

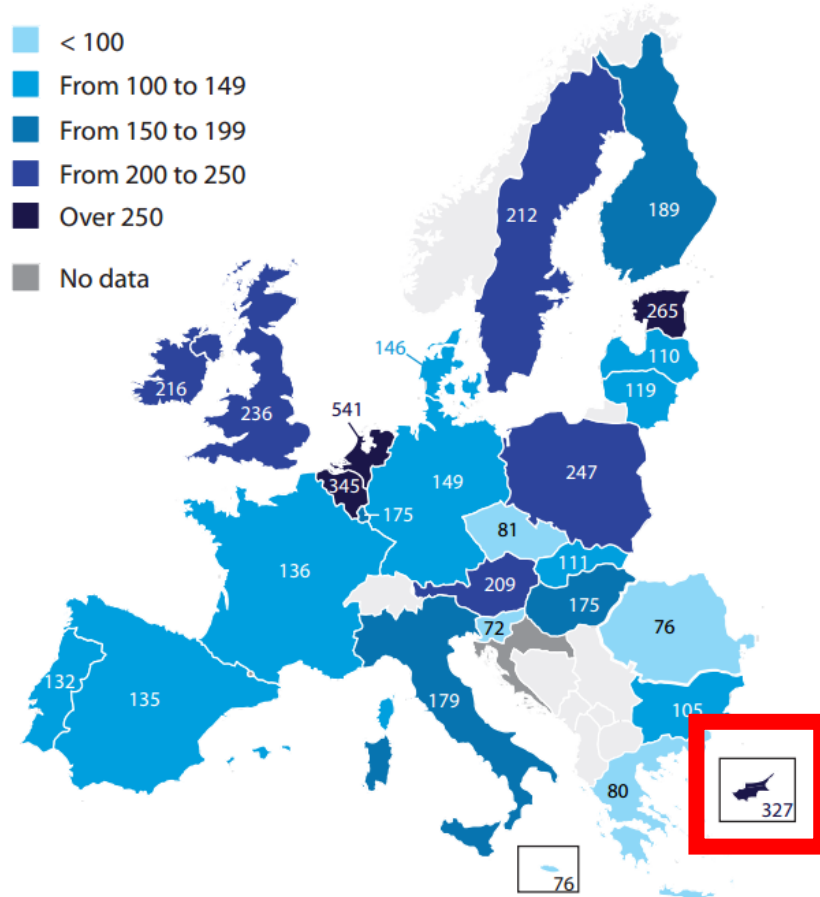


# The Concept of Food Waste and Food Losses Prevention and Measuring Tools

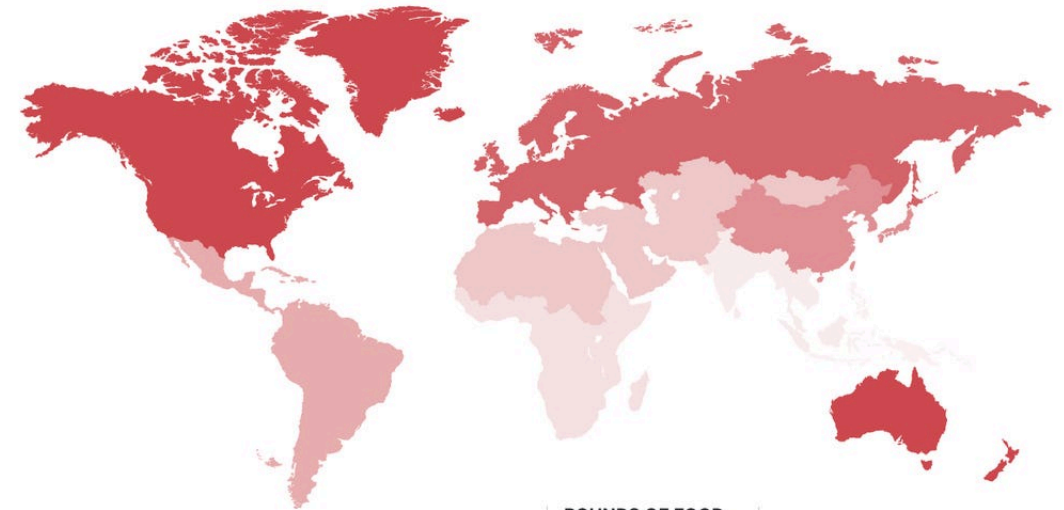
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# Estimated FW in EU and worldwide

## Estimated total food waste in the EU, 2010 (kg per capita)



## The biggest food wasters around the world



RANK/REGION	POUNDS OF FOOD WASTE PER PERSON /PER YEAR	TYPES OF FOOD MOST WASTED
7 South/Southeast Asia	227 pounds	Grains
6 Sub-Saharan Africa	350 pounds	Roots/tubers
5 North Africa & West/Central Asia	460 pounds	Grains
4 Latin America	495 pounds	Fruits/vegetables
3 East Asia	530 pounds	Roots/tubers
2 Europe	610 pounds	Roots/tubers
1 North America & Oceania	640 pounds	Roots/tubers

SOURCE: The Food and Agriculture Organization of the United Nations

TECH INSIDER

Data source: [Technology options for feeding 10 billion people](https://epthinktank.eu/2014/02/07/tackling-food-waste-the-eus-contribution-to-a-global-issue/food-waste3/), STOA 2013.

Available at: <https://epthinktank.eu/2014/02/07/tackling-food-waste-the-eus-contribution-to-a-global-issue/food-waste3/>

# What makes FW/FL one of the main global issues?

## Globally:

The global food system account 1.3 billion tons of food are lost or wasted every year (World Counts, 2022).

At the same time, FAO estimates that one-third of food produced worldwide is wasted, contributing to more than 820 million people battered with world hunger each year and 2 434 235 people who died from hunger in 2022 globally.

## European Union:

In the EU alone, around 931 million tons of FW were generated in 2019. In addition, FW accounts for 25% of the annual freshwater supply and approximately 300 million barrels of oil annually (Danible et al., 2021). Greenhouse gas emissions from the production of food are ultimately wasted, accounting for 7.2 billion tons from within the farm gate, 3.5 tones from land use change, and 5.8 billion from supply chain processes, according the last analysis (FAO, 2019).

2019



== 174 kg/  == 143 billion € == 170 000 000 tons CO<sub>2</sub>

■ Foodservice ■ Retail ■ households

# One meal

The environmental cost of one meal requires:



- 10 kg of topsoil,



- 1.3 L of diesel,

- 800 L of water, 

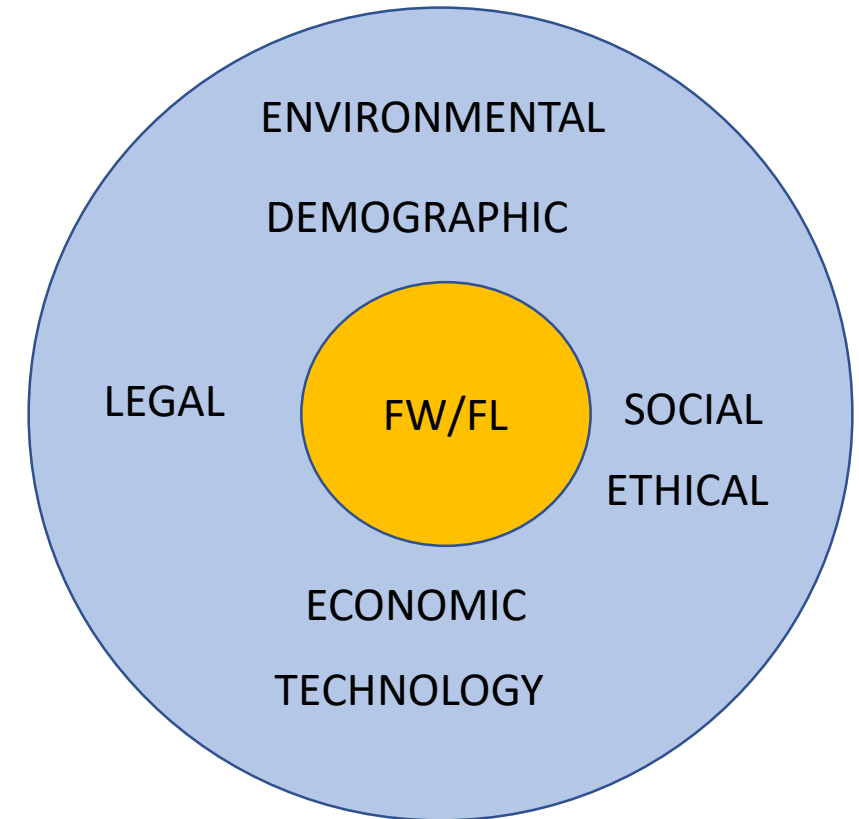


- 0.3 gr of pesticides and

- 3.5 kg of CO<sub>2</sub> emissions (The World Counts, 2022) 

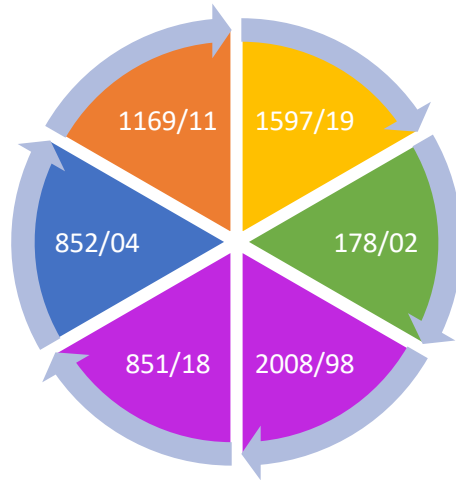
## Research Question

- Identify
- Analyze
- Control
- Provide solution

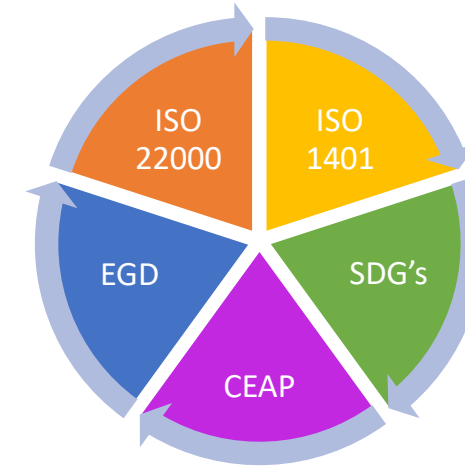


# How we can identify and control them?

Directives / Legislations :



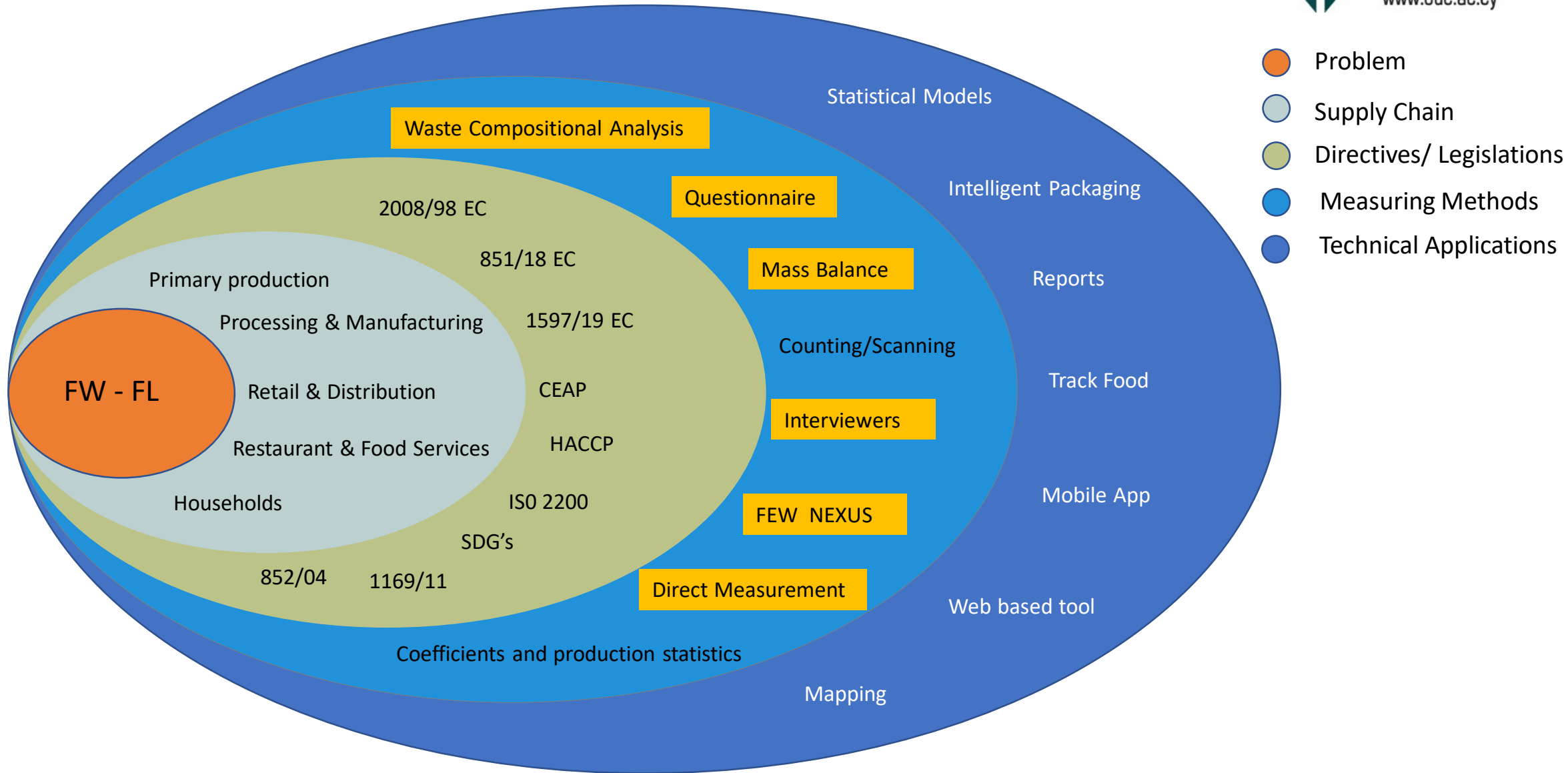
Solutions:



Stage of the food supply chain	Methods of measurement			
Primary production	— Direct measurement	— Mass balance	— Waste composition analysis	— Questionnaires and interviews
Processing and manufacturing				— Coefficients and production statistics. — Waste composition analysis
Retail and other distribution of food				— Counting/scanning
Restaurants and food services				— Diaries
Households				

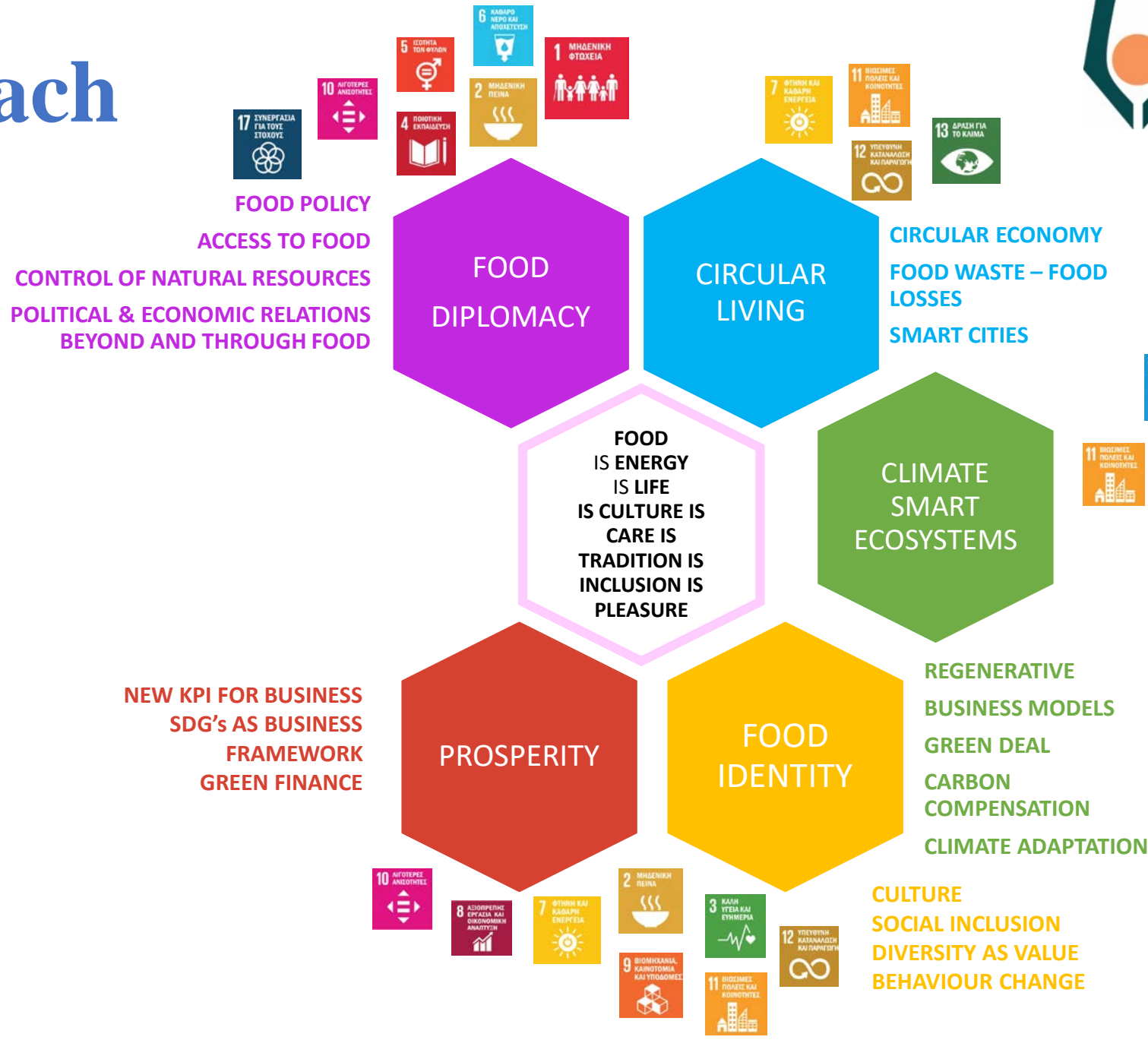
Directive 2008/98/EC lays down an obligation for Member States to include Food Waste Prevention (FWP) into their waste prevention programs and to monitor and assess the implementation of their FWP measures by measuring the levels of FW on the basis of a common methodology in stages of the food supply chain based on Commission Delegated Decision EU 1597/2019

# Results



- Problem
- Supply Chain
- Directives/ Legislations
- Measuring Methods
- Technical Applications

# New Approach





The reduction of FW/FL has become a fundamental responsibility involving the entire community, from international institutions to individual citizens

**Thank you!**