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Challenges for the Islands in the era of the Circular Economy

The prevention of Food Waste as a strategy to implement the Bioeconomy

Adamantios D. Skordilis

f. General Director of the Hellenic Recycling Agency



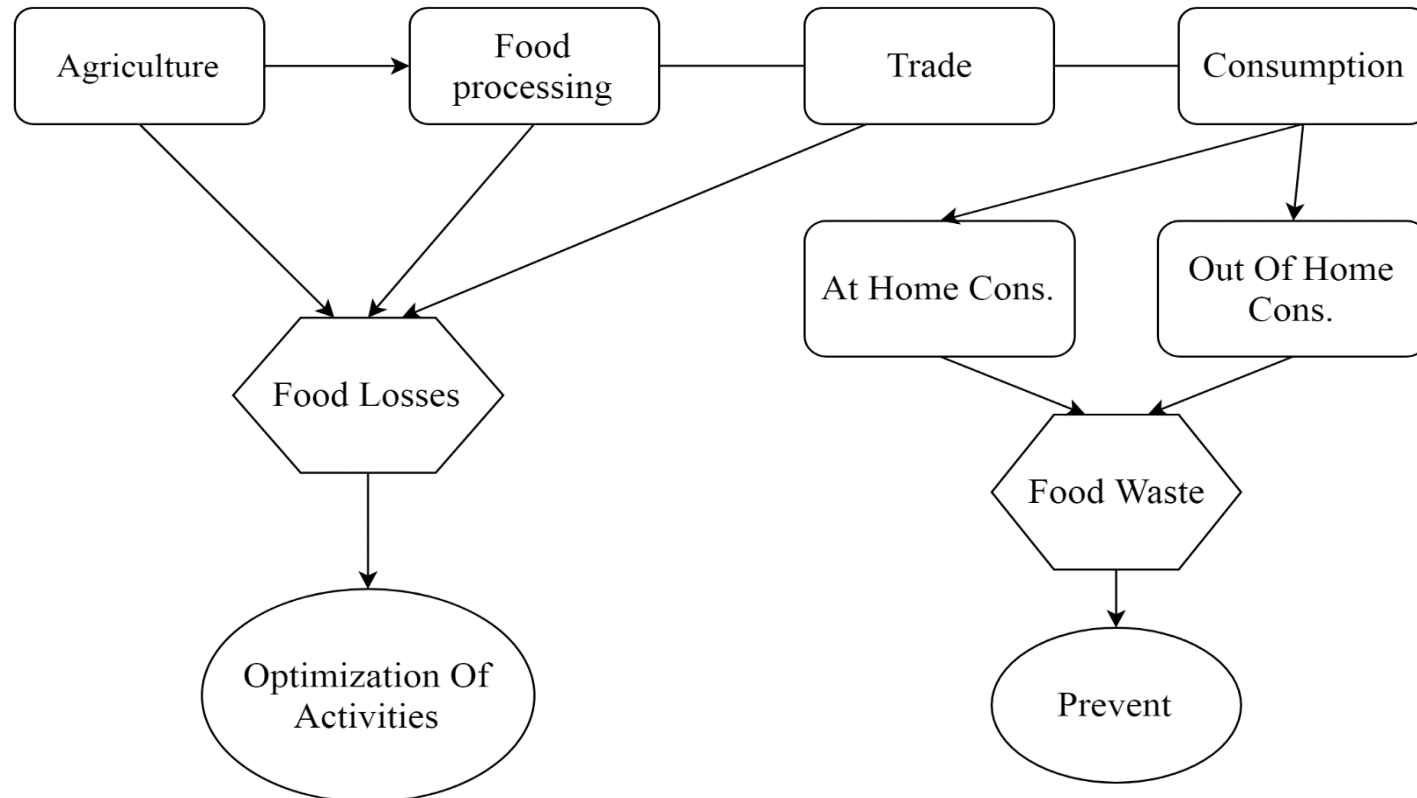
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Losses and waste in the food chain





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1. Agriculture

Impact from climatic conditions

- Diseases / Parasites
- Losses during storage
- Losses during transportation

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2. Food processing

- Deviation from the required product properties and quality attributes
- From storage of return samples
- Overproduction and mismanagement
- Errors in the production process (eg production break, incorrect marking, etc.)

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3.Trade

- Damage during transportation
- Past expiration date
- Improper storage
- Surpluses due to poor product- market calculations

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4a. At home Consumption

- Incorrect estimations of the volumes of generated waste
- Insufficient storage
- Shopping planning
- Bad implementation of hygiene and safety standards
- Invalid portion size determination

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4b. Consumption out of home

- Bad market planning
- Lack of stock inventory at home
- Past expiration date

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Worldwide food waste generation

- The global quantity amounts to 1.3 billion tons
- 1/3 of the food produced for human consumption is lost or becomes waste at the world level





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Food Waste Generation in EU, Greece and Cyprus



- In the EU discarded food → 89 million tons.
- Per person → 173 Kg / year
- Per EU household → 76Kg / year
- The BCFN (2012) study estimated that Greeks and Cypriots produce **50kg** per person annually.
- This corresponds to 550,000 tons and 42,000 per year respectively.

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Eurobarometer: the most practical ways to help people to waste less food



60% use refrigerators



59% re-use leftovers



49% improve shopping planning





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- Being able to choose for a smaller portion in restaurants (55%)
- Better estimation of food portion sizes (53%)
- Better product information on food labels (51%)
- Clearer product use information (48%)

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Environmental Effects

Classification

Effective categories

Impact indicator

CO₂

CH₄

N₂O

NH₃

SO₂

Greenhouse effect

Eutrophication

Acidification

CO₂ Equivalent

Eutrophication Potential

Acidification Potential





- Global CO₂ release from food production processes and discarded food is estimated at 3.3 Gtons
- Every year, 170 million tons of CO₂ are released in the EU





CO₂ equivalent

Livestock products



→ 9,21 Kg CO₂ eq./kg

>

3,6 times more

Plant products



→ 2,55 Kg CO₂ eq./kg





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Water Consumption-Required land

- The required water consumption for food losses is 250Km³, 3 times the water in Lake Geneva.
- The required land for producing food that we never eat is up to 1.4 billion hectares.

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Environmental impacts of food waste (per 100 persons)

Greenhouse gas emissions



13.2 t CO₂e



42,500 km car drive

Agricultural land use



24,900m²*a



3 soccer fields

Agricultural water consumption



85,000 litres



85,000 1-litre water bottles

Source: Umweltbundesamt

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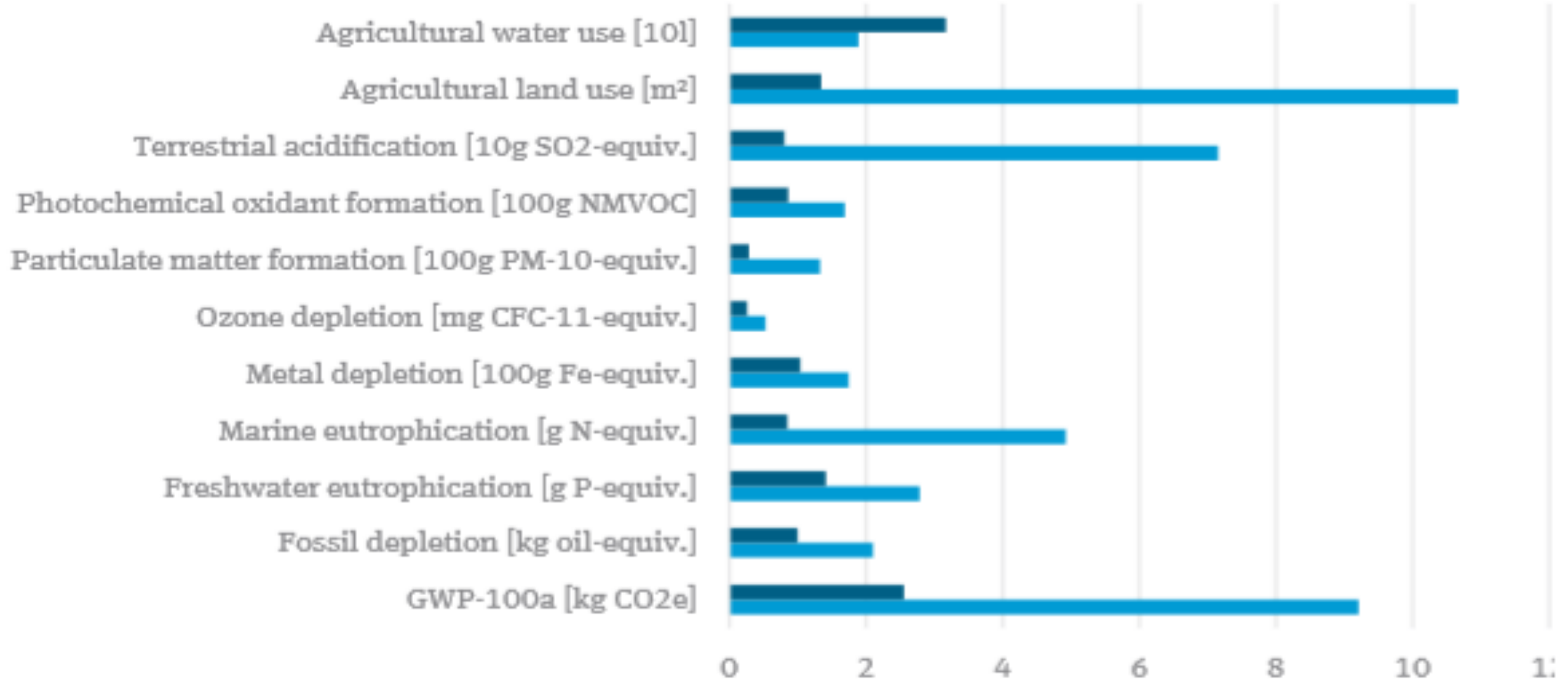




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Environmental impact analytics of food losses and food waste per person and year

	Unit	Agriculture	Food processing	Trade	Consumption	Total
Green house gases	Co ₂ -equivalent	3,3	19	10	134	476
Mineral raw materials	kg-oil	54	4	3	48	109
Eutrophication (lakes,rivers)	Kgp-equ	0,034	0,014	0,009	0,1	0,157
Eutrophication (s ea)	Kgp-equ	0,188	0,037	0,025	0,028	0,255





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Activities towards food waste reduction

- Production (agriculture, manufacturing and manufacturing)
- Trade (food retailing, wholesale, direct marketing)
- Consumption at Home
- Out-of-home consumption (mass catering, hotels, food supply)
- Society (Initiatives, campaigns, NGOs, social institutions, educational institutions)

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Measures towards food reduction

- Measures for designing a framework
- Measures relating to individual aspects
- Measures for increasing appreciation of food

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Initiatives in Europe to reduce food waste

- Education campaigns, information and training,
- Waste collection and supply chain optimization.

→ However, most of the measures are yet small and not adequately evaluated because they do not provide the necessary clarity.

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The European Platform on Food and Waste (FLW)



- Determining the measures needed to prevent food waste
- Exchange information of best practices and
- Assessment progress over time





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The European Platform on Food and Waste (FLW)



1. Too Good To Go
2. Resq Club
3. Sir Plus
4. Epepetete
5. Zu gut fuer die Tonne
6. Eat Smarter
7. Essen und Trinken

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Examples of best practices

- New product ideas
- Start-ups
- Associations and
- Initiatives

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Conclusion

A drastic reduction in Food Waste can only be achieved when all stakeholders contribute with concrete solutions and targeted agreements.

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Thank you for your attention

Adamantios Skordilis
[askor@tee.gr]



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