

COMPENDIUM — FINAL REPORT
ZERO HUNGER CHALLENGE WORKING GROUPS

THE SECRETARY-GENERAL'S
HIGH-LEVEL TASK FORCE ON
GLOBAL FOOD AND
NUTRITION SECURITY



ZERO LOSS OR WASTE OF FOOD

Working group composition – participating agencies

Co-Chairs: FAO, UNEP, UNIDO

Other Participants: IFAD, ILO, World Bank, WFP, WTO

This compendium summarizes the outcome of the work done by the twenty-three High level Task Force of Global Food and Nutrition Security entities coordinated by the HLTF coordination team ~~for the Zero Hunger Challenge~~ from October 2014 ~~to October~~ —July 2015.

This report outlines the main features of this specific Zero Hunger Challenge element, including suggested metrics to monitor progress, as a guide to all stakeholders willing to join the challenge. The report is articulated around four sections. Each section explains the approach used, bottlenecks encountered, alternatives considered and all the information necessary for the reader to understand how the group reached its conclusions.

I. Definition: The definition of the element is clarified when necessary.	Page 1
II. Policy measures: This explains policy measures which provide the enabling environment for reaching the final objectives.	Pages 2 – 3
III. Metrics: A set of indicators for monitoring progress toward the Zero Hunger Challenge element has been identified.	Pages 4 – 5
IV. Messaging: Trade-offs and priorities have been included. This material is intended to help the Zero Hunger Challenge reach other stakeholders, particularly civil society and the private sector.	Pages 6 – 8
V. Conclusion: This highlights remaining knowledge gaps and work. The group reviewed the newly-adopted global agenda on development and suggested next steps.	Pages 9 – 10

I. Definition

Concordance reached by the HLTF entities:

Food is any substance, whether processed, semi-processed or raw, which is intended for human consumption.

Food loss is the decrease in quantity or quality of food.

Food waste is an important part of food loss and refers to the removal from the food supply chain of food which is fit for consumption, or which has spoiled or expired, mainly caused by economic behaviour, poor stock management or neglect.

(The above definitions were validated by the United Nations Secretary-General Ban Ki-moon at the 11 March 2015 HLTF Principals Meeting).

Explanations

Explanatory terms and concepts that underpin the definitions can be found in the definitional framework available at the following links:

- <http://www.fao.org/3/a-at144e.pdf>
- <http://thinkeatsave.org/index.php/be-informed/definition-of-food-loss-and-waste>

The definitional framework was developed through a multi-stakeholder process within the Save Food Initiative and further refined within the context of the working group.

Here are some explanatory terms in the definitional framework:

- Quantitative food loss refers to the decrease in food mass.
- Qualitative food loss refers to the decrease of food quality attributes such as appearance, taste, texture and nutritional value.
- Food loss in the production and distribution segments of the food supply chain is mainly caused by the food production and supply system or its institutional and legal framework.
- Although not sharply defined, food waste is still recognized as a distinct part of food loss, because the underlying reasons, economic framework and motivation of the food supply chain actors for wasting food are different from unintended food loss. Subsequently, the strategies on how to reduce food waste are conceived in a different, targeted manner.
- The food supply chain starts from the moment that:
 - Crops are harvest-mature or suitable.
 - Animals are ready for slaughter.
 - Milk has been drawn from an udder.
 - Eggs are laid by a bird.
 - Aquaculture fish are mature in the pond.
 - Wild fish have been caught by fishing gear.
- The end point of the food supply chain is when food is consumed or removed from the food supply chain.

The term "post-harvest loss" is used to represent food loss in the production and distribution segments of the food supply chain.

II. Policy measures

Concordance reached by the HLTF entities:

A 'hierarchy approach' should be taken in which emphasis is placed on prevention (source reduction) as the priority option for reducing food loss and waste.

Where prevention fails or is impossible, the order of priority is: recovery and redistribution of food to feed humans; recovery to feed animals; recycling for industrial purposes such as for bioenergy; and composting. Incinerating and disposing wasted food in landfills are the worst options.

The approach to reducing [Food Loss and Waste \(FLW\)](#) should be embedded within a broader framework for promoting [Sustainable food systems](#) ~~frameworks should help reduce waste~~. Policy measures directed at reducing FLW should promote resource efficiency, environmental sustainability and climate resilience. These policy measures can contribute to food and nutrition security goals. They should also consider relevant gender dimensions.

Policies and strategies aimed to reduce FLW should be an integral part of the wider frameworks established to promote food and nutrition security and social and economic development. These frameworks should be assessed to identify and address gaps which might contribute to FLW. National efforts to address FLW should be coordinated to avoid duplication.

The private sector is a crucial partner in efforts to address FLW. Coherent policies and government regulations are needed to create an enabling environment that is conducive for the private sector to help reduce FLW.

The group members also agreed on the following:

FLW will likely be reduced if the public sector also involves civil society, and local and regional authorities, to help identify strategies for action.

Functioning markets and prices are incentives for private sector investment. Actions for fostering market development include:

- Develop producer organizations which use market opportunities by chain actors
- Support inclusive value chains to promote partnerships among chain actors
- Develop grades and standards, while considering aesthetic standards on produce which provoke food waste.
- Promote business development services which support enterprises involved in the value chain.
- Support market institutions such as warehouse receipt systems with their associated quality control, secure storage facilities and credit functions.
- Provide market information.
- Improve market efficiency by reducing trade transaction costs.

The state of infrastructure, especially in rural areas, significantly influences the level of FLW. Infrastructure investments are a crucial part of the enabling environment for private sector activities. They include ICT, energy, roads, market facilities (assembly, whole sale and retail markets), abattoirs, fish landing sites, warehouses and cold storage. Infrastructure facilitates market access. There is generally more FLW in places with poor infrastructure.

The costs and benefits of reducing FLW need to be understood by private actors. Benefits should be improved and costs reduced.

Policies should support financial products for households, producer-groups and the private-sector. The products should also be useful for finance institutions, investment funds, and risk mitigation tools such as matching grants and loan guarantees.

Research is an important element in addressing FLW, therefore policy measures should be directed at creating a suitable environment for it. Research questions that need answering include: What is the magnitude and causes of FLW? What solutions can address this? Solutions that need to be identified through research could include improving products and processes, as well as identifying opportunities to add value to products and to use sub-quality products and by-products. Policies should support strengthening research capacity and foster public-private collaboration and partnership in research.

Policy and investments should support training and capacity-building to reduce FLW at all stages of the food supply chain. For example, to reduce FLW for food supply chains which are market-oriented and also those for food not intended for the market. Many training programmes in developing countries focus on primary crop and livestock production. As a result there is more capacity and skills in production-related issues than in the post-production components of the chain. Training is also needed for the post-production phase, to complement the support provided to increase productivity in primary production.

Where the public sector is involved in direct food procurement and distribution, policies should ensure that the practices applied are appropriate and do not lead to FLW in the value chains concerned.

The regulatory framework is also important in reducing FLW. For example, compulsory reporting of waste data by businesses; landfill levies or even bans; and direct or variable charging schemes ("pay-as-you-throw" or PAYT) for waste collection. A key example is the landfill escalator tax, making landfill more expensive over time, and thus enabling the private sector to make long-term investments in landfill alternatives. Regulation is also important in reducing fish discards at sea. Misunderstood legislation could pose a barrier to reducing food waste. For example, in food recovery and redistribution through food banks, legislative uncertainty around donations can stifle food donation. To avoid this, it is crucial to improve public understanding of existing legislation.

Date marking can impact food waste. Countries should identify problems of current date marking and then address them. Policies need to support simplification and clarification of food date labelling.

Explanations

The above guidance was agreed through tele-conference discussions, consultations, and e-mail exchanges among the working group agencies under the coordination of the co-chair agencies.

The working group used information by the agencies and from the Save Food Initiative, the Committee on World Food Security (CFS), and the Think_Eat_Save campaign.

The Think_Eat_Save campaign published a comprehensive approach to food waste prevention for countries and companies in its 2014 guidance document. (<http://thinkeatsave.org/index.php/take-action/think-eat-save-guidance-document>). UNEP, FAO and other partners are piloting the National Food Waste Prevention Programmes with governments using this guidance.

III. Metrics

Concordance reached by the HLTF entities:

There are two metrics being proposed to monitor progress on FLW:

- Global Food Loss Index
- Food Loss and Waste Protocol

The targets corresponding to these metrics are the same of those for SDG 12.3. They are respectively:

- By 2030 reduce food losses along production and supply chains, including post-harvest losses;
- By 2030, halve per capita global food waste at the retail and consumer levels.

Explanations

Global Food Loss Index

The Global Food Loss Index (GFLI) has been proposed as an indicator for SDG target 12.3: "by 2030 halve per capita global food waste at the retail and consumer level, and reduce food losses along production and supply chains including post-harvest losses."

The model for GFLI is being refined. Working group members are assessing food losses through case-studies of the causes of losses in specific value chains. This information will improve the primary database and refine the model parameters.

GFLI aims to model country and regional food loss on factors such as weather and infrastructure (such as storage facilities and roads).

The GFLI is as a result of data aggregation on food losses, broken down by primary agricultural products. This data will be collected from representative surveys (primary data) or, in cases of data gaps, estimated by applying econometric techniques. A single number, the food loss index, can be calculated for each country to indicate the severity of food loss. It is calculated on a quantity basis and subsequently transformed to dietary energy supplies (in kilo calories) per capita for consistent aggregation and then indexing.

GFLI covers losses on farm, during transport, in storage, and during processing; losses in retail and households are not covered.

The GFLI supports dynamic predictions — estimates can be continuously updated.

Food Loss and Waste Protocol

The Food Loss and Waste Protocol is a global standard for the measurement of food loss and waste. It was proposed as an indicator for the SDG target 12.3, regarding processing, retail, consumers. It can be used by both countries and companies to measure FLW within their borders and supply chains.

The FLW protocol provides a consistent and transparent basis for entities to quantify and report FLW. It includes requirements and provides guidance on implementing them, including why quantification is useful, what to quantify (in terms of timeframe, material type, destination and boundaries) and how to quantify (which quantification methods to use, how to sample, scale, and estimate uncertainty).

A consensus-based multi-stakeholder process was followed to develop the standard. Government agencies, intergovernmental organizations, non-governmental organizations, businesses, and academic institutions from around the world participated. To assist users in preparing a FLW inventory, guidance is available for free on the FLW protocol website (www.wri.org/food/protocol).

This quantification approach has been refined from a basis in module 1 of the "think eat save guidance," which provides advice on comprehensive approach for developing food waste prevention programmes (www.thinkeatsave.org/index.php/take-action/think-eat-save-guidance-document). This approach and is currently being piloted in South Africa.

IV. Messaging

Private sector

Concordance reached by the HLTF entities:

The basic principle in the role of the private sector is that it is primarily the people and companies acting in the food supply chain (farmers, traders, processors, retailers and consumers) that can reduce FLW at a significant scale. The public sector is indispensable in reducing FLW but its primary role is in facilitating action from these actors. The private sector should support stakeholders in identifying needs for government investments and incentives. The private sector should communicate these needs to governments and development agencies and lobby for appropriate and immediate public action.

The private sector should take a hierarchy approach, with prevention as the first option for reducing FLW. Where prevention is not possible, the order of priority is: recovery and redistribution to feed humans; recovery to feed animals; recycling for industrial purposes; and composting. Incineration and disposal of waste in landfills are the last options.

When there is lack of data to guide FLW reduction, the private sector can support assessments to generate the needed data, which may help their own businesses. The private could improve the transparency and sharing of FLW data across the food supply chain.

The private sector should help prevent and reduce FLW through direct private investment in improved technologies and infrastructure needed along the food supply chain. The private sector could also conduct research to support innovations. In addition it should invest in improving supply chain management, contractual arrangements with chain partners, production planning, providing credit and technical assistance, and partnerships with the public sector. The changed practices to promote reducing FLW in the food supply chain should be integrated into business practices and corporate responsibility policies.

The group members also agreed on the following:

The approach taken by the private sector to reduce FLW should promote the sustainability of the food systems concerned. The implemented measures should ensure resource efficiency, environmental sustainability, climate resilience, and contribute to food and nutrition security goals.

Food waste reduction possibilities by the retail sector include:

- Develop and improving practices and industry standards related to product sourcing, in particular standards used to accept or reject food produce. This can be done by introducing differentiated pricing and by relaxing aesthetics standards which can cause farmers to discard good quality produce for superficial reasons, such as shape or colour.
- Better anticipate changes in consumer demand and improve contractual terms for suppliers to reduce the freedoms to cancel or modify orders in timeframes that leave suppliers with unmanageable surplus.
- Create secondary markets for lower grade foods and facilitating the use of surplus foods through food recovery and redistribution — such as –food banks — and donations.

- Improve products so that they are less susceptible to FLW, modifying packaging, food labelling, storage and portion guidance. The retail sector could also raise consumers' awareness through product-specific prevention messages, for example, through shelf-talkers.

The food service sector can reduce food waste. They can: inform consumers, restaurants, and institutions to adapt portion sizes to needs and eliminate quantity discounts; optimise demand forecasting by requesting reservations for breakfast in hotels or for lunches in cafeterias; have just in time food preparation, display smaller volumes of food at buffets and replenish buffets only as needed; raise awareness of customers about not taking more food than they can eat; offer greater variety in portion sizes; and make provisions for handling leftovers, such as “doggie-bags.”

Civil Society

Concordance reached by the HLTF entities:

Consumers' food waste occurs as a result of sub-optimal food planning, buying, storage, preparation and use.

Messages to civil society may take two complementary forms. The first is awareness-raising to encourage behavioural change. Awareness-raising programs can show how reducing food waste not only helps to save money but also helps foster a sustainable future.

Awareness-raising should be complemented with messages to foster skills and manage food efficiently. Useful skills include household management skills, stock organization, and how to prepare nutritious and healthy meals. Cascade training, through which influential community members undergo training and then share this with their neighbours, can be particularly effective.

The group members also agreed on the following:

Regarding food waste, messages target consumers and non-governmental organizations active in the field of raising consumers' awareness. The Think.Eat.Save campaign provides materials that can be downloaded from its website.

Awareness-raising to incite behavioural change can be done through providing evidence on: the scale of problem in terms of the percentage of the food produced for human consumption which is not eaten; the economic value of wasted food; the social, food security and nutritional impact; and the environmental impact in terms of greenhouse gas emissions and impact on natural resources. Public awareness campaigns work well both at national and at local level. To maximize efficiency, a national campaign can be started —providing core messages and campaign materials — and the actions can be implemented locally.

Some simple actions by consumers can dramatically cut the amount of food waste. The Think.Eat.Save campaign has identified ten major messages to consumers about actions they can take. These include: planning meals and shopping smartly; buying “funny” fruits and vegetables which are safe to eat but are not of optimal quality with regards to aesthetic attributes such as size, shape, or colour; understanding expiration dates to know which ones provide guidance on when

food can still be safely consumed; managing food in the refrigerator; using freezers where available; correctly selecting portion sizes at restaurants; composting food scraps; using FIFO (First in First Out) as a kitchen rule; using leftovers effectively; and donating to local food banks, soup kitchens, pantries and shelters.

Schools offer a unique opportunity to foster food waste prevention behaviours. Children can then share these behaviours with their families. Food waste prevention should be set in a context of sustainable food education, where children reconnect with the origins of food, by growing their own vegetables in school gardens or by visiting local farmers.

Civil society organizations are integral to global efforts to reduce food waste. They serve three main functions: awareness-raising; redistribution of surplus food; and research and development of new knowledge that can inform policy and business practices.

Civil society organizations also supported successful social innovations which help food waste prevention in recent years. Social innovation involves participatory, grassroots activities which respond to a social need that is not fulfilled by public services. They often have multiple benefits which may include the reduction of waste techniques, for example cooking skills classes which provide food waste prevention techniques while also addressing social isolation.

V. Conclusion

Existing knowledge gaps and additional work

Global Food Loss Index (GFLI):

The GFLI will be calculated on the basis of a standard definition. However, the accuracy of the estimates will vary across countries as a result of differences in the availability and quality of the source data.

The accuracy of the GFLI has been improved by increasing the availability and quality of primary data. Moreover, the estimation model was changed to make its parameters more responsive to those factors which influence food losses in a particular commodity per country. These factors include inadequate storage facilities, road quality, climate zone, rainfall at harvest, and presence of pests.

The working group agencies generate information which builds the database and refines model parameters for the GFLI. These activities include the case studies and surveys being carried out across all developing regions to assess the causes and extent of food losses in the food supply chains for the major food crops. These crops include grains, roots and tubers, fruits and vegetables, fish, meat, and milk.

Other international initiatives such as the Food Loss and Waste Protocol will be compared with the measurement concepts for the GFLI.

A number of working group agencies have set up a platform for sharing experiences about reducing FLW. This initiative was started by the G20.

Quantification method for food waste:

The Food Loss and Waste Protocol is a global accounting and reporting standard for quantifying food loss and waste. It will enable countries, companies and other organizations to account for and report how much food loss and waste occurs. It will also show how food waste occurs, thus enabling targeted efforts to reduce it. It is publicly available in draft form and is undergoing pilot testing by countries and companies. It will be officially published in January 2016. One of the most significant knowledge gaps is food waste data in developing and emerging economies. The current estimates for these regions at consumer level are entirely based on assumptions; data collection is needed to inform policy, private sector and civil society-led behaviour change activities.

A knowledge gap exists for downstream food waste prevention within sustainable food systems, demonstrating how food waste prevention and healthy diets contribute to sustainable food consumption, informing coordinated messaging to consumers.

Links with the global agenda on sustainable development

Future activities of the Working Group will strive to align to and contribute to SDG goal 12.3, "Ensure sustainable consumption and production patterns' and its targets by 2030, halving per capita global food waste at the retail and consumer level, and reducing food losses along production and supply chains, including post-harvest losses."

The working groups will support initiatives by all stakeholders – governments, inter-governmental organizations, business and civil society – to achieve the SDG 12.3 target. The working group will try to mobilize these stakeholders and get their leaders' commitments to redouble efforts to reduce food loss and waste.

The working group supports considering FLW prevention to be high on the agenda of the United Nations Climate Change Conference (COP21). The working group will support awareness-raising for food waste in climate change mitigation leading up to COP21, using the SAVE FOOD and Think.Eat.Save communication channels. COP21 provides an opportunity to share the food waste messages with policymakers, the private sector and civil society.

Links with the other elements of the Zero Hunger Challenge

Work on FLW is relevant to issues addressed by the other four elements of the Zero Hunger Challenge. The working group will therefore ensure that its contribution to initiatives and processes, such as the SDGs and the Second International Conference on Nutrition (ICN2) Framework for Action, will be coordinated with the other four elements.