



Environmental impacts of food

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EUPOPP Stakeholder Workshop

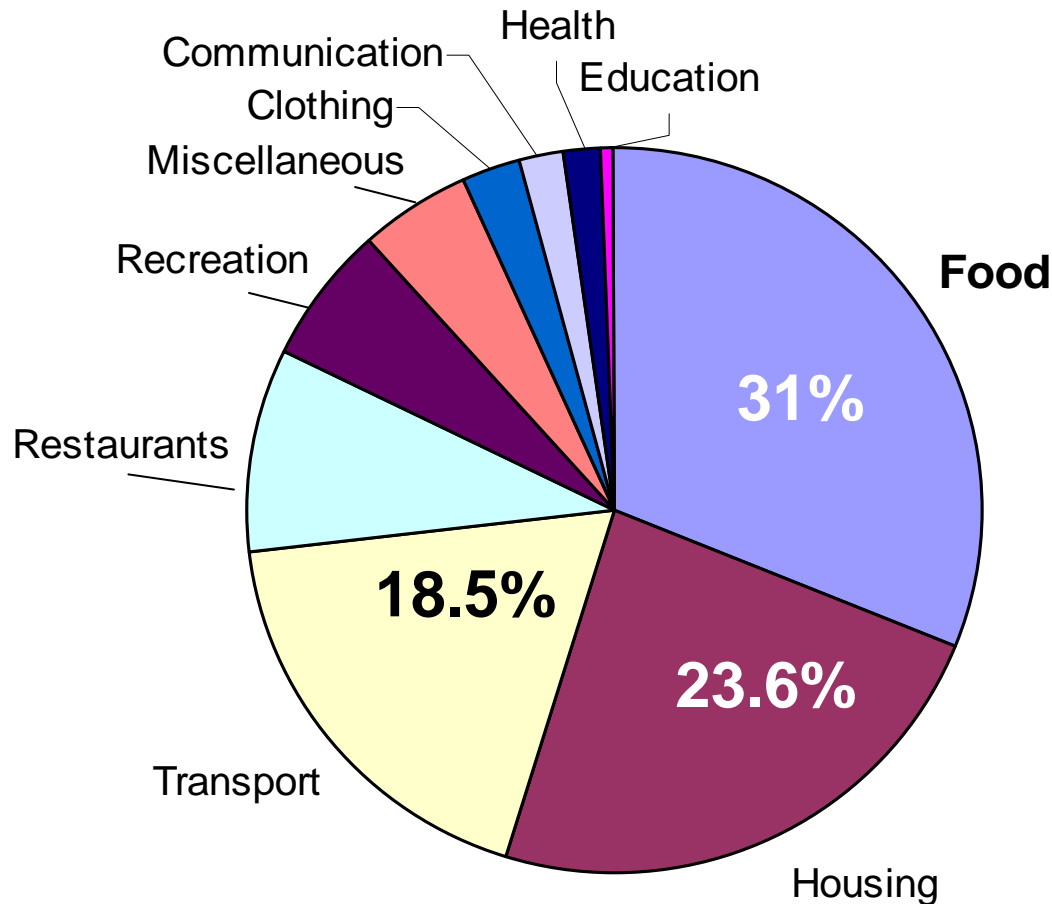
Brussels 15 november 2010

The “Environmental Impact of Products” (EIPRO) Study

- **Conducted by the EC JRC-IPTS and published in 2006**
- **Analysis of environmental impacts of products consumed in the EU**
- **All products are concerned, i.e. produced in EU and imported,**
- **The analysis includes the life cycle stages of extraction/agriculture, transport, production, use/consumption, and waste management**
- **The contribution of food consumption figures amongst the highest impacts in terms of GWP (Global Warming Potential).**

Environmental impacts caused by final consumption

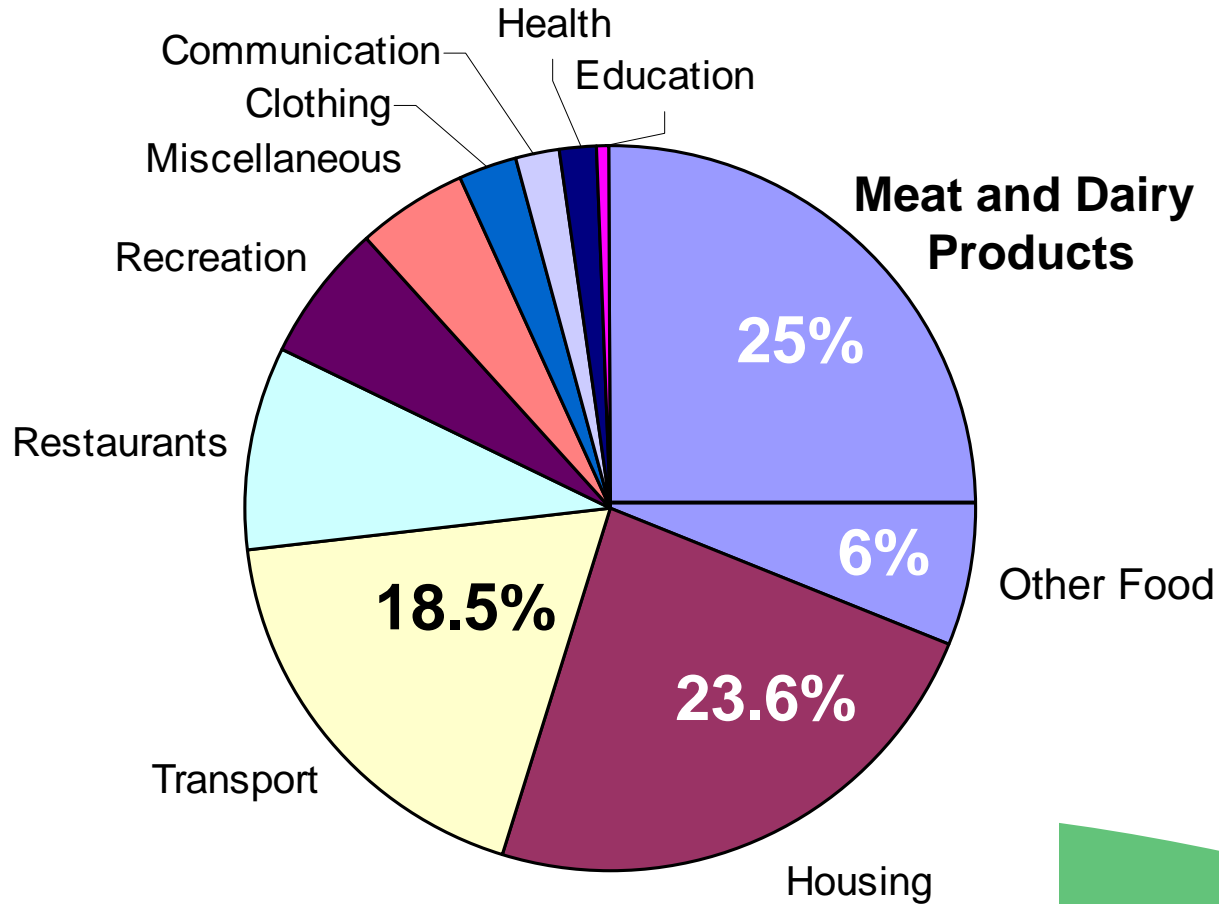
The three more important sectors in terms of environmental impacts (Global Warming Potential) caused by final consumption : food, transport and housing



*Figures taken from
JRC IPTS EIPRO
study (2006)*

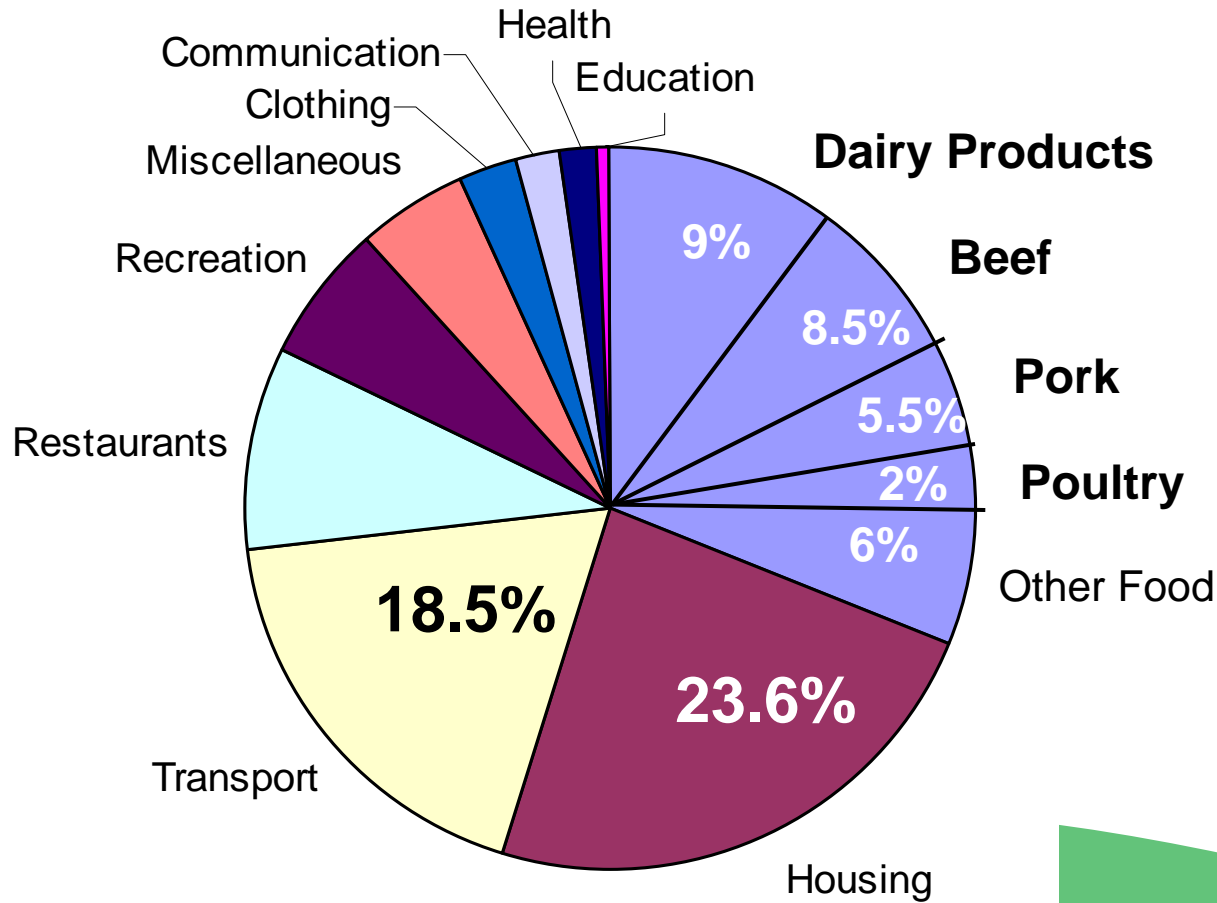
Environmental impacts caused by final consumption

Distribution by family of food products

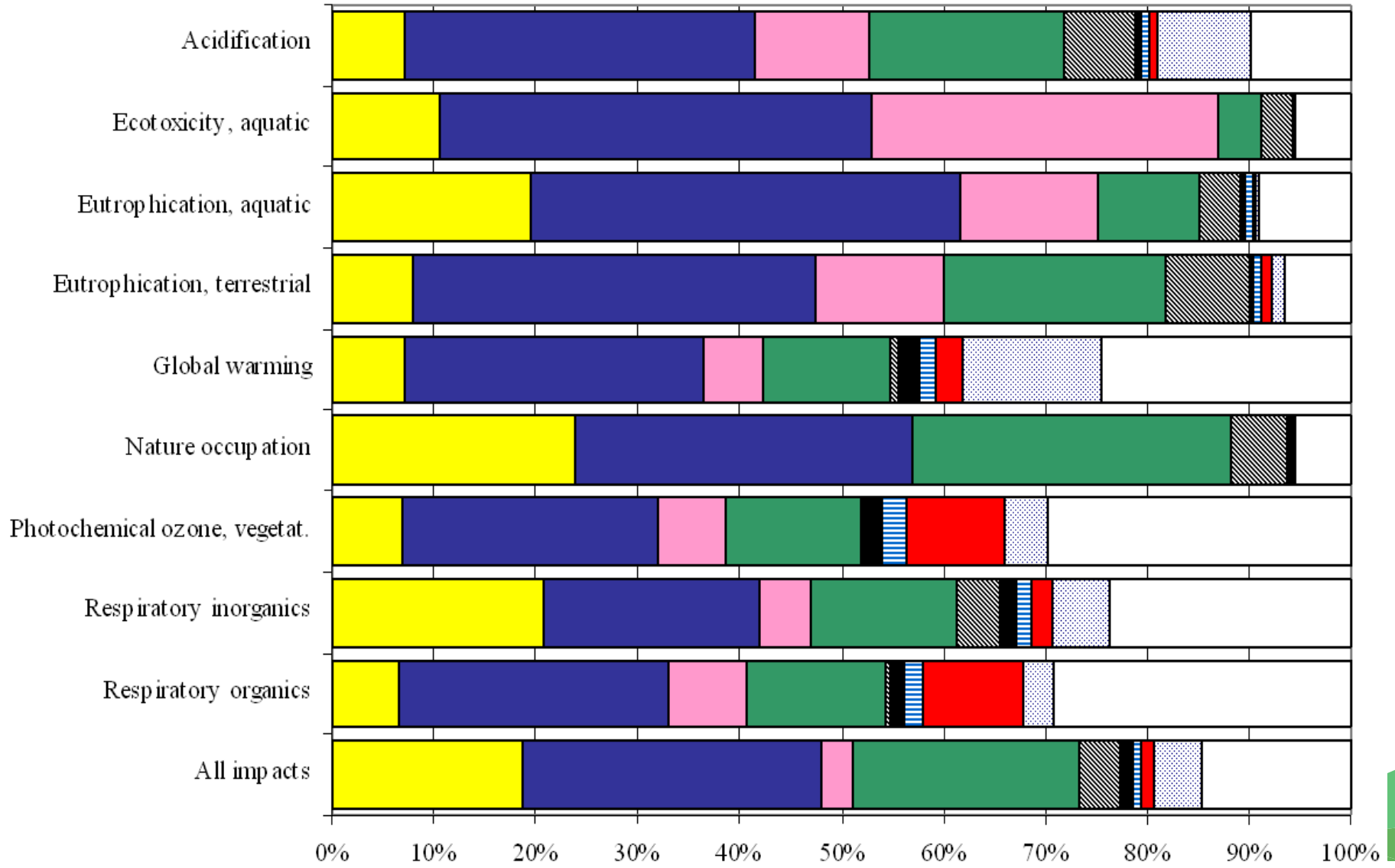


Environmental impacts caused by final consumption

Distribution by family of food products - detailed



Contribution of main processes to each impact category



Grain crops
 Dairy farming
 Pig farming
 Cattle farming
 Poultry farming
 Food industry
 Transport
 Car driving for shopping
 Electricity production
 Remaining processes



IMPRO Food

Environmental Improvement Potentials of Meat and Dairy Products

➤ Improvement options

- Agricultural improvements (reduce air & water emissions, diet for animals, etc.)
- Household improvements (reduce food loss & car use)
- Power savings (farm, industry, retail, catering, household)

➤ Combined improvement potential

- Impacts of meat and dairy products can be reduced by 20%
- Overall impacts in EU27 would be reduced by 5% (19% instead of 24%)

IMPRO Food Study

Environmental Improvement Potentials of Meat and Dairy Products (JRC – IPTS 2008)

➤ Options with highest environmental improvement potential

- *Cereal intensification for higher yields per ha*
- *Optimised feeding for pigs and dairy cattle*
- *Better manure management and application*
- *Reduction of food losses in households*



To reduce household loss of dairy and meat products:

- *Experiments with household planning tools (menu plans generating shopping lists)*
- *Increase shelf life through*
 - *innovative packaging*
 - *ultra-pasteurisation*
 - *lower fridge temperature (tradeoff with energy consumption)*

IMPRO Food Study

Environmental improvement potentials of all improvement options combined

Aquatic ecotoxicity	68%
Aquatic eutrophication	43%
Acidification	30%
Terrestrial eutrophication	30%
Global warming	25%
Respiratory inorganics	25%
Nature occupation	16%



IMPRO + Food

Environmental Impacts of Diet Changes in the EU

Focus

- IMPRO meat analysed technical change, leaving consumption unchanged
- IMPRO+ looked at changed consumption, leaving technologies unchanged

Scenarios - Large scale diet changes

- Diet 1: World Health Organisation (WHO) guidelines
- Diet 2: World Cancer Research Fund (WCRF) recommendations
- Diet 3: Mediterranean: the only efficient (reduction of red meat consumption ~40%)

Improvement potential (monetarised impacts)

Reduction of Impacts of food sector	Reduction in food sector with second order effects	Reduction of env. Impacts of EU 27	Reduction in EU 27 with second order effects	Additional effects in non-EU countries
8%	4%	2%	1%	± X%

Reduce of meat production smaller than consumption: increase of exports
 Due to this exports: additional effects (reduction of production) in non-EU countries (to be evaluated)

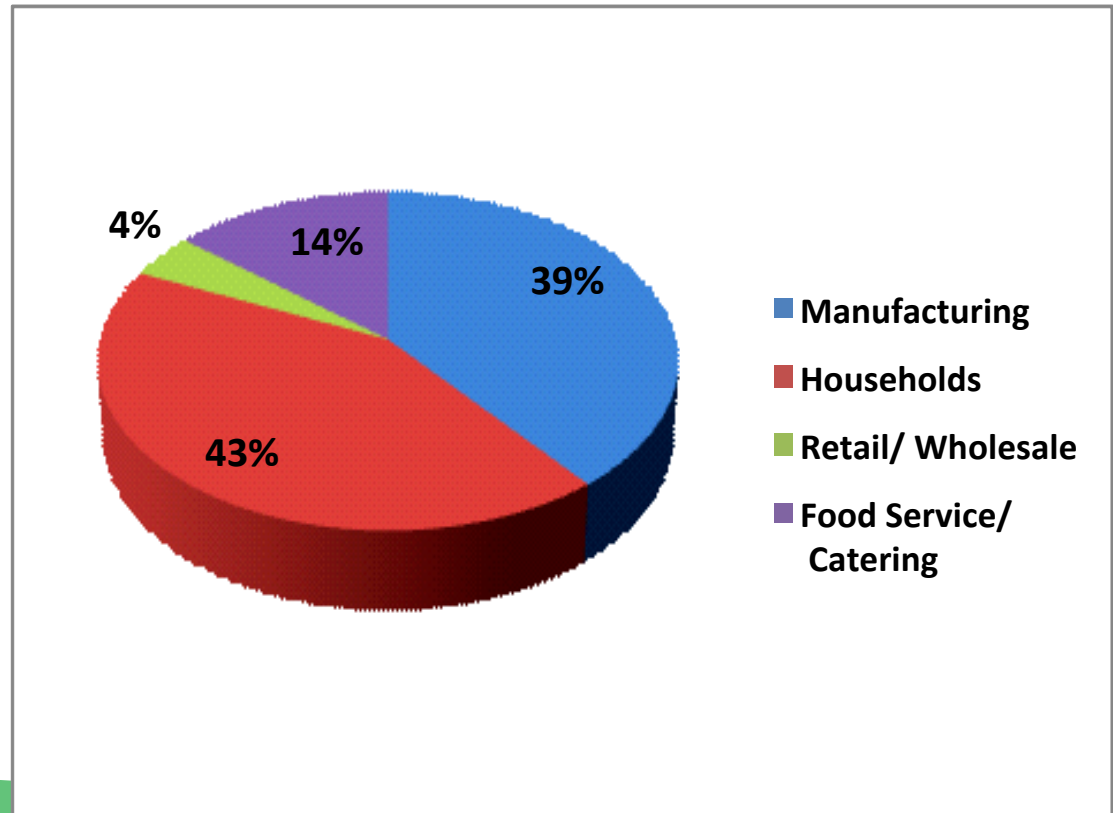
Some figures about food wastage

➤ **Study conducted by the European Commission (December 2009 – October 2010) – *farming level excluded***

➤ The generation of food waste in the EU is estimated at **89 million tonnes per year** or **179kg per capita**

➤ **Households produce the largest fraction, at 43% of the total (76kg/capita)**

➤ **Manufacturing sector at 39%, of which most part is unavoidable**



Environmental impacts of food wastage

- An average of **at least 1.9t CO₂ eq./t** is estimated to be emitted for each ton of food wasted in Europe during the whole life cycle of food waste
- Overall EU environmental impact: **at least 170 Mt of CO₂ eq.** emitted per year
- Relative importance of such figures: ~ **3% of total EU27 emissions** in 2008 (Source: EUROSTAT)
- **Households** sector has the **most significant impact**, both per ton of food waste (2.07 t CO₂ eq./t) and at the European level (78 Mt CO₂ eq./yr, i.e. **45% of estimated annual GHG emission due to food waste**);
- FW generated in the **Manufacturing** sector is responsible for ~ **35%**

	Waste amounts in EU27	GHG emissions in EU27	
Sector	Mt of FW/yr	t CO ₂ eq./t of FW	Mt CO ₂ eq./yr
Manufacturing	35	1.71	59
Households	38	2.07	78
Other sectors	16	1.94	33
Total	89	1.9	170

Source: calculated based on EUROSTAT data, national sources and ETC/SCP working paper 1/2009

Causes of food wastage

► Diversity of food waste causes, with great intra-EU variations at the household level

Sources of food waste exist at all stages between farm and fork:

- **Households:** lack of awareness, or of **knowledge** on efficient food usage, **attitudes** (cultural, undervaluing, etc.), individual preferences (e.g. apple skins, bread crusts...), **planning** issues, **socio-economic** factors
- **Food service sector:** **portion sizes**, logistics, attitudes, awareness of food waste as an issue, **preferences** (e.g. **children** at school canteens)
- **Wholesale/retail sector:** supply chain inefficiencies, stock management, marketing strategies, high product specificity (exposure to light...), temperature sensitivity, etc.
- **Manufacturing sector:** largely **unavoidable**, technical malfunctions

The European Food SCP Round Table

- **Private initiative of the Food Supply Chain (farmers, traders, food industry, packaging, etc.**
- **Co-chaired by the European Commission**
- **Main objectives:**
 - methodology to assess the environmental impacts of food and drink products along the whole food chain
 - identify the most suitable tools to provide information on such impacts to consumers and along the food chain
- **First work delivered: Guiding Principles for the environmental assessment of food products and communication tools**
- **Expected soon: development of harmonised methodology for the environmental assessment of food and drink products.**



**European Commission
DG Environment -
Directorate of Sustainable
Production and Consumption**

Thank you



http://ec.europa.eu/environment/eussd/escp_en.htm