Task Force 3
**LiFE, Resilience, and Values for Well-Being**

# REDUCING FOOD LOSS AND WASTE: ENABLING ACTION THROUGH THE TARGET-MEASURE-ACT APPROACH

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**Ruchika Singh,** Director, Sustainable Landscapes and Restoration Program, World Resources Institute India
**Shweta Lamba,** Senior Project Associate, Sustainable Landscapes and Restoration Program, World Resources Institute India
**Liz Goodwin,** Senior Fellow and Director, Food Loss and Waste, World Resources Institute
**Murli Dhar,** Director, Sustainable Agriculture Program, WWF-India
**Devyani Hari,** Director, Programmes, Centre for Responsible Business (CRB)
**Nitya Sharma,** Program Manager, Food Loss and Waste, Sustainable Landscapes and Restoration Program, World Resources Institute India
**Jayahari KM,** India Country Coordinator, Food and Land Use Coalition (FOLU) India



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# Abstract

Every year, more than 40 percent of food intended for human consumption is either lost or wasted across the global food supply chain. The reduction of such food loss and food waste could yet be one of the most effective strategies to mitigate the existential threat of climate change. Governments, businesses and private organisations are increasingly using the Target-Measure-Act approach for reducing food loss and food waste. This Policy Brief recommends adopting this approach. The key recommendations, aimed at G20 governments and businesses, include setting explicit targets on food loss and food waste reduction, enabling measurement of food loss and food waste through public-private partnerships, and inspiring action through targeted incentives, policies and investment in research and capacities for reducing food loss and waste.

# A Critical Global Challenge

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The heightened food insecurity as a result of the COVID-19 pandemic has had massive impacts on most economies, and certain populations have been affected disproportionately based on their income, gender and age. Globally, the prevalence of undernourishment increased from 8 percent in 2019 to nearly 10 percent in 2021.[1] Yet, more than 40 percent of all food produced worldwide is lost or wasted between the farm and the plate.[2] In addition to a global economic loss of around US$ 1 trillion annually, food loss and waste is contributing to food and nutrition insecurity,[3] with unequal distribution and access to food among different groups of the population.

Feeding the world's growing population puts enormous environmental pressure on Earth, leading to ecological problems such as degradation of soils, loss of biodiversity, and depletion of water.[4] Within overall food systems, reducing food loss and food waste is one of the top global climate change mitigation solutions, accounting for reduced emissions across the food supply chain from farm to fork, to landfill.[5] The effort requires a holistic and circular food system approach with a systemic shift towards sustainable production and post-harvest management, improved infrastructure, and consumption practices (see Figure 1). The Target-Measure-Act approach, which will show the hotspots, can help address the challenge. Identifying whether the biggest problem is at the household level, or in the supply chain, can enable more targeted action.

## Figure 1: Key Drivers and Challenges to Reducing Food Loss and Food Waste

<table>
<tr><th colspan="5">Structural Issues</th></tr>
<tr><td>Access to financing</td><td>Economics</td><td>Demographics</td><td>Policies and regulations</td><td>Climatic conditions</td></tr>
<tr><td colspan="2">Technological</td><td colspan="2">Managerial</td><td>Behavioural</td></tr>
<tr><td colspan="2">• Poor infrastructure<br>• Inadequate equipment<br>• Suboptimal packaging</td><td colspan="2">• Inadequate food management practices, skills & knowledge<br>• Inflexible procurement requirements<br>• Poor supply/demand forecasting and planning<br>• Marketing strategies</td><td>• Lack of awareness<br>• Norms and attitudes<br>• Concerns about possible risks</td></tr>
<tr><td colspan="5">Leads to food and its inedible parts exiting the food supply chain due to deterioration, suboptimal quality, appearance, and lack of a buyer/user.</td></tr>
</table>

*Source: World Resources Institute*[6]

To be sure, there is no single solution to the interlinked challenges of food loss and waste and what is needed is a menu of strategies. Evidence indicates that several governments and businesses[a] are increasingly using the widely accepted Target-Measure-Act approach to guide and achieve food loss and waste reduction targets.[7]

- **Target:** Setting a reduction target increases the attention paid by decision-makers to the issue of food loss and waste; attention is a prerequisite to action.
- **Measure:** Measuring and analysing how much and where food is being lost or wasted enables identification of the areas with the greatest opportunities for reduction.
- **Act:** Taking action includes identifying the specific interventions required to reduce food loss and waste, and then implementing them.

[a] Adopting this framework, the UK, European Union, and various big companies (Kellogg, Nestle, Sodexo, Tesco, and Walmart) have made considerable progress on their food loss and food waste reduction targets.

**1.1 Key actors in reducing waste, and food loss and the benefits of reducing food loss**

There is a role for every actor in the food system, from farmers to consumers, play a role reducing food loss and food waste through the Target-Measure-Act approach (see Table 1).

## Table 1. Key Actors and Their Roles, and the Benefits of Reducing Food Loss and/or Waste

| KEY ACTORS | POTENTIAL ROLE | MULTIPLE BENEFITS FOR ENVIRONMENT, ECONOMY AND (PEOPLE'S) FOOD AND NUTRITIONAL SECURITY |
|---|---|---|
| **Governments** | • Agenda- and target-setting<br>• Fostering an enabling environment—policies and incentives, research and innovation, awareness and behavioural change. | • Efficiency and self-reliance in agriculture (for producer countries) and allied industries and improved access to nutritious food.[8]<br>• Supports several Sustainable Development Goals (SDGs), such as combatting global hunger with increased food availability.<br>• 25-% reduction in food loss and waste globally would reduce the food calorie gap by 12%, reduce the land use gap by 27%, and the greenhouse gas (GHG) mitigation gap by 15%.[9]<br>• Preventing food waste from going to landfills can help in mitigating methane emissions from farm to fork to landfill,[10] and also protect fish and wildlife population from negative influences. |
| **Businesses** | • Lead in innovation through public-private partnerships and participate in sharing of knowledge and good practices | • Improved supply chain efficiencies in their operations and supply chains. An investment of £1 (US$ 1.26) for reducing waste can yield benefits of £14 (US$ 17.58) for companies.[11]<br>• Demonstrate alignment and achievement on SDGs and corporate responsibility. |

| | | |
|---|---|---|
|  **Farmers** | • Take action to reduce on-farm and near-farm losses while taking produce to the market | • Improved income and livelihoods, especially for small and marginal farmers, including women. |
|  **Consumers** | • Showcasing through action, for example, reducing household waste supported by enabling legislations and public-private partnerships | • Reduce expenses of households and consumers.[12]<br>• Health benefits and cleaner cities. |
|  **Civil society** | • Support ecosystem-building by addressing supply chain and policy barriers, rescuing food, bridging capacity gaps, creating awareness and behavioural change | • Fulfilling their role and mission by building sustainable food systems that also mitigate climate risks. |

*Source: Authors' own*

# G20's Role

2

The global momentum on reducing food loss and food waste can be solidified during the G20 Summit with discussions on concrete steps that the international community can take. These can include adopting the Target-Measure-Act approach to enhance food and nutritional security, mitigate climate risks, and improve livelihoods and farmers' incomes. A number of G20 member states (and non-members) are already working on the issue of reducing food loss and food waste through their commitments to the SDGs, in particular, Target 12.3, which calls for cutting in half the per-capita global food waste at the retail and consumer level, and reducing food losses along production and supply chains (including post-harvest losses) by 2030. Table 2 highlights the challenges faced and progress made by countries towards food loss and food waste reduction using the Target-Measure-Act approach.

**Table 2: Challenges and Progress of Countries In Food Loss and Food Waste Reduction Using the Target-Measure-Act Approach**

| KEY ASPECT | CHALLENGES | PROGRESS AT THE GOVERNMENT LEVEL TO ADDRESS CHALLENGES AGAINST SDG 12.3 |
|---|---|---|
|  TARGET | • While all countries have targets under the SDGs, there are a few climate commitments such as the Nationally Determined Contributions (NDCs) for reducing food loss and waste and for food waste going to landfills and baselines for monitoring and reducing food loss and food waste.[13] | • Countries and regional blocs representing roughly 55% of the global population have set specific targets in line with SDG 12.3. However, within G20 member countries, only China has an NDC related to food loss and food waste reduction. |

| | | |
|---|---|---|
|  **MEASURE** | • Lack of information on hotspots and no standardised measurement tools. | • Only a handful of countries (12% of the global population) measure their food loss and/or food waste throughout the supply chain, viz.: Argentina, Australia, Canada, Colombia, Denmark, Israel, Italy, Japan, Finland, Mexico, the European Union (EU), New Zealand, Norway, Saudi Arabia, the United Kingdom (UK), and the United States of America (USA).[14] Even among these countries, not all have attempted to quantify their food waste and are struggling with developing a methodology. India has been undertaking post-harvest loss estimations for selected food grains since 1968 and a more comprehensive national assessment for major crops since 2005. Its latest national assessment was published in 2022.[15] |
|  **ACT** | • Lack of prioritisation by governments with limited strategies and programmes for action.<br>• Fragmented action by businesses throughout supply chains.<br>• Urgent need to nudge consumer behaviour towards reducing food waste. | • 35% of the world's population are now acting at scale to address food loss and food waste within their borders (for example, Australia, China, the EU, New Zealand, Turkey, and the UK). The G20 members are at different stages of developing strategies and programmes on food loss and/or waste reduction. For instance, the UK is closest to achieving SDG 12.3 with a 27-% reduction in per capita food loss and food waste through measurement and action over a decade. In another instance, a one-year national awareness campaign in Turkey on reducing food loss and waste saved US$ 100 million by reducing food waste from households.[16] |

*Source: Authors' compilation* [17]
*Note: Highlighted names are G20 members*

A more consistent approach and strategy is essential at the country level for targeted action. While examples given in Table 1 indicate notable steps by the G20 members, there is a lot more that can be done.

Evidence suggests that reducing food loss and waste by 50 percent by 2050 can close the gap, between food available in 2010 and that needed in 2050, by more than 20 percent.[18] Another study has found that donation of surplus food from the grocery, retail, restaurant and food service sectors in three US cities alone provided an additional 68 million meals annually to families in need.[19] The G20 members—by focusing on the promotion of sustainable consumption while pursuing inclusive, equitable and sustainable growth—can reduce food loss and food waste.

The 2023 summit offers an opportunity for the G20 countries to solidify action on food loss and waste by adopting the Target-Measure-Act approach and discussing action points with agriculture, environment and other sectoral ministries. These action points can then be endorsed by the G20 leaders and enacted through existing technical working groups to strengthen food security and improve livelihoods across the G20 in the long run.

# Recommendations to the G20

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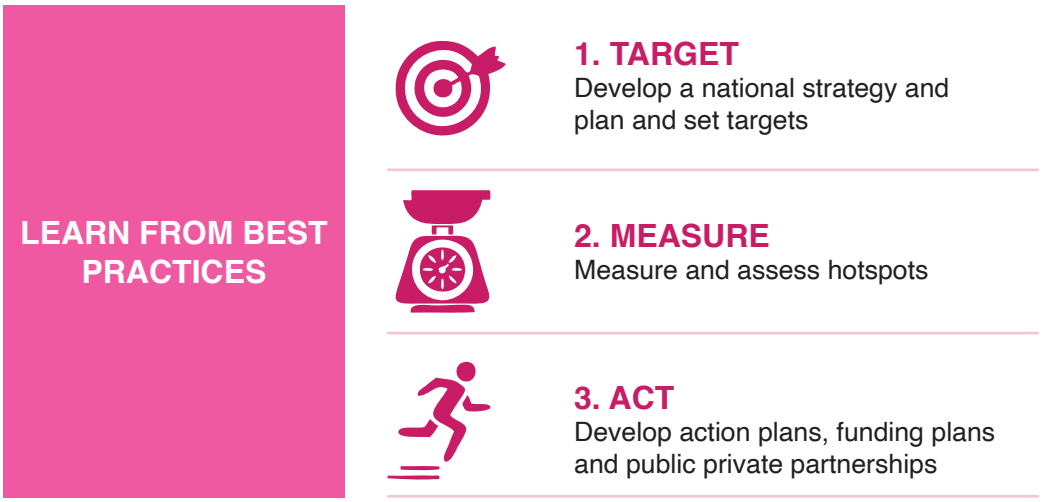
The causes of food loss and food waste differ for developed and developing countries and even within regions.[20] For instance, in low-income countries, food loss is caused by wide-ranging managerial and technical limitations in production, harvesting, infrastructure, processing, and marketing. In wealthier countries, meanwhile, causes include consumer behaviour and wasteful practices that lead to food waste.[21] Countries therefore need strategies that are made more suitable to their context. Adopting the Target-Measure-Act approach could be the catalyst—at the national level—for aligning public policy, private sector action, and the behaviour of farmers and consumers (see Figure 2).

**Figure 2: The Target-Measure-Act Approach**




*Source: World Resources Institute*

**Recommendation 1: The G20 should set explicit targets (similar to the NDCs for climate action) on food loss and food waste reduction, to reduce the volume of food waste going to landfills.**

It is crucial to set specific targets to show the commitment of countries to reducing food loss and food waste. The G20 countries should include reducing food loss and food waste as part of their NDC commitments and develop national strategies and budget outlays for monitoring and measuring target-setting plans. The following are a few examples of best practices on target setting:

- Only a few nations, mostly non-G20 members, have made NDC commitments that take into consideration reducing food loss and food waste: these include Bhutan, China, Egypt, Ethiopia, Ghana, Rwanda, and Uganda.[22]
- The G20 governments can encourage businesses in their territory to set targets and explore public-private partnerships. For instance, Tesco, a multinational retailer from the UK, has set targets aligned with SDG 12.3 in 2016-17 to achieve SDG 12.3 by 2030. According to latest data, Tesco has already achieved a 45-percent reduction in operational food waste against the baseline by the end of 2021/2022.
- By the end of 2023, the EU intends to establish legally binding targets to reduce food waste in the region.[23]

**Recommendation 2: The G20 states should enable measurement of food loss and food waste through public-private partnerships to understand the scale of food lost or wasted in the target geography.**

Measuring the scale of food loss and food waste will help identify hotspots that need more urgent action in creating opportunities for reduction, prioritising the setting of targets for reducing food loss and food waste, and monitoring progress.

- The G20 countries can adopt a standardised measurement methodology that works within their local contexts and encourage other countries to follow to motivate action. For instance, a household food waste estimation done by local authorities in the UK is comparable across the years.[24] The China Action Plan on Food Waste Reduction lays out actions for reducing food loss and waste across their supply chain.
- G20 members can adapt resources as per their needs and local circumstances and encourage public-private partnerships for collaborative measurement and motivating action for both G20 (and non-G20 members). Best practices exist in this regard, such as:
    - The Courtauld Commitment in the UK is a voluntary agreement that enables collaborative action across the UK food supply chain to reduce food waste from farm to plate and associated GHG emissions and reduce water stress.[25]

- The Australian Food Pact is an ambitious agreement that brings together multiple state, private and food rescue organisations in a collaborative attempt to develop and share solutions for reducing food waste.[26]
- The Pacific Coast Collaborative calls on food businesses and jurisdictions to join the Pacific Coast Food Waste Commitment—a voluntary agreement that builds upon existing food waste reduction platforms and commitments, such as SDG 12.3 and Champions 2030.[27]
- Several EU countries have specific commitments such as the 'Netherlands united against waste' campaign, initiated by a multi-institution task force that focuses on behaviour change by educating people about minimising food waste.[28]

**Recommendation 3: The G20 states can inspire action through targeted incentives, policies and investment towards research and capacity building on reducing food loss and food waste and forging public-private partnerships that will work towards the targets.**

The G20 countries can discuss and communicate innovations and act on policy, incentives and partnerships through targeted convenings, existing technical working groups, and targeted convening before the global food systems summit to discuss the following aspects:

**3.1 Policies and incentives**

- G20 governments can incentivise businesses to adopt voluntary targets and best practices. The G20 members can learn and leverage successful initiatives such as '10x20x30', which brings together at least 10 of the world's largest food retailers and providers, each engaging with at least 20 suppliers to reduce food loss and waste by 50 percent by 2030.
- Provide incentives and remove tax barriers for reducing food loss, for surplus food diversion and/or donation.
    - The G20 countries can learn from their peers such as Argentina, Italy and Canada, which have all passed their versions of a 'Good

Samaritan' law to encourage private sector food companies and retailers to donate excess or unsold food to charities by limiting their liability for food safety requirements.[30]

- The G20 members can incentivise reducing food loss and waste by repurposing perverse agricultural incentives to incentivise farmers to reduce losses on farm and near farm. India, for instance, announced an agriculture infrastructure fund of INR 1 trillion (approx. US$ 13.5 billion) in 2020 to provide a medium- to long-term debt financing facility for setting up cold chains and post-harvest management infrastructure at farm gates and aggregation points.[31]

- **Invest in research and innovative solutions:** The G20 members can encourage, invest in and cross-pollinate research and innovation. For example, the Australian government has created an independent organisation to plan and implement a strategy on food waste and has allocated a certain budget for it.[32]
- **Supporting technological innovations:** Growing agri-tech startups working towards reducing food loss and food waste require support to develop innovative solutions that can be met by channelling public finance.[33] For instance, the Government of India announced an agriculture accelerator fund for entrepreneurs in 2023.[34]

### 3.2 Awareness, capacity building and behavioural change

- **Members could integrate food loss and food waste in education and capacity-building programmes for both private and public sectors.** Lessons derived from the 'food waste warrior program' in the United States can be leveraged for designing awareness initiatives at the level of schools in the G20 countries on the environmental impacts of food systems.[35] Additionally, building awareness and technical knowledge of agriculture extension services is critical to reducing farm gate losses.[36]
- Members could run consumer behaviour change campaigns in

targeted geographies to tackle household food waste and encourage investments and research. Social norms messaging is an effective approach for shifting consumer behaviour towards reducing food waste in households.[37] For instance, the Government of India's Lifestyle for Environment (LiFE) Mission incorporates behaviour change campaigns on issues like food waste disposal.

Overall, the G20 members can demonstrate ambition and commitment towards addressing the issue of food loss and food waste through both communication and action. They can share best practices and learnings on incentives, enable movement-building within their regions, and facilitate public-private partnerships. Moreover, the G20 countries can inspire and work with non-member countries to set baselines, and identify interventions and best practices to help address the massive challenge. Lastly, the existing working groups within the G20 could be leveraged to advance and solidify the agenda of reducing food loss and food waste at the global level.

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