

Agri-Food Supply Chains and Logistics: Reducing Food Loss and Waste

World Agriculture Forum (WAF) Working Group

Terms of Reference

Topic: Agri-Food Supply Chains and Logistics: Reducing Food Loss and Waste

Introduction

Agri-food supply chains are the backbone of food systems, ensuring the efficient movement of food from producers to consumers. However, inefficiencies in these supply chains often result in significant food loss and waste, impacting food and nutrition security, sustainability, and economic viability. Approximately one-third of the food produced globally is estimated to be lost or wasted annually, amounting to about 1.3 billion tons: on the farms, in transport and storage, as well as at the final retail point and/or by the consumers themselves. This represents a global critical challenge. In regions with underdeveloped logistics, volatile markets and poor infrastructure, losses can be extremely high.

This Working Group will explore strategies to enhance the efficiency of agri-food supply chains, focusing on logistics innovations, waste reduction, and sustainable practices that promote food and nutrition security and minimize environmental impact.

Objectives

- **Improve Supply Chain Efficiency:** Identify and advocate for best practices and technologies to reduce bottlenecks and inefficiencies in agri-food logistics.
- **Minimize Food Loss and Waste:** Develop actionable strategies to reduce losses at every stage of the supply chain, from production to consumption.
- **Promote Sustainability:** Support approaches that align supply chain improvements with sustainability goals, reducing carbon footprints and resource wastage.
- **Engage Stakeholders:** Foster collaboration among farmers, policymakers, industry players, and consumers to address systemic challenges in agri-food systems.
- **Provide Policy Guidance:** Offer evidence-based recommendations to policymakers to strengthen infrastructure, encourage innovation, and promote waste reduction initiatives.

Key Focus Areas

1. **Enhancing Agri-Food Logistics and Infrastructure**

- **Cold Chain Development:** Promote the use of energy-efficient cold storage and transport systems to reduce post-harvest losses, particularly in perishable goods.
 - **Secure Storage:** Promote storage solutions that will ensure minimal losses in storehouses and siloes.
 - **Smart Logistics Solutions:** Explore the use of IoT (the Internet of Things -the concept of connecting various devices to share data and interact with each other), blockchain, and machine-learning for real-time tracking, inventory management, and efficient routing.
 - **Last-Mile Connectivity:** Identify and address challenges in delivering food to remote or under-served areas, ensuring equitable access.
 - **Infrastructure Modernization:** Advocate for investments in rural roads, storage facilities, and transportation networks to support efficient supply chains.
2. **Reducing Food Loss at Production and Post-Harvest Stages**
- **Post-Harvest Management:** Promote training for producers in best practices for storage, handling, and preservation to minimize spoilage.
 - **Harvest Timing and Techniques:** Promote precision agriculture tools to optimize harvest schedules and reduce losses.
 - **Community-Based Storage Solutions:** Develop cost-effective, localized storage facilities, such as silos and cooling hubs, to minimise spoilage of produce in rural areas.
3. **Minimizing Food Waste in Distribution and by the Consumer**
- **Retail and Distribution Practices:** Encourage retailers to adopt measures such as flexible grading standards, donation programs for surplus food, and dynamic pricing models.
 - **Policy advocacy:** Addressing the losses incurred from labeling of ‘Best Before’ and ‘Use By’ dates and from restrictions on the use of food from catering establishments.
 - **Consumer Awareness Campaigns:** Educate consumers on the importance of reducing food waste through better purchasing, storage, and meal planning habits.
 - **Redistribution Systems:** Create efficient networks for redistributing excess food to communities in need, including food banks and charitable organizations.
4. **Leveraging Technology and Innovation**
- **Data-Driven Decision Making:** Use data analytics to predict demand, optimize inventory, and reduce overproduction.
 - **Innovative Packaging Solutions:** Promote biodegradable and intelligent packaging that extends shelf life and reduces spoilage.
 - **Food Processing Advancements:** Encourage technologies that convert surplus or imperfect produce into value-added products, reducing waste.
 - **Biotechnology tools:** Assess opportunities to include gene-edited long-shelf-life produce into the food basket.

5. Sustainability and Circular Economy Approaches

- **Waste-to-Value Initiatives:** Explore ways to recycle food waste into animal feed, bioenergy, and compost.
- **Carbon Footprint Reduction:** Advocate for practices that reduce emissions across the supply chain, such as local sourcing and renewable energy use.
- **Integrating Circular Systems:** Promote circular economy principles that reuse and recycle resources within the agri-food supply chain.

6. Policy and Collaboration for Systemic Change

- **Policy Advocacy:** Recommend policies that incentivize sustainable practices, such as subsidies for cold storage facilities, and seek to curb excessive food waste.
- **Stakeholder Collaboration:** Engage with farmers, governments, private sector players, and NGOs to develop holistic solutions.
- **Global Knowledge Exchange:** Facilitate knowledge sharing on successful initiatives from different regions to inspire scalable solutions.

Structure and Organization

Members of the World Agriculture Forum Council will be invited to join the Working Group with other relevant experts in logistics, supply chain management, and food systems. The Working Group will identify a Chair to lead the Working Group and a member of the World Agriculture Forum Secretariat will assist with coordination, planning meetings, peer reviews, publication of the various outputs and dissemination through high level events, interviews etc.

Outputs and Responsibilities

These topics form a broad, interdisciplinary yet interconnected framework for the Working Group to develop actionable insights and recommendations on minimizing food loss and waste and optimizing supply chains. The analysis and recommendations could be geographically targeted or global in nature, with a focus on collaboration between researchers, policymakers, agribusiness leaders and farmers which will enrich the knowledge products and insights of the Working Group.

Working Groups may also be called upon to assist with the preparation of specific fundraising proposals in line with their thematic focus. Each Working Group will provide reports to the World Agriculture Forum twice a year and will lead a stream of events at the annual World Agriculture Forum Summit.
