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FAO's Efforts to Reduce Food Loss and Waste

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FAO's Vision

A world free from hunger and malnutrition where food and agriculture contribute to improving the living standards of all, especially the poorest, in an economically, socially and environmentally sustainable manner.

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FAO and the Sustainable Development Goals

Food and agriculture contribute to achieving all 17 of the Sustainable Development Goals (SDGs). FAO is the custodian agency for 21 SDG indicators.

SDG 12.3: 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.

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Definitions and Boundaries

Food Loss is the decrease in the quantity or quality of food resulting from decisions and actions by food suppliers in the chain, excluding retail, food service providers and consumers.

Food Waste is the decrease in the quantity or quality of food resulting from decisions and actions by retailers, food services and consumers.

Source: FAO, State of Food and Agriculture 2019

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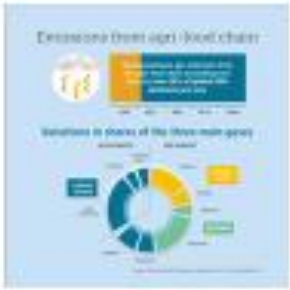
Global Facts and Figures

13.2 percent of food, valued at $400 billion is lost on an annual basis between harvest and the retail market (FAO 2019)

17 cent of food production is wasted in households, food services and in retail (UNEP 2020)



Food loss and waste account for approximately 10 per cent of global greenhouse gas (GHG) emissions (UNFCC, 2019)

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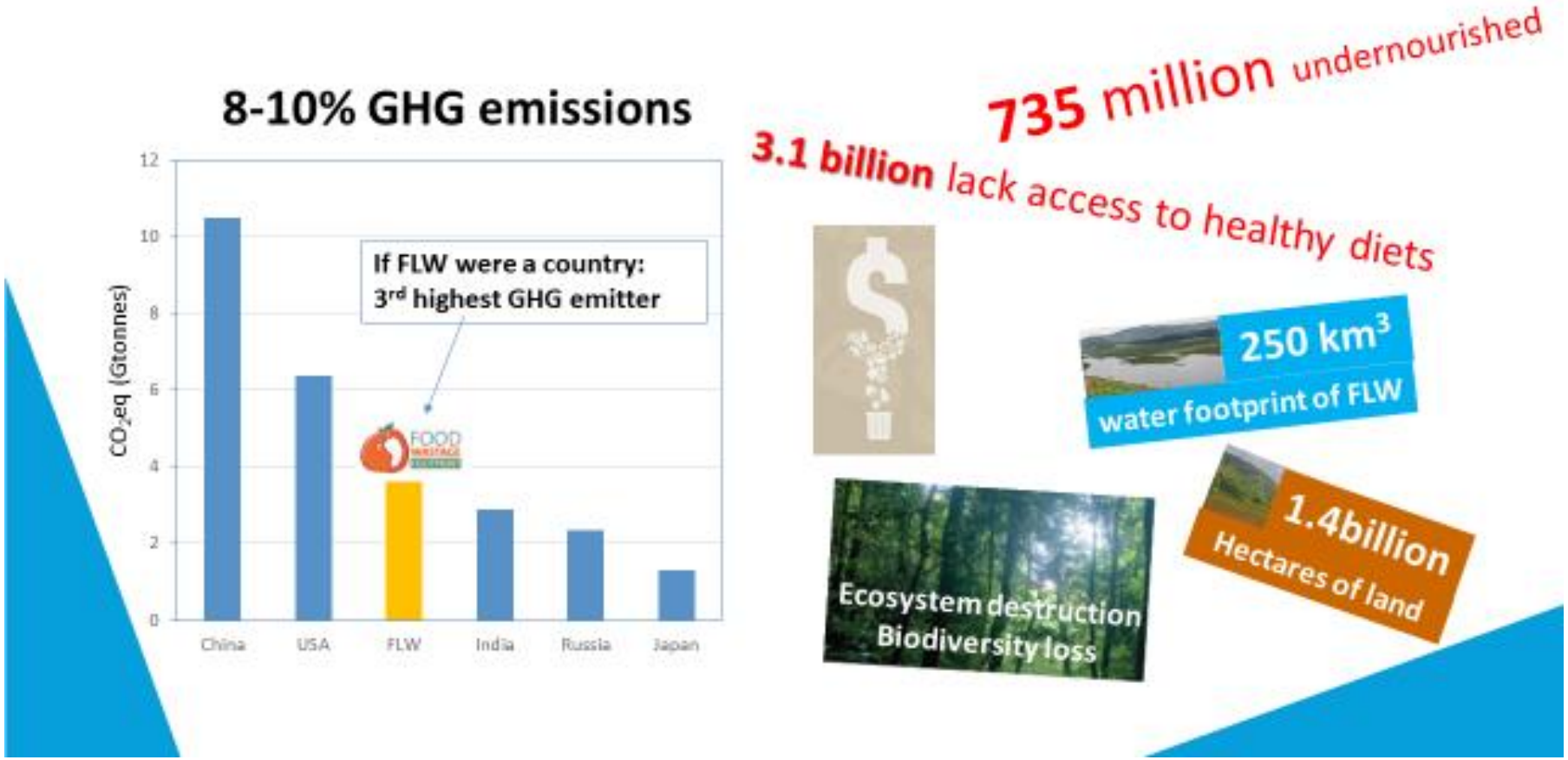
Implications of FLW for food security and nutrition, livelihoods, natural resources and the environment



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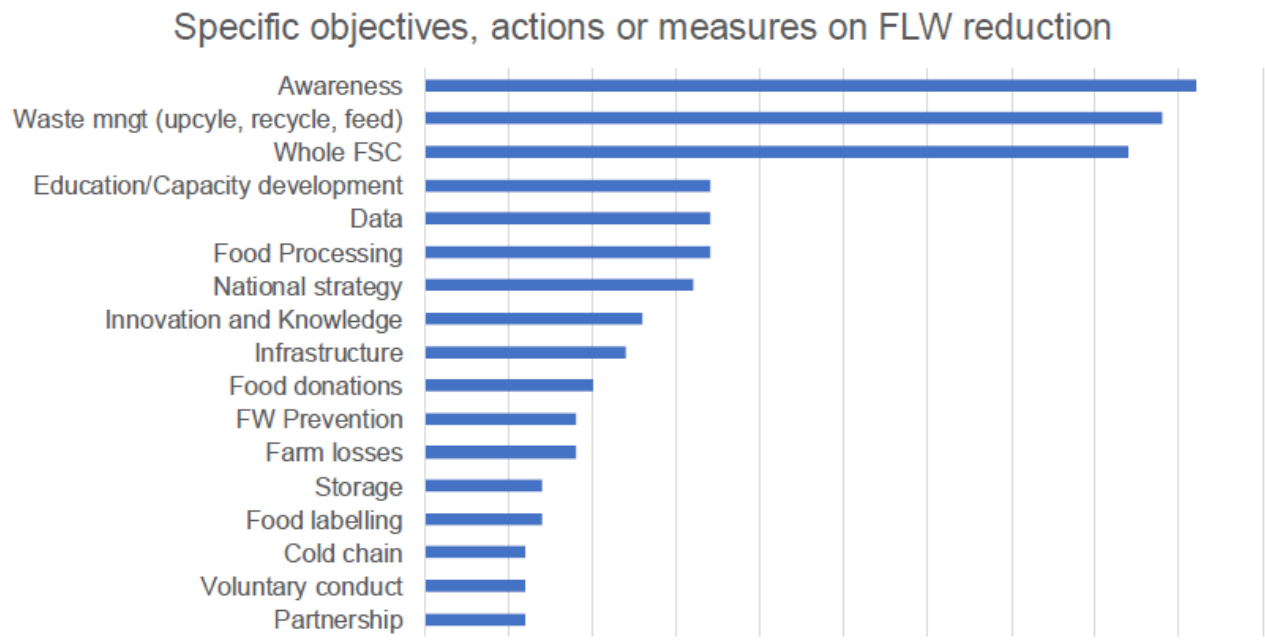
Priority areas for action on FLW reduction identified in **Country Pathways** at the Food Systems Summit 2021

Country Pathways – What specific objectives and actions?



>> FAO Statistics Division

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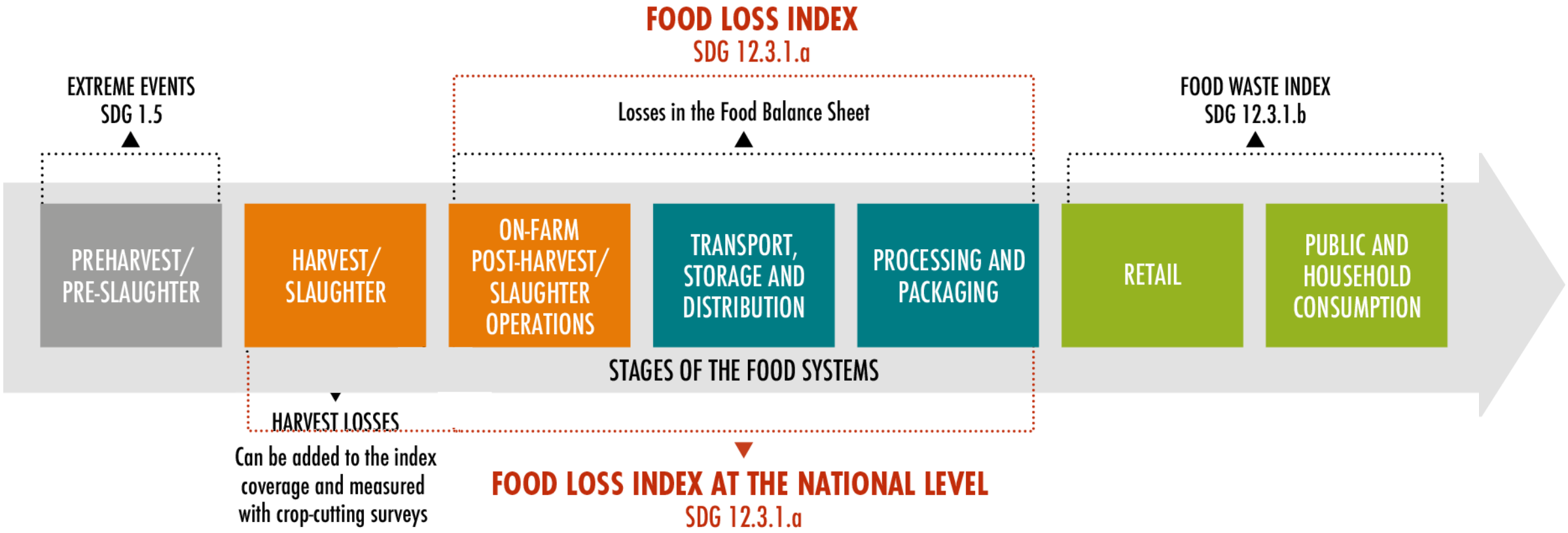
FAO's Core Functions

1. Assemble, analyze, monitor and improve access to **data** and **information**
2. Development and implementation of **normative** and **standard setting instruments**
3. Facilitate, promote and support **policy dialogue** at global, regional and country levels
4. Support **institutions** to prepare, implement, monitor and evaluate **policies** and **programmes**, and **leverage investments**
5. Facilitate **partnerships** and **coalitions** for more efficient, inclusive, resilient and sustainable agri-food systems
6. Advise and support activities that assemble, disseminate and improve the **uptake of knowledge, technologies and good practices**
7. **Advocate** and **communicate** at national, regional and global levels

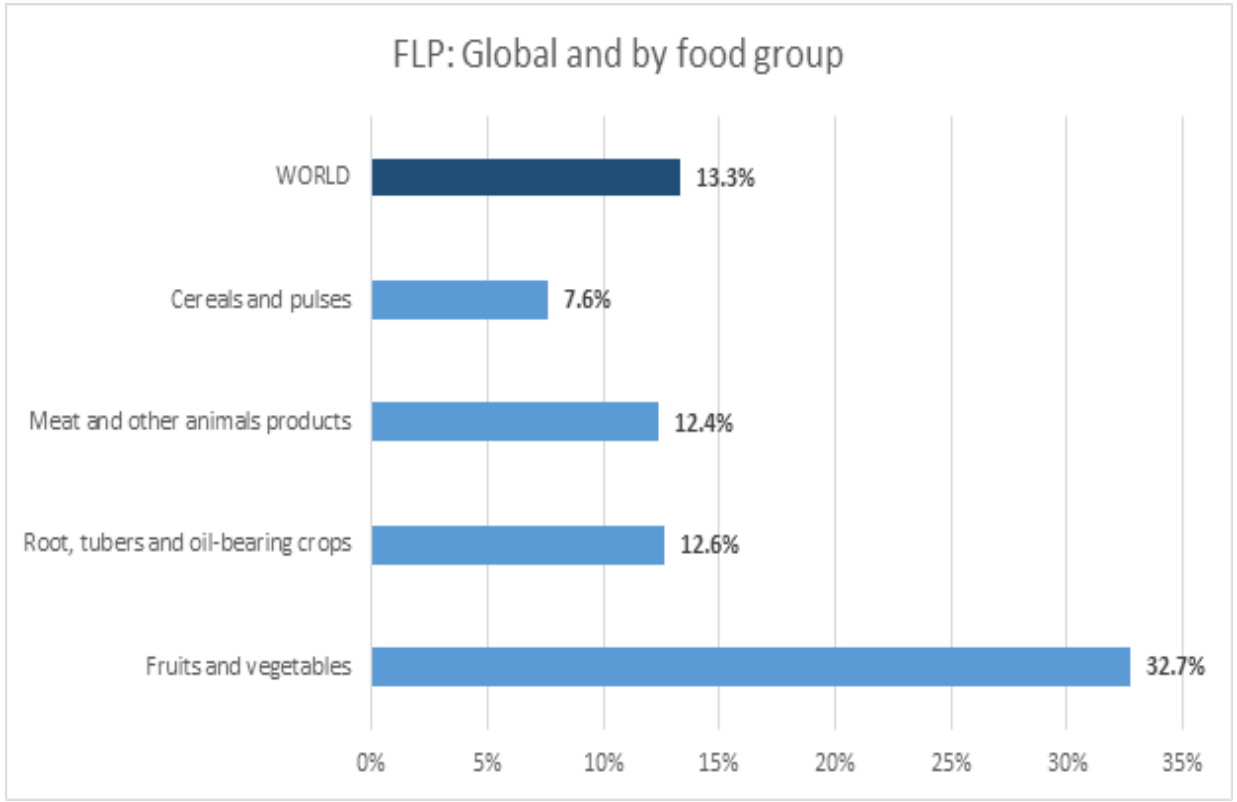


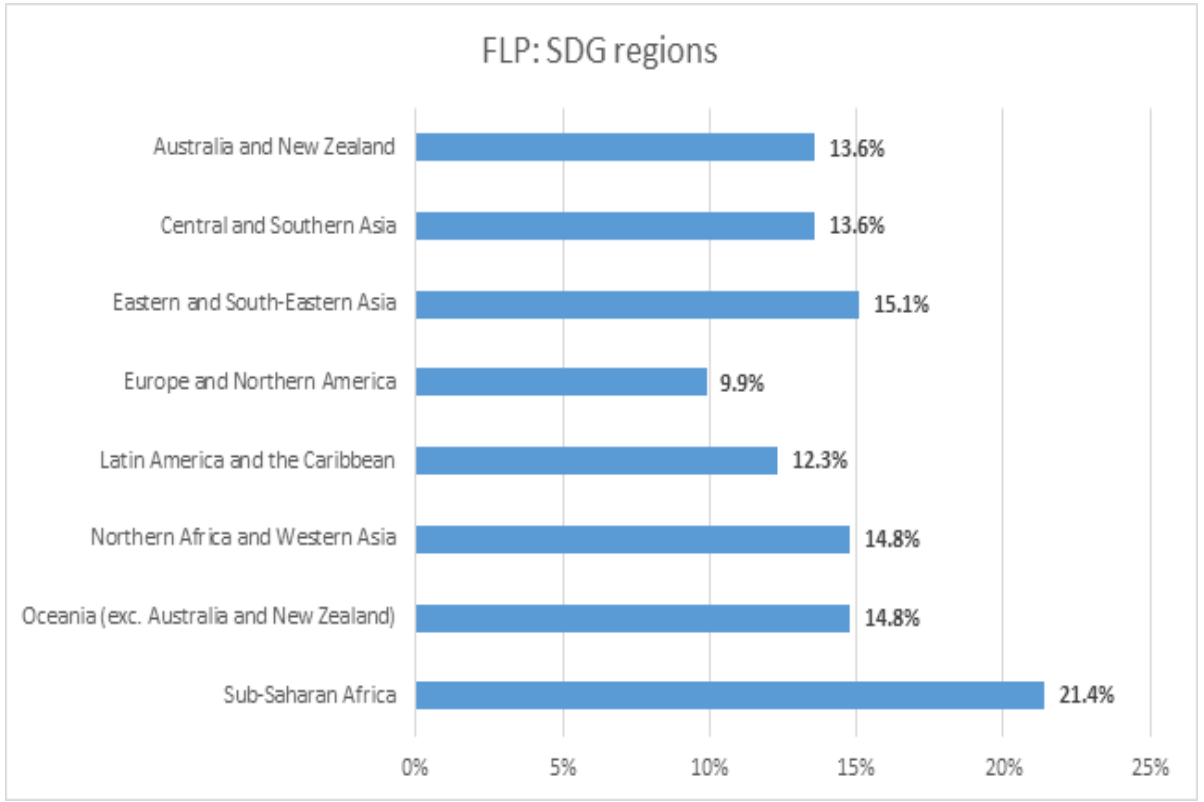
FLI** helps to identify **inefficiencies in the food system**, to generate more **knowledge of the supply chains** and **identify critical points

Source: https://www.fao.org/sustainable-development-goals/indicators/1231/en/

Data, measurement and monitoring

More than 13% of the food produced did not reach the retail level in 2020





Source: FAO, SDG reporting 2022

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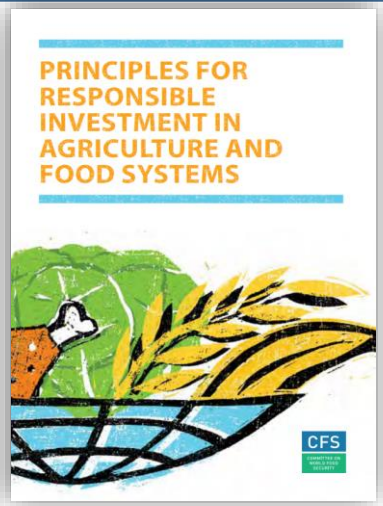
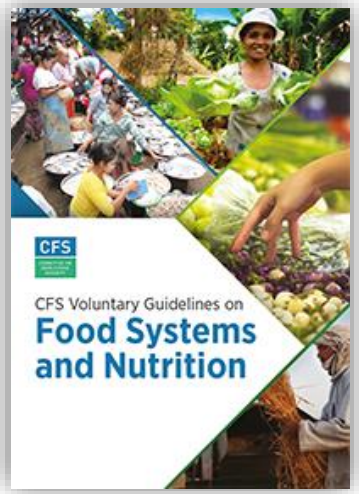
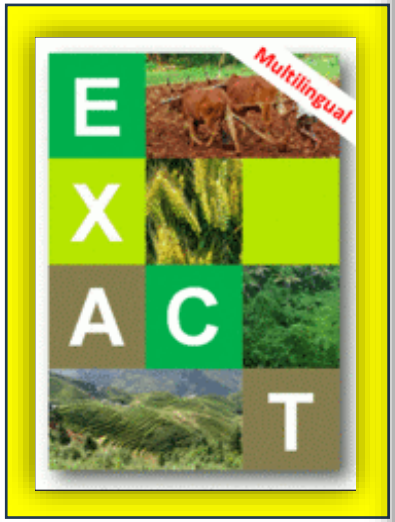
Normative and standard setting instruments

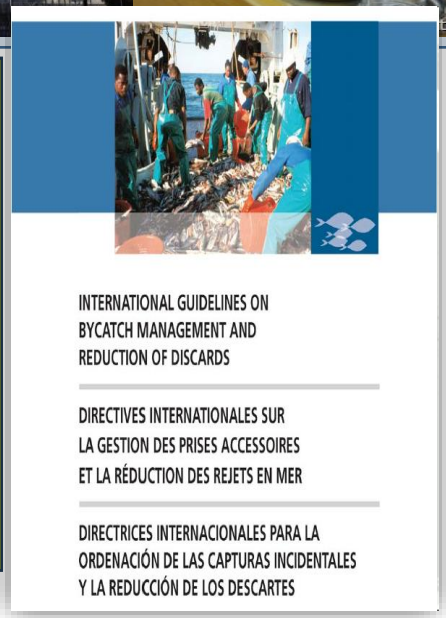
FAO

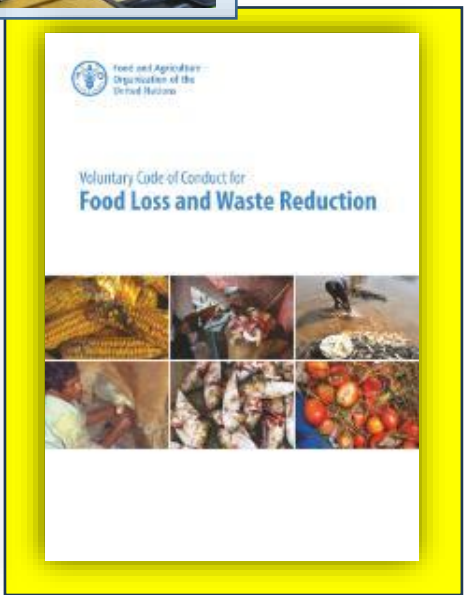
- A meeting place for nations
- Honest broker, neutral platform for negotiation and dialogue
- Technical expertise











Developing Policies and Strategies

- Evidence based
- Prioritization to guide policy and strategy development

Prevention (good handling and processing)

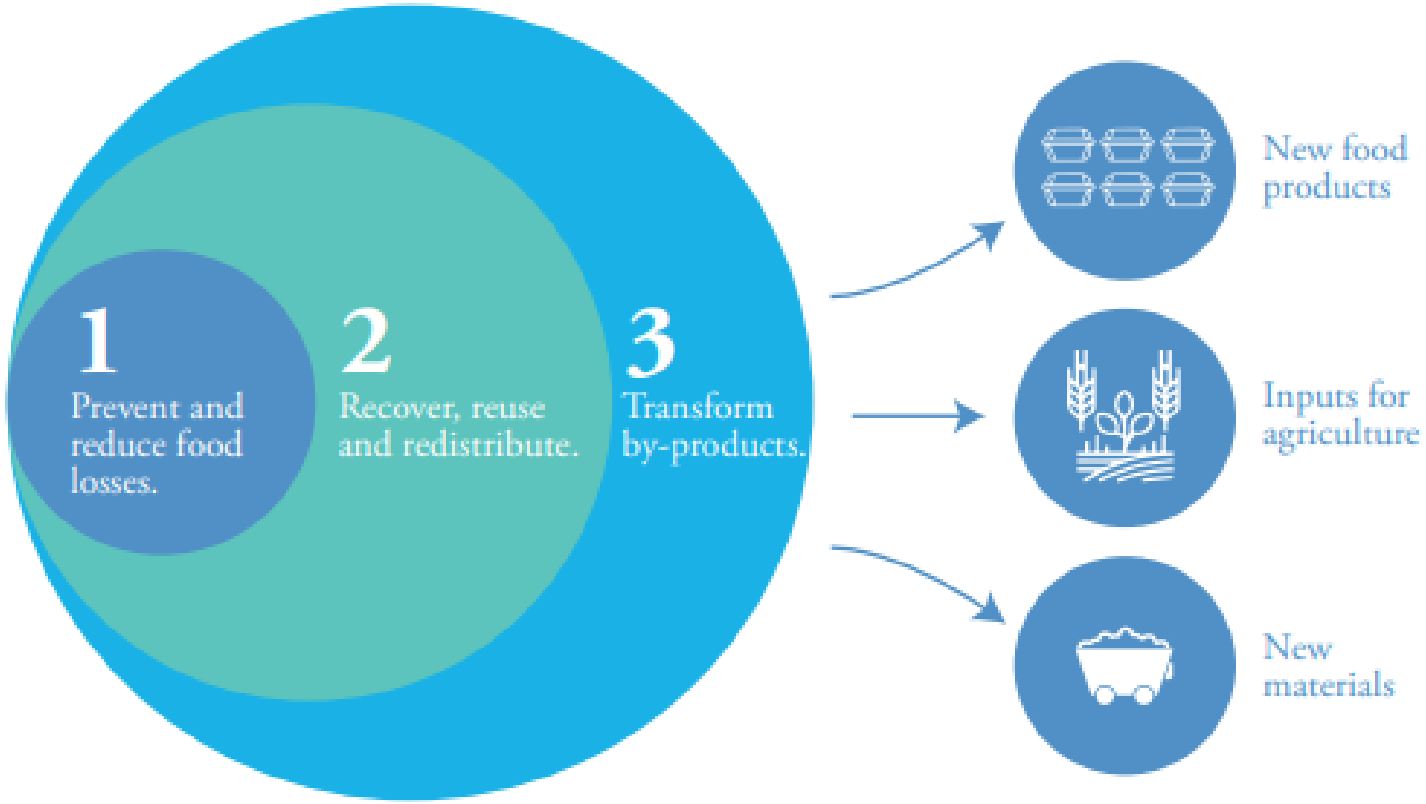
Rescue, recovery and redistribution

Recycling and upcycling

Proper disposal of remaining material

- Applicable at subnational, national, regional and global levels
- Regulatory frameworks, including for date labelling and food/feed safety

Applying circular practices to keep food loss and waste out of landfills



Source: Adapted from Ellen McArthur Foundation (2023)

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Building the **evidence base** to inform policy development

FIELD-LEVEL TRAINING

FIELD-LEVEL TRAINING ON GOOD DRYING PRACTICE

HERMETIC GRAIN STORAGE

BENEFICIARIES

GRAIN STORAGE IN SILOS

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POLICY MEASURES FOR MANAGING QUALITY AND REDUCING POST-HARVEST LOSSES IN FRESH PRODUCE SUPPLY CHAINS IN SOUTH ASIAN COUNTRIES

Smallholders and traders are key stakeholders in fruit and vegetable supply chains supplying local mass markets across South Asian countries. Training these stakeholders and introducing simple technical innovations into these supply chains can dramatically improve the quality and shelf-life of fresh produce and reduce losses, thereby generating economic benefits for producers, supply chain stakeholders and consumers as well as improving nutrition. Consequently, greater support is called for to address the challenges faced in traditional supply chains.

INTRODUCTION

Fruits and vegetables are rich sources of vitamins and micronutrients and contribute significantly to the nutritional quality of South Asian diets. High levels of post-harvest losses increase the cost of fruits and vegetables for consumers and result in reduced income for stakeholders handling fresh produce in the supply chain, particularly farmers who bear the cost of losses at the wholesale and retail levels because of low farmgate prices. Losses also represent a waste of land, labour, water, energy and the inputs that go into producing the fresh produce.

IMPORTANCE OF FOOD LOSS IN SOUTH ASIAN COUNTRIES

Food systems in South Asian countries are changing

Food systems in South Asian countries are currently being transformed by a number of demographic and social factors. The population continues to increase across the subregion and urbanization is increasing. Food produced in rural areas must travel longer distances from farm to markets to supply the nutritional requirements of the growing urban population; many still shop at traditional wet markets for their fruits and vegetables. At the same time, the rapid growth of supermarkets has caused a growing demand for safe, high quality produce, which has opened up new market opportunities and greater income for smallholders who can adopt better practices and differentiate their fresh produce to target these markets, while still supplying traditional fresh markets. The economic and nutritional importance of traditional fruit and vegetable supply chains, therefore, warrants governments' specific focus to address deficiencies related to post-harvest systems in these supply chains.

Stakeholders have scarce knowledge of post-harvest handling in the fresh fruit and vegetable supply chain

Smallholders are the main producers of fresh fruits and vegetables consumed in local markets across South Asia. Together with other stakeholders in traditional supply chains – harvesters, traders, transporters, processors, wholesalers and retailers – they supply the food requirements of the region's mass markets. Stakeholders in these traditional supply chains lack the basic knowledge of good post-harvest handling practices and the organizational capacities to address quality management

TABLE 1
Post-harvest losses for fruits and vegetables in South Asian countries

Crop	Losses (%)
Banana	29
Cauliflower	52
Mandarin	20
Mango	38
Snap beans	52
Winter tomato	46

Source: Field data

in fresh fruit and vegetable supply chains. Moreover, stakeholders need assistance in accessing capital so they can invest in acquiring the local technologies to upgrade their practices. A sound body of knowledge concerning good post-harvest management principles can be found at academic and research institutions across the Region, but relatively little of this knowledge is extended to smallholders to improve the management of post-harvest systems. Strengthening networking among these institutions would contribute greatly to enhancing knowledge and technology exchange across the subregion.

TABLE 2
Post-harvest losses in bulk-packaged fruits and vegetables transported from rural to urban centres in South Asian Countries

Crop	Loss during transportation in mesh sacks (%)	Loss during transportation in plastic crates (%)	Percentage of loss reduction
Tomato	14.7	2.2	97.8
Banana	5.6	2.1	41
Cauliflower	11	4.5	40
Mandarins	7.2	4.1	43
Snap beans	18.8	7.3	40

Source: Field data

PHOTO 1
Tomatoes packaged in plastic crates and in mesh sacks for transportation from rural to urban markets in Bangladesh

PHOTO 2
Examples of mechanically damaged tomatoes transported in mesh sacks

Post-harvest losses in fresh fruit and vegetable supply chains are high

Pilot activities and measurements conducted during an FAO Technical Cooperation Project: TCP/RAS/3202, titled *Reduction of post-harvest losses in horticultural chains in SAARC Countries* in six prioritized fruit and vegetable supply chains in three South Asian countries, have shown that the magnitude of quantitative post-harvest losses in these chains ranges from 20 percent for mandarins, to 52 percent for cauliflower and snap beans (Table 1). These high losses are largely the result of mechanical damage and decay during storage and transport between harvest and the market. High levels of water loss, particularly at the retail level in fresh markets, also result in qualitative loss because of shrivelling and wilting, which results in significant economic loss to farmers.

A major cause of losses in traditional fruit and vegetable supply chains is inadequate bulk packaging

The piloting of improved post-harvest practices in fruit and vegetable supply chains, supported by the introduction of appropriate levels of post-harvest technologies, has highlighted that improved packaging practices can contribute significantly to maintaining the quality of fresh produce during transportation, thereby contributing to fewer qualitative and quantitative post-harvest losses in the supply chain. Fruits and vegetables, when packaged in traditional plastic sacks, are highly susceptible to mechanical damage – such as compression and abrasion (Photo 2). Switching from traditionally used plastic sacks as bulk packaging to plastic crates significantly reduced quantitative post-harvest losses for all the varieties of fruits and vegetables studied (Table 2).

Use of plastic crates can substantially reduce qualitative losses – the number of sound fruit recovered was greater when fresh produce was transported in plastic crates instead of in mesh sacks. Qualitative loss in tomatoes transported in mesh sacks was, for example, higher at the bottom (Photo 2) as compared to the top and middle portions of the sacks, when compared to fruit packed in plastic crates.

Managing Quality and Reducing Post-Harvest Losses in Fresh Produce Supply Chains in South Asian Countries

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TABLE 2
Post-harvest losses in bulk-packaged fruits and vegetables transported from rural to urban centres in South Asian Countries

Crop	Loss during transportation in mesh sacks (%)	Loss during transportation in plastic crates (%)	Percentage of loss reduction
Tomato	16.7	2.2	97.8
Banana	5.4	2.1	61
Cauliflower	11	4.5	60
Mandarins	7.2	4.1	43
Snap beans	18.0	7.3	60

Source: Field data.

PHOTO 2
Examples of mechanically damaged tomatoes transported in mesh sacks

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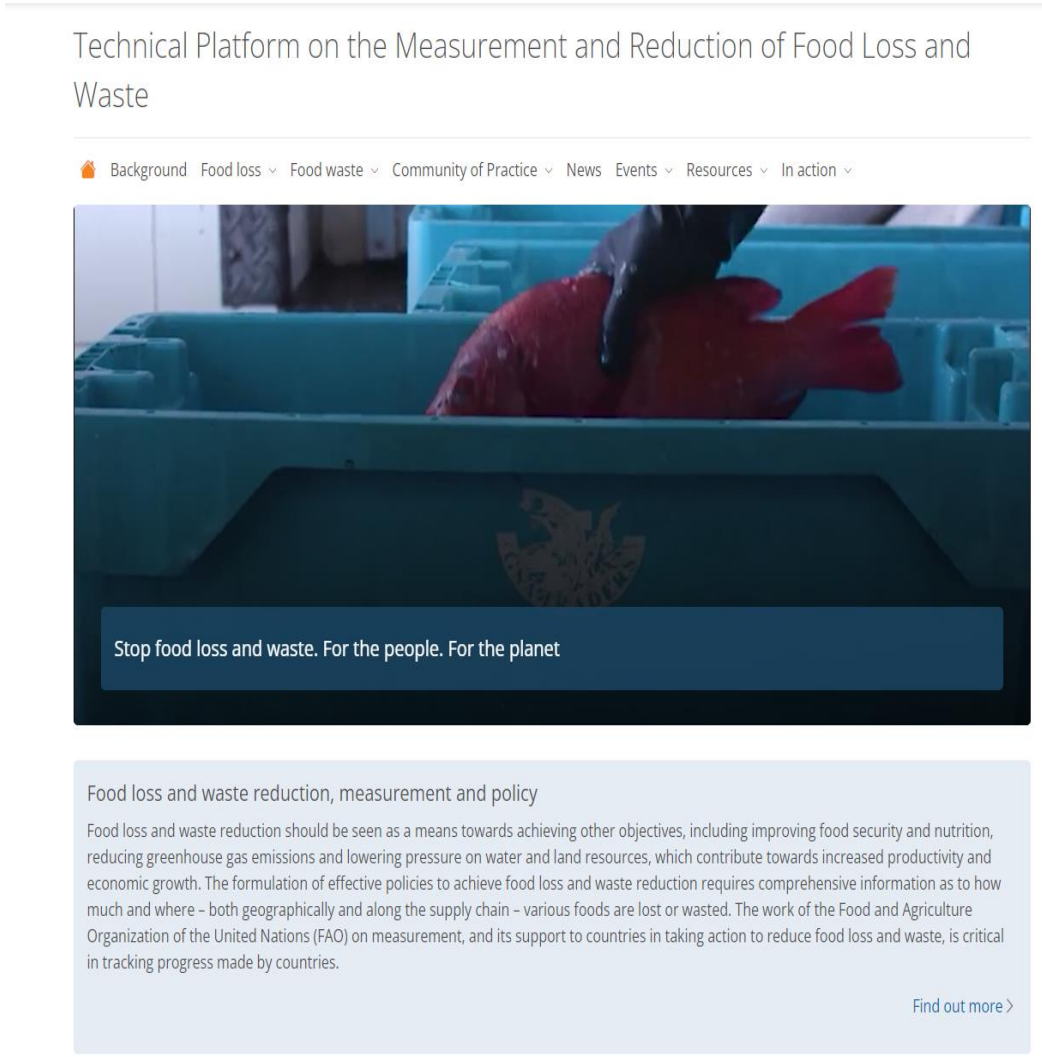
Technical Platform

- Established by FAO and IFPRI in 2015, under the Turkish Presidency of the G20.

- Aim:
  To strengthen collective efforts to prevent and reduce FLW toward achieving SDG target 12.3.



https://www.fao.org/platform-food-loss-waste/en

Technical Platform: actions to strengthen collective efforts

- Consolidates a broad spectrum of resources that address the complexity of the drivers and impacts of FLW.
- Provides a mechanism for collective learning and capability strengthening.
- Promotes awareness raising.
- Facilitates networking and communication through a Community of Practice (CoP).

Technical Platform on Food Loss and Waste Reduction: Partners

Rome-based UN agencies:

Food and Agriculture Organization of the United Nations

IFAD
Investing in rural people

World Food Programme

Food is Never Waste Coalition

- ✓ Launched in Rome at the Food Systems Pre-Summit in 2021, the Coalition seeks to take forward Agenda 2030 to accelerate the pace of reducing food loss and waste, toward achieving SDG 12.3.

The #123 Pledge, launched during CoP27, is the first initiative of the Coalition.

29 September

International Day of Awareness of Food Loss and Waste

STOP FOOD LOSS AND WASTE. FOR THE PEOPLE. FOR THE PLANET.

#FLWDay

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Thank you!

STOP FOOD LOSS
AND WASTE.
FOR THE PEOPLE.
FOR THE PLANET.

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Learn more: https://www.fao.org/platform-food-loss-waste/background/en

Join the Community of Practice on Food Loss and Waste