

Workshop on Food Loss and Waste Prevention in Latin America and the Caribbean: Summary

22-24 October 2024, Brasilia

The workshop was jointly organized by the Brazilian Agricultural Research Corporation (Embrapa), Brazilian Ministry of Social Development (MDS), UN Environmental Program (UNEP), Food and Agriculture Organisation (FAO), Global Research Alliance on Agricultural Greenhouse Gases (GRA), National Agricultural Technology Institute Argentina (INTA), Natalia Basso (independent consultant, Argentina) and the Thünen Institute (Germany). The workshop was funded by the German Ministry of Food and Agriculture (BMEL) and the New Zealand Ministry for Primary Industries (MPI) through the bilateral Alliance for the Climate, called [AgriDENZ](#). Additional funding was provided by UNEP. The workshop was held at the Embrapa headquarters in Brasilia.

180 participants from 17 countries attended the workshop who are a mix of experts/practitioners from businesses, associations, national and international NGOs, national, regional and local governments, research organisations, consultants, foundations and United Nations Organisations.

The summary is available in all three languages of the workshop – English, Portuguese and Spanish, on the dedicated [Workshop website](#) of the [Collaboration Initiative Food Loss and Waste](#) together with the agenda, presentations, posters and chosen photos.

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Opening ceremony

Brazil, as one of the largest food producers in the world, must take a leading role in combating food losses and wastes. In 2022, it is estimated that over one billion tons of food were wasted globally, with 60% of this total coming from households. This waste not only exacerbates food insecurity, which already affects 733 million people, but also contributes about 10% of global greenhouse gas emissions, primarily through the release of methane, a gas that has a direct impact on global warming.

To tackle these challenges, it is necessary to make food waste a significant cost. A positive example is South Korea, which recycles 97% of its food waste, demonstrating that strict public policies can effectively transform waste management. Furthermore, it is essential to restructure global agri-food systems to respond more effectively to wastes and food security issues.

In this context, disseminating regional initiatives becomes crucial for building an ecosystem aimed at combating losses and wastes. However, there are still barriers that hinder these advancements, such as the need for reliable data collection. To eradicate hunger and poverty and to establish a robust food and nutrition security system, it is crucial that we succeed in this battle against food losses and wastes.

Moreover, there should be a clear connection between waste reduction policies and the circular economy. The production of fertilizers from food waste is an example of how Brazil seeks to integrate sustainability into its sectoral waste mitigation planning, promoting a more efficient and responsible production cycle.



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Session 1: Multistakeholder initiatives for food losses and waste mitigation

Session 1, chaired by Gustavo Porpino (Embrapa Foods and Territories), was comprised by the following presentations.

Brazilian national plan for FLW mitigation (*Carmem Priscila Bocchi, Ministry of Social Development*)

Food loss and waste (FLW) impact both global and local food availability, worsening food insecurity. Inefficiencies throughout food systems lead to higher food prices, limiting consumer access and negatively affecting the economic stability of actors in the food supply chain. Additionally, FLW contributes to long-term environmental impacts by wasting resources like land, water, and energy, and generating harmful greenhouse gas emissions.

Reducing FLW is therefore critical to mitigating the climate crisis and combatting food insecurity. An effective FLW strategy must involve private sector, particularly at the retail level, and must be supported by effective

measuring and monitoring, particularly in view of achieving Sustainable Development Goal (SDG) 12 on responsible consumption.

Much is at stake for Brazil, where further action is needed to ensure that the population has access to healthier foods, and that the environmental impacts of food systems are reduced.

The National Intersectoral Chamber on Food and Nutrition Security (CAISAN) is organised around 6 axes:

- (1) Food losses and processes: a national strategy will soon be finalised
- (2) Wholesale markets and central supply hubs: with an emphasis on circular economy and waste management, training, technological innovation
- (3) Supermarkets, fairs, and markets: developing measurement methods and supporting technology update, focus on fruit, vegetables and pulse food categories.
- (4) Consumption (households and school feeding): improved measurement of household wastes, and researching consumer behaviours.
- (5) Cities: further development of existing programs such as “Feeds cities” and “Network of solidarity kitchens”, as well as identification of municipal policies and programs aligned with circular urban food systems.
- (6) Food banks: provide further financial resources, training and support technology uptake. Generate tax incentive mechanisms to support food donations.

Costa Rican FLW Network (*Laura Brenes, Tecnológico de Costa Rica*)

In Costa Rica, FLW has been identified as a serious, cross-cutting issue. The country has acknowledged the need for a national policy on production and consumption, including food guides and composting initiatives. However, there is not yet a dedicated strategy, budget, or directive to tackle FLW effectively. A voluntary code of conduct has been introduced, but more action is needed.

A clear definition of the issue and collaboration across stakeholders are key for making progress. Costa Rica’s FLW Network, which was launched in 2014 as a multisectoral platform, includes over 30 active members from diverse sectors. Originally established by academics in partnership with the FAO, the network expanded in 2015 to include public sector representatives, private sector actors, and citizens. The platform promotes environmental education and advocates for all sectors to engage with this issue to achieve meaningful change.

FLW is complex and its reduction requires a variety of approaches. These include studies involving multiple stakeholders, collaboration with the food industry to determine critical areas for FLW reduction and product innovation within a circular economy framework. Behavioural studies also help understand consumer attitudes towards waste, and food banking as well as public health communications around healthier cooking to promote better food habits.

Communication plays a key role in FLW reduction, particularly to disseminate best practices. There are ongoing efforts to embed FLW strategies in training courses. Uptake in the standards industry is encouraging, with the inclusion of FLW in the [FSSC 22000](#).

While there is notable progress, there are challenges including improving metrics for tracking food losses, enhancing the synergy of workgroups, and focusing beyond case studies to ensure long-term impact.

Argentina’s Plan to Reduce FLW (*Mariana Brkic, Argentinian Secretary of Agriculture, Livestock and Fisheries*)

Argentina has addressed FLW in recent years through a series of interventions. In 2015, Argentina launched the “Let’s Value Food” campaign, followed by the establishment of a national FLW network in 2017. The country then passed National Law 27.454 in 2018, to promote food donations, and in 2020, Argentina launched its Strategy 2030, which focuses on five pillars:

- institutional and regulatory framework
- innovation and technology
- production and logistics
- consumer and society
- relationships and linkages with key stakeholders

The development of working groups (WGs) that involve the public sector, universities, industry, retail, and municipalities is at the core of Argentina's approach. The public sector is developing new indicators for FLW which will be published as a report in 2025. Local governments are also involved through the "Potenciar Sostenibilidad" federal programme, which promotes FLW reduction at the provincial and municipal levels.

Higher education is playing a key role with universities conducting studies on food waste in their own canteens. A first introductory course on FLW is now available online. Industry and retail, coordinated by GS1 and the Secretariat for Agriculture, Livestock and Fisheries (SAGyP), are working on improving data collection and tracking FLW causes. Concrete actions are being planned, with pilot projects focusing on displaying food waste messages during key events like the International Awareness Day for FLW (September 29 to October 16).

The Argentinian government is also focusing on food rescue and donation, by collaborating with food banks and tracking salvaged food volumes. Separately, FLW reduction in wholesale markets is being supported; a [national guide](#) was developed in partnership with FAO.

Another [project](#) is underway which focuses on food waste in urban households, supported by BID. The data gathered from these efforts is critical and will help inform future policy development.

Session 2 - Social and disruptive innovations for FLW mitigation

Session 2 was chaired by Nicol Barahona (FAO Americas) and included the following presentations.

Artificial intelligence Applied to Food Waste Reduction (Marco Perlman, Aravita)

The start-up [Aravita](#) has developed cutting-edge technology that uses Artificial Intelligence (AI) to estimate and mitigate food waste (FW) produced by supermarket supply chains. A whopping 40% of fresh fruit is wasted in Brazil. To prevent and reduce food waste at retail level, Aravita's technology focuses on optimizing product selection, stocking decisions, and improving overall supply chain efficiency. By predicting consumption patterns and stock requirements while capturing consumer feedback, the system aims to reduce overstocking. The project is being currently implemented across major supermarket chains, with insights from these efforts informing future advancements in the field.

Role of Food Banks in Food Waste Mitigation (Alicia Guevara, Quito Food banking)

The [Quito Food Bank](#) is playing a critical role in reducing food waste in Ecuadorian local communities. It was originally initiated by academics and has been running successfully for 21 years; thanks to the commitment of local volunteers. It focuses on surplus food recovery as well as food storage and distribution to people in need. Key to its success is its collaboration with farmers who donate surplus produce in exchange for scientific and agricultural support, including soil testing and veterinary services. This model demonstrates how food banks can significantly contribute to food waste mitigation, which can be replicated at different scales.

Promoting Innovation to Fight Hunger and Food Waste (*Maria Siqueira, Pact Against Hunger*)

[Pacto Contra a Fome](#) in Brazil, is a nationwide initiative aiming to reduce FLW. There are many ongoing and effective initiatives in Brazil to reduce FLW but more data is required to inform strategies and innovations in this field.

While there are barriers to developing and implementing FLW innovations, there are many emerging opportunities including:

- Increased government attention, including public policies at the state level.
- Growing international recognition of Brazil's efforts.
- Interest from the private sector in collaborating on food waste solutions.

Financial support and investment are, of course, needed to support new initiatives and scale up existing ones; as is better communications and awareness raising about this issue.

The Pacto has created an ecosystem to address FLW and is working to recognise the contributions of different stakeholders in this effort.

Social Innovation in Practice (*Claudia Sanchez, Pacto por la Comida*)

There are many examples of highly impactful social innovations that are reducing food waste in Mexico, where 30 million tonnes of food are estimated to be wasted annually. Some of the more notable programmes consist of collaborations between private companies, academia, and NGOs. One key approach has been to engage directly with consumers through targeted awareness campaigns. These initiatives include:

- Offering tips and recipes to reduce food waste.
- Partnering with chefs and influencers to promote the message of "Cook More, Waste Less."
- Educating consumers that imperfect produce is still good to eat and can be sold at lower prices.

A few examples of effective initiatives include:

- The Spotify campaign called "A Second Chance," where QR codes linked to food waste reduction tips were placed on magnets and other materials. They also created a cookbook by chef Mariana called "Cook a Lot, Waste Less, Save More", which has gained significant attention.
- Social media campaigns on platforms like TikTok and Instagram have helped raise awareness among diverse audiences, while special events like Tortilla Day and 29S focused on public engagement.
- Efforts to use pricing strategies, where consumers can buy "imperfect but good" products at a discount, encouraging both environmental consciousness and waste reduction.

Session 3- Delivering Sustainable Development Goal 12.3 in Cities

Beatriz Martins Carneiro (UNEP) chaired Session 3 and led the discussion related to the following presentations:

- UNEP Food Waste Index - Tracking Food Waste in Cities (Clementine O'Connor, UNEP)
- New Household Food Waste Data in Brasilia, Rio de Janeiro and São Paulo (Carlos Silva, ISWA)
- Separate Collection of Organic Waste: the experience of Florianopolis (Karina Souza, Municipality of Florianópolis)
- Financing Food Waste Reduction in Cities (Marc Dumas-Johansen, Green Climate Fund)
- Closing Remarks - Food Waste Prevention in Cities, Ways forward in Rio de Janeiro (Eliana Cacique, Secretary of Environment of Rio de Janeiro)

The world wastes one billion tons of food annually, highlighting a global issue that is not confined to wealthy nations. Action on a large scale is possible, as evidenced by the inclusion of food waste strategies in Nationally Determined Contributions (NDCs).

The panel discussed the waste management hierarchy and addressed the triple planetary crisis driven by a linear economic model that leads to excessive waste generation. In Brazil, the estimated total waste generation reached 71 million tons in 2022, with 50% of this being organic waste. Most of this organic fraction is sent to final disposal without extensive recovery through recycling or other valorisation alternatives, underscoring the urgent need for change. This decade has been deemed crucial for implementing effective solutions.

Improving solid waste management, particularly with a focus on prevention, is essential. A case study in Rio de Janeiro, conducted by UNEP and ISWA with 100 households, revealed that 62% of the waste generated is food waste, translating to a per capita rate of 77 kg annually. Additionally, three case studies in the cities of São Paulo, Brasília, and Osasco showed per capita food waste rates of 76.7 kg and 76.2 kg annually, respectively. The panel emphasized the need for cities to prioritize food waste prevention alongside enhanced management of organic materials.

The panel, which featured representatives from two Brazilian cities – Florianópolis (Santa Catarina) and Rio de Janeiro (Rio de Janeiro) - discussed initiatives for food waste prevention and organic waste management at the sub-national level, with examples from these two cities. In Florianópolis, organic waste constitutes 35% of the total waste generated. Innovative programs such as "Minhoca na Cabeça" which provides composting kits with California worms, and systems utilizing water tanks were highlighted. Additionally, separate collection of organic waste in urban areas has been implemented, with 340 out of 3,340 condominiums participating in the program. This initiative includes meetings with building managers to foster community engagement and training for caretakers, emphasizing the importance of collaboration in effective waste management.

In Rio de Janeiro, programs such as "Alimenta Rio" and pilot projects for sustainable community kitchens, alongside a food bank initiative in the Zona Sul Supermarket, illustrate the city's commitment to reducing food waste and enhancing food security.

A particularly relevant point discussed by the panellists was how to promote change at scale, focusing on preventing waste and managing organic materials. The key elements include:

- Increased investment from diverse sources, not solely reliant on public funding, along with robust oversight.
- Development of cost-effective programs that can be scaled up.
- Economic viability of valorising waste, ensuring it is cheaper than landfilling, supported by better data collection.
- A necessary paradigm shift to achieve sustainable and lasting change.

Session 4 - Policy Frameworks for Food Loss and Waste (FLW) Reduction

This session focused on policy frameworks and strategies to reduce FLW. Moderated by Elizabeth Kleiman (FAO Argentina), the session highlighted diverse regional and international perspectives.

The first presentation by Professor Emily Broad Leib (Harvard Food Law and Policy Clinic) explored existing FLW policies across the LAC region. She emphasized the importance of coherent legal frameworks, multi-stakeholder collaboration, and enforcement mechanisms in achieving measurable reductions in FLW. The presentation provided examples of effective policies and highlighted areas for further development.

Céline Giner (OECD) and Rachel Collie (Consultant, The Bahamas) presented findings from the OECD's stocktaking of FLW policies. They provided an overview of the current situation in LAC countries, outlining both achievements and persistent challenges. Their presentation underscored the value of data collection, standardization, and the need for integrated national strategies tailored to the region's specific contexts.

The Uruguayan perspective, presented by Chiara Fioretto (Ministry of Environment, Uruguay), detailed Uruguay's FLW mitigation strategy. She shared actionable insights on how Uruguay has integrated FLW reduction into its environmental policies, illustrating practical steps for other countries in the region.

Finally, Manuela Cuvi (FAO) highlighted opportunities to apply the FLW Code of Conduct, a comprehensive framework promoting sustainable practices across the food system. She emphasized the Code's potential to guide countries in aligning national policies with international standards.

The concluding discussion of this session underscored the critical role of policy frameworks in reducing FLW and the need for continued collaboration among LAC countries to achieve regional and global reduction goals in food loss.

Session 5: How food waste mitigation can help tackling the climate crisis

This session was jointly chaired by Chanjief Chandrakumar (Global Research Alliance on Agricultural Greenhouse Gases) and Clementine O'Connor (UNEP). They moderated the following presentations and led through the discussion.

Food waste and NDCs proposals *(Carolina Urmeneta, Global Methane Hub)*

An IPCC report showed that methane has contributed 45% of recent net warming. This gas has a much greater global warming power than other gases such as carbon dioxide. Considering the projections for global temperature increase, we need actions that allow us to achieve high-impact achievements. One of these actions is to concentrate efforts on reducing methane emissions.

Today, we have ground-breaking technologies that allow us to visualize methane, for example with satellite images. The Carbon Mapper, MethaneSAT and GHGSAT&SRON platforms allow, for example, the detection of "plume" emissions, which are the major points of methane emissions. So, for example, we can now detect landfills or energy production sites through the vision of methane. In turn, 60% of methane emissions globally come from the food production sector and food waste. The FLW is responsible for 14% of methane emissions considering food production and final disposal as waste.

We have known about the food waste hierarchy for decades but unfortunately, we do not use it in practice yet. So, there is an opportunity in the union between the FLW agenda and the climate change agenda, the latter being a very high-level agenda that requires a great mobilization of resources. So, the Global Methane Hub asked: what is methane mitigation in reduction and recovery activities? Is there data? When countries worked on the 2020 NDCs, very little was mentioned about FLW, while it is expected that for the next edition in 2025 the topic will be incorporated.

This year, COP29 is being held and countries by mandate must submit the Biennial Transparency Reports that have information on the emissions inventory and projections, and countries must submit them every 2 years. For COP30 (Brazil, 2025) countries are expected to submit their new commitments. This is a great opportunity to assess whether countries are incorporating these measurements and how they are incorporating them. The COP29 presidency has already put forward the 10 of the declaration and there is one on organic waste and methane, and so it is the first time that "organic waste" is specifically included, given that previously there was much more talk about waste in general and the focus was on inorganic waste. Although the Declarations seem to be worthless political documents, they are crucial because they imply the involvement of the ministries and the presidency of the countries, and therefore raise the discussion.

In this sense, food recovery is a strategy to avoid methane emissions. Hence, Global Methane Hub is working with the Global Network of Food Banks on the Food Recovery to Avoid Methane Emissions (FRAME) Methodology as an open platform that will allow organizations to have access to economic and climate change instruments.

Global Methane Hub is also working on improving data and building capacities. Then, an estimate will be obtained on the reduction in methane emissions that is avoided thanks to the rescue and donation by preventing organic waste from reaching the landfill.

Global Methane Hub is also working with REFED in the United States on this issue. The Hub has 5 principles to guide climate policies at the national and sub-national levels. They have an alliance with the IDB, an organization that has committed that its entire waste portfolio has a goal of 30% reduction in methane emissions. That is to say, all the projects they finance have to meet this goal and therefore, the methodology and measurement must be improved in order to control these goals and their achievements. In line with this, the Hub is talking with national development banks so that they can include similar goals - in parallel, the Methane Partnership for Lowering Organic Waste was created.

As a final message, they seek to demonstrate that the reduction of methane emissions and their monitoring is possible and that it is cost-effective to really reduce the rate of global warming. Today, we must manage to put this issue on the agenda.

Linking actions on climate change with waste reduction (*Richard Swannell, WRAP*)

WRAP seeks to transform food systems by working on four main areas: changes in diets, reduction of GHG emissions, water demand and food insecurity. WRAP's methodology on establishing alliances towards "target + measure + act" is based on a systemic vision and the priority is oriented towards the prevention of FLW and the circular economy.

In the United Kingdom, they have created the "Courtauld Food Pact" which has the participation of several companies. Regarding the case studies carried out by WRAP, "The story of 100 potatoes" is a good example of the importance of measurement because it helps us understand where we need to act, where the highest GHG emissions are and the hotspots of FLW, beyond having the discard figures.

It concludes that reducing food waste contributes to reducing GHG and methane emissions, therefore it has important benefits. The inclusion of food waste in the NDC will help to prioritize the issue and generate investments in this regard.

Food Recovery to Avoid Methane Emissions (*Maria Teresa Garcia, Global Food Banking Network*)

Food is a basic human right and essential for both individual and societal development. Yet, over 763 million people globally live in hunger. Latin America faces a particularly dire situation, with the highest cost for a healthy diet in the world. While the global average for a healthy diet is US\$3.60 per person per day, in Latin America it is US\$4.06. Furthermore, women are more likely to experience food insecurity. FLW occurs at every stage of the value chain. However, consumer demand for aesthetic quality, such as perfect-looking produce, often leads to significant waste. If we could recover just 25% of total FLW, we could feed 828 million people - more than the number of people currently suffering from hunger globally.

Food banks play a crucial role in reducing FLW by recovering and redistributing food, ensuring it stays within the value chain and fulfils its primary purpose - feeding people. They generate a triple positive impact by:

- Feeding those in need
- Reducing FLW
- Helping lower greenhouse gas (GHG) emissions

The Global Network of Food Banks, for example, prevents 1.8 million tons of GHG emissions annually. Over its 50 years of existence, the network has made a significant contribution to global GHG reduction.

In partnership with the Global Methane Hub, the network developed the *Food Recovery to Avoid Methane Emissions (FRAME)* methodology. This methodology includes a dashboard with indicators to guide actions, track progress, and highlight co-benefits aligned with SDGs 2 (Zero Hunger), 8 (Decent Work and Economic Growth),

12 (Responsible Consumption and Production), and 13 (Climate Action). It is a tool that not only benefits food banks but also donor organizations, which can use the data in their sustainability reports.

Integrated Food Waste Management in Quito: A Multidimensional Approach (Xavier Oña-Serrano & Oswaldo Viteri-Salazar, *Escuela Politécnica Nacional, Ecuador*)

They conducted research on food waste in Quito households and then assessed the impacts on soil, energy and water; and worked on ways to address these impacts in Quito. An interesting fact is that the first time they estimated waste, while some foods were not included. They then adjusted the methodology to include meat, fish and milk. This allowed them to identify important waste. One of the findings is that households with higher incomes have higher waste. They also determined the costs in terms of energy, water and land.

Although Quito does not have a FLW reduction strategy, it has other complementary strategies such as: composting programs, urban gardens, food banks, regulations, master plan for comprehensive solid waste management in Quito, and metropolitan ordinance.

On the other hand, they have conducted studies on policies that show that throughout the years of the green revolution the focus was on increasing production and their work is crucial in terms of developing a multidimensional approach to FLW. They have developed a methodology to study different possible scenarios where FLW policies are applied and the effects they would have on water, energy, and soil. They also integrate aspects of urban agriculture and short marketing circuits.

Session 5: Questions & Answers

During session 5, the audience raised several important questions regarding food waste initiatives, regulations, and the valorisation of local species in Latin America.

Binding Agreements with Companies in the UK: An attendee enquired about the binding nature of agreements with companies in the United Kingdom and whether these commitments should be applied in Latin America, where many of these companies operate. Richard responded that this is indeed the goal, emphasizing that expanding their efforts to other countries is aligned with this principle. He highlighted that regulations are crucial for driving change, and the networks they are building help accelerate these efforts. Clementine added that, when analyzing the 20 most important companies worldwide, they found that only one implements its commitments across all operations globally.

Biodiversity and Valorisation of Local Species: Another question addressed the issue of biodiversity and the valorisation of local species to reduce dependency on certain agricultural inputs. A representative from BAMEX (Mexico's food bank network) explained that food banks arose from observing families salvaging food from waste containers, with only 1% of global FLW being rescued. Beyond simply distributing food, food banks have strong food education campaigns aimed at helping families maximize the use of what they receive. This education is key to promoting better food utilization and reducing waste.

The Global Methane Hub responded by discussing organic waste, such as peels, skins, and bones, which are often discarded, leading to nutrient loss. They are advocating for solutions like composting, biodigestion, and the breeding of soldier flies to process this waste. They also emphasized that 45% of the changes required to address food waste must come from production and consumption. They highlighted the growing issue of landfills reaching capacity and being set on fire, exacerbating global warming.

Research on Valorisation of by-products: The audience pointed out that while many scientists in Latin America are researching the valorisation of food by-products, many projects remain at the laboratory stage. They stressed that the region has the technical capacity to implement these solutions, but what is needed is investment to facilitate technology transfer and scaling. They suggested it would be valuable to measure the methane emissions that could be avoided if these technologies were adopted.

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BAMEX's Efforts in Climate Action: BAMEX shared that the Quito Food Bank has successfully included its food recovery efforts in the country's Nationally Determined Contributions (NDCs) to climate action. They are working to make the methodology for measuring food waste reductions available to other food banks, aiming to further strengthen and expand these initiatives.

Working Group 1: Field and post-harvest losses: Challenges and opportunities to accelerate mitigation

Moderators: Murillo Freire, Gilmar Henz (Embrapa), Nicol Barahona (FAO RLC), Marcus Vinicius (Brazil Ministry of Agriculture)

QUESTION 1

How can cooperation between the countries of the Latin American and the Caribbean region be directed towards reducing food losses in the production stage?

By systematizing the information of the subgroups, it is possible to identify four types of responses such as:

1. Generate technical, market and public policy cooperation agreements among LAC countries.
2. Systematize the countries that have taken actions to reduce losses in the production stage and share the successful experiences and/or lessons learned from these actions.
3. To hold multi-country events, meetings and workshops.
4. Undertake or continue with training and education to the actors of the productive stage to reduce field losses and post-harvest.

QUESTION 2

What concrete actions can be implemented to advance the reduction of food losses (production stage)?

The response of the sub-groups is summarized in the following six points:

- 1. Planning of production and associativity or cooperativism among food products** → With the aim of reaching the market better or having greater opportunities in the market for selling their products, thus reducing the food loss due to non-harvest.
- 2. Short marketing channels (Short food miles)** → It has been identified that food logistics can lead to higher loss figures in this part of the chain, so that producers can access markets more directly, can, on the one hand, prevent food losses and, on the other hand, access to fairer prices for their products.
- 3. Quantification and identification of causes of losses in the field** → While some LAC countries have identified causes, in others this is still an action that has not been implemented. Identifying this would allow for more effective responses to reduce field losses during harvest and post-harvest.
- 4. Creation of an interdisciplinary research group, involving multiple countries** → These alliances between countries, with a team of experts would allow faster and more effective progress in generating actions against FLW.
- 5. Creation of regulations or legislations to strengthen circular and sustainable systems in the fight against field and post-harvest losses.**
- 6. Improve access and/or implement technologies, adequate infrastructure - including cold chain preservation in harvest and post-harvest, and innovations that help reduce food losses.**

QUESTION 3

What are the opportunities for developing joint actions for LAC countries in relation to food losses at the production stage? What are the challenges?

No.	OPPORTUNITIES	CHALLENGES
1	Investment in infrastructure and technologies to reduce losses	Develop regulations that facilitate the development of markets in LAC
2	Higher level of intelligence in the design and execution of actions	<ul style="list-style-type: none"> Improving or increasing access to credit for producers Have an international fund that addresses the FLW subject To generate practical exchanges of experience
3	Strengthen and accompany producers in equipment and technologies to reduce losses	Better market articulation of production
4	Openness to countries' collaboration and sharing of experiences	The product packaging is mostly plastic, with downstream environmental consequences → Having alternatives that correctly preserve products after harvest and properly manage the plastics that accompany food, would reduce FLW without creating environmental impacts.
5	Marketing to the LAC market through partnership agreements (more opportunities have opened between neighbouring countries than just looking at other continents)	Improving food transport logistics with efficient and sustainable energy → The prevention and reduction of FLW must go hand in hand with mitigation of environmental impacts.
6	Cooperation network in LAC	Climate change → In relation to food losses in the field, it can be due, for example, to the water crisis or to excessive pests, so that it is essential to make improvements in production practices, which are crucial in addressing climate change.
7	Replicate practices that have yielded results in similar countries (in terms of soil and climate conditions and type of foods produced)	Lack of political will → Often, this FLW agenda is not seen as a priority in the country, but others are frustrated by public policy decisions.
8	Communication and outreach campaigns for producers	Unfair competition (for small-scale agriculture)
9		Quality standards → There is no harmonization between countries, markets demand different standards, and production must conform to this.
10		Data organization and lack of measurement of FLW across the entire agri-food system.

Working Group 2: Consumer Food Waste: Challenges and opportunities to accelerate the mitigation

Moderators: *Gustavo Porpino (Embrapa), Clementine O'Connor (UNEP), Richard Swannell, Michael Jones, Carolina Fernandez, Erin McCluskey (WRAP)*

Introduction to Consumer Food Waste

The session cited the key messages from the UNEP Food Waste Index Report 2024:

- In 2022, the world wasted 1.05 billion tonnes of food. This amounts to one fifth (19%) of food available to consumers being wasted, at the retail, food service, and household level. That is in addition to the 13% of the world's food lost in the supply chain, as estimated by FAO, from post-harvest up to and excluding retail.
- Most of the world's food waste comes from households. Out of the total food wasted in 2022, households were responsible for 631 million tonnes equivalent to 60%, the food service sector for 290 million tonnes and the retail sector for 131 million tonnes.
- On average, each person wastes 79 kg of food annually. The equivalent of at least one billion meals of edible food is being wasted in households worldwide every single day, using a very conservative assessment on the share of food waste that is edible. This is the equivalent of 1.3 meals every day for everyone in the world impacted by hunger.
- Food waste is not just a 'rich country' problem. Following a near doubling of data coverage since the 2021 Food Waste Index Report was published, there has been increased convergence in the average per capita household food waste. High-income, upper-middle income, and lower-middle income countries differ in observed average levels of household food waste by just 7 kg/capita/year.

Breakout session

We invited participants to discuss what are the best practices in the region in implementing behaviour change strategies to reduce food waste at the consumer level. What information is needed to change behaviours, what role government, municipalities and businesses play and what are the best practices to measuring success of behaviour change initiatives?

The working group used the "World Café" format, where participants were divided into subgroups to discuss three guiding questions. After 15 minutes, participants rotated tables, contributing to all three questions. The moderators summarized key points from each group.

Guiding questions

- (1) What information do you need to change behaviour?
- (2) What ways or approaches can you use to implement citizen behaviour change?
- (3) How do you measure success of behaviour change initiatives?
- (4) What roles do government, municipalities, businesses play to help consumers change behaviours?

Q1. What information do you need to change behaviour?

The key messages from all 4 groups are:

- Society's consumerist tendencies require a systemic shift, starting with educating citizens about sustainable consumption to challenge the status quo effectively.
- Changing consumer behaviour involves addressing "financial illiteracy," as the economic consequences of food waste are often overlooked.
- Understanding the full food cycle is crucial to reducing waste. Reconnecting individuals with food production and distribution fosters awareness of its environmental impacts, which are better understood through targeted education.
- Campaigns to transform consumer behaviour must tailor information to specific audience profiles. Effective messaging requires careful planning of both the content and delivery method.
- Given the diversity of consumer groups, a single message will not resonate with all. To communicate effectively with the lower-middle-class majority in Latin America and the Caribbean (LAC), it is essential to listen, understand their context, and craft clear, relatable messages.
- Effective communication with urban peripheries demands accessible language. Technical discussions about environmental impacts and climate change are unlikely to influence mass behaviour.
- Listening to those who waste food, particularly within the lower-middle-income segment, is critical. Engaging food retailers like supermarkets, where 30 million Brazilians shop daily, can amplify the impact since most food in LAC is purchased through this channel.
- Food and nutritional education should be a cornerstone of behavioural change strategies. Schools across LAC should integrate food education into their curricula starting at the elementary level.
- Research on food consumption behaviours—both qualitative and quantitative—should guide campaign design. Understanding the drivers of food waste is the first step; effective strategies to mitigate the problem must then be built on empirical evidence.

Q2. What ways or approaches can you use to implement citizen behaviour change?

- Engage Communities with Localized, Hands-On Approaches: Tailor messaging to specific communities by using language and messaging that resonates with each community to increase relevance and effectiveness. Connect with youth and marginalized communities, partnering with youth groups in underserved areas and connect them to urban farms to build awareness and hands-on experience. Gamify Community Efforts: Introduce community-based gamification, allowing neighbourhoods or cities to compete in reducing food waste, fostering a sense of collective responsibility and fun.
- Educate through schools and home-based initiatives: Integrate food waste education in schools, working with schools to adopt waste prevention policies, include food waste topics in curricula, and make learning engaging and fun. Offer cooking classes and provide composting guidance that includes prevention messages to build practical skills and reinforce waste reduction habits.
- Promote seasonal and local food awareness: Raise awareness about the importance of seasonal foods to foster respect and appreciation, leading to less waste. Encourage local and traditional food consumption and promote local foods that are fresher and last longer, building habits around consuming local produce to reduce the waste associated with long-distance transport and storage.
- Implement retail and grocery store strategies. For example, supermarkets can provide tips on using whole produce, storing food properly, and include colour-coded stickers to indicate ripeness levels. They can also provide technology and tools for consumers such as offering meal planning apps and other tools to simplify grocery shopping and meal prep, especially for those with busy lifestyles.
- Run awareness campaigns across media platforms: Engage charismatic influencers and use diverse media channels (TikTok, radio, podcasts, TV) to reach out wider audiences and reinforce waste prevention messages.

Q3. How do you measure success of behaviour change initiatives?

- Perform waste compositional analysis: Measure the quantity and types of food waste generated by participants or in households targeted by the initiative before, during, and after the intervention. Comparing baseline data with post-initiative data can highlight reductions. Note: deploying this method can be expensive.
- Utilize self-reporting methods: Collect survey or diary data from participants to understand changes in practices like meal planning, portion control, shopping frequency, and leftover management.
- Track changes in attitude and awareness: Use surveys to assess changes in attitudes toward food waste and awareness of its impacts. Increases in awareness and shifts in attitudes often precede lasting behavioural changes. Track not only awareness, but knowledge of what behaviours will reduce food waste.
- Use engagement metrics: For online campaigns, measure engagement metrics like website visits, content shares and reposts, comments, and downloads of resources. For in person engagements, track the number of participants and level of engagement.
- Understand household savings: Calculate average savings for households resulting from reduced food waste. This can be a powerful indicator, especially if participants report reduced food bills.
- Sustained behaviour over time: Conduct follow-up surveys or waste measurements several months after the initiative to assess whether behavioural changes are maintained.

Q4. What role do government, municipalities, businesses play to help consumers change behaviours?

- Government needs a clear strategy and policy to reduce food loss and waste, this would be mirrored by municipalities.
- Municipalities and government have a role in establishing a baseline on household food waste, there should be sufficient data to now run a campaign, e.g. emphasising the cost savings associated with food waste reduction.
- Government should consider penalties and/or incentives to help reduce food waste, run a consumer behaviour change campaign, either at national or city level.
- Behaviour messages to promote behavioural changes should be amplified through businesses, cities, influencers and through central government, focusing on behaviours that we know reduce food waste.
- Other government entities can play a key role in carrying this message, including departments of cities and national government, e.g. education, social care, correspondence relating to waste, even tourism.
- Businesses are and can further take action to help reduce food waste, e.g. selling loose fruit and vegetables which make it easy to buy what you need, resealable packaging.
- Integrate prevention messages when separate food waste collections are installed.
- Conduct a small scale behaviour change-focused pilot campaign in a city to establish a business case for a broader campaign, i.e. the cost of running a campaign, estimate of benefits for municipalities, estimate of GHG emissions reduction, particularly methane.

Working Group 3: Retail and hospitality food waste: challenges and opportunities to accelerate the mitigation

Moderators: Natalia Basso (independent, Argentina), Richard Swannell, Michael Jones, Carolina Fernandez, Erin McCluskey (WRAP)

Introduction

The session, moderated by Natalia Basso and WRAP colleagues, focused on food waste in the retail and HORECA (Hotel, Restaurant, Catering) sectors. Food waste is significant in these sectors, with UNEP reporting 131 million tons (12.5%) in retail and 290 million tons (27.5%) in food service globally. However, in Latin America, data on food waste in these sectors is limited, with only a few countries collecting reliable information.

The retail sector in Latin America is a mix of large supermarket chains with sustainability policies and smaller local businesses, such as street markets, grocery stores, and bakeries. These small businesses are especially prevalent in rural areas, and food waste is often a concern in urban street markets, where waste can reach up to 23.7 kg per stall and week¹. Similarly, the hospitality sector includes large chains with growing sustainability awareness, but many small hotels and restaurants still struggle to address food waste.

Key Insights

Richard Swannell highlighted the significant economic impact of the food retail and hospitality sectors in Latin America, noting that retail sales in the region amounted to over USD 1 trillion in 2022. He also mentioned examples of multinational companies like Tesco and IKEA leading the way in reducing food waste through supply chain innovations and partnerships. These companies not only reduce food waste in their operations but also influence consumer behaviours through campaigns like UNEP's *Recipe of Change*.

World Café Discussions

The working group used the "World Café" format, where participants were divided into subgroups to discuss three guiding questions. After 15 minutes, participants rotated tables, contributing to all three questions. The moderators summarized key points from each group.

Guiding Questions

- (1) What is the compelling business case for preventing food loss and waste in retail and hospitality?
- (2) What are the barriers in retail and hospitality businesses to prevent and reduce FLW?
- (3) What strategies should be promoted to bring micro and small businesses on board?

Discussion Outputs:

1. The Compelling Business Case:

- **Operational Savings:** Reducing food waste leads to cost savings in procurement, waste management, and disposal.
- **Resource Utilization:** Better resource management reduces environmental impacts and lowers operational costs.
- **Positive Public Perception:** Companies that address food waste attract environmentally conscious consumers, enhancing brand loyalty.
- **Sustainability Demands:** Consumers increasingly favour businesses that align with sustainability values, making food waste reduction a competitive advantage.

¹ According to a study carried out in street markets in São Paulo, total waste reaches 23.7 kg per stall per week, with unavoidable food waste, particularly coconut and sugarcane bagasse, making the largest contribution to the wasted food.

- **Value Recovery:** Repurposing surplus food or donating it creates new revenue streams and potential tax benefits.
 - **Supply Chain Stability:** Reducing waste helps stabilize supply chains, reducing disruptions.
2. **Barriers to Reducing FLW:**
- **Lack of Transparency:** Companies are often reluctant to share FLW data due to concerns about confidentiality or reputational risks.
 - **Knowledge Gaps:** Many businesses lack the understanding or tools to effectively measure and reduce FLW.
 - **Consumer Awareness:** There is limited consumer pressure for the industry to act, as many consumers are unaware of the issue.
 - **Unclear Costs:** The full economic, environmental, and social costs of FLW are not well understood.
 - **Inconsistent Measurement:** FLW measurement is not standardized, making it difficult to identify the most impactful areas for action.
 - **Ineffective Supplier Relationships:** Poor relationships between retailers and suppliers lead to practices like poor forecasting and logistical inefficiencies that hinder waste reduction.
3. **Strategies for Micro and Small Businesses:**
- **Awareness Campaigns:** Raise awareness of the savings and benefits of reducing FLW to encourage micro and small businesses to take actions.
 - **Sustainability Training:** Offer training for hotel and restaurant staff on sustainability, emphasizing consumer demand for eco-friendly practices.
 - **FLW Measurement:** Encourage businesses to measure FLW as a first step in identifying inefficiencies and understanding hidden costs.
 - **Best Practices:** Promote efficient practices in food handling, preparation, and service to reduce waste.
 - **Training for Entrepreneurs:** Provide business management and sustainability training for small business owners, particularly those in the food sector.
 - **Student and Professional Training:** Educate students and professionals in the gastronomy field about sustainability and FLW to foster innovation in food waste reduction.
 - **Municipal Support:** Train local inspectors to incorporate FLW into health inspections and encourage best practices.
 - **Practical Guides and Incentives:** Create practical guides and checklists for small businesses, along with certifications or awards for those adopting sustainable practices.
 - **Tax Benefits:** Design tax incentives for businesses that reduce FLW or support food waste reduction initiatives.

Working Group 4: Developing policies

Moderators: Emily Broad Leib (Harvard Food Law and Policy Clinic, USA), Gustavo Alves (Ellen MacArthur Foundation, Brazil)

Key messages from the subgroups of Working Group 4 included:

- Provide/strengthen tax incentives for food donation
- Improve the governance and enforcement of food waste policies that already exist, such as any related to not wasting food
- Provide resources for food banks to increase their infrastructure
- Provide training to food producers about food standards to avoid post-harvest waste
- Ensure there is better post-harvest infrastructure
- Invest more on research related to quantifying waste and on the effects of various interventions on reducing food waste
- Create a “map” of the policies and ministries involved in FLW issue to facilitate a common and harmonised policy, and to make it clear where decisions are being made to facilitate better stakeholder involvement with policy development
- Create opportunities for participants in this workshop to continue to engage with each other moving forward
- Prioritize developing tools and data to better measure and monitor food loss and waste across supply chains, for the most effective approach.
- Address (legal) barriers that prevent loss and waste reduction action, such as not being able to donate food. At the same time, there are various campaigns urging actors to reduce waste -> need to work on framework conditions to enable and support those reduction activities, especially for food/surplus redistribution and donation.
- Bring further awareness to food loss, currently food waste is prioritized in the discourse on FLW
- At municipal level, there is often a lack of technical expertise and changes in government lead to a lack of continuity

Exhibition

Accompanying the presentations and discussions, the exhibition presented further practical examples, research focuses and activities for the prevention and utilization of FLW. There were exhibition stands on the following topics:

- SESC Mesa Brasil
- Delafinca Nicaraguan Specialty Coffee
- Embrapa Vegetables
- Rioterra
- RAMA (Brazilian association of supermarkets)
- Connecting food

The poster exhibition included the following issues:

- Collaboration Initiative Food Loss and Waste by *Felicitas Schneider (Thünen Institute, Germany)*
- Characterization of Food Losses in Agro-food Companies according to size in Argentina by *Paula Gomez & Natalia Basso (Secretary of Agriculture, Livestock and Fisheries, Argentina)*
- Latin American Working Group on Fruit and Vegetable Loss and Waste (GLAPDFYH) by *Marcela Leal (consultant, Argentina)*
- Food Waste in Urban Households of the Argentine Republic by *Secretary of Agriculture, Livestock and Fisheries, Argentina*



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- Pact against Hunger *by Pacto contra a fome, Brazil*
- Monitoring of food and beverage waste in the retail sector in Argentina *by GS1 Argentina and Secretary of Agriculture, Livestock and Fisheries, Argentina*
- Sustainable homes: An Approach to understanding and motivating pro-environmental behaviour *by Christiam Méndez (University of Lima, Peru)*
- Revisiting Food Waste in Low-Income Households: Evidence from Chile *by María Isabel Sactic & Andrés Silva (Universidad San Sebastián, Chile)*
- Food Bank Program of State of Maranhão *by Ingrid Elizabeth Maia Aranha Damasceno & Fatiana Diniz Araujo Belfort (Banco de Alimentos do Maranhão, Brazil)*

Day 3 – Excursion to food bank and agroecological cooperative (24 October 2024)

Due to logistical reasons, we had 55 seats available for registered participants on the last day of our workshop. First, we were kindly invited to visit [SESC Mesa Brasil](#). Our generous hosts gave us a great welcome with displays and visual aids that impressively explained the range of services offered to social organisations and their clients, as well as society, in general. We were also able to sample delicious finger foods, which - as with lunch on the previous days - followed the zero waste concept. Tasty fruit juices made from whole fruits including peels were offered together with an Australian bread sandwich filled with banana peel meat. To complete lunch, delicious apple cup cakes baked from whole apples with their seeds, stem and peel were provided as dessert.

In an interesting presentation by Ms Claudia Vilhena, we were informed that in 2023, 1700 tons of food products were donated by 158 companies and redistributed in cooperation with 357 organisations. The large amounts of managed items require a lot of storage capacity and handling space which was the reason for investing into a new facility which offers more space than the current one. A lot of donors are classified as small-holder farmers who receive knowledge support in return of their surplus donations. Usually, fresh products are delivered at night from the fields and will be redistributed the next morning. For donations coming from grocery stores and supermarkets, a team of nutritionists and technicians will check the quality prior to redistribution. Depending on the cooperation partners' capacity, some pick up the donations by themselves while other get the products delivered by SESC Mesa Brasil. From all donations, approximately 64 % are rescued which would have been wasted otherwise.

The social organisations benefiting from the SESC Mesa Brasil activities are not only supported with valuable food but also with knowledge to process the food further (e.g. jams, cookies). In addition, there are training programmes how to produce non-food products which could be used on the one hand as part of an employment programme for beneficiaries and on the other hand, as an additional source of income through sales (such as textiles, small bags, art). One example is the hand-processed soap which is produced by one of the partner organisations which processes collected spent cooking oil. We learned that not only surplus perishable food from grocery stores or markets are collected and redistributed but also durable food items which are in surplus after popular public special offer campaigns in combination with public events such as soccer games or concerts. For further photos please see their [website](#).

Our second stop of the excursion brought us to an agroecological cooperative located in the north-eastern part of the District Federal of Brasilia. [Aprospera](#), the Associação dos Produtores Agroecológicos do Alto São Bartolomeu, welcomed us directly in the middle of their fields. The spokeswoman explained their vision and approach focussing on high quality native local food products and provided insights into the production system. We were invited to taste some of the varieties such as fresh pink pepper, cagaita, a special variety of passion fruit and others. Mr Nuno Madeira from Embrapa Vegetables informed our group about the outcomes of the cooperation between Embrapa and the cooperative as well as on the benefits for society. Our discussions were continued during tasty lunch at the meeting house of the location. Unfortunately, heavy rainfall interrupted our walk through the farms where we could have seen examples of the produced food items and their by-products.

We appreciate the opportunity to connect theory with practice and thank both organisations who hosted us! This added additional value to the overall event.

Acknowledgements

We appreciate the valuable support from SESC Mesa Brasil who provided the entire catering during the workshop and the excursion as a zero-waste buffet. It was great taste and no food waste. In addition, Pacto contra a fome supported the delivery of the workshop – thank you! We thank all chairs, working group facilitators as well as the motivated participants for their valuable input and especially Embrapa vegetables and corresponding on-site colleagues for hosting the event. A big thank you to all colleagues who engaged in the administrative and technical matters which contributed towards the success of the workshop.

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Context

The results of the present workshop will be used for further cooperation within the workshop participants and as input for future collaboration related to the [Agricultural policy dialogue Brazil - Germany](#).