

# CHAMPIONS 12.3

## SDG TARGET 12.3 ON FOOD LOSS AND WASTE: 2018 PROGRESS REPORT

An annual update on behalf of Champions 12.3

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



### EXECUTIVE SUMMARY

In September 2015, the United Nations General Assembly adopted a set of 17 Sustainable Development Goals (SDGs) as part of the 2030 Agenda for Sustainable Development. SDG 12 seeks to “ensure sustainable consumption and production patterns.” The third target under this goal (Target 12.3) calls for halving per capita global food waste at the retail and consumer levels and reducing food losses along production and supply chains (including postharvest losses) by 2030.

To what degree has the world made progress toward achieving Target 12.3? This third annual progress report assesses advances by governments and companies over the past 12 months relative to a three-step approach for reducing food loss and waste: target, measure, and act.

**Targets set ambition, and ambition motivates action.** Therefore, a first step toward reducing food loss and waste is for governments and companies to set specific reduction targets aligned with SDG Target 12.3. This past year has seen a steady growth of countries and companies setting targets in support of SDG Target 12.3, with notable additions including Japan and Australia.

**What gets measured gets managed.** Quantifying food loss and waste within borders, operations, or supply chains can help decision-makers better understand how much, where, and why food is being lost or wasted. Such data are also the foundation for prioritizing reduction strategies and for monitoring progress. One highlight of the past 12 months is that, based on our assessment, more than 100 companies are now measuring food loss and waste, with nearly a third of them listed among the Fortune Global 2000. Furthermore, revised EU waste legislation requires member states to monitor food waste annually, starting in 2020, according to a harmonized methodology to be adopted in 2019. A third highlight is the launch of the online Food Waste Atlas, a global repository of food loss and waste data. This database makes it easier for governments and companies

### ABOUT THIS PUBLICATION

*SDG Target 12.3 on Food Loss and Waste: 2018 Progress Report* is the third in an annual series of publications providing an assessment of the world's progress toward achieving Sustainable Development Goal (SDG) Target 12.3. SDG Target 12.3 aims to “by 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.” Prepared on behalf of Champions 12.3, this publication seeks to inform decision makers in government, business, academia, and civil society about recent advances and what remaining steps need to be addressed if the world is to achieve the target. The *2016* and *2017 Progress Reports* can be found at <http://www.champions123.org>.

### AUTHORS

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### ABOUT CHAMPIONS 12.3

Champions 12.3 is a unique coalition of more than three dozen leaders from around the world dedicated to inspiring ambition, mobilizing action, and accelerating progress toward achieving SDG Target 12.3. The Government of the Netherlands and the World Resources Institute jointly provide secretariat support to Champions 12.3.

to find existing data when conducting food loss and waste inventories, and also provides a place for them to post their completed food loss and waste inventories.

**What ultimately matters is action.** Reducing food loss and waste is everyone's responsibility. Exactly what needs to be done varies around the world, and achieving SDG Target 12.3 will require big acts by big players, as well as millions of acts by everyone from farmers to consumers. Working across supply chains is an important way for farmers, both large and small, to be involved in and benefit from efforts to achieve SDG Target 12.3, as well as ensuring that companies can better understand the needs of farmers.

One noteworthy development over the past 12 months occurred in September 2018 when the African Union Commission launched the "Continental Post Harvest Management Strategy" that will support the realization of the Malabo Declaration, which calls for halving food losses on the continent by 2025. Another development is the emergence of more national-level public-private partnerships on food loss and waste reduction, with new partnerships established in the Netherlands and Indonesia.

The past year witnessed many hopeful signs of progress. But is the world on track to achieve Target 12.3 by 2030? To answer this question, this report reviews progress by governments, companies, and other actors around the world relative to a road map introduced in the *2017 Progress Report* that shows a pathway for achieving Target 12.3. The road map proposes a series of milestones for governments and companies—for every three-year period from 2016 to 2030—covering the "target, measure, act" approach.

This report's authors have assessed progress against the 2016–2018 milestones, with the color green indicating developments that are on track to achieve this first milestone, yellow indicating that some progress has been made but below the pace needed to achieve this milestone in time, and red indicating that progress is not on track to meet this milestone by the end of 2018. The assessment has the following results:

## Governments

- **Target:** Countries with 40 percent of the global population have set specific food loss and waste reduction targets aligned with Target 12.3 (yellow). Countries or regional blocs that have set specific food loss and waste reduction targets aligned with SDG Target 12.3 cover an estimated 30

percent of the world's population. These regions include the African Union, European Union, Australia, Japan, and the United States. If, in late 2018, members of the G20 reaffirm their commitment to SDG Target 12.3 in line with the recently published *Declaration G20 Meeting of Agriculture Ministers*, then more than two-thirds of the world's population would be covered.

- **Measure:** Countries with 20 percent of the global population have quantified base-year food loss and waste and have started reporting on food loss and waste (yellow). Countries that have started measuring their food loss and/or waste include Japan, the United Kingdom, Norway, Denmark, Mexico and the United States. These countries represent 10 percent of the world's population. However, during the past year a number of additional countries are now starting processes to measure, including Australia and Saudi Arabia. Additionally, member states of the European Union will start measuring according to a uniform methodology in 2020, and the first results are expected by the end of 2022.
- **Act:** Countries with 20 percent of the global population are actively working at scale to reduce food loss and waste (yellow). The number of national-level initiatives to tackle food loss and waste—with ambition for large-scale impact—continues to grow. Besides initiatives established in previous years in the United Kingdom, the United States, the European Union, and Japan, new efforts have recently emerged in Denmark and the Netherlands. These efforts are happening in countries that cover more than 14 percent of the world's population.

## Companies

- **Target:** Sixty percent of the world's 50 largest food companies, by revenue, have set specific food loss and waste reduction targets aligned with Target 12.3. Among those setting targets, half are working with suppliers to set their own targets (green). Nearly two-thirds of the world's 50 largest food companies (by revenue) participate in programs that have a food loss and waste reduction target consistent with SDG Target 12.3. Previously, most targets had been set by food retailers and manufacturers. This past year, more companies in other parts of the food supply chain, such as hotels and restaurants, started to set targets. Still, only a small number of companies are working with suppliers to set their own food loss and waste reduction targets. Engaging with suppliers should be a priority for companies over the next year.

- Measure:** *Twenty percent of the world's 50 largest food companies have quantified base-year food loss and waste and have started measuring and reporting on food loss and waste. Among those measuring and reporting, half are working with their suppliers to quantify the latter's food loss and waste (green).* More than a quarter of the world's 50 largest food companies now measure food loss and waste within their operations, and a number are working with their suppliers to help them measure and report on their food loss and waste. However, not all companies that measure publicly report their data, with only 10 of the top 50 food companies measuring *and* reporting. This not only makes tracking progress toward SDG Target 12.3 more difficult but also hinders sharing best practices and motivating other companies to act. Going forward, more companies need to publicly report their inventories.
- Act:** *Ten percent of the world's 50 largest food companies have active food loss and waste reduction programs. Among those taking action, half are working with their suppliers to reduce the latter's food loss and waste (green).* Twenty percent of the world's 50 largest food companies have established food loss and waste reduction programs, and among them, half are engaged with their suppliers to reduce the latter's food loss and waste. Business

partnerships like The Consumer Goods Forum, Global Agri-business Alliance, Food Reform for Sustainability and Health (FRESH) program, United Against Food Waste, Courtauld 2025, International Food Waste Coalition, and the U.S. Food Loss and Waste 2030 Champions continue to provide a good foundation for companies to set ambition, share best practices, and collaborate on solutions.

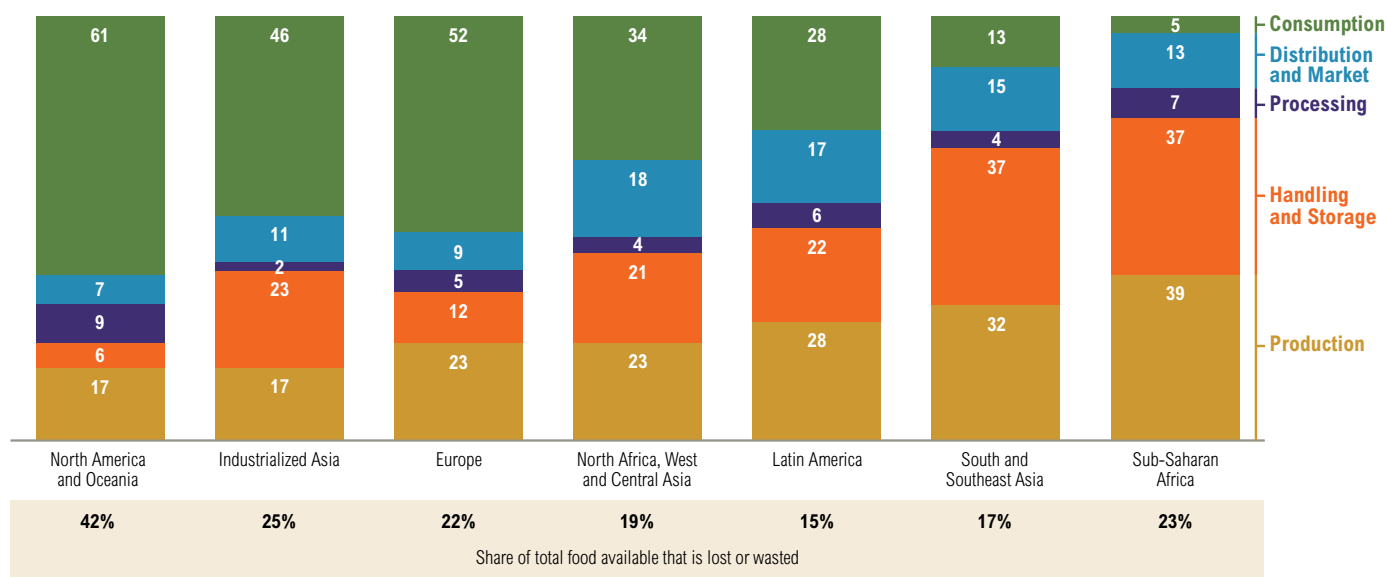
Set targets, measure, and take action. If the world does this over the remaining 12 years of the SDGs, it will take a big step toward realizing a future that achieves food security, reduces greenhouse gas emissions, protects the planet, and contributes to prosperity for all.

## THE CHALLENGE

According to the Food and Agriculture Organization of the United Nations (FAO), approximately one-third of all food produced in the world is lost or wasted (FAO 2011).<sup>1</sup> This huge level of inefficiency has significant impacts.

Consider food security. In some areas, food losses near the farm are predominant (Figure 1) and can affect the ability of farmers to make a good living and, at times, feed their families. In other places—including Europe and North America—food wasted near the end of the supply chain can affect household

**FIGURE 1. Food Losses Near Production Are More Prevalent in the Global South While Food Waste Near Consumption Is More Prevalent in the Global North (Percent of kcal Lost and Wasted)**



Note: Numbers may not sum to 100 due to rounding.

Source: WRI analysis based on FAO 2011.

nutrition and spending. Regardless of where the food loss and waste occurs, in a world where one in nine people are undernourished, the fact that more than 1 billion tons of food never gets consumed is a travesty (WFP 2017; FAO 2017). And as the demand for food production rises to meet a growing population, the world needs now more than ever to make the most of what is already grown.

Consider the economic costs. Food loss and waste results in roughly US\$940 billion in economic losses globally per year (FAO 2015). In sub-Saharan Africa, postharvest losses total up to \$4 billion per year (World Bank 2011). Food waste in households and restaurants costs an average of \$1,500 per year for a family of four in the United States and about \$1,100 per year for the average household with children in the United Kingdom (Buzby et al. 2014; WRAP 2015).

Consider the environment. Food that is harvested but ultimately lost or wasted consumes about one-quarter of all water used by agriculture each year (Kummu et al. 2012). It requires land area greater than the size of China to be grown (FAO 2013). And it generates about 8 percent of global greenhouse gas emissions annually (FAO 2015). To put this in perspective, if food loss and waste were a country, it would

be the third-largest greenhouse gas emitter on the planet—surpassed only by China and the United States (Figure 2).

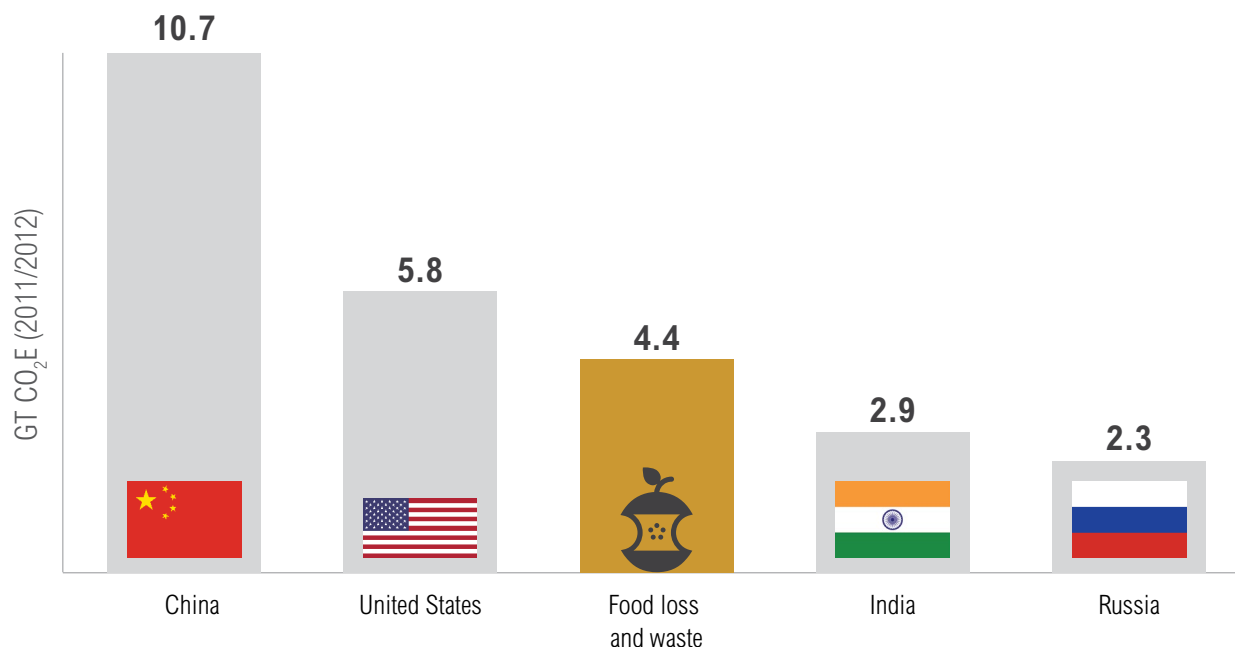
## A HISTORIC OPPORTUNITY

In light of these impacts, reducing food loss and waste can be a triple win. It can help feed more people. It can save money for farmers, companies, and households while creating new business opportunities. And reductions can alleviate pressure on climate, water, and land resources.

In September 2015, a historic window of opportunity opened to elevate the issue of food loss and waste reduction on the global agenda. At the United Nations General Assembly, countries of the world formally adopted a set of 17 SDGs as part of the 2030 Agenda for Sustainable Development: global goals to end poverty and hunger, protect the planet, and ensure prosperity for all populations and generations (UN 2017a). These SDGs and their associated targets came into effect on January 1, 2016.

SDG 12 seeks to “ensure sustainable consumption and production patterns.” The third target under this goal (Target 12.3) calls for halving per capita global food waste at the retail

**FIGURE 2. If Food Loss and Waste Were a Country, It Would Be the Third-Largest Greenhouse Gas Emitter**



Note: Figures reflect all six anthropogenic greenhouse gas emissions, including those from land use, land-use change, and forestry (LULUCF). Country data is for 2012 while the food loss and waste data is for 2011 (the most recent data available). To avoid double counting, the food loss and waste emissions figure should not be added to the country figures.

Source: Climate Analysis Indicators Tool 2017; FAO 2015.

and consumer levels and reducing food losses along production and supply chains (including postharvest losses) by 2030 (Box 1). This ambitious yet achievable target has the potential to embed the reduction of food loss and waste firmly in public- and private-sector strategies around the world for the first time. It is truly a global target. Although solutions may differ between the global North and global South, every country, company, and individual has a role to play.

This target contributes to achieving other SDGs and international aspirations such as the Zero Hunger Challenge, the United Nations Framework Convention on Climate

Change, and more. For instance, the Paris Agreement on climate change calls for nations to take action on climate mitigation and adaptation; reducing food loss and waste is a strategy that addresses both. The achievement of SDG Target 12.3 will also aid in the realization of the African Union’s Malabo Declaration, which was adopted in 2014 and included several commitments, one of which is to reduce postharvest losses by 50 percent by 2025. Moreover, the second United Nations Environment Assembly in 2016 adopted a resolution on prevention, reduction, and reuse of food waste, which calls for increased awareness and action to reduce food waste by governments and UN Environment.

### BOX 1. About Food Loss and Waste

The difference between food loss and food waste is not always sharply defined. However, a distinction is sometimes made to reflect different underlying causes. Under the SAVE FOOD initiative, FAO, UNEP, and stakeholders use the following definitions:

- “Food loss’ in the production and distribution segments of the food supply chain is mainly caused by the functioning of the food production and supply system or its institutional and legal framework.
- ‘Food waste’ refers to the removal of food from the food supply chain which is fit for consumption, by choice, or which has spoiled or expired, mainly caused by economic or social behavior, poor stock management, or neglect.”<sup>a</sup>

Figure B1 provides examples of food loss and waste during various stages of the food supply chain.

Notes:<sup>a</sup> FAO and UNEP 2016.

FIGURE B1. Examples of Food Loss and Waste Along the Food Supply Chain

PRODUCTION	HANDLING & STORAGE	PROCESSING & PACKAGING	DISTRIBUTION & MARKET	CONSUMPTION
<i>During or immediately after harvesting on the farm</i>	<i>After leaving the farm for handling, storage, and transportation</i>	<i>During industrial or domestic processing and/or packaging</i>	<i>During distribution to markets, including at wholesale and retail markets</i>	<i>In the home or business of the consumer, including restaurants and caterers</i>
<ul style="list-style-type: none"> <li>• Fruits discarded due to bruising during picking</li> <li>• Crops sorted out post-harvest for not meeting cosmetic standards</li> <li>• Crops left behind in fields due to poor mechanical harvesting or drops in prices</li> <li>• Fish discarded during fishing operations</li> </ul>	<ul style="list-style-type: none"> <li>• Food eaten by pests</li> <li>• Food degraded by fungus or disease</li> <li>• Livestock death during transportation to slaughter or not accepted for slaughter</li> <li>• Fish that are spilled or degraded after landing</li> </ul>	<ul style="list-style-type: none"> <li>• Milk spilled during pasteurization and processing</li> <li>• Food sorted out as not suitable for processing</li> <li>• Livestock trimming during slaughtering and industrial processing</li> <li>• Fish spilled or damaged during canning or smoking</li> </ul>	<ul style="list-style-type: none"> <li>• Food sorted out due to quality</li> <li>• Safe food disposed of because of going past sell-by date before being purchased</li> <li>• Food spilled or damaged in market</li> </ul>	<ul style="list-style-type: none"> <li>• Food sorted out due to quality</li> <li>• Food purchased but not eaten</li> <li>• Food cooked but not eaten</li> </ul>

Source: WRI analysis based on FAO 2011.

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

—SDG Target 12.3

## PROGRESS SINCE SEPTEMBER 2017

Over the past 12 months, essentially the third year since the announcement of the SDGs, to what degree has the world continued to make progress toward achieving Target 12.3? This publication addresses this question by evaluating progress relative to a three-step approach advocated by Champions 12.3 for reducing food loss and waste: target, measure, and act.

### 1. Target

Targets set ambition, and ambition motivates action. Therefore, as a first step toward reducing food loss and waste, governments and companies should set reduction targets aligned with SDG Target 12.3.

#### Governments

With the adoption of the SDGs in 2015, all nations implicitly agreed to SDG Target 12.3. But because the SDGs have a total of 169 targets, adoption of the SDGs *en masse* does not necessarily mean that food loss and waste reduction will garner sufficient government attention and focus. Explicitly articulated or specific food loss and waste reduction targets made by governments, aligned with SDG Target 12.3, would indicate such attention and focus. Figure 3 shows countries or regional blocs with such targets (either voluntary or mandatory) in place that the authors could identify, including those that set specific targets before the advent of the SDGs in September 2015.

Progress in setting government targets over the past 12 months includes the following results:

- The government of Australia published its *National Food Waste Strategy*, which provides a framework to support action toward a target of halving Australia’s food waste by 2030. The Australian Government has made a commitment of \$1.37 billion over 24 months toward this goal, with funding going toward a voluntary commitment program that will engage businesses, and the development of a monitoring and evaluation framework to track progress toward the goal (Australian Government 2017). The Australian government has also provided a \$30 million grant to establish the \$100 million 10-year “Fight Food Waste Cooperative

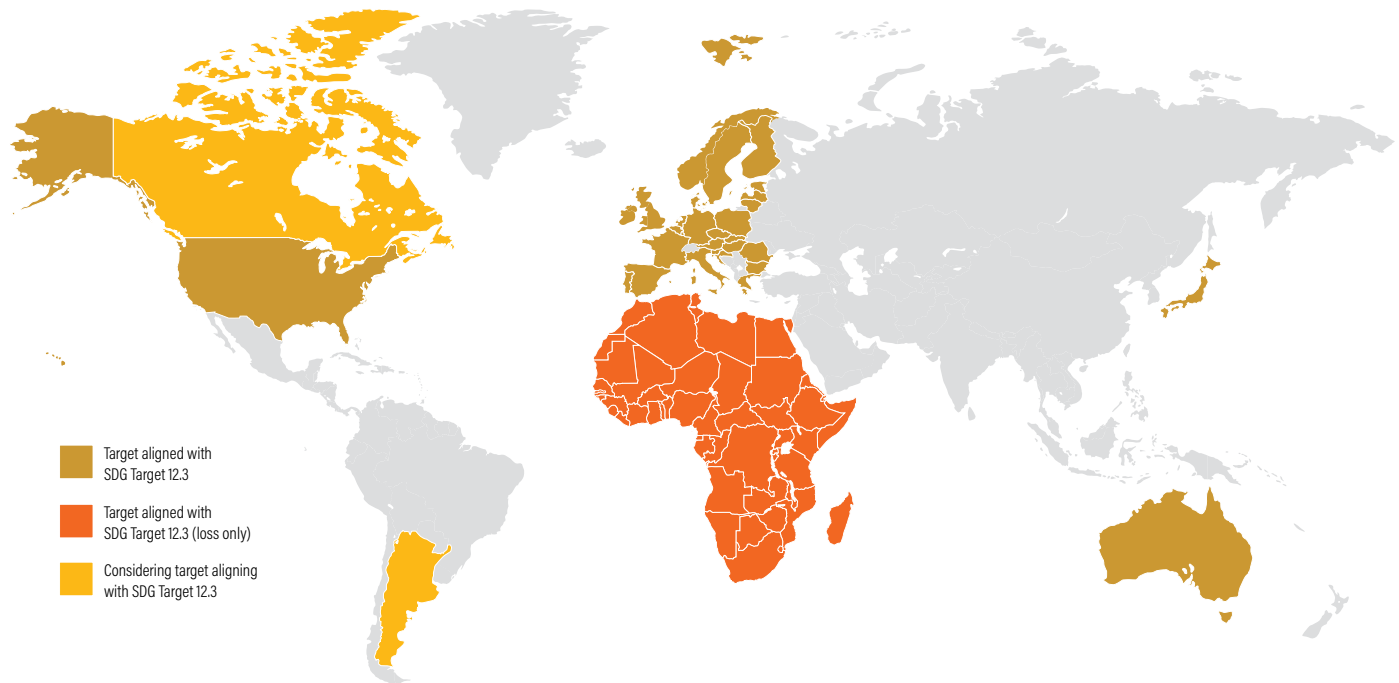
Research Centre” to fund research into reducing food waste throughout the supply chain.

- In June 2018, Japan announced a target to halve household food waste by 2030, compared with a 2000 baseline (Japanese Government 2018).
- Wales announced a new nonbinding target to halve food waste by 2025 from 2006–7 levels (Welsh Government 2017).<sup>2</sup>
- In line with the European Union’s commitment to SDG 12.3, the revised Waste Framework Directive, adopted in May 2018, introduces new obligations for Member States to reduce food waste levels at each stage in the food supply chain to help achieve this target. The legislation also encourages food donation and other redistribution for human consumption, prioritizing human use over animal feed and reprocessing into non-food products (European Parliament and the Council 2018).

Some countries are still considering committing to a target. In Canada, for example, the public-private partnership National Zero Waste Council published its first National Food Waste Reduction Strategy in 2018. This includes the recommendation for the federal government to actively support a national waste reduction target of 50 percent by 2030, a target that the federal government is still considering (Waste360 2018). Argentina is also considering committing to a target aligned with SDG 12.3, and the country has created the “National Program to Reduce Food Loss and Waste” which aims to coordinate, suggest, and implement public policies in order to understand the causes and effects of food loss and waste.

Cities and local governments are also setting goals in line with SDG Target 12.3. London recently committed to a target of 50 percent reduction in food waste by 2030 (Resource 2018), in addition to a ban on biodegradable waste going to landfills by 2026. Dubai expanded its existing work on food waste by launching a zero-tolerance approach to food waste in October 2017. This includes a competition for innovative ideas to reduce food waste in restaurants, a social media competition, and a mass food donation drive (Gulf News 2017).

FIGURE 3. National and Regional Governments with Food Loss and/or Waste Reduction Targets Aligned with SDG Target 12.3 (as of September 2018)



Source: WRI authors.

### Companies

The private sector continues to adopt targets aligned with SDG Target 12.3. Initiatives such as the Global Agri-business Alliance’s “Food and Agricultural Product Loss Resolution” and the Consumer Goods Forum’s “Food Waste Resolution,” profiled in the *2017 Progress Report*, demonstrate that already many of the world’s leading food companies across the food supply chain have an explicit food loss and/or food waste target. Although the importance of going beyond setting targets to conducting measurement and taking action cannot be understated, the number of companies setting targets is an indication of growing momentum within the private sector.

In 2018, 24 new signatories to the Courtauld Agreement were announced. Through this agreement, signatories commit to collaborate to achieve a 20 percent reduction in food waste and greenhouse gas emissions by 2025, compared to 2015. This target builds on previous UK voluntary agreements, and analysis by the Waste and Resources Action Programme (WRAP) suggests that achieving the Courtauld 2025 food waste target would result in a 40 percent reduction of food waste by 2025, as covered by SDG 12.3, compared to 2007, putting the United Kingdom on track to deliver a 50 percent reduction by 2030. Notable new signatories include AccorHotels UK and Ireland, Hovis, and Scotland Food and

Drink. This brings the number of signatories to the Courtauld Agreement to 156 companies, covering 95 percent of the UK food retail market (Edie.net 2017).

Other companies are setting targets that build upon or are independent of these collective efforts:

- The Kroger Company, the second largest food retailer in the United States (Forbes 2018a), announced its “Zero Hunger | Zero Waste” plan through which the company aims to end hunger and eliminate waste—including food waste—in communities where it does business by 2025. To achieve this, Kroger has established a \$10 million innovation fund to identify and fund solutions to prevent and reduce food waste and will accelerate donations and advocate for public policy solutions to hunger through its Zero Hunger | Zero Waste Food Rescue program (Supermarket News 2017).<sup>3</sup>
- In October 2017, Aeon, the largest food retailer in Asia, announced that it will halve food waste across its stores by 2025, relative to a 2015 baseline (Aeon 2017).
- Retailer Aldi UK and Ireland pledged to halve its food waste by 2030 (Fresh Produce 2018).

- Hotel operator Marriott announced a target to reduce food waste by 50 percent by 2025 (Marriott International 2017).
- Costa Cruises announced a target to reduce food waste across its fleet by 50 percent by 2020 (Winnow 2018).

## 2. Measure

There is an old adage that says, “What gets measured gets managed.” This holds true for food loss and waste. Quantifying food loss and waste within borders, operations, or supply chains can help decision-makers better understand how much, where, and why food is being lost or wasted. This information is the foundation for developing and prioritizing reduction strategies. In addition, measurement is necessary if entities are to know whether they are on track to meet SDG Target 12.3. Entities need to quantify a base-year amount of food loss and waste and monitor change over time.

A significant development of the past 12 months was the launch of the online Food Waste Atlas, a global repository of food loss and waste data. This database makes it easier for governments and companies to find existing data when conducting food loss and waste inventories. Users can search this data by combinations of location, food category, and stage in the supply chain. The Food Waste Atlas also provides a place for governments, companies, and others to publicly post their completed food loss and waste inventories.

### Governments

FAO conducted the first global food loss and waste quantification effort, and in 2011 published the results in the report *Global Food Losses and Food Waste*. It estimated food loss and waste throughout the food supply chain, dividing the world into seven near-continental regions (FAO 2011). Although the results were entirely based on existing data and literature and no new measurements were conducted, this landmark study was a catalyst for the current movement to tackle food loss and waste.

Much government action to achieve SDG Target 12.3 will likely occur at the country or even subnational level. This requires quantification at that geographic scale. As noted in the 2016 *Progress Report*, a few governments have been early movers in measuring national-level food loss and waste. These include the United Kingdom, the United States, and Japan.

To assist governments with monitoring progress toward SDG Target 12.3, UN agencies have been working to develop national-level estimates of food loss and food waste over the past 12 months. The FAO has been leading the development of a “Food Loss Index,” to measure and monitor losses that occur within a country from primary production up to but not including the retail level. In complementary fashion, UN Environment has been leading the development of a “Food Waste Index” alongside Wageningen University, WRAP, and WRI. This index will be used to estimate and monitor food waste levels at the country level across the manufacturing, retail, hospitality, food service, and consumer sectors.

To complement these ongoing efforts in global measurement, the International Food Policy Research Institute (IFPRI) and the Consultative Group on International Agricultural Research (CGIAR) have developed a methodology that aims to improve the measurement of food losses across the whole value chain. This new methodology calculates the economic cost of losses due to quality deterioration as well as physical loss, and it pinpoints the specific processes where losses occur. IFPRI has applied this methodology for a variety of staple foods in several countries including China, Ethiopia, and India. IFPRI is currently working with FAO, through the Technical Platform on the Measurement and Prevention of Food Loss and Waste, to align this methodology with data collection underpinning the Food Loss Index.<sup>4</sup>

Building upon its earlier steps, in May 2018 the European Parliament and European Council reached agreement and adopted the revised Waste Framework Directive (European Parliament and the Council 2018), which details a timeline for the use of a common measurement methodology by which member states will monitor their food waste from 2020 onward and report them to the European Commission by mid-2022. The exact methodology and scope of what is to be measured is due to be finalized by the end of March 2019. On the basis of this data, by the end of 2023, the European Commission will prepare a report considering the introduction in the EU of legally binding targets on food waste prevention, to be met by 2030. Based on the definition laid down in the revised EU waste legislation, the materials to be quantified as “food waste” would include food and associated inedible parts discarded from the food supply chain from the farm all the way to consumer waste.<sup>5</sup>



Some other countries also have made progress on measurement during the past 12 months:

- Argentina started work in 2015 to measure food loss and waste, and a recent survey found that up to 45 percent of fruit and vegetables are lost after harvesting (Postharvest Network 2017).
- The Commission for Environmental Cooperation, more commonly known as CEC—in partnership with Mexico’s Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT), the U.S. Environmental Protection Agency, and Environment and Climate Change Canada—announced the creation of a new trinational expert group to advance the measurement of food loss and waste across the food supply chain in North America (Commission for Environmental Cooperation 2018).
- WRAP has restated the way UK household food waste between 2007 and 2015 is defined and described to conform with international standards and conventions, aligning data with the *Food Loss and Waste Accounting and Reporting Standard (FLW Standard)*, making it easier for like-for-like comparisons to be made between nations. The data reveal a 23 percent per capita reduction in wasted food (excluding inedible parts) from 2007 to 2015 (WRAP 2018b).
- The Saudi Grains Organization and the Saudi Ministry of Environment, Water, and Agriculture launched a joint initiative to reduce food waste across the country. A first step will be to establish a food loss and waste base-year for the Kingdom, as well as calculate the economic costs associated with food loss and waste (*Saudi Gazette* 2018).
- Denmark updated its food waste statistics for households, which show that Danish households have reduced food waste by an average of 8 percent per person between 2011 and 2017 (The Local 2018a).
- Germany also conducted research on food waste generation in households, finding that the average German household produces around 109 kg of food waste per year, with just under half of this waste being avoidable food waste. These results will help inform food waste prevention strategies (Thünen 2018).
- The government of Mexico, led by SEMARNAT, is working with the World Bank and WRAP to develop a framework for a national strategy for food loss and waste that identifies hotspots for food loss and waste across the supply chain. This builds on the development of the first baseline for food loss and waste in Mexico. On August 28, the World Bank presented the first draft

of this framework to the intersectoral working group, attended by representatives of the public, private, academic, and social sectors.

- In January 2018, the African Union Commission published the first *Biennial Review Report*, which tracks progress toward achieving the 2025 Malabo goals, including the goal to reduce food losses. The report shows that five countries are on track to achieve the postharvest loss reduction target by 2025: Malawi, Mauritania, Rwanda, Togo, and Uganda (African Union 2018).

Cities and subnational governments are well placed to address food waste, as municipal governments are often responsible for providing waste hauling services. However, few cities have conducted detailed food waste assessments to date. To start addressing this gap, the Natural Resources Defense Council (NRDC), in partnership with the Rockefeller Foundation, examined the amounts, sources, and types of food going to waste in three cities: New York City, Nashville, and Denver. The council’s analysis also identified reasons behind the creation of food waste and opportunities for reduction, recycling, and redistribution. It is hoped that the publicly available methodology and case studies, which have been developed in accordance with the *FLW Standard*, will provide a much-needed practical template for other cities to perform similar assessments (NRDC 2017).<sup>6</sup>

### Companies

Companies continue to lead on measurement of food loss and waste. Members of The Consumer Goods Forum are conducting measurement as part of the Food Waste Resolution. Members of the Global Agri-business Alliance are starting to measure food loss and waste as part of the Food and Agricultural Loss Resolution announced in September 2017. Companies participating in voluntary agreements, such as Courtauld 2025, the International Food Waste Coalition, and U.S. Food Loss and Waste 2030 Champions, are also measuring their food loss and waste to track reductions over time.

In some instances, these companies publish their data. However, in most cases, companies are not yet publicly reporting their food loss and waste data on an individual basis, making progress difficult to independently track, and meaning that opportunities to share learning and best practices are lost. One development of the past 12 months that will help companies and other entities understand the benefits of reducing food loss and waste is the launch of the “FLW Value Calculator.” The calculator was developed by the Food Reform for Sustainability and Health (FRSH) program—a

joint project between EAT and the World Business Council for Sustainable Development (WBCSD) that seeks to mobilize business to address food system challenges (including food loss and waste)—and Quantis, with input from WRI. The calculator enables users to quickly calculate the value of their food loss and waste with respect to the environmental impacts (greenhouse gas emissions, land, water, and nitrogen and phosphorus uses) as well as the nutrition being lost. The calculator is available in a beta test version, and companies or other entities can use it to quickly prioritize food loss and waste streams and to understand the value of their food loss and waste reduction actions with respect to sustainability goals.

Other measurement-related developments from the private sector over the past 12 months include (but are not limited to) the following examples:

- Tesco has expanded reporting beyond its UK operations to publicly report the food waste of its businesses in The Republic of Ireland and Central Europe (i.e., Poland, the Czech Republic, Hungary, and Slovakia). Tesco also announced partnership agreements with 24 of its largest food suppliers to publish food waste data within their own operations by September 2018, and to reduce food waste both in their own operations and from farm to plate (TESCO PLC 2017).
- In September 2018 the *UK Food Waste Reduction Roadmap* was launched. The road map details how all large UK food businesses, including food producers and manufacturers, retailers, hospitality, and food service operators, will work toward achieving SDG12.3. The road map is underpinned by a suite of resources that support more consistent public reporting, aligned with the *FLW Standard* and a harmonized approach to supplier engagement. The road map was developed after extensive collaboration facilitated by WRAP and the Institute of Grocery Distribution (WRAP 2018a).
- For the first time, Campbell Soup Company publicly reported its food waste data in 2018 in accordance with the *FLW Standard* (Campbell Soup Company 2018).
- Morrisons, the United Kingdom's fourth-largest supermarket (The Grocer 2018), and retailer Lidl both published their food waste data for the first time in 2018 (Morrisons 2018; Lidl 2018).
- In 2018, Walmart established a 2016 food waste baseline for operations in Canada, Japan, the United Kingdom, and the United States, in line with the *FLW Standard*. This follows the announcement of the company's Zero Waste by 2025 target for operations in the same four countries (Walmart 2018). Walmart has already reported progress in Walmart Canada, where wasted food in its operations was reduced by 23 percent between 2015 and 2017. This was achieved through operational process improvement, better marketing and replenishment, and increased redistribution efforts (Greener Ideal 2018).

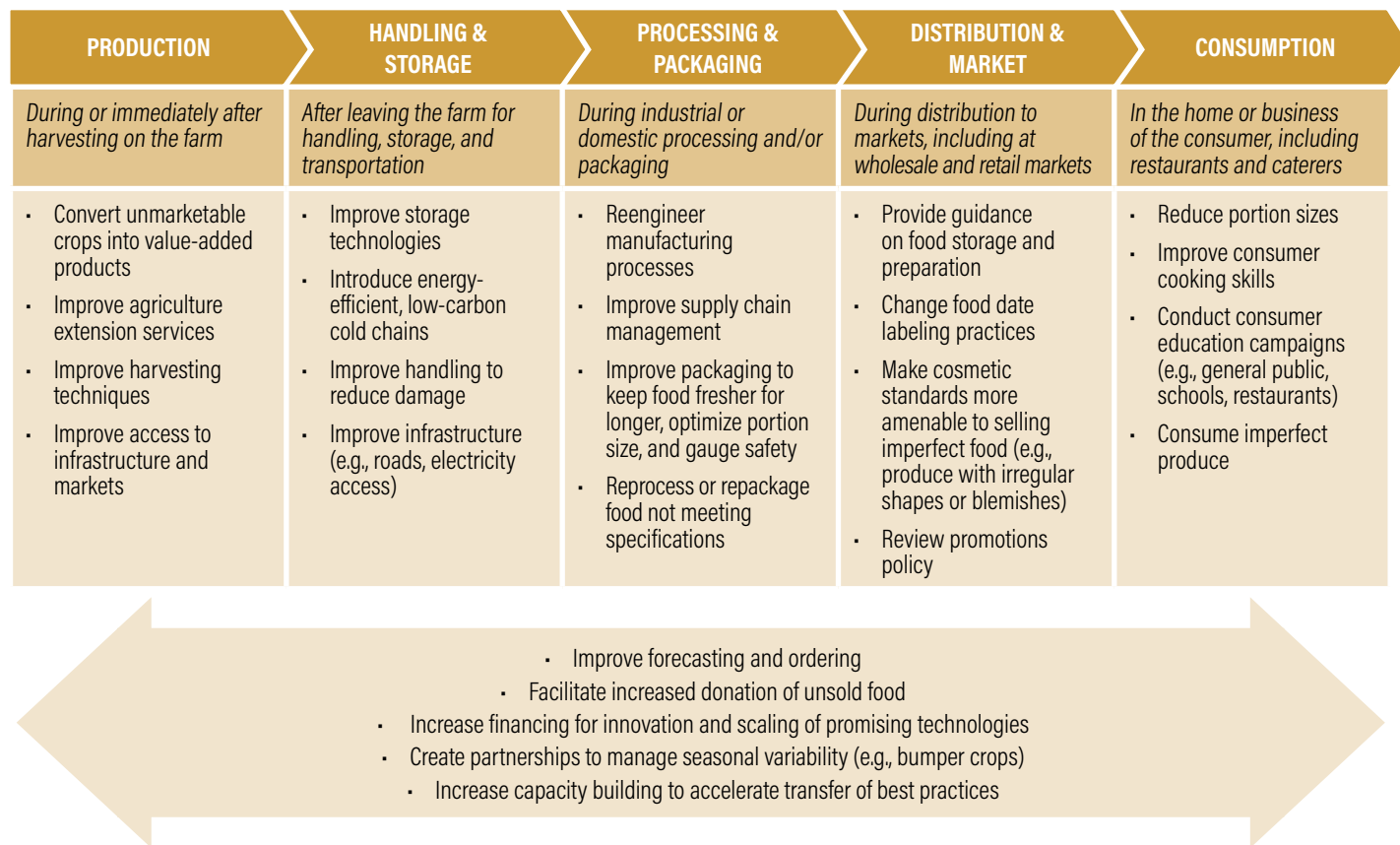
### 3. Act

Setting targets and measuring food loss and waste are important. But what ultimately matters is action. Therefore, governments and companies need to follow through on implementation.

By knowing where and how much food is being lost and wasted, entities can prioritize actions to tackle the hot spots. Exactly what needs to be done varies among countries as a result of differences in their level of economic development and roles in the food supply chain. In developing regions, most food loss occurs during production, on- and off-farm handling, and storage (Figure 1). Thus, investing in, for example, extension services for improved farm-level handling, and in better infrastructure to improve storage, processing, and transportation will be important. In developed regions, as well as in rapidly growing urban areas around the world, most food waste occurs at the consumption stage of the food supply chain. Thus, steps to raise awareness among consumers and retailers, clarify date labeling, and facilitate food redistribution and food donations will be vital. Figure 4 provides examples of actions per stage in the food supply chain that would reduce food loss and waste.

Efforts to address food loss and waste are not new, and activity in many places has been ongoing for some time. Since the launch of the SDGs in 2015, there have been a number of notable actions by countries, companies, and others to tackle this issue. These activities include actions taking place on the ground that directly affect food loss and waste, as well as activities such as capacity building, training, and education services. The examples featured in the Act section, which are by no means exhaustive, highlight various types of action over the past 12 months, listed according to the stage in the supply chain where food loss and waste otherwise would have occurred.<sup>7</sup>

FIGURE 4. Possible Approaches for Reducing Food Loss and Waste (Not Exhaustive)



Source: Based on Lipinski et al. 2016.

More examples can be found at the ReFED innovator database,<sup>8</sup> the Refresh Community of Experts,<sup>9</sup> FurtherwithFood.org, and The Community of Practice on Food Loss Reduction.<sup>10</sup>

### Production

- In April 2018, the European Commission proposed new legislation on unfair trading practices. The legislation prohibits practices such as late payment for perishable food products, last-minute order cancellations, unilateral or retroactive changes to contracts, and forcing the supplier to pay for wasted products. The prohibition of these practices will help avoid food waste and will also benefit farmers and small and medium-sized businesses (The European Commission 2018a).

- Farm Radio International, with the support of The Rockefeller Foundation’s YieldWise initiative, has launched a project that brings together a consortium of service providers such as local radio stations and non-profits that aims to bridge the gap between farmers’ awareness and the adoption of improved farming practices that reduce postharvest loss. Interactive radio, television programs, and mobile videos will provide farmers in Kenya, Nigeria, and Tanzania with the information they need to make informed decisions about practices that reduce postharvest loss, as well as connect them with input suppliers and buyers (Farm Radio International 2018).

FIGURE 5. Solutions to Postharvest Losses (PHL)



Note: PHL: Postharvest losses

Source: Adapted from The Global Knowledge Network 'Innovating the Future of Food Systems' Report, Global Knowledge Initiative 2017.

## Handling and storage

- The Government of India, alongside the National Cold Chain Development Board, has provided funding support for developing more than 2,000 fruit and vegetable packing houses over the next three years. Packing houses provide the clean, cool conditions that are required to reduce postharvest losses, and it is hoped this investment will boost export of fruits and vegetables (The Hindu Business Line 2017).
- The Global Knowledge Initiative, on behalf of The Rockefeller Foundation's YieldWise Initiative, identified 22 investible innovations (Figure 5) that present immediate solutions to the problem of postharvest food loss. The innovations covered a range of solutions addressing processing, packaging, storage, transportation, data, and monitoring (Global Knowledge Initiative 2017).
- The Ethiopian Society of Postharvest Management was launched in January 2018. The objectives of the society are to create a platform for postharvest management professionals to share experiences and exchange information. The society also provides research, education, training, and extension services on the topics of postharvest handling, packaging, cooling, storage, transportation, and processing (ESPHM 2018).
- Unilever's Hellman's Red and Green Tomato Ketchup is saving an estimated 2.5 million tomatoes that would have otherwise been discarded during processing for not being red enough to go into ketchup. The line is already sold in Europe and will be further expanded to Latin America in early 2019 (Unilever 2018).
- Several technology innovations over the past year have emerged that result in superior packaging to reduce food waste. For example, Mitsubishi has developed a resin that can be layered on to any barrier film to reduce oxygen absorption, thereby preserving food and doubling the shelf life of products. This technology may be particularly suited to the organic and all-natural market as it avoids the

use of artificial preservatives and additives. In February 2018, Tesco introduced a unique combination of UV light treatment and improved packaging film to extend the shelf life of avocados by up to two days, without any compromise on quality or flavor.

## Distribution and market

- Maersk Growth has partnered with Rockstart, a start-up accelerator, to create FoodTrack by Maersk, a one-month accelerator program for start-ups that are trying to reduce food loss in the supply chain from harvest to distribution. Maersk Growth will run three rounds of the program throughout 2018 and 2019. Participants from the first program include Tsenso, a technology that monitors the temperatures at which a product was stored along the whole supply chain to provide a more accurate shelf-life indicator for food, and KrishiHub in India, which offers technology platforms to help smallholder producers connect directly with larger end markets (Forbes 2018b).
- In the Czech Republic, a new amendment to the Food Act came into effect in 2018, requiring all supermarkets over 400 square meters to donate unsold but still consumable food to charities (Prague.tv 2017).
- Movement to reduce consumer confusion around food date labels continues. Building on last year's Consumer Goods Forum "Date Label Call to Action," Tesco, for example, has removed "best before" labels from around 70 fruit and vegetable lines (*The Guardian* 2018). Norwegian dairy companies Tine, Q-Meieriene, and Prior are adopting better, consolidated labeling for dairy products (*The Daily Meal*, 2018). Kellogg Company is standardizing the date labels on all U.S. food packages to "best if used by," with more than 50 percent of its packaging transitioned by the end of 2017.
- A number of studies are quantifying the impact of steps to reduce food loss and waste at the distribution and market stage, and the consumption stage of the food supply chain (Box 2).

## BOX 2. Emerging Evidence of Reductions at the Distribution, Market, and Consumption Stages

- Redistribution of surplus food continues to grow. For example, the U.S. Environmental Protection Agency launched the Excess Food Opportunities Map, an online tool that identifies more than 500,000 potential food waste generators and recipients of excess food in the hope that this tool will help facilitate connections between the two groups (USEPA 2018). Hello Fresh, a meal-kit delivery provider, partnered with Spoiler Alert to increase its redistribution efforts in its New Jersey distribution center. The center nearly doubled the percentage of unsold inventory donated to charities, from 33 percent to 61 percent, and saw a 65 percent reduction in food waste to landfills. The partnership is now being expanded nationwide (AgFunder News 2018). The nonprofit 412 Food Rescue has partnered with food retailer Giant Eagle to pilot technology that has been used across all the chain's stores in the Pittsburgh region—increasing retail donations by 300 percent over two years. 412 Food Rescue is expanding this pilot to San Francisco, Philadelphia, and Cleveland in the next year (412 Food Rescue 2018).
- Research in the United Kingdom found that redistribution from retailers, manufacturers, and hospitality and food services businesses increased by 50 percent between 2015 and 2017. The combined increase totaled 14,500 tons, equating to the equivalent of an extra 35 million meals a year (WRAP 2018c).
- World Wildlife Fund US (WWF-US) and the American Hotel and Lodging Association (AHLA) worked with the hospitality industry to understand and reduce food waste in that sector. WWF-US and the AHLA conducted a four-month pilot in 10 hotels, which saw at least a 10 percent reduction in food waste over 12 weeks. Using the lessons learned from the pilot project, WWF-US and AHLA produced a publicly available tool kit that provides the background, tools, and resources a hotel needs to prevent food waste from happening in the first place and to donate or divert away from landfills any food waste that is not avoided (Hotel Kitchen 2018).
- Recent research on the impact of NRDC's and the Ad Council's "Save The Food" public education campaign found that 50 percent of millennials and 37 percent of mothers (the campaign's target demographics) are now aware of Save The Food. Among the general U.S. public, awareness of food waste as an issue has also risen from 31 percent in April 2016 to 48 percent as of March 2018 (Sustainable Brands 2017).

## Consumption

- Food waste is becoming a more high-profile topic in China. Topics in Focus, a popular TV program, aired a "food waste reduction special" four times in 2017, calling on the public to realize the problem of food loss and waste and take action to fight food waste. In addition, the All China Environment Federation, UN Environment, FAO, China Academy of Sciences, and the Swedish Institute of Environmental Research co-hosted the "Reducing Food Waste" Youth Contest for the first time in China in 2017. The contest aims to promote awareness regarding food loss and waste in elementary and secondary schools as well as universities in China (All China Environment Federation 2017).
- In 2017, Buenos Aires launched the Cuidemos Los Alimentos or "Take Care of Food Waste" program, which involves a variety of activities including the promotion of doggy bags in restaurants and a training program for kitchen employees to help them prepare food in a manner that reduces waste (Beyond Food Waste 2018).
- The UK Government's Department for Environment, Food and Rural Affairs, the UK Food Standards Agency, and WRAP worked together to produce a set of guidelines on storage and the application of date labels. The guidelines included recommendations, such as using a "Snowflake" icon to indicate that a product can be frozen, and a "Little Blue Fridge" icon that indicates that a product would benefit from being stored in the fridge (WRAP 2017).
- More than 130 chefs from 38 countries launched the "Chef's Manifesto Action Plan" in June 2018. The action plan is a practical guide designed to outline simple actions that chefs can take in their kitchens, classrooms, and communities to create a better food system. One of the key thematic areas of the plan is to tackle food waste, with recommended actions including offering smaller portion sizes, using the whole ingredient, and working with suppliers to work surplus food into menus. Chefs can also contribute to "Cooking the Manifesto," an online database of recipes that are in line with the thematic areas of the manifesto (SDG2 Advocacy Hub 2018).

## Crosscutting

- In September 2018, the African Union Commission announced its "Continental Post Harvest Management Strategy" that will help African Union member states develop policies and strategies to address postharvest food losses at various levels of the food supply chain. The

strategy will help support the realization of the 2014 Malabo Declaration, which calls for halving food losses on the continent by 2025.

- In 2018, the Brazilian government, under the Inter-Ministerial Chamber of Food and Nutrition Security, approved the “Inter-Sectoral Strategy for Reducing Food Losses and Waste in Brazil,” which coordinates actions aimed at preventing and reducing food loss and waste through more integrated management of government and society initiatives. The strategy is aligned with the National Food and Nutrition Policy and provides a basis for future public policy on food loss and waste. The strategy places an emphasis on redistribution and strengthens the public-private partnership between the Ministry of Social Development and the National Food Bank Network, which works to redistribute surplus food to food banks (CAISAN 2018).
- The European Commission adopted European Union guidelines to facilitate food donation in October 2017 (The European Commission 2017), as well as guidelines on the valorization of food no longer intended for human consumption as animal feed in April 2018 (The European Commission 2018b). The EU guidelines aim to clarify relevant provisions in EU legislation and thereby help to lift any barriers that may prevent the safe use of food resources in the food and feed chains.
- In March 2018, the Netherlands launched “United against Food Waste,” a public-private partnership that forms part of the Dutch national agenda to halve food waste by 2030. The initiative was announced by the Taskforce Circular Economy in Food, a group made up of companies, research institutes, civil society organizations, and the government. Over the next four years, the Dutch Ministry of Agriculture, Nature and Food Quality, will provide a total of €7 million to the initiative to support innovation, research, monitoring, and education. One of the first initiatives of the project is “Verspillend Is Verrukkelijk” (“Waste Is Delicious”), a group of entrepreneurs who have worked with retailer Jumbo to launch an aisle of food-waste products, such as soup made from misshaped vegetables, beer brewed using stale bread, and soap produced from orange peels (Food Ingredients First 2018).
- Denmark took big strides in its efforts to reduce food loss and waste, with a new private-sector initiative and think tank, both launching in the country in August 2018. The private-sector initiative, “Denmark against Food Waste,” is a coalition of 17 food retailers, food manufacturers,

and nonprofit organizations, including Denmark’s largest retailer Salling Group, as well as Nestlé, Unilever, and Arla, who have all committed to halving their total food waste by 2030 and to measuring and publishing their food loss and waste data every year. The initiative is supported by Danish nonprofit “Stop Wasting Food” (Food Navigator 2018). In addition, with inspiration by Champion 12.3, Selina Juul, the Danish Ministry of Environment and Food, announced the formation of a think tank that will work toward consolidating the country’s efforts to prevent food loss and waste. This new partnership will provide the opportunity for businesses, researchers, officials, and the food sector to work together to reduce food waste. The first step will be to examine the possibility of establishing a common, voluntary food waste reduction target for entities across the food supply chain in Denmark. This target will be in line with SDG Target 12.3, and will help the country fulfill its contribution to the global goal on reducing food loss and waste (The Local 2018b).

- In September 2018, the Food Loss and Waste Action Partnership-Indonesia was launched by WBCSD, WRI, the Partnership for Green Growth and the Global Goals 2030, and the Food and Land Use Coalition. The initiative is a public-private partnership of companies with operations in Indonesia, government agencies, and nongovernmental organizations dedicated to dramatically reducing food loss and waste within the country. The partnership adopts Target 12.3, measures to manage food loss and waste, and develops and implements reduction strategies.
- In 2017, the inaugural group of Friends of Champions 12.3 was launched to recognize and bring attention to those companies and organizations that are working to reduce food loss and waste. The Friends Group includes 2 Sisters Food Group, 412 Food Rescue, Apeel Sciences, Aldi, Arla Foods, Barnana, Costa Cruises, Cranswick, Danfoss, Brazilian Agricultural Research Corporation (EMBRAPA), Foodbank Australia, FoodCache, FoodDrinkEurope, Food Innovation Australia Ltd, foodspace, Food Systems Lab, Greencore Group plc, Homera, I’m Perfect Food, InspiraFarms, Kerry Foods, LeanPath, OzHarvest, Pizza Hut Restaurants (UK), The Postharvest Education Foundation, Potatoes South Australia, Remeli, Spoiler Alert, Tulip, Whapow, Winnow, and Vestergaard SA ZeroFly.
- Technology is increasingly providing innovative solutions to food loss and waste, with numerous solutions emerging over the past 12 months. Box 3 details a sample of these innovations.

### BOX 3. Selected Innovations to Tackle Food Waste

Technology has an important role to play in accelerating the achievement of SDG Target 12.3. Companies are increasingly inventing and employing new technologies to reduce food loss and waste across the food supply chain. Some innovations have gained traction over the past year:

- The University of Leeds has extracted natural dyes from black currant waste produced during the processing of Ribena, a popular juice drink that uses 90 percent of all British black currants produced. The natural dyes could be used to make hair dye and although Ribena was not involved in the study, the researchers have patented the technology (Rose et al. 2018).
- Apeel Sciences has developed a range of natural coatings that are applied to fresh produce to double shelf life. Apeel adds an extra peel to the surface of produce, reinforcing the plant's own peel and slowing the rate of water loss and oxidation, which are the main causes of spoilage. In June 2018, the company introduced Apeel avocados at Costco and Harps Food Stores in the United States and has recently developed a new coating for citrus fruits (The Packer 2018).
- Dairy company Arla is currently testing food labels that turn “bumpy” when products have reached the end of their shelf life. The gelatin-based label reacts to changes in the packaged food, and it is hoped that this new label will avoid confusion over date labels and give consumers the confidence to consume food up to the point where the label reacts (The Grocer 2018).
- Apps that help businesses and consumers tackle food waste have become popular in recent years, with food redistribution apps like Olio, which operates worldwide, and No Food Waste, working in India. This year saw the launch in London of the app Karma, which allows restaurants and cafés to upload information about surplus food, which can then be picked up at a 50 percent discount by customers. Businesses can also use technology to increase redistribution. For example, Food Cloud technology, which connects supermarkets that have surplus food with charities that redistribute food to those in need, continues to expand and has been adopted by Waitrose, ASDA, and Aldi after being rolled out by Tesco.
- Protix, an insect ingredient company, uses food waste that otherwise would have been disposed of to feed insects, which in turn are processed into high-value protein for animal feed. Within the past year, Protix raised €45 million to develop a second facility in the Netherlands that will enable Protix to significantly scale up its production (Rabobank 2017).

## GOING FORWARD: A ROAD MAP AND ASSESSMENT

It has been three years since the launch of the SDGs. So how is progress going in relation to Target 12.3? Is the world on track, or is the world behind?

### A Road Map

To reduce the amount of subjectivity involved in answering these questions, we developed a road map that describes a possible pathway for achieving SDG Target 12.3 (Table 1). Based on expert input, the road map provides milestones for a series of metrics per each three-year period from 2016 to 2030—from the first full year of the SDGs to their stated completion date. There are milestones for setting targets, for measuring food loss and waste, and for taking action—aligning with our Champions 12.3 “target, measure, act” approach. The milestones are split between two sectors: governments (which includes the citizens they represent) and companies.




The pacing of these milestones reflects the fact that change does not occur immediately but rolls out over time, often in a nonlinear fashion. We start by generically assuming that 10 percent of a metric is met after the first three-year period (2016–2018), 20 percent after the second period (2019–2021), 40 percent after the third period (2022–2024), 60 percent after the fourth period (2025–2027), and more than 95 percent after the fifth period (2028–2030). We then modify these percentages to reflect the fact that some activities need to be completed early in order for there to be sufficient time for full implementation to occur. For example, governments and companies need to set targets by 2021, otherwise they are unlikely to have enough time to measure and take actions that enable achievement of Target 12.3 by 2030.

Finally, the road map is a balancing act. It needs to meet the scale of the challenge yet be conceivably attainable, all within the remaining 12 years. Of course, this road map presents just one potential pathway; other combinations of milestones are possible. Nonetheless, this road map is intended to provide a basis for monitoring progress and for prompting discussion about what next steps are needed.



## 2018 assessment

Table 1 shows our assessment of where the world is in relation to achieving Target 12.3 after the first three years of the SDGs. We use the following color-coded indicators:


-  **Green.** There is sufficient progress to suggest that the sector is on track to meet or exceed the milestone within the time period.
-  **Yellow.** There is some progress toward meeting the milestone, but it is below the pace needed to meet the milestone within the time period.
-  **Red.** There is little progress toward meeting the milestone, or previous progress is backsliding.


These indicators should be taken solely as an assessment of progress to date. A green indicator does not necessarily mean that the milestone has been already met, but rather that the progress to date is on track for the milestone to be met within its three-year time period. We will indicate in future progress reports when a milestone has been achieved. Moreover, our assessment is based on publicly available information; thus, there may be developments toward meeting Target 12.3 of which we are unaware.


2018 is a milestone year in the road map. However, as the analysis for the road map has been conducted half way through 2018, rather than at the end of the year, progress of the 2016–2018 goal cannot be fully assessed until early 2019.


A summary of the 2018 Road Map assessment can be found on the back cover of this report.

TABLE 1. Road Map to Achieving SDG Target 12.3 (2018 Assessment)

		2016–2018	2019–2021
TARGET	GOVERNMENTS	 Countries with <b>40%</b> of the global population have set specific FLW <sup>a</sup> reduction targets aligned with Target 12.3.	Countries with <b>&gt;95%</b> of the global population have set specific FLW reduction targets aligned with Target 12.3.
	COMPANIES	 <b>60%</b> of the world's 50 largest food companies by revenue (spanning manufacturing, production, processing, retail, and food service sectors) have set specific FLW reduction targets aligned with Target 12.3.  Among those setting targets, <b>half</b> are working with their suppliers to set their own targets.	<b>&gt;95%</b> of the world's 50 largest food companies have set specific FLW reduction targets aligned with Target 12.3.  Among those setting targets, <b>all</b> are working with their suppliers to set their own targets.
MEASURE	GOVERNMENTS	 Countries with <b>20%</b> of the global population have quantified base-year FLW and have started reporting on FLW.	Countries with <b>40%</b> of the global population have quantified base-year FLW and have started reporting on FLW.
	COMPANIES	 <b>20%</b> of the world's 50 largest food companies have quantified base-year FLW and have started measuring and reporting on FLW.  Among those measuring and reporting, <b>half</b> are engaged with their suppliers to quantify the latter's FLW.	<b>40%</b> of the world's 50 largest food companies have quantified base-year FLW and have started measuring and reporting on FLW.  Among those measuring and reporting, <b>half</b> are engaged with their suppliers to quantify the latter's FLW.
ACT	GOVERNMENTS	 Countries with <b>20%</b> of the global population are actively working at scale to reduce FLW: <sup>c</sup>	Countries with <b>40%</b> of the global population are actively working at scale to reduce FLW.  <b>First</b> country halves its rate of FLW.
	COMPANIES	 <b>10%</b> of the world's 50 largest food companies have active FLW reduction programs.  Among those taking action, <b>half</b> are engaged with their suppliers to reduce the latter's FLW.  The <b>first</b> global company halves FLW in its own operations.	<b>20%</b> of world's 50 largest food companies have active FLW reduction programs.  Among those taking action, <b>half</b> are engaged with their suppliers to reduce the latter's FLW.  The <b>first</b> global company halves FLW in its own operations and its supply chain.
OVERALL PROGRESS <sup>d</sup>		<b>5% reduction</b> in FLW achieved globally	<b>10% reduction</b> in FLW achieved globally

 **Green.** There is sufficient progress to suggest that the sector is on track to meet or exceed the milestone within the time period.

 **Yellow.** There is some progress toward meeting the milestone, but it is below the pace needed to meet the milestone within the time period.

 **Red.** There is little progress toward meeting the milestone, or previous progress is backsliding.

2022-2024

2025-2027

2028-2030

Countries with **60%** of the global population have quantified base-year FLW and have started reporting on FLW.

Countries with **>95%** of the global population have quantified base-year FLW and have started reporting on FLW.

**60%** of the world's 50 largest food companies have quantified base-year FLW and have started measuring and reporting on FLW.

**>95%** of the world's 50 largest food companies have quantified base-year FLW and have started measuring and reporting on FLW.

Among those measuring and reporting, **all** are working with their suppliers to reduce the latter's FLW.

Among those measuring and reporting, **all** are working with their suppliers to reduce the latter's FLW.

Countries with **60%** of the global population are actively working at scale to reduce FLW.

Countries with **>95%** of the global population are actively working at scale to reduce FLW.

**10** countries halve their rate of FLW.

**50** countries halve their rate of FLW.

**40%** of the world's 50 largest food companies have active FLW reduction programs.

**60%** of the world's 50 largest food companies have active FLW reduction programs.

Among those taking action, **half** are engaged with their suppliers to reduce the latter's FLW.

Among those taking action, **half** are engaged with their suppliers to reduce the latter's FLW.

**>95%** of the world's 50 largest food companies have active FLW reduction programs.

Among those taking action, **half** are engaged with their suppliers to reduce the latter's FLW.

**20% reduction**  
in FLW achieved globally

**30% reduction**  
in FLW achieved globally

**50% reduction**  
in FLW achieved globally

*Notes:*

<sup>a</sup> FLW = food loss and waste.

<sup>b</sup> Evidence of working at scale could include the presence of nationwide voluntary agreements between government agencies and businesses, passage of public policies aimed at reducing FLW, increased investment in FLW reduction, consumer campaigns, and so on.

<sup>c</sup> Currently, there is no globally agreed-upon base-year FLW quantification. Thus, it is not possible to measure overall progress against SDG Target 12.3 until the base-year FLW levels have been quantified.

## Target

### Governments

Countries or regional blocs that have set specific food loss and waste reduction targets aligned with SDG Target 12.3 currently represent 30 percent of the world's population. These regions include the African Union, European Union, Australia, Japan, and United States. This amount is three quarters of the way to the 2018 milestone of "Countries with 40 percent of the global population have set specific food loss and waste reduction targets aligned with Target 12.3." As we have not reached the end of 2018, and since there is promising movement within the G20 process to adopt such targets before year's end, we give this milestone a **yellow** assessment.

**To secure this 2018 milestone by the end of the year, just a few more governments that represent large populations need to set such targets.** For example, the milestone could be met if China (with 19 percent of the world's population), India (with 17 percent of the world's population), or the combination of Indonesia, Mexico, Pakistan, and Bangladesh (with 10 percent of the world's population) set specific targets.

### Companies

Nearly two-thirds of the world's 50 largest food companies (by revenue) now have a food loss and waste reduction target. These companies span the manufacturing, production, processing, hospitality, food service, and retail stages of the supply chain. Therefore, we give this milestone a **green** assessment. Although some companies are engaging with suppliers, not all companies that have set targets themselves are actively engaging with their suppliers to set targets.

**Increasing work with suppliers should be a priority for these companies over the next 12 months.**

## Measure

### Governments

As summarized in the *2017 Progress Report*, the majority of countries with explicit food targets do not yet currently measure food loss or waste within their borders. Japan, the United Kingdom, the Netherlands, Norway, Denmark, Mexico, and the United States are some exceptions, but they comprise just 10 percent of the world's population. However, many countries are in the process of starting to measure food loss and waste, such as Australia with its new National Food Waste Strategy. Hungary and Saudi Arabia also are working toward

establishing base-year data (Refresh 2018). The percentage of countries measuring should increase significantly following new obligations introduced in EU waste legislation in May 2018 that require EU member states to monitor food waste levels at each stage of the food supply chain from 2020. Considering the number of countries that have begun to measure (and those that will be required to measure), we give this milestone a **yellow** assessment.

**Nevertheless, more countries and regional blocs, including the African Union and the Asia-Pacific Economic Cooperation coalition, will need to begin systematic quantification of their food loss and waste and report the results in order for this milestone to achieve a green rating going forward.** Such measurement need not be every year; every three to five years should be sufficient to monitor progress and mobilize efforts. With development of the Food Loss Index and Food Waste Index (see page 8), measurement of country-level food loss and waste is expected to become more widespread.

Food loss and waste measurements conducted in conformance with the global *FLW Standard* enable consistent, clear, and transparently reported quantification for both governments and companies. The *FLW Standard* provides a common set of requirements and guidance for quantifying and reporting on the weight of food and/or associated inedible parts removed from the food supply chain.

### Companies

The number of the world's largest food companies measuring food loss and waste grew relative to 2017, with 16 of the largest 50 food companies—according to our research and interviews—now measuring food loss and waste within their operations. However, not all of these companies publicly report their measurement data; we have identified only 10 companies that do, and a subset of these are engaging their suppliers to quantify the latter's food loss and waste. Nonetheless, given that the overall threshold has been crossed, we give this milestone a **green** assessment.<sup>11</sup>

More widely, estimates by WRI and WRAP suggest that at least 100 companies active in the food industry—of which nearly a third are among the Global Fortune 2000—have started measuring their food loss and waste. This is a significant increase relative to just three years ago when the number was more in the order of around 20.

Due to the lack of publicly available data, definitively tracking progress toward this milestone is difficult, leaving tracking reliant on informal interviews and Internet searches. Moreover, lack of these data forgoes the opportunity for companies to showcase success and engage internal and external stakeholders. **A priority for the next year should be for companies to publicly report food loss and waste data.** The launch of the Food Waste Atlas (see page 8) should help address this data gap in coming years.

## Act

### Governments

There has been a burgeoning number of initiatives on food loss and waste over the past few years throughout the European Union, United Kingdom, United States, and Japan. Over the past 12 months, a number of additional countries have introduced or scaled up programs addressing food loss and waste, such as Argentina, Denmark, and the Netherlands. Most notable is the emergence of public-private partnerships to tackle food loss and waste. Such partnerships are arguably the most effective way to address this issue, given the need to simultaneously address government policies, business actions, farmer practices, and consumer behaviors. The United Kingdom pioneered such partnerships with the Courtauld Commitment in 2005. The United States followed suit in 2017 with Food Loss and Waste 2030 Champions. This year, the Netherlands launched “United against Food Waste,” and Indonesia now has a public-private partnership on food loss and waste.

Although efforts have increased in the past year, these efforts are taking place in countries that represent just 14 percent of the world’s population, alling short of the milestone, which is 20 percent of the global population. A number of countries, such as Brazil, have developed food loss and waste strategies over the past 12 months, and Kenya, Tanzania, Zambia, and Zimbabwe have also developed national strategies to measure and reduce postharvest loss. As these strategies are implemented, we should see an increase in the number of countries acting at scale. Considering this growing momentum, this milestone has a **yellow** assessment.

The number of countries that measure food loss and/or waste within their borders is currently lower than the number of countries acting at scale. Although the growth of programs

and policies to reduce waste is an indicator of progress, it is essential that the impact of these activities be measured and reported to ensure that best practice is shared and global progress toward achieving SDG Target 12.3 is accurately tracked.

**To achieve SDG Target 12.3, more countries will need to pursue food loss and waste reduction initiatives at scale—initiatives involving activities like public-private partnerships that span the food supply chain, public policies that support food loss and waste reduction from farm-to-plate, increased investments, farmer and consumer education campaigns, and more.**

### Companies

At least 20 percent of the world’s 50 largest food companies—including Aramark, Danone, Kellogg Company, Kroger, Nestlé, Sodexo, Tesco, Unilever, and Walmart—have established food loss and waste reduction programs. Other major food companies not among the 50 largest—such as Campbell Soup Company, Costa Cruises, and IKEA—have done so as well. In addition, of those companies with these programs in place, approximately half are engaging with their suppliers on establishing food loss and waste reduction efforts. As a result, we give this milestone a **green** assessment.

Business partnerships, such as The Consumer Goods Forum, Global Agri-business Alliance, Courtauld 2025, International Food Waste Coalition, Food Reform for Sustainability and Health (FReSH), and the U.S. Food Loss and Waste 2030 Champions, continue to provide a good foundation for companies to set ambition, share best practices, and collaborate on solutions. **However, in order to address food loss and waste at every stage of the supply chain and to fully leverage the reach that large companies have, more companies going forward will need to actively engage with their suppliers to reduce their food loss and waste.**

No company has yet to announce that it has halved food loss and waste in its own operations. However, some companies have halved food waste in certain operations, and there are a number of companies reporting impressive reductions across their whole operations. Because it is difficult to establish whether this goal will be met by the end of 2018, it will be fully assessed in the *2019 Progress Report*.

## Overall progress

The overall 2016–2018 milestone is a 5 percent reduction in global food loss and waste, as compared to 2015 base-year levels. However, we are unable to determine by how much the world has reduced food loss and waste over the past two years because global base-year data (for example, food loss and waste in 2015) have not yet been reported and no follow-up quantification of global food loss and waste levels has been conducted. Over time, as more and more countries conduct national food loss and waste inventories, a global picture should emerge. Moreover, as discussed on page 8, the FAO and UN Environment are working with others to develop quantified national-level figures for both food loss and food waste, which should provide some indication of the global progress in reducing food loss and waste.

Among both governments and companies, action is currently taking place at a more rapid pace than is measurement. Although perfect data are not required to start addressing food loss and waste, without adequate measurement it is impossible to determine whether actions are successful in achieving reduction of food loss and waste.

Ultimately, without establishing base-year food loss and waste levels and conducting periodic subsequent measurement, it will be impossible to determine whether the planet is achieving SDG Target 12.3. Therefore, we give the overall progress milestone an unknown assessment. **Developing this information and making it publicly available as soon as possible is a critical gap that needs to be filled.**

## IN CLOSING

SDG Target 12.3 is a historic opportunity for the world to curtail food loss and waste at scale and reap the food security, economic, and environmental benefits. Fortunately, momentum toward achieving this target is growing, even after only 3 years. But only 12 years remain before the SDGs are due to be met. It is therefore incumbent on all governments, companies, farmers, and individuals to deepen their commitment and accelerate their efforts.

Set targets, measure the problem, and take action. If the world does this, it will take a big step toward realizing a future where no more food goes to waste.

## ENDNOTES

1. As measured by weight.
2. This announcement was made in August 2017 but was not included in the *2017 Progress Report* as the report was already in print, so it is instead highlighted in this report.
3. This announcement was made in September 2017 but was not included in the *2017 Progress Report* as the report was already in print, so it is instead highlighted in this report.
4. For more information, see <http://www.fao.org/platform-food-loss-waste/food-loss/food-loss-measurement/ifprimethodology/en/>.
5. See amendment to Article 1, 4a: "food waste" means all food as defined in Article 2 of Regulation (EC) No 178/2002 of the European Parliament and of the Council that has become waste (<https://eurlex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32018L0851>).
6. Technical appendices are available at <https://www.nrdc.org/sites/default/files/food-waste-city-level-technical-appendices.pdf>.
7. Many actions by multiple entities to reduce food loss and waste have occurred prior to 2015. This publication, however, focuses on actions initiated in 2015 or later.
8. For more information, please see: [www.refed.com/tools/innovator-database/](http://www.refed.com/tools/innovator-database/).
9. For more information, please see: [www.eu-refresh.org/refresh-community-experts](http://www.eu-refresh.org/refresh-community-experts).
10. For more information, please see: [www.fao.org/food-loss-reduction/forum/en/](http://www.fao.org/food-loss-reduction/forum/en/).
11. Companies outside of the 50 largest by revenue are also acting to reduce food loss and waste. This report uses the progress of the top 50 food companies as a proxy for progress across the sector.

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## SDG TARGET 12.3 PROGRESS REPORT: 2018

To what degree has the world made progress toward achieving Target 12.3 of the Sustainable Development Goals? This third annual progress report assesses progress made by governments and companies over the past 12 months relative to a three-step approach for reducing food loss and waste: Target, Measure, and Act.

GOVERNMENTS				
	2016–2018 MILESTONE	2018 HIGHLIGHTS	PROGRESS BY 2018 RELATIVE TO 2015	CALL TO ACTION
 TARGET	Countries with <b>40%</b> of the global population have set specific FLW reduction targets aligned with Target 12.3.	Countries representing more than <b>30%</b> of the global population now have a target aligned with SDG 12.3.		Countries with large populations (China, India, Brazil, Indonesia) should adopt domestic targets aligned with SDG 12.3. The G20 could take a lead on this.
 MEASURE	Countries with <b>20%</b> of the global population have quantified base-year FLW and have started reporting on FLW.	Countries representing <b>10%</b> of the global population are measuring FLW.		Many more countries need to quantify their base-year FLW, monitor change over time, and publicly report the results.
 ACT	Countries with <b>20%</b> of the global population are actively working at scale to reduce FLW.	Countries representing <b>14%</b> of the global population are acting at scale to reduce FLW.		Many more governments need to launch public-private partnerships on FLW reduction, invest in technology innovation and deployment, and support shifts in social norms.
COMPANIES				
	2016–2018 MILESTONE	2018 HIGHLIGHTS	PROGRESS BY 2018 RELATIVE TO 2015	CALL TO ACTION
 TARGET	<b>60%</b> of the world's 50 largest food companies by revenue have set specific FLW reduction targets aligned with Target 12.3. Among those setting targets, half are working with their suppliers to set their own targets.	Nearly <b>2/3</b> of the world's 50 largest food companies participate in programs that have a FLW reduction target.		More companies need to encourage and support their suppliers in setting their own reduction targets.
 MEASURE	<b>20%</b> of the world's 50 largest food companies have quantified base-year FLW and have started measuring and reporting on FLW. Among those measuring and reporting, half are engaged with their suppliers to quantify the latter's FLW.	<b>More than a quarter</b> of the world's 50 largest food companies now measure FLW within their operations, with the vast majority of these companies also publicly reporting.		More of the world's largest food companies (and their suppliers) need to publicly report their FLW inventories.
 ACT	<b>10%</b> of the world's 50 largest food companies have active FLW reduction programs. Among those taking action, half are engaged with their suppliers to reduce the latter's FLW.	<b>20%</b> of the world's 50 largest food companies have established FLW reduction programs.		More companies need to actively engage with their suppliers to reduce FLW at every stage of the supply chain and increase financial investment in new technologies and programs.

*Note:* The color green indicates developments that are on track to achieve the milestone, yellow indicates that some progress has been made but below the pace needed to achieve the milestone in time, and red indicates that progress is not on track to meet the milestone.

*Source:* WRI Authors.