Designing & implementing Action Plans that support eco-innovations to reduce food waste and promote a better resource efficient economy

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Dia Mundial de l’Alimentació, 16 Oct 2018
Generalitat de Catalunya, Barcelona
Ambition of the project

• To help territorial authorities to better address the reduction of food waste along the food chain by the support of eco-innovations through regional and local policies as part of a more global territorial strategy for food security

• To address the crucial issue of food waste in EU city and regions and to demonstrate that food waste reduction and redistribution management could be at source of a resource efficient and environmentally friendly economy for the territories

• To provide valuable inputs for the debate on future EU priorities beyond 2020, including governance, strategies and delivery mechanisms at City and Regional levels by focusing on the nexus between food security, resource efficiency, circular economy and territorial governance.
Our focus: reduction of losses/waste and redistribution of food

Our scope: from agrifood industries to consumers & citizens

Source: WRAP
Share and value of food waste in the EU

Split of EU-28 food waste in 2012 by sector; includes food and inedible parts associated with food.

Source: FUSIONS
**Your Business Is Food; don’t throw it away**

Devon - England

Cutting costs and saving money by throwing away less food is a challenge for every catering company. "Your Business Is Food; don’t throw it away" is a free campaign designed to help businesses review and cost the food they are throwing away in order to take actions and make savings.

In the catering sector food waste can occur at different stages: purchasing, storage, preparation, overproduction, serving dishes, through to left overs on customers’ plates. What’s thrown away is not just food, but also staff time and disposal costs. Reviewing the amount of food that is thrown away can help to find out where savings can be made, straight to the bottom line. The campaign tools gives some clear ideas on how to throw away less food and start saving money. A starter guide gives a summary of why and how to take action on food thrown away. There is an animation to show how to use the tools.

The length of the review depends on how long it’s needed to get a clear picture of where food is being thrown away: through 3-day, 7-day or more tracking sheets.

A calculator tool is used to see at what stage food is being thrown away on site. The Calculator includes handy graphs to show the savings that can be made to help focus on the actions for your business. Some corrective actions have been very efficient to cut food waste:
- Improved portion control;
- Optimising the use of ingredients;
- Improved management of food prepared after the main evening peak service;
- Asking customers if they want side dishes.

**IN BRIEF**

- Developed by WRAP under the Courtauld Commitment 2025
- Used by the sector incl. the British Hospitality Association (now UKHospitality), Chartered Institute of Environmental Health, Sustainable Restaurant Association, Considerate Hoteliers
- Reduction of perishable food purchasing costs up to 25%
- Food waste reduced up to 72%
- Gross profit up by 3-5% following 33% reduction in food waste

[https://partners.wrap.org.uk/yb/business](https://partners.wrap.org.uk/yb/business)

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**Innovation through food circular economy curriculum**

South Ostrobothnia - Finland

Seinäjoki University of Applied Sciences has developed a stable model of circular economy studies in the school of Food and Agriculture.

Seinäjoki University of Applied Sciences (SeAMK) prepares professionals of the future and produces high-level applied research to promote welfare and innovations. The School of food and agriculture is one of the four faculties that offers Bachelor Degree Programmes (Agriculture and Rural Enterprises, Food and Hospitality, Food Processing and Biotechnology) and Masters Degree programme (Food Chain Development).

SeAMK considers that circular economy skills shall be a part of education of food professional and engineers of process and material technology. Designed courses are related to sustainable food systems, sustainable use of materials, food retail material (plastic, textile, chemical pulp fibre), sustainability of chemical and process industry, use of byproducts as well as info package and workshop with food chain companies. The project aims at developing, producing, testing, and evaluating the new tools for the education in the food supply chain. The standard model is a triple helix learning approach that comprises the student, the teacher and an external expert on circular economy. Such a curriculum provides new knowledge and experience to future food professionals as follows:
- It combines food waste prevention with business knowledge;
- It has an effect on food waste prevention in different levels of the food chain;
- It increases the cooperation between students, enterprises, teachers and policy makers;
- It supports new innovations. This model is suitable to be implemented in other universities.

**IN BRIEF**

- Since 2017
- Food circular economy projects 80% supported by Sitra fund for innovation

[www.seamk.fi/en](http://www.seamk.fi/en)
Focus group on food loss on the farm

Suggestion of key issues to be considered by the EIP-AGRI Focus Group: Food Loss on the Farm

1. Definition and quantification of on-farm food losses - what constitute food losses on the farm? ‘avoidable’ and ‘unavoidable’ wastes; and define the boundaries;

2. The necessity for using a holistic approach - local, regional, EU, global; how are all these levels addressed? Is the global food trade the key defining parameter?

3. Soil health: how can soil health be assured when ‘exporting’ wastes from the farm?

4. Prioritising the use of land for food production. How does this link in with the bioeconomy?

5. Risk management: how to address over-production to meet market needs?

6. Efficiency: is ‘producing more from less’ the proper approach? And what are the consequences for the full agri-food chain?

7. Potential for waste reduction on the farm: how much of the food loss that is currently reported/analysed can be considered avoidable in practice?

8. How do post-farm gate issues impact on pre-farm gate food losses? And how can these be addressed? What are the relative impacts of ‘practice based’ and ‘market based’ losses on the farms?

9. Policy v. good science. How can the unintended negative impacts of policy be avoided? Is policy necessary or can we rely on the ‘free market’?

10. Holden’s ‘Fossil Food’ concept: what does this mean?

11. How can ’Digital agriculture’ contribute to minimising on-farm food waste? What other technologies and systems can contribute?

12. Where does the consumer fit in all this? Is consumer education an important element in reducing on-farm food waste?

13. The farmer: how can the farming community optimise production systems to minimise on-farm waste?

14. How can EIP-AGRI contribute to reducing food losses on the farm?
## Focus group on food loss on the farm

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### Strategy	Theory of Change

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<thead>
<tr>
<th>Develop new crop varieties</th>
<th>Development of new varieties that are less susceptible to disease, can reduce crop losses</th>
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<tbody>
<tr>
<td>Better agronomy practices and improved chemicals</td>
<td>Limiting the damage of pests/diseases is central to reducing crop wastage</td>
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<tr>
<td>More precision agriculture techniques</td>
<td>Data harvesting and the embedding of effective sensor technology can help farmers better manage crops</td>
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<tr>
<td>Improved storage and preservation methods</td>
<td>Ensuring adequate and appropriate storage facilities (e.g., ventilated, cold, etc.) can drastically cut food losses, helping farmers avoid losses due to spoilage and pests</td>
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<tr>
<td>Demand forecasting and sharing information</td>
<td>Retailers can be more forthcoming in sharing forecast data for specific food items to help farmers with their production planning and prevent over-production</td>
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**Further collaboration efforts within the supply chain**

WRAP (2017) highlight that UK supermarket Asda’s sourcing arm IPL is helping its growers use a new yield forecasting tool. Growers now use smart phones to upload photos of their crop throughout the season, and intelligent software uses these images to assess the crop’s potential in relation to data from local weather stations, and historical data. Growers, IPL and Asda receive a yield report to make accurate decisions earlier in the season that reduce the risk of both gluts and shortages, at farm and retail level. These collaborative efforts provide an effective template for others to follow.

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### Increase diversity of crop base

Given the inevitable variability in crop quality, having a diversity of customers with different needs may reduce risk to the farmer and enhance overall productivity by harnessing new technology and using market places such as ![branchequiditou.fr](https://branchequiditou.fr).

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### Redistribute surplus crop for animal/human feed

*For people needs first!*

Identifying suitable distribution chains for surplus crop is essential to determine the effectiveness of this strategy. Redistribution specialist like [Food cloud](https://www.foodcloud.org) and apps such as [SpoilerAlert Gleaning Network](https://www spoileralert.org) are actively working with farmers across Europe to salvage surplus crops for redistribution.

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### Work with retailers to have more flexible quality specifications

Explore market niches by marketing ‘ugly’ (i.e. misshapen and non-spec) vegetables directly to customers e.g., through new app delivery services like [Imperfect Produce](https://www.imperfectproduce.co.uk), [wonky veg](https://www.wonkyvegbox.co.uk) boxes, and the [Fruta Fein](https://www.frutafein.com) cooperative.
EIP-Agri/FG Food loss on the farm: Causal Map for food losses in primary production

At production level in France, food losses and waste vary largely among products (ADEME, 2016):
• eggs (9%),
• fresh salads (57%)

No single figure can summarize those loss and waste in the food system but estimates are (ADEME, 2016):
• Cereal crops (20%)
• Fruit and vegetables (23%)
• Animal food products (12%)

At farm level, ways of reduction of food loss include:
• Relaxing quality specifications between producers and retailers so they are more intrinsic quality-driven rather than on aesthetic aspects
• Coordinated approaches between farmers and processors and new food supply chains (small volumes, food donation).
Mapping the eco-innovative solutions in the food system

Source: Ecowaste4food
Options for keeping the food system within environmental limits

The food system is a major driver of climate change, changes in land use, depletions of freshwater resources, and pollution of aquatic and terrestrial ecosystems through excessive nitrogen and phosphorus inputs. Here we show that between 2010 and 2050, as a result of expected changes in population and income levels, the environmental effects of the food system could increase by 50–90%, in the absence of technological changes and dedicated mitigation measures, reaching levels that are beyond the planetary boundaries that define a safe operating space for humanity. We analyse several options for reducing the environmental effects of the food system, including dietary changes towards healthier, more plant-based diets, improvements in technologies and management, and reductions in food loss and waste. We find that no single measure is enough to keep these effects within all planetary boundaries simultaneously, and that a synergistic combination of measures will be needed to sufficiently mitigate the projected increase in environmental pressures.

Source: journal Nature, 2018

- Halving food loss & waste is needed for keeping the food system within environmental limits: it could if globally achieved, reduce environmental impact up to a sixth (2030 target)
- Tackling food loss & waste requires measures across the entire food system, from harvest, storage, transport, over food packaging and labelling to changes in regulations and business behavior
- Ecowaste4food: Good practices only are not enough anymore to reduce food waste impacts; ambitious Action Plans at EU, national, regional and city levels are key drivers towards behavior change
“Food waste is a problem along the entire food supply chain and therefore action should be targeted all along the chain with potential benefits for all those involved. Emphasis should be put on prevention, as the benefits of avoiding waste outweigh those of dealing with it later. Whilst there are a number of EU policies with the potential to combat food waste, this potential is not exploited and the opportunities offered have yet to be taken. There has been a notable lack of assessment of the impact of the various EU policies on the fight against food waste. Major policy areas, such as agriculture, fisheries and food safety, all have a role to play and could be used to better combat food waste. It must be recognised that, over time, policy changes, including reforms to the CAP and fisheries policy, have had a positive impact”.

European Court of Auditors, Jan 2017
Thanks for your attention!

@ecowaste4food

www.interregeurope.eu/ecowaste4food/