



PAFO-COLEACP INNOVATIONS SERIES: Innovations and successes of African farmer-led businesses and SMEs

SESSION N°11

Promoting circular economy and reducing food losses and waste: Successes by SMEs and entrepreneurs

Monday 28 November 2022, 12:00-14:00 (GMT)

Online ([Zoom](#))

English-French interpretation available

1. Context: a complex set of challenges impacting our food system

Our food system faces serious challenges. The global population has just reached 8 billion people and is projected to reach 9.7 billion in 2050, and 10.4 billion in 2100.¹ Many countries around the world face scarcity of resources, climate shocks, conflicts, unsustainable production models, pressures on the environment, and a threat of global recession caused by food, health and fuel crises. These challenges impact much more the most vulnerable countries and households.

Global hunger numbers rose to 828 million in 2021, an increase of about 46 million since 2020 and 150 million since the outbreak of the COVID-19 pandemic.² A total of 49 million people in 49 countries are teetering on the edge of famine.³

Climate change has a negative impact on agricultural production, destroying lives, crops and livelihoods and increasing food insecurity. Climate shocks and extreme weather conditions (droughts, floods, storms, heat, increase in pests and diseases) affect many regions in the world with more acuity for the poorest.

¹ United Nations Department of Economic and Social Affairs, Population Division (2022). [World Population Prospects 2022: Summary of Results](#). UN DESA/POP/2022/TR/NO. 3.

² FAO. 2022. The State of Food and Agriculture 2022. [Leveraging automation in agriculture for transforming agrifood systems](#). Rome.

³ <https://www.wfp.org/global-hunger-crisis>



To feed the world sustainably, producers need to grow more food while reducing negative environmental impacts on soil, water and nutrient loss, greenhouse gas emissions and degradation of ecosystems. Consumers must be encouraged to shift to nutritious and safe diets with a lower environmental footprint.

2. Reducing food loss and waste across the food chain

While the world needs an increase in production to address food and nutrition security without compromising the environment and limited resources, food loss and food waste are a global challenge.⁴

The substantial amount of food that is lost and wasted every year has severe implications in terms of food and nutrition security, economic losses but also negative impacts on the environment, use of land and water resources, biodiversity, climate change⁵ and pollution. Higher-income regions waste more food at the consumption stage; lower-income regions lose food during the production, handling and storage stages, because of poor infrastructure and a lack of cold-storage containers.⁶

Global attention to food loss and waste (FLW) reduction is reflected in the 2030 Agenda for Sustainable Development, particularly in the Sustainable Development Goal (SDG) 12: Responsible Consumption and Production which seeks to “ensure sustainable consumption and production patterns.” Target 12.3 of that goal aims to “by 2030, halve the per capita global food waste at the retail and consumer level, and reduce food losses along production and supply chains including post-harvest losses.”⁷

Food waste reduction has significant implications for several of the UN SDGs such as Zero hunger (SDG 2), improving food security and nutrition (SDG 3), Responsible consumption and production (SDG12), Climate action and reducing greenhouse gas emissions (SDG 13), Life below water (SDG14) and Life on land (SDG 15).

Reducing food loss and waste has far-reaching effects on climate change and biodiversity, as well as driving down hunger rates, emissions, and economic losses for individual households. More than 1.3 billion tonnes of edible food material are wasted annually around the world, which represents about one third of the total food produced and is enough to feed more than one billion people.⁸

⁴ **Food loss** is a decrease in the quantity or quality of food resulting from decisions and actions by food suppliers (i.e., before or during food production and processing). **Food waste** is a decrease in the quantity or quality of food resulting from decisions and actions by retailers, food service providers and consumers. FAO. 2022. [The State of Food and Agriculture 2022. Leveraging automation in agriculture for transforming agrifood systems](#). Rome.

⁵ FAO. [Sustainable and circular bioeconomy in the climate agenda: Opportunities to transform agrifood systems](#). 2022.

⁶ World Business Council for Sustainable Development (WBCSD). [Food Loss and Waste](#).

⁷ SDG target 12.3 has two components, Losses and Waste that should be measured by two separate indicators. Sub-Indicator 12.3.1.a - Food Loss Index: The Food Loss Index (FLI) focuses on food losses that occur from production up to (and not including) the retail level. It measures the changes in percentage losses for a basket of 10 main commodities by country in comparison with a base period. The FLI will contribute to measure progress towards SDG Target 12.3.

Sub-Indicator 12.3.1.b - Food Waste Index: A proposal for measuring Food Waste, which comprises the retail and consumption levels is under development. UN Environment is taking the lead on this sub-indicator.

⁸ Shurson, G.C. [“What a Waste”—Can We Improve Sustainability of Food Animal Production Systems by Recycling Food Waste Streams into Animal Feed in an Era of Health, Climate, and Economic Crises?](#) Sustainability 2020, 12, 7071. FAO. Food wastage: Key facts and figure. <https://www.fao.org/news/story/en/item/196402/icode/>



Globally, food loss estimates have remained steady between 2016 and 2020, although with substantial variations across regions and subregions. The global percentage of food lost after harvesting at the farm, transport, storage, wholesale and processing levels is estimated at 13% in 2016 and 13.3% in 2020.⁹ An estimated 17% of total global food production is wasted (11% in households, 5% in the food service and 2% in retail) and food that is lost and wasted accounts for 38% of total energy usage in the global food system.¹⁰

The amount and types of food waste vary between countries where 44% of global food waste occurs in less-developed countries during the post-harvest and processing stages of the food supply chain, while the remaining 56% of these losses, of which 40% occur at the pre- and post-consumer stages, are attributed to developed countries in Europe, North America, Oceania, Japan, South Korea, and China.¹¹

At the regional level, sub-Saharan Africa has the highest losses at 21.4%. Least developed countries (LDCs) and Small Island Developing States (SIDS) also register high losses, with 18.9% and 17.3%, respectively. Structural inadequacies in these regions result in food being lost in large quantities between the farm and retail levels. All regions except Central and Southern Asia register an increase in estimated losses in 2020 as compared to 2016, with the highest increases seen in SIDS (up 1%), Oceania (up 1.2%) and Northern Africa and Western Asia (up 1.7%).¹²

3. Addressing inefficiencies along the food supply chain to reduce food loss and waste

The agricultural sector has a key role to play in feeding the population without destroying the planet and its resources. Promoting circular economy is part of the solution since it can bring new jobs and business opportunities for farmers groups, Small and Medium Enterprises (SMEs) and entrepreneurs in converting waste into productive resources such as fertilizers, animal feed, biomaterials or bioenergy.

Food processors, distributors, retailers and foodservice providers, as well as green tech innovators, play a decisive role in influencing consumer's food waste behaviour. Many examples show voluntary agreements between supply-chain operators, retailer-supplier contracts, traceability systems, closed-loop circular models and public-private partnerships supporting food waste reduction.¹³

Research conducted by the World Business Council for Sustainable Development (WBCSD) found that, for every US\$1 companies across a wide range of sectors (e.g., food manufacturing, food retail, hospitality and food service) invested to reduce food loss and waste, they saved US\$14 in operating costs.¹⁴ Improvements need to happen across the value chain aiming at reducing food waste from the production level by reducing surplus of food which cannot be transported or sold, promoting processing techniques up to extending the

⁹ FAO. SDG12. <https://www.fao.org/sustainable-development-goals/indicators/1231/en/>

¹⁰ UN. [International Day of Awareness on Food Loss and Waste Reduction](#).

¹¹ Shurson, G.C. "What a Waste"—Can We Improve Sustainability of Food Animal Production Systems by Recycling Food Waste Streams into Animal Feed in an Era of Health, Climate, and Economic Crises? Sustainability 2020.

¹² FAO. SDG12. <https://www.fao.org/sustainable-development-goals/indicators/1231/en/>

¹³ UNEP DTU Partnership and United Nations Environment Programme (2021). [Reducing Consumer Food Waste Using Green and Digital Technologies](#). Copenhagen and Nairobi.

¹⁴ Ibid.



shelf life of food products and improving the efficiency on the redistribution of surplus food at retail level.

Technologies beyond the farm (food preservation technologies, food packaging and smart labelling, consumer-oriented smart devices or consumer and food-sharing apps) can further reduce food loss and waste, enhance food safety, and enable value addition.¹⁵

Many technologies contribute to reducing food waste such as innovations in refrigeration, thermal preservation, biological and bio-chemical preservation, solar-powered cold storage, active packaging, waste-to-energy, composting, recycling and upcycling. Mobile applications also provide solutions for smart labelling, dynamic pricing, product traceability, intelligent redistribution, and storage.¹⁶ Cold chains are key to reduce food loss, especially the ones close to the centres of production or markets which benefit farmers. More needs to be done in sharing opportunities for entrepreneurs in smart packaging, labelling and storage technologies.

Smallholders, SMEs and value-chain actors need to acquire more knowledge on food storage, preservation, cooking, date-labels and the many implications of loss and food waste. Well informed consumers can contribute to waste reduction through concrete actions which promote sustainable consumption. Food waste can also result from inadequate food safety practices and addressing this requires knowledge and implementation of best practices of food safety.

The public and private sector need to take complementary and holistic approaches and actions which promote innovations and direct new investments to the circular economy.

Policy-makers need to design favourable policies and regulations which stimulate technology adoption, create links with research, develop appropriate infrastructures for collection, composting and recycling and support businesses in reuse and recycling products (incentives, appropriate subsidies, information, access to finance). Mandatory requirements need to be in place. Some targeted incentives must reach women and youth in view of their key contribution to agriculture.

Research can provide knowledge of where losses and waste appear along the value chain and demonstrate the cost-benefit of reducing them. Increasing information, transparency and traceability in the value chain allows increased awareness amongst consumers and change in behaviours.

Entrepreneurs need to constantly innovate and acquire the knowledge and best practices allowing prevention of food losses and waste and when existing the potential products that can be produced. Constant upgrading of skills and knowledge are a must.

¹⁵ FAO. 2022. The State of Food and Agriculture 2022. [Leveraging automation in agriculture for transforming agrifood systems](#). Rome.

¹⁶ UNEP DTU Partnership and United Nations Environment Programme (2021). [Reducing Consumer Food Waste Using Green and Digital Technologies](#). Copenhagen and Nairobi.



4. The way forward

There is a whole area of economic development which will allow to save money and save the planet while promoting health diets.

There is a pressure from consumers as well as high-end markets such as the European Union (EU), where exporters need to meet sustainability standards related to prevent deforestation, excessive water use, better inclusion of small farmers, decent working conditions, and identification of alternatives to plastic packaging that producers will have to adapt to enter this market.¹⁷ The implementation of the EU Farm-to-Fork strategy is expected to reinforce these trends through the establishment of new regulations to comply with for suppliers from EU-partner countries. This can make exporting to the EU harder, especially for smaller firms.¹⁸ In this context, it is critical to support SMEs compliance through updated information on standards, capacity building, trainings and technical assistance.

Infrastructure and efficient logistics services are key to move goods from the production site to the final consumer avoiding spoilage. It is important to connect those who generate waste to those who use waste for productive resources to learn from each other and create value partnerships.

Access to finance to scale up remains a challenge, especially for smallholders, SMEs and entrepreneurs. The food industry competitiveness in many African countries is hampered by various factors which aggravate food loss and waste and need also to be addressed such as lack of infrastructure, limited finance for investments in processing, storage and cooling, high costs for inputs, lack of value chain organisation, and lack of stakeholder involvement in policy making and public-private dialogue.¹⁹

Key points for discussion on SMEs and businesses contributing to reduce food loss and waste

- What are the drivers of success in addressing food loss and waste: what innovations and technologies have proven to be successful and accessible to SMEs?
- What type of investments are needed?
- What incentives can be provided to SMEs and smallholders to better address?

¹⁷ Supermarkets are constantly changing their packaging, replacing plastic trays with cardboard or biodegradable packaging made of different components, such as sugarcane bagasse which is entirely biodegradable and compostable at home.

¹⁸ ECDPM. [The future for Africa's trade with Europe: factors affecting the long-term relevance of the European market for African exports](#). Discussion paper No. 306. 2021.

¹⁹ OECD/WTO (2019), [Aid for Trade at a Glance 2019: Economic Diversification and Empowerment](#), OECD Publishing, Paris.



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Agenda

12:00-12:10 Introduction: *Dr. Babafemi Oyewole Olulopo, CEO, PAFO*

Moderator: *Isolina Boto, Head of Networks and Alliances, COLEACP*

12:10-13:00 Panel: SMEs and businesses contributing to circular economy

- *Gideon Nyameson, Founder and CEO, AgriCentric Ventures, Ghana*
- *Rose Noah, CEO, West African Feeds (KemProtein), Ghana*
- *Fatou Titine Cissoko, Founder and Manager, Jedengui, Guinea*
- *Amogelang Shaun Masi, Co-founder, Viva Organica, Botswana*
- *Mark Musinguzi, Team Lead, Hya Bioplastics, Uganda*

13:00-13:20 Discussants

- *Andrew McNaught, Lead Consultant, Tandem Circular Consulting, Zambia*
- *Oscar Ekponimo, Founder, Chowberry, Nigeria*

13:20-13:50 Debate

13:50-14:00 Key takeaways and conclusion

- *Jeremy Knops, General Delegate, COLEACP*