

POLICY BRIEF

TRANSFORMING FOOD CHAIN STRUCTURE TO REDUCE FOOD LOSS AND WASTE (FLW)



ZeroW tackles Food Loss and Waste (FLW) through a coordinated set of innovations piloted in nine real-world Systemic Innovation Living Labs (SILLs) aiming to achieve significant reductions across all stages of the food supply chain - from pre-harvest to consumption. A dedicated Policy Team complements this work by defining a 'Just Transition Pathway' toward near-zero FLW, offering a practical framework to bridge systemic barriers (e.g., fragmented and lengthy nature of the food supply chains, the digital divide, challenges in scaling innovative waste reduction technologies) and on-the-ground FLW solutions. Drawing on economic modelling and insights from the stakeholders and the SILLs, the team identified key recommendations promoting a flexible, equity-focused transition.

Reducing Food Loss and Waste (FLW) is a central objective of the European Green Deal and the Farm to Fork Strategy. While EU policy has made significant progress, current efforts are overly focused on end-of-chain interventions (e.g., consumer behaviour, waste management) and overlook structural problems in food supply chains.

Policy Problem

Long, centralised food chains and weak support for Short Food Supply Chains (SFSCs) hinder systemic change. Without a structural reform that addresses the current concentration of power in long, centralised food supply chains whose inefficiencies, coordination challenges, and extended transit times contribute significantly to FLW, even reduction measures can lead to unintended effects, such as increased emissions, biodiversity loss, and marginalisation of small producers.

Key insights from ZeroW project

- Environmental trade-offs: Reducing FLW can inadvertently increase emissions in primary agriculture if not paired with sustainable farming.



This is because efforts to reduce waste, such as improved yields and production efficiency, enhancing crop appearance, or extending shelf life, often involve higher use of chemical fertilisers, energy, or water, as showcased in the economic modelling carried out within the project. Without sustainable practices, these changes can lead to greater greenhouse gas emissions and environmental impact, undermining the transition.

- Cost-benefit challenges: FLW reduction measures, including shifting to shorter food supply chains, often carry high implementation costs, requiring economic support for adoption.
- A ‘Just Transition Pathway’ must integrate resilience as a core component, recognising that while SFSCs empower small producers and reduce waste, they often operate with limited resources and are more vulnerable to external shocks such as market fluctuations, climate events, or infrastructure disruptions. Strengthening resilience ensures that these localised systems can adapt, maintain continuity, and scale effectively despite challenges such as logistical constraints, limited digital access, and insufficient infrastructure. Without resilience, SFSCs risk instability and cannot reliably support inclusive, equitable transitions in food systems.
- Real-world labs (SILLs) revealed that digital solutions (AI tools, real-time quality control, platforms for food redistribution) have potential for scaling waste reduction technologies, but adoption is slowed by data-sharing gaps, trust issues, and lack of inclusive design.

Three Strategic Recommendations

1. Strengthen Short Food Supply Chains for resilient primary production

SFSCs reduce waste by minimising intermediaries and transport, while increasing system resilience and empowering small actors.

- Provide grants, tax incentives, and loan guarantees for SFSC start-ups.
- Expand green public procurement for local and organic food.

- Invest in logistics hubs, cold storage, and public infrastructure for SFSCs.
- Promote legal recognition of Alternative Food Networks (AFNs) and ensure fair pricing for SFSC products.
- Foster co-ops and peer-learning among producers and logistics actors.
- Prioritise inclusion (e.g., young people, women, small-scale farmers) via land access and training.

2. Enhance agricultural sustainability through innovation and digital data access

Digital tools (e.g., interoperable platforms, AI-based forecasting) are essential for reducing food loss and waste by enabling better demand planning, inventory optimisation, and coordination across the supply chain. A dedicated data space for FLW monitoring is vital to support these tools, providing a secure, standardised framework for data sharing and analysis. This ensures transparency, informs policy, and fosters collaboration, but its benefits depend on making such systems accessible and inclusive, particularly for smaller actors often excluded from digital innovation.

- Create a secure EU “FLW Data Space” to support real-time monitoring.
- Ensure rural access to broadband, digital skills training, and funding.
- Co-develop digital tools with farmers and compensate their participation.
- Incentivise digital solution providers to tailor tools for diverse users.
- Align digitalisation with gender equity, farm succession, and local needs.



3. Support sustainability transitions in the food chain with interventions targeting logistics and transportation

Efficient, inclusive, low-carbon logistics are a cornerstone of a just transition to near-zero FLW.

- Set up regional food logistics hubs using underutilised public spaces, such as vacant municipal buildings or transport depots. These hubs can decentralise storage and distribution infrastructure, making it more accessible to small producers and alternative food networks. Additionally, they enhance coordination, reduce transportation distances, and support local economies.
- Fund reverse logistics systems for the redistribution or valorisation of surplus food. In parallel with logistics hubs, these systems allow for the systematic collection and redistribution of surplus food, either for human consumption, animal feed, or industrial uses such as composting or bioenergy. This not only prevents food waste but also strengthens circularity within the food system, contributing to both social equity and environmental sustainability.

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