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ICEDD & VITO's study on key products

⇒ Nemry et al. 2002

⇒ Bottom-up analysis of the Belgian consumption in 2000 (data ranging from 1995 to 2000)

⇒ Food excluded from the start

⇒ Impacts : GHG, material use, acidification, eutrophication, ozon depletion, POPs & heavy metals

⇒ Conclusion : transport, housing, packaging, EEE



New research

- Cars, household packaging, computers & paper, housing for GHG emissions, waste and resource use
- Strategies to decrease impacts :
 - Change of products for the same use : some potential, but mostly not decisive
 - Acting on the product's composition and design
 - Importance of use phase (lifespan, consumption...)
- Synergies



Key products

From CEDA EU 25 + other studies, key products appear clearly :

- Food
 - Meat
 - Dairy products
- Transport (cars)
- Housing
 - Heating
 - House structure
 - Electricity use : washing, refrigerators, various equipment (+ TVs and videos)



Products with lesser impact

- Restaurants & hotels
- Recreation
- Other services
- Services are not as « dematerialised » as often thought



Results in relation to goal and scope

Goal 1 : The project should focus on identifying the products on the basis of their current life cycle environmental impacts. They will be identified on the basis of the environmental impacts of the whole volume of products used.

Data refer to 1990 => not really current. However, best available data and limited expected changes of technologies / consumption patterns.



Results in relation to goal and scope

Goal 2 : The study should primarily focus on the life cycle impacts of products (including services) serving the *final* consumption in the EU25 (both household and government consumption).

Government consumption : additional work needs to be carried out.

Household consumption : IO tables best option to cover the whole consumption.

Pb : use of US emission factors for the estimation of impacts. However, it is true that the expected difference with EU is small + worldwide economy.



Results in relation to goal and scope

Goal 3 : The project should identify the products by dividing the EU final consumption into product aggregates at different levels of aggregation. The following levels may be distinguished:

- Functional areas of consumption (7 to 10 elements)
- Consumption domains (40 to 60 elements)
- Product groupings (several hundreds of elements)

Good definition of products for I/O analysis.



Results in relation to goal and scope

- Goal 4: The study should include capital goods, and where possible will pay attention to specific materials such as, packaging and other intermediate products, despite the fact that they are not the primary cross-section in this study.

No mention of packaging & other intermediate products (I/O tables not appropriate for this issue)



Results in relation to goal and scope

- Goal 5: The study should primarily focus on the EU's final consumption, and not on production for export

OK



Results in relation to goal and scope

- Goal 6: Inventory/emission data of accession countries would be modelled on the basis of EU15. For the accession countries, it can be assumed that in the next 10 years the most obsolete production technologies will disappear or be upgraded to a regular EU technology level.

OK for modelling of EU 15 / EU 25. Few data exist for accession countries, thus extrapolation good compromise.



Results in relation to goal and scope

- Goal 7: Where relevant, the study should cover a variety of impact assessment methods.

Choice of impact assessment methods OK.



Results in relation to goal and scope

- Goal 8: No impact categories should be excluded beforehand. The study must be very prudent with ranking on the basis of toxicity impacts, since scientific knowledge about this issue is limited.

Impact categories shown are the most significant and relevant (GWP, photochemical oxydation, acidification, eutrophication). Ozone layer depletion, eco toxicity and human toxicity far less reliable.



Conclusion on validity of the study

- I / O methodology : covers the whole household expenditures
- Less strong for B2B and public expenditures
- Results confirm the 7 studies reviewed
- Life cycle covered : production ok, use and waste less detailed
- Data not quite up to date but best available (further research necessary)



Further research

- Good confidence on key products for IPP
- Some missing knowledge : waste, water, use phase.
- Lack of European data (emission factors)
- Public expenditure / B2B expenditure
- Methodological and practical improvements ?

Further research needed : data

- European data on technological modelling and emission factors may not be crucial in a short-term basis, but more on a longer term.
 - time is necessary to gather/organise these data
 - Problem : European / worldwide for some technologies.
E.g : textiles, paper, steel, printed circuit boards....
 - Concentrate on data used for key products?



Further research needed : waste & use

- Modelling of waste phase : process descriptions
 - Short term solution to be found
 - Problem : local effects – specific situations in EU 25
 - Concentrate on data used for key products
 - I / O tables may not be the best option for that
- Use phase : I/O tables not easy to modell this phase
 - select products (cars, EEE...)



Further research needed : public & B2B expenditure

- EU 2003 communication on IPP : public procurement as a tool for IPP
- Public expenditure is not just an extension of consumer expenditure
- According to the communication public expenditure = 16% of GDP => non negligible
- Short term research for specific products + services paid by government (e.g. hospitals, education)
- same for B2B (hotels, transport)