



Stakeholder MEETING

Harmonization of methods for food waste quantification and prevention

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OSTFOLD RESEARCH



WP1: Objectives for harmonized methodology

Assess food waste quantities and trends in food waste prevention and reduction by:

1. Establishing a **standard approach on system boundaries and definitions** of food waste
2. Developing, testing and describing **standardised reporting methodologies** to improve quantification of food waste
3. Comprehensively mapping **existing trends in relation to food waste prevention and reduction**



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WP1 identified the following needs for methods for quantifying food waste (Amsterdam workshop)

- Not one method for all types of problems and research questions (need flexibility within the main framework) - Should have product-/process specific rules which specifies methods to be used within the main framework
- Need both a bottom-up and a top-down approach; data for own organisation as well as sectors and food chain, national and EU Statistics
- Need methodology that can be used both for food waste statistics and for preventative actions to reduce food waste, both in companies and the whole food chain



WP1: Tasks and deliveries



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WP1: Approach for developing a framework



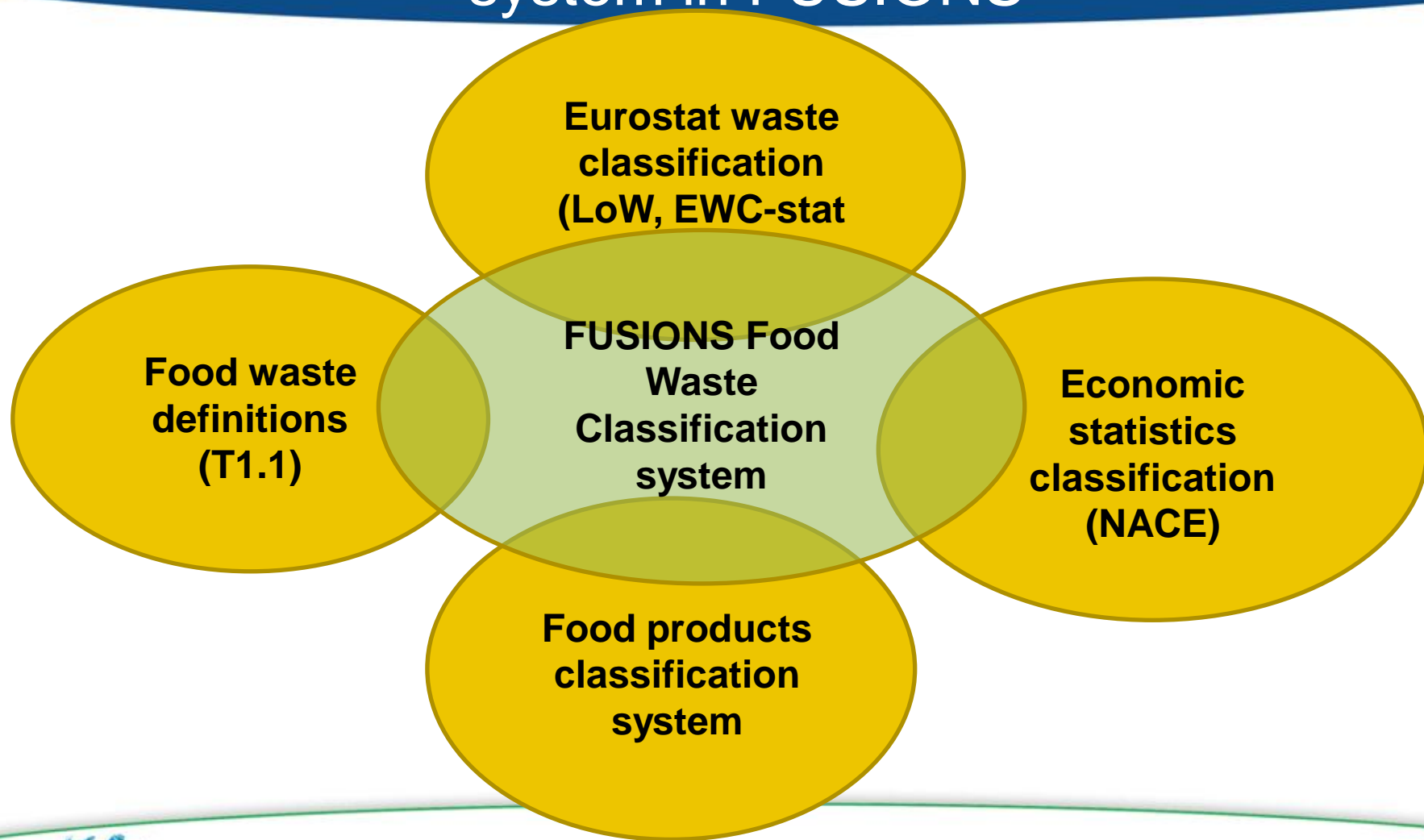
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Basis for development of food waste classification system in FUSIONS



The basis is waste generated in a geographic region per year

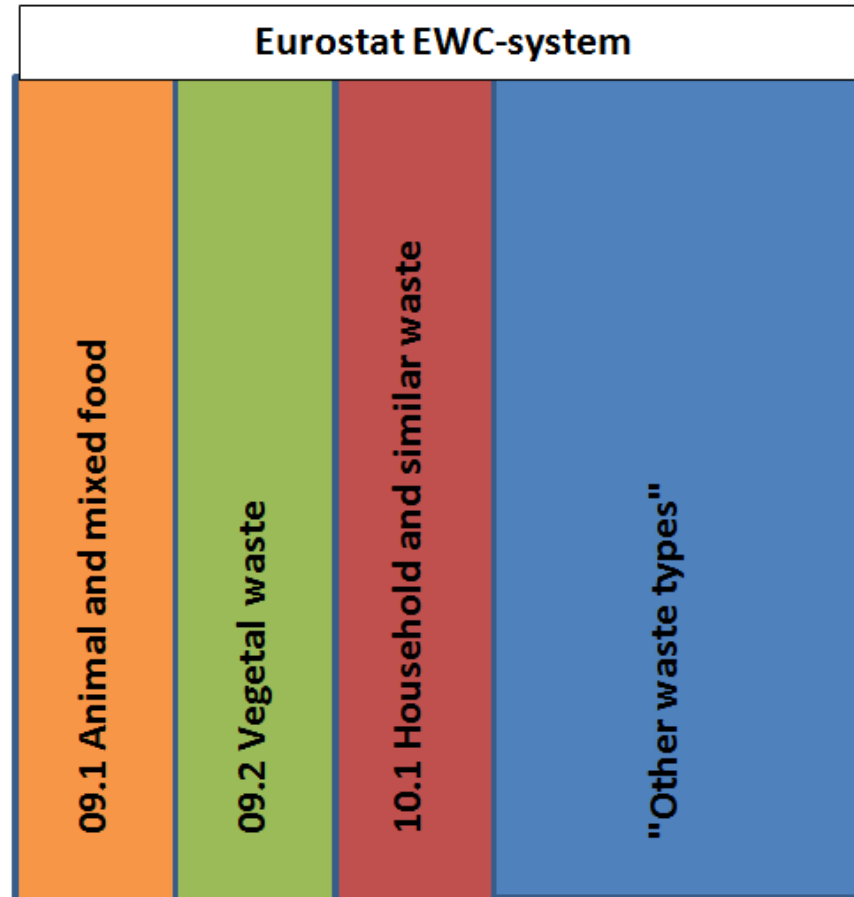
**Total waste generated
per year**



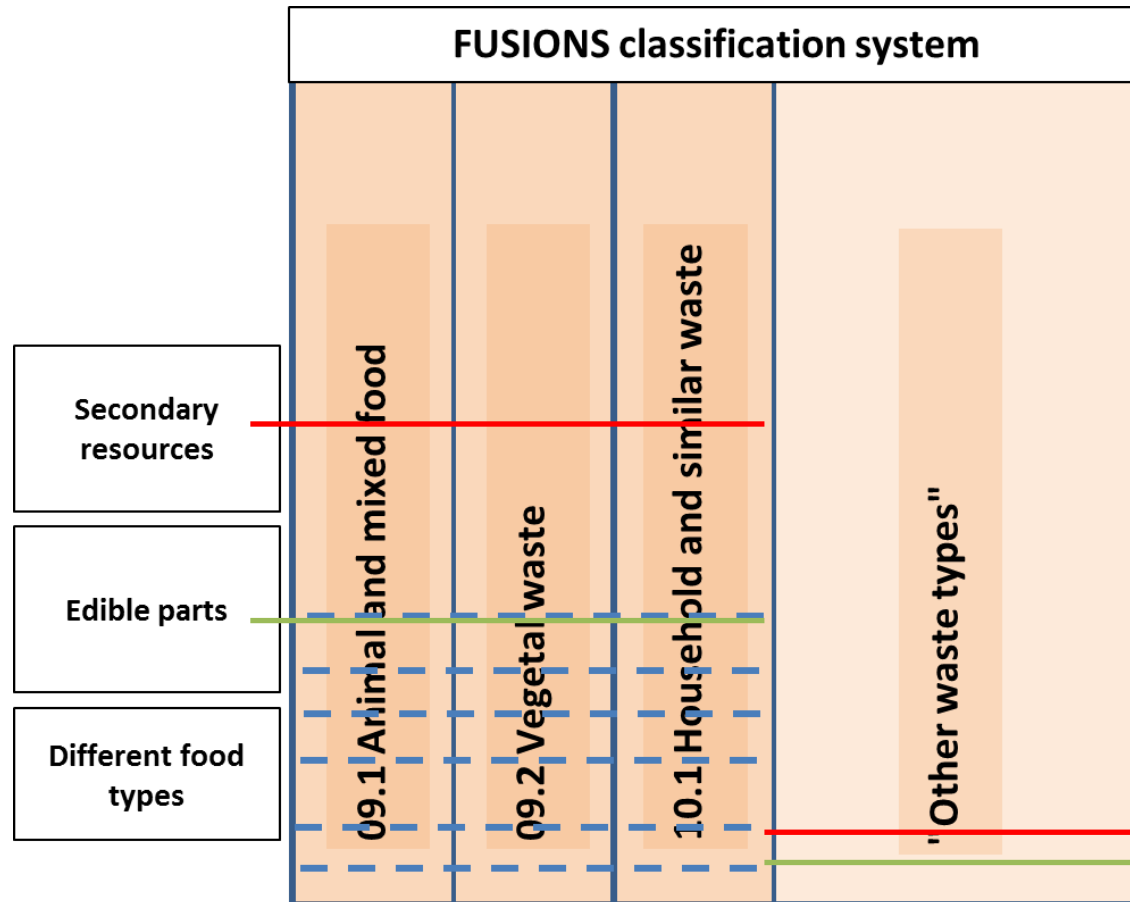
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Eurostat EWC classification system



FUSIONS Classification level 1-3



Need both bottom-up and top-down approaches

- Methods to develop "food waste factors" that quantify those interconnections according to
 - Total amount of "Edible food" and "Inedible parts of food"
 - The EWC classification
 - The NACE categories relevant for wasted food
- Methods to scale up to sector-wise and national levels



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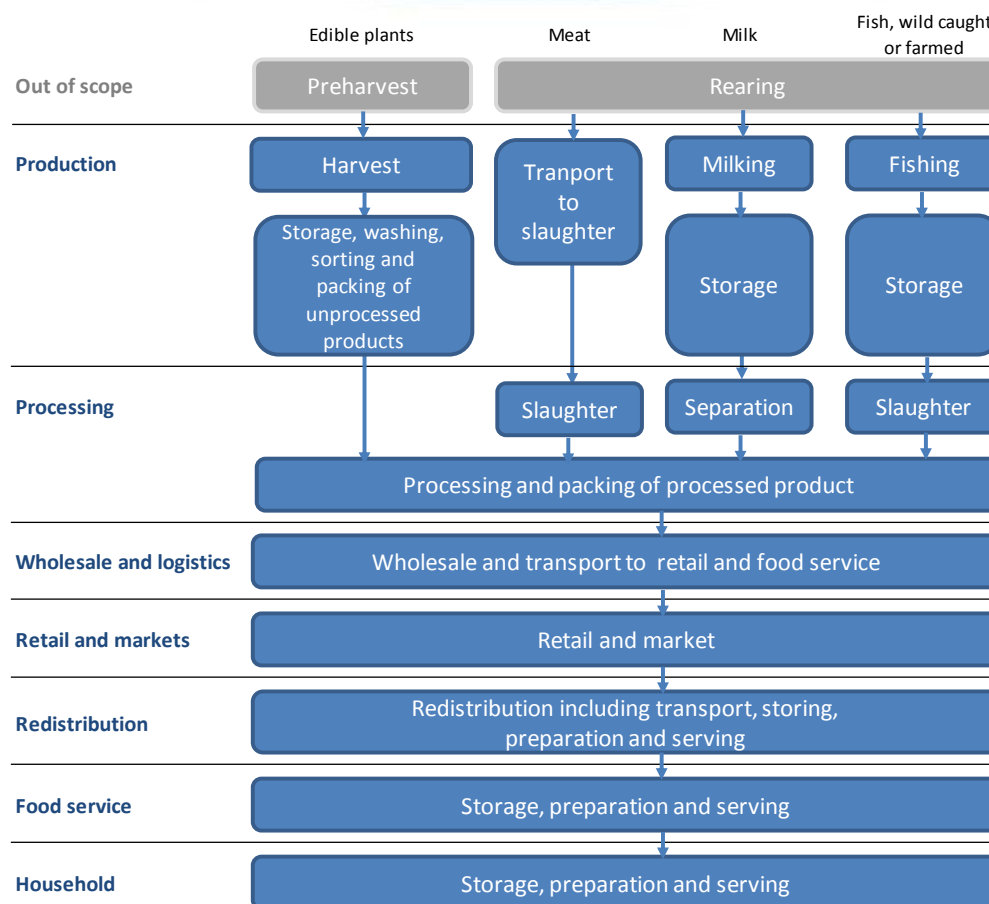


Recommended types of indicators

- Time scale (year)
- Fraction (product category and edible/inedible)
- Geographic (country)
- Food supply chain (step)

Steps in food supply chain	Indicator
Production Processing Wholesale and logistics Retail and markets Redistribution Food service	Amount of total secondary resources per produced amount (tonnes)
Households	Amount of total secondary resources per capita

Supply step boundaries as a basis for quantification



Available methodologies – Bottom-up approach

Quantification and registration of wasted food:

- Measurement (weight or volume)
- Waste composition analysis
- Scanning (Electronically recording)
- Food waste diary
- Questionnaires (reporting)



Available methodologies – Top-down approach

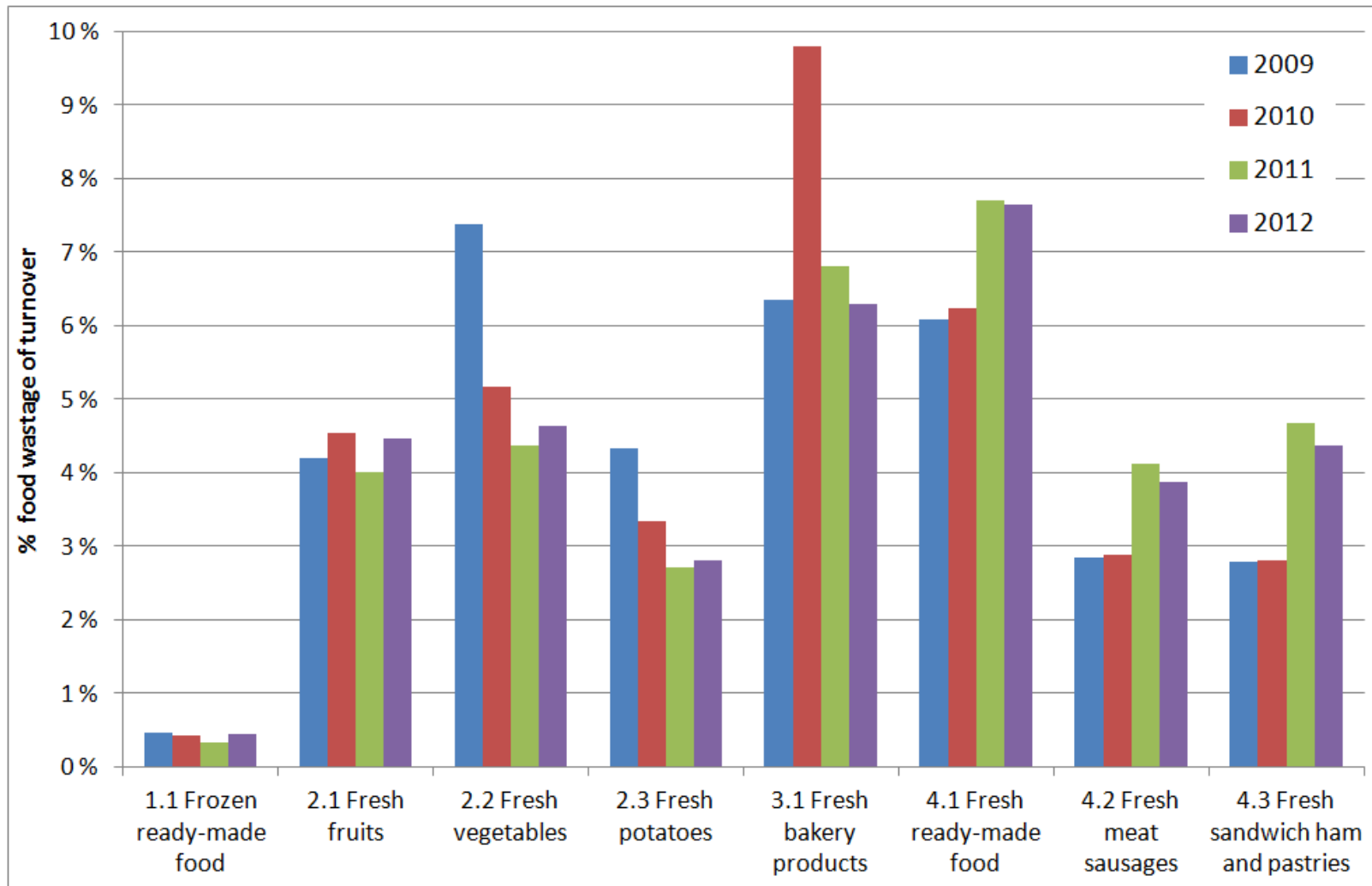
Data collection and survey:

- Statistics (at national level or at other level e.g. country, municipality, company etc.)
- Mass balances
- Interviews and surveys (reporting)
- Questionnaires (reporting)

Some examples from the ForMat-project – retail

- Detailed assessment of 29 representative retail shops in Norway
 - Based in economic values of food waste from scanning
 - Transformed to mass based data
 - Develop waste factors for the retail sector – kg of food waste per million of turnover for 21 different food groups
 - Upscaling to the whole sector based in economic turnover

Food waste from 29 retail shops



Example from ForMat/EPA-project - Households

- Detailed waste composition analyses of 220 households from two regions in Norway in 2011 – percentage of edible food waste of total organic waste for 9 different food waste categories
- Survey of 60 waste composition analyses from Norwegian municipalities from 2011/2012 – mass of food waste and organic waste per capita in Norwegian households
- Estimate mass and composition of food waste based in the two studies – 46,3 kg of food waste per capita 2011
- Total food waste from Norwegian households 231 000 tons



Food waste from Norwegian households

Food Waste Category	Kg/capita and year	Percentage of total food waste
Bread	9,3	20,0
Other bakery products	3,5	7,6
Fruits and vegetables	11,3	24,4
Meat and fish products	3,6	7,9
Dairy products	2,8	6,1
Leftovers from plates and pots	10,3	22,1
Other waste fractions, not identified	5,5	11,8
<i>Total</i>	<i>46,3</i>	<i>100,0</i>



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Up-scaling based in waste factors

Waste reporting at the national level can be organised so that countries can report based on what data are available:

- **Tier 1** Simplest method (Only national waste statistics are available – combined with waste factors)
- **Tier 2** National waste factors (National waste statistics and some waste composition analyses are available)
- **Tier 3** More detailed sector- or country-specific methods (National waste statistics and detailed waste composition analysis are available)



Recommended and available methods

	Quantification and registration (Bottom-up)	Data collection and up-scaling for EU-28 (Top-down)
Production	On-site measurements of weight or volume Food waste diary	Statistical data (Possible tools: Eurostat, FADN) Mass-balances Interviews and questionnaires
Processing	On-site measurements of weight or volume	PRODCOM data (developed) European production statistics Eurostat waste statistics Mass-balances Combining data source
Wholesale and logistics	Scanning/Stock-keeping tools On-site measurements of weight Interviews of key personnel	(Inter)national statistics, aggregated statistics from umbrella branch organisations
Retail and market, redistribution	Scanning/Stock-keeping tools On-site measurements of weight Interviews of key personnel	Aggregated data from stock-keeping tools used in national statistics
Food service	Waste composition analysis On-site measurements of weight/food waste diary Interviews	Statistics combined with weighing/food waste diary Statistics combined with waste composition analysis Data from municipal waste companies
Household	Waste composition analysis Food waste diary	Statistics combined with waste composition analysis



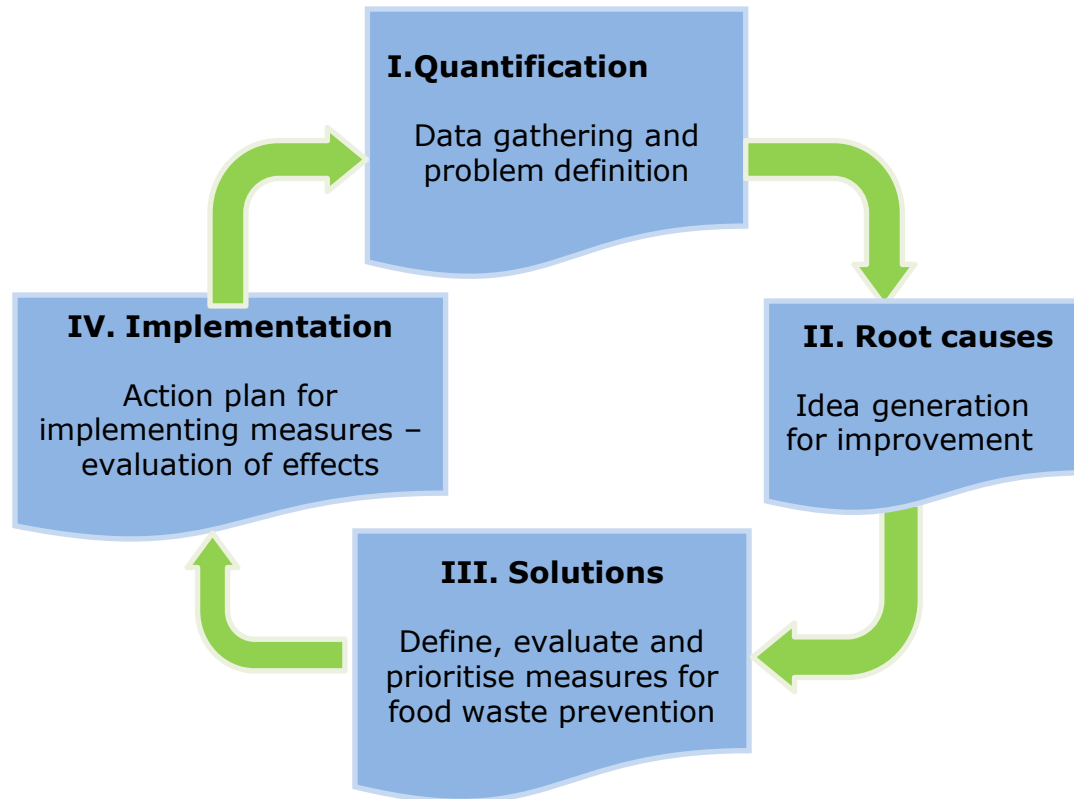
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Model for food waste prevention in companies



Some key questions to be answered

- What types of food is wasted and in what quantities per year?
- Where in the process is food waste generated?
- Why is food being wasted – what are the ROOT causes to food waste?
- What are the costs of food waste for the organisation (total costs)?
- Which measures can be developed and implemented to prevent and reduce food waste?
- What are the cost-/benefit of the measures
- How to implement food waste prevention initiatives and who is responsible?
- How to document the effects of measures taken?



ForMat Quick Starter Checklist and Calculation Tool for Food Waste

The screenshot shows a web browser window with the URL <http://matsvinn.no/sjekk/>. The browser tabs include "ScienceDirect.co...", "Introduction", "Format - Ta F...", "Publication", "Waste indicators...", and "Ordrebeholdelse". The website header features the ForMat logo (a green apple icon) and the text "forebygging av matsvinn". Navigation links include "Forsiden", "Om ForMat", "Om matsvinn", "Nyheter", "Ressurser", and "Kontakt". A search icon is also present.

Below the header, there are three green buttons with white icons and text:

- REDUSER MATSVINN OG SPAR PENGER
- HVORDAN KOMMER JEG I GANG?
- TEST DIN BEDRIFT: TA FORMAT-SJEKKEN

The main content area has a background image of a kitchen. It contains the following text:

Velkommen til ForMat-sjekken.

Her kan du enkelt svare på spørsmål om bedriftens eller butikkens avfallsmengder og håndtering av disse, for å kartlegge din bedrifts/butikks "nå-situasjon" når det gjelder matsvinn.

Bedriften/butikken har muligens god oversikt over matsvinnet og gjør det som skal til for å utnytte råvarer og produkter maksimalt. Hvis ikke, så trenger dere kanskje bidrag fra ForMats metodeverktøy til å få denne oversikten og til å redusere svinnet og spare penger.

Uansett vil du ha et mye klarere bilde av din bedrifts eller butikks situasjon hvis du besvarer ForMat-sjekken!

At the bottom of the content area, there is a text input field labeled "Bedrift/Butikk" and a button labeled "Aktiver Windows". Below the input field, there is a link that says "Gå til PC-innstillinger for å aktivere Windows".

The Windows taskbar at the bottom shows the Start button, several application icons (including Internet Explorer, Word, and Excel), and the system tray with the date and time: 07:36 04.05.2014.

Questions to the group work

- What is your practical experience on food waste quantification by bottom-up and top-down approaches?
 - Which steps in the food chain are best/least covered?
 - Which are the challenges related to use of the methodologies?
- Given that the FUSIONS methodology is available in 2015, what types of applications will be most important for you as stakeholders?
- Who will be the most important users of the FUSIONS methodologies and how should the Food Waste Quantification Manual be developed to make it easier to use the methodologies?



There will be five groups for discussions

Please have a good mix around each table with the following representatives:

- Governmental authorities
- Business and business organisations
- Research and consultancies (FUSIONS-partners)
- Research and consultancies (Non-FUSIONS partners)
- Representatives from other organisations

There is one reporter to make notes from each group and the group should select one person to lead the discussions





Thank you for your attention!

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