Strategy, which is built on four pillars (see Figure 2).

Figure 2: Pillars of the German Food Waste Reduction Strategy. Source: BMEL

### Reflections on a national strategy



More valid and representative data are required to achieve the target of reducing food waste by 50 percent in 2030. The *Too good for the bin!* initiative will continue to provide information (facts), evoke emotions (address people directly and make them feel personally concerned), and stimulate action (identification of options for action, motivation to get involved) to reduce food waste. Research activities will be strengthened by participating in the *G20 Platform for Transparency regarding research activities in the field of food losses and food waste*. In addition, the cooperation with actors along the

value-added chain, round tables, sector-specific discussion groups will be fostered, and joint projects with economic operators and NGOs will be put forward.

## 1.2 Legal measures

During the dialogue forum, the effectiveness of legal measures to prevent food waste was discussed using the example of the French anti-food waste legislation, which was introduced in February 2016. Discussions about this legislation had been on the political agenda in France since 2011. For example, the Programme National pour l'alimentation (National Food Program), which was approved in 2011, introduced the target of halving food waste by 2025; thereby making the program more ambitious than SDG target 12.3. The present law introduced a hierarchy of tackling food waste, with priority given to prevention measures, before reuse/donation and recycling. Under the new law, retailers with shops larger than 400 m<sup>2</sup> are obliged to sign a contract with redistribution charities to handle food waste. In addition, the law prohibits rendering edible food inedible (e.g. by pouring bleach) and blocking food donations of private label products from manufacturers. Finally, the law foresees the integration of the fight against food waste as a topic into school curricular. Whether the legislation will be successful remains to be seen. There are still uncertainties about monitoring food waste (methods, amounts); and more knowledge on the overall assessment of reduction measures (e.g. efficiency, trade-offs), including public policy evaluation, needs to be created. There was some discussion in the audience whether legal measures are more efficient than tax incentives provided to retailers that donate food.

## 1.3 Food banks

The National Association of German Food Banks (Die Tafel) provided an overview on its work during the dialogue forum. The principle behind food banks is that businesses and organizations set aside quality surplus grocery items, which are being picked up by the food bank and delivered to those in need. There are more than 900 local food banks in Germany, and their number has more than doubled in the past decade. Today, the food bank reaches about 1.5 million customers, which range from long-term unemployed persons to refugees. To address the underlying problem of poverty which forces people to take food from food banks, the National Association of German Food Banks actively works to prevent and eliminate poverty; e.g. it is demanding the appointment of a national poverty commissioner and the inclusion of nutrition and food waste topics in school curricula. The subsequent discussion on food redistribution schemes centered on the question whether food banks are perpetuating the problem of food waste by incentivizing it.

## 2. Challenges to reducing food waste

A number of challenges were identified to reduce food waste and achieve SDG target 12.3. These can be summarized as follows:

- a) **Quantification.** There is no sufficient and reliable baseline data on food waste at the consumer and retail level, which makes it difficult to measure progress. There are also no agreed methodologies to measure food waste at the regional and global level. The definition of food waste may also vary (e.g. are bones from meat to be included?). The Food Loss & Waste (FLW) Protocol, which is a multi-stakeholder effort to develop a global accounting and reporting standard (known as the FLW Standard) for quantifying food and associated inedible parts removed from the food supply chain, may be a good approach. The FLW Standard will enable a wide range of entities to account for and report in a credible, practical and internationally consistent manner how much food loss and waste is created and identify where it occurs, enabling the targeting of efforts to reduce it. Moreover, available data sets are often outdated. For developing countries data mainly focus on food losses, while increasing problems of food waste are observed also in developing countries. The proposed indicator (i.e. the food loss index) for target 12.3 only covers food losses, but not food waste, making it impossible to fully measure progress towards achieving the target.



- b) **Food waste needs to be examined through the lens of food systems.** It is an entry-point into debates on sustainable food systems in general. Reducing food waste needs to be approached in an integrated fashion because it impacts other SDGs like climate, water, and land, and is impacted by how we produce and consume food.
- c) **One approach to reducing food waste does not fit all** at regional / global levels. The national level is the most important for reducing food waste, and the responsibility of national governments needs to be reinforced.
- d) There are many multi-stakeholder initiatives at global and regional levels to raise awareness on food waste (e.g. Champions 12.3, Think.Eat.Save). It is not likely that there will be only one big in the future, but **partnerships should streamline efforts and avoid duplicating each other.** Delivery on target 12.3 should be made collectively.
- e) It is **challenging to involve all actors along the food value chain** to address the issue of food waste, especially retailers / private sector.
- f) **Strong institutional framework and political will is required to effectively reduce food waste.** Social innovations can stimulate behavioral changes.

### 3. Ways forward

The final part of the dialogue forum discussed ways forward on national, regional and global scales to achieve SDG target 12.3. On the national scale the following measures were suggested:

- Raising awareness for a better appreciation of food and introducing the issue of food loss and waste into educational activities;
- Increasing cooperation between different stakeholders, especially retailers and industry;
- Introducing legislative measures, like subsidies or liabilities; and,
- Strengthening local food systems.

For global / regional scales the following measures were suggested:

- Development of strong indicators for food waste and losses
- Development of approaches to scale up measures from national to global levels;
- Building technical expertise on measuring and monitoring food waste; and,
- Facilitating knowledge sharing on food waste reduction strategies and monitoring on national, regional and global scales.



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