Indicators for natural resource use: Taking into account the North-South perspective

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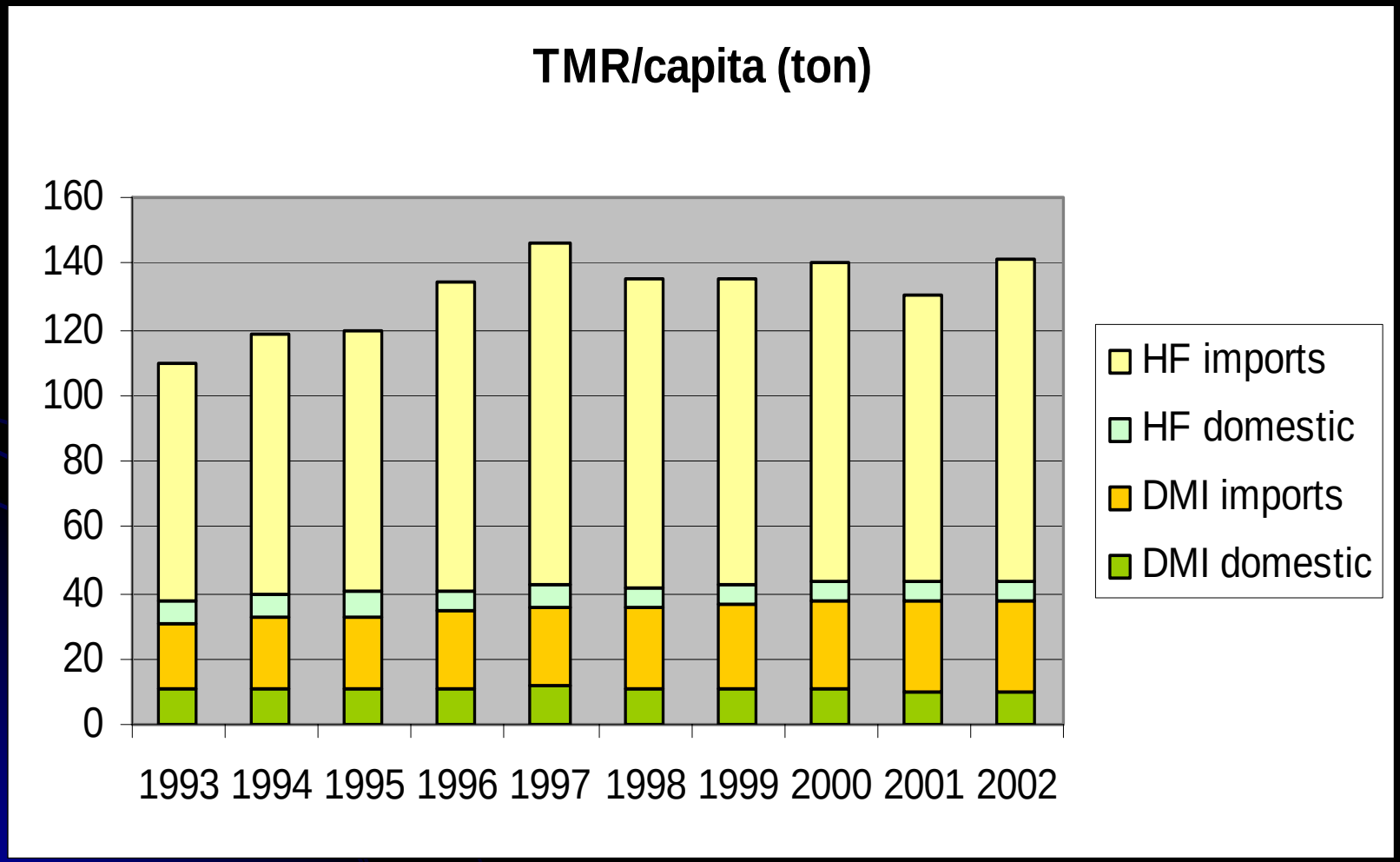
Overview

1. Flemish material use: indicators for MIRA-T
2. The concept of ecological debt
3. Ecological debt: Belgian energy use / contribution to climate change
4. Ecological debt: Belgian agriculture / fodder crop production
5. Provisional conclusions and questions

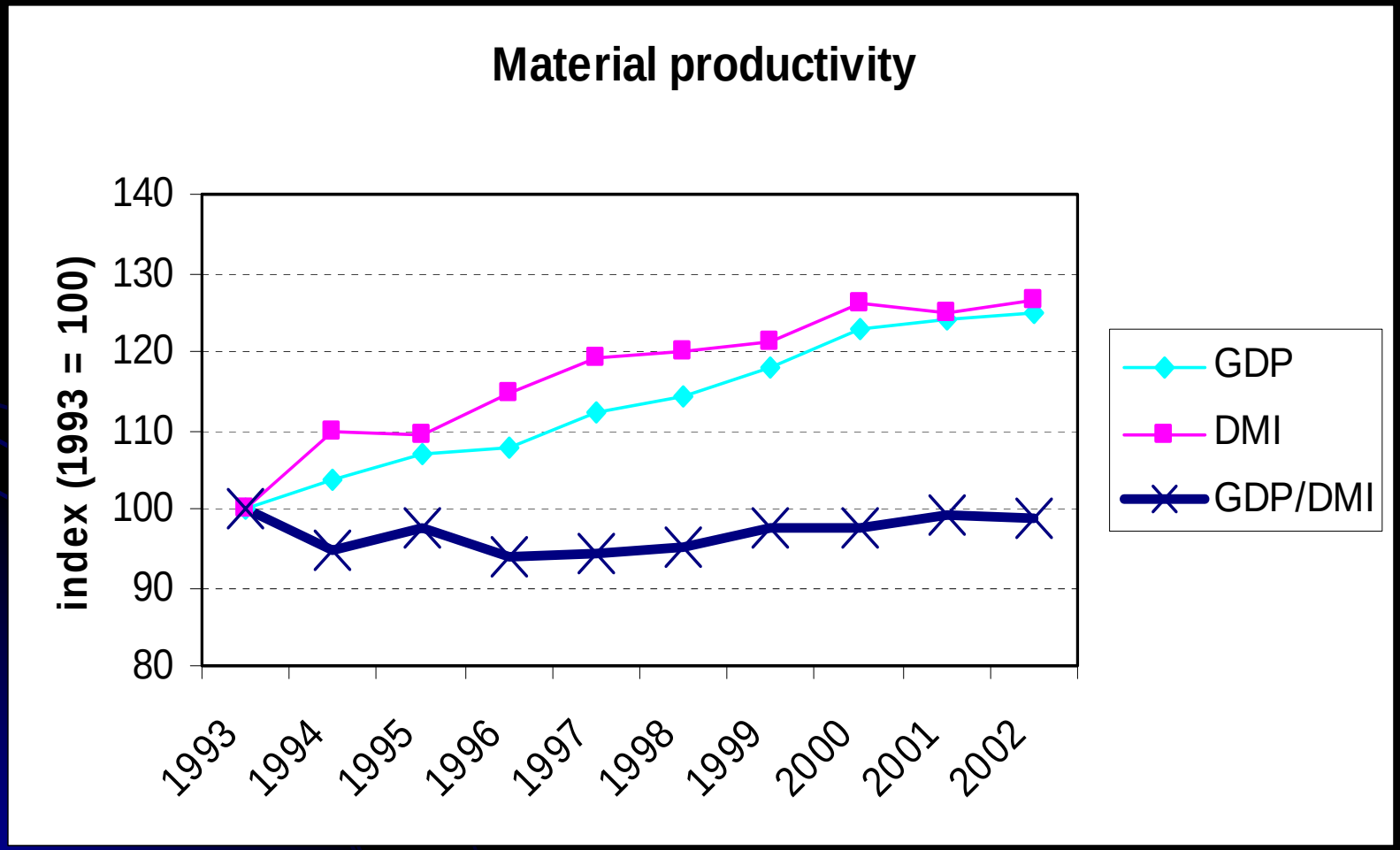
1. Flemish Material Use

Indicators in the
Report on the State of the Environment
in Flanders (MIRA-T)

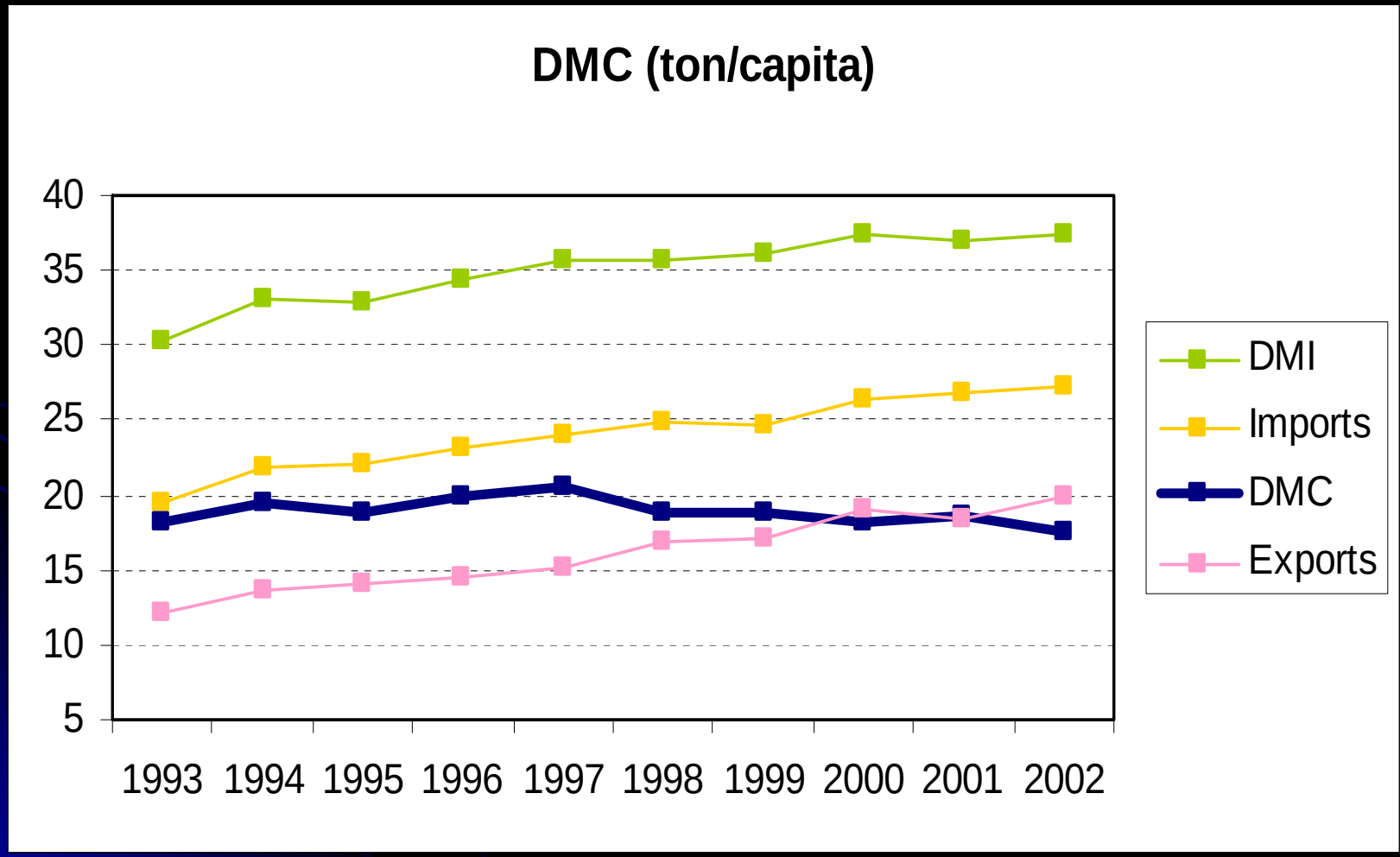
Total Material Requirement, Flanders 1993-2002



Direct Material Input and GDP, Flanders 1993-2002



Domestic Material Consumption, Flanders 1993-2002



2. The concept of ecological debt

Ecological debt: working definition

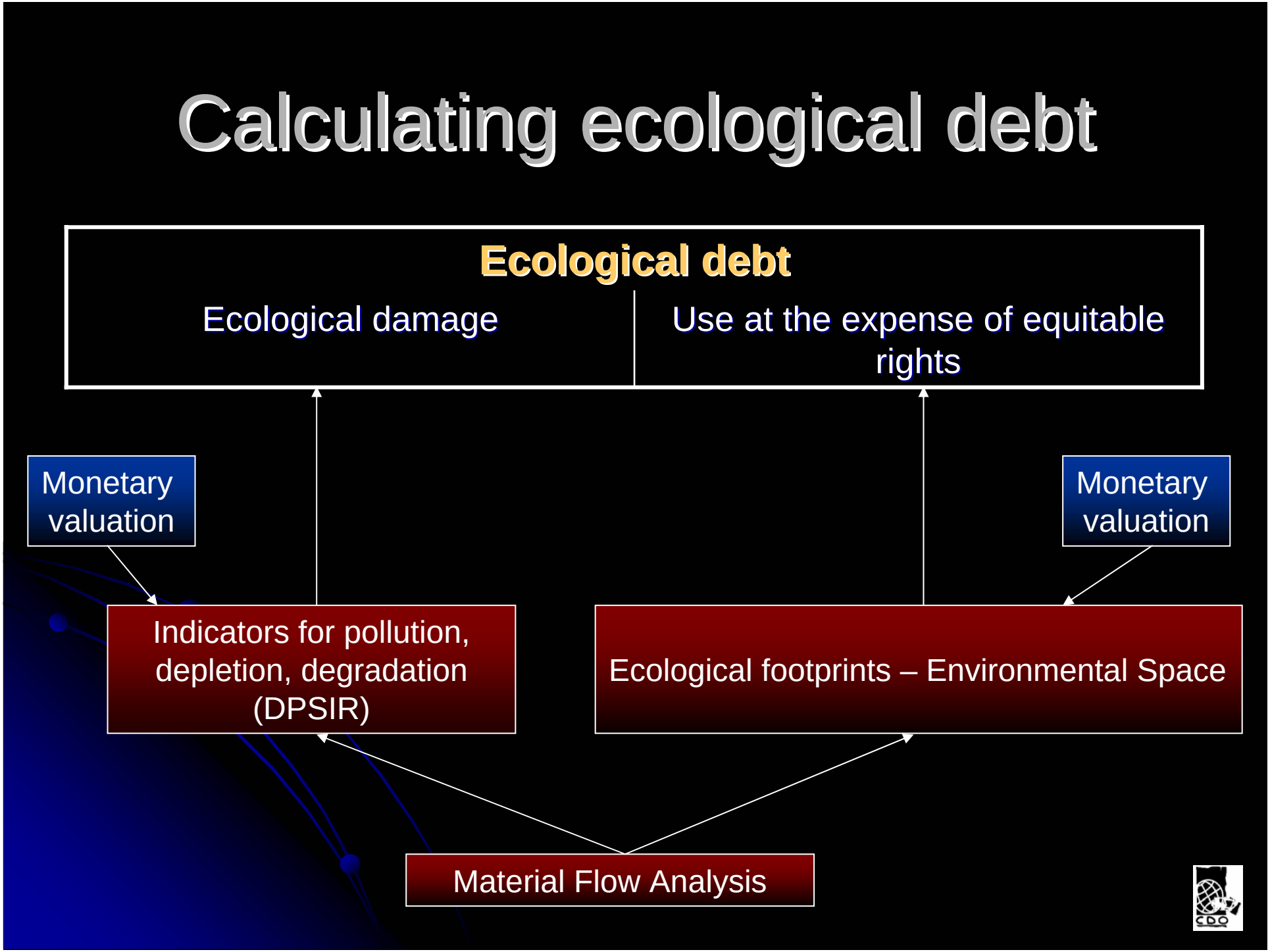
The ecological debt of country A consists of:

1) The **ecological damage** caused over time by country A in other countries or in an area under jurisdiction of another country through its production and consumption patterns, and/or

2) the **ecological damage** caused over time by country A to ecosystems beyond national jurisdiction through its consumption and production patterns; and/or

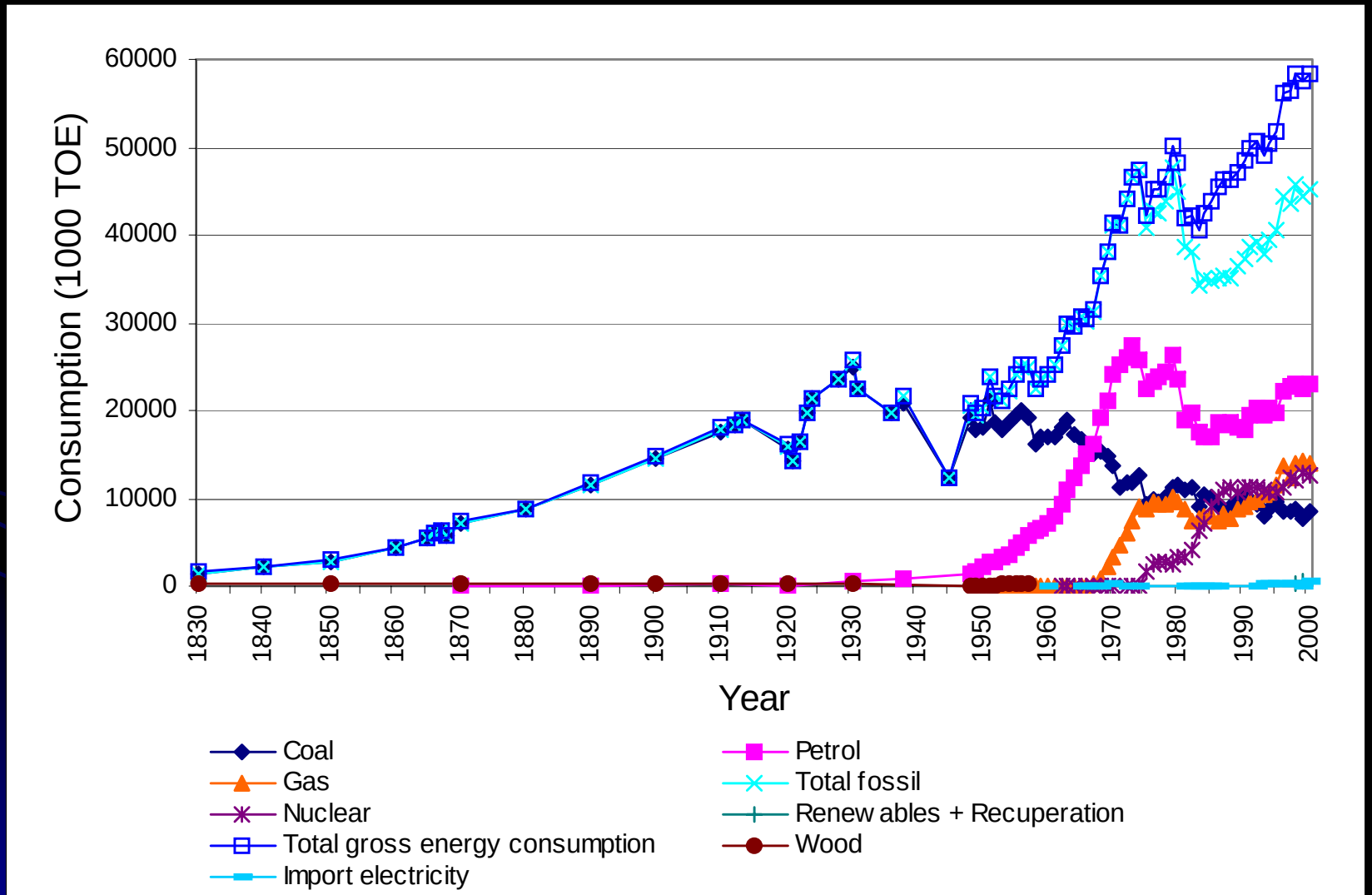
3) the **exploitation or use** of ecosystems and ecosystem goods and services over time by country A, **at the expense of the equitable rights** to these ecosystems and ecosystem goods and services by other countries or individuals

Calculating ecological debt

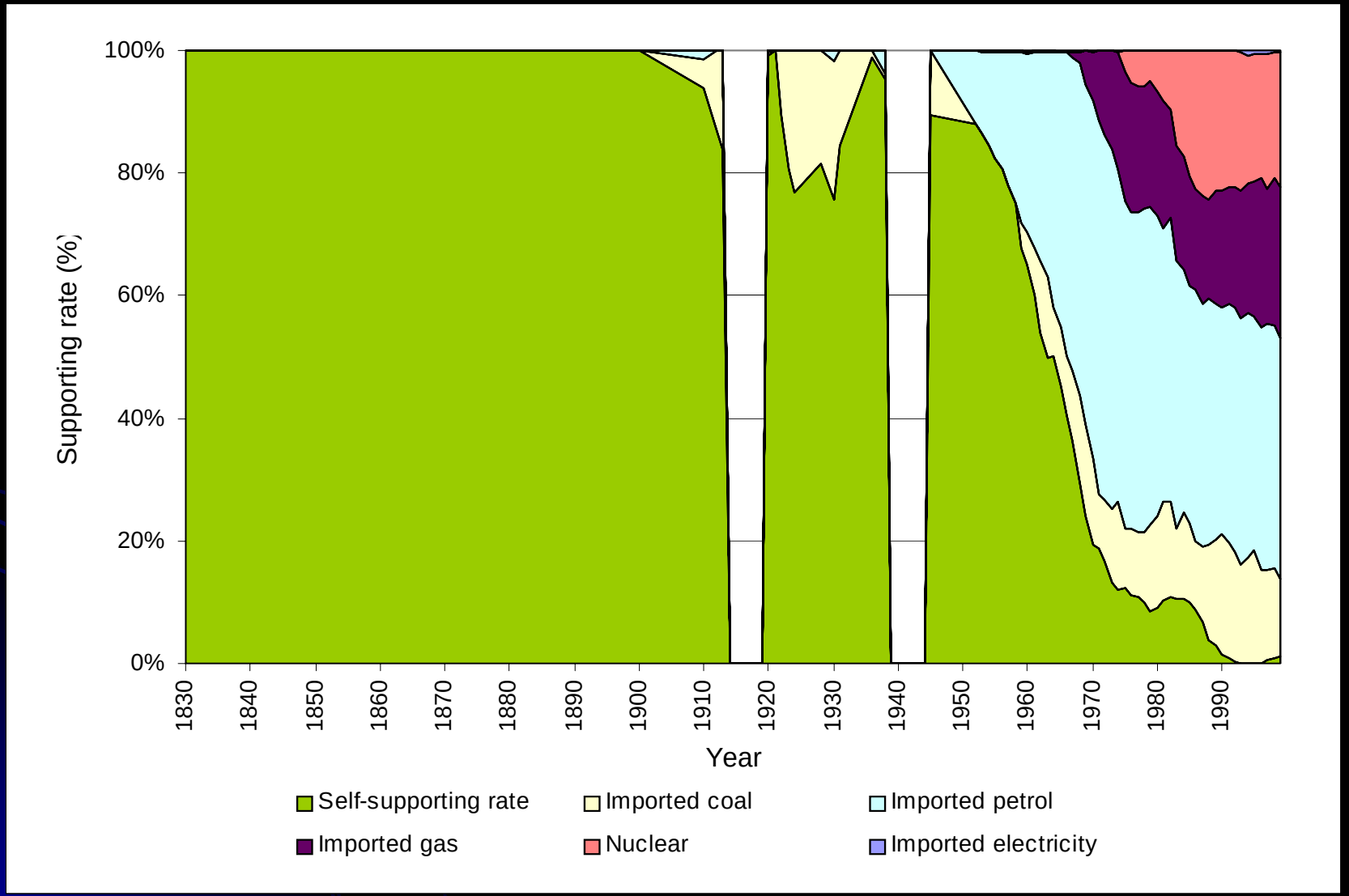


3. Ecological debt: Belgian energy use / contribution to climate change

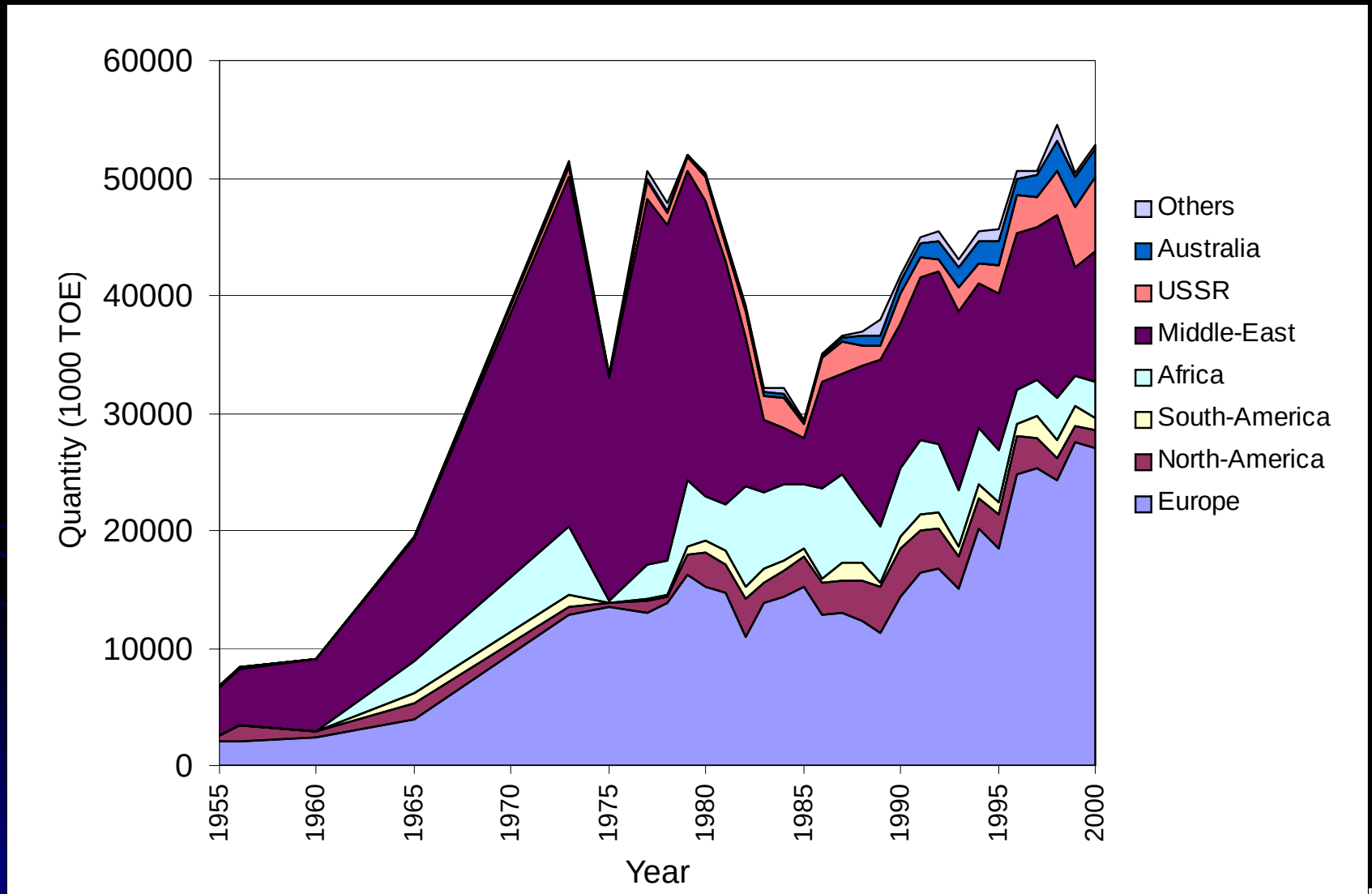
Fossil fuel consumption in Belgium



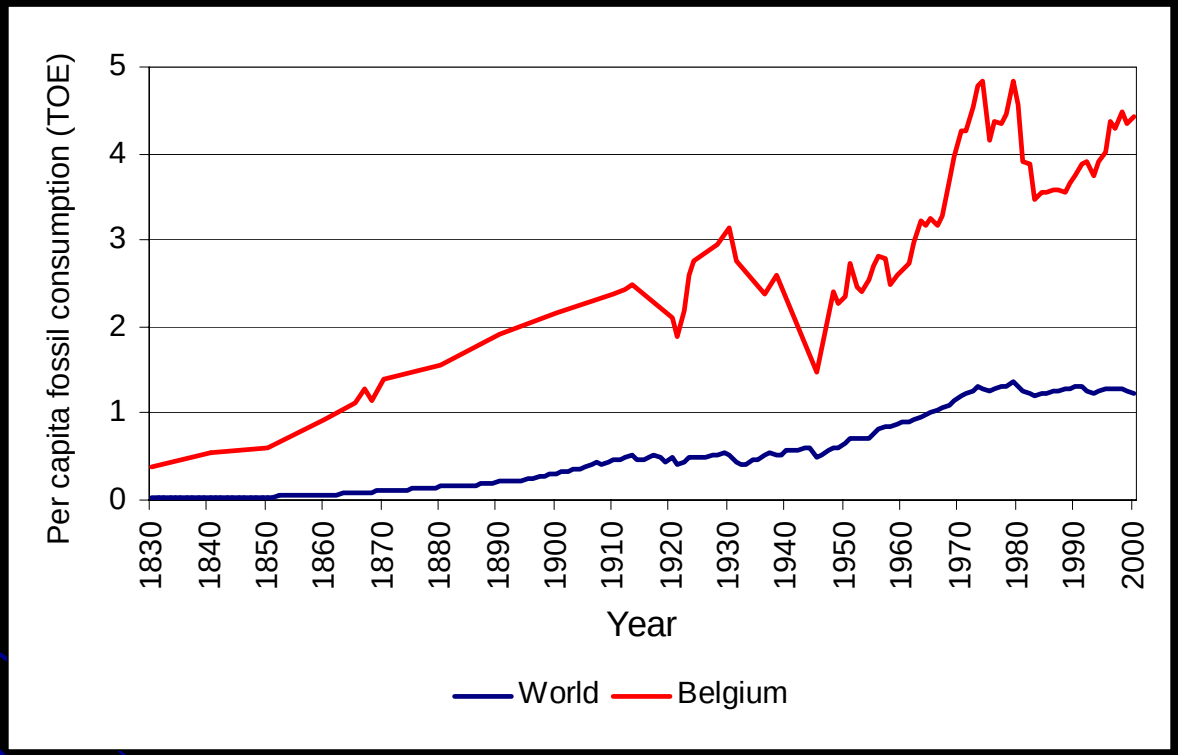
Energy (Self) Supporting Rate



Import of raw fossil fuels



Ecological debt and fossil fuel consumption/depletion

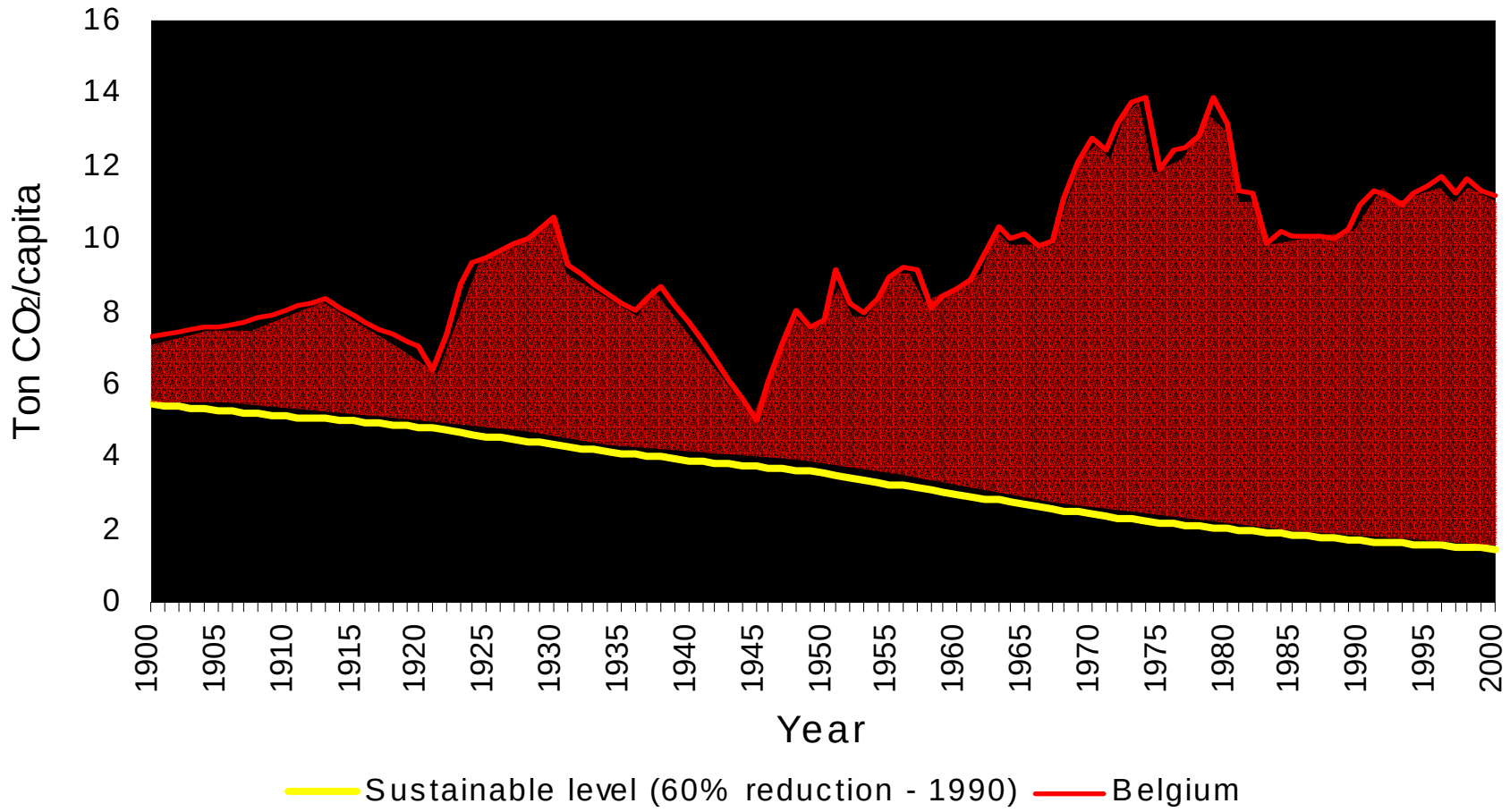


Proven World fossil fuel reserves (BP, 2002):

850 billion TOE = 140 ton/cap

Exploitation at which ecological and social costs ?

The Belgian Carbon Debt

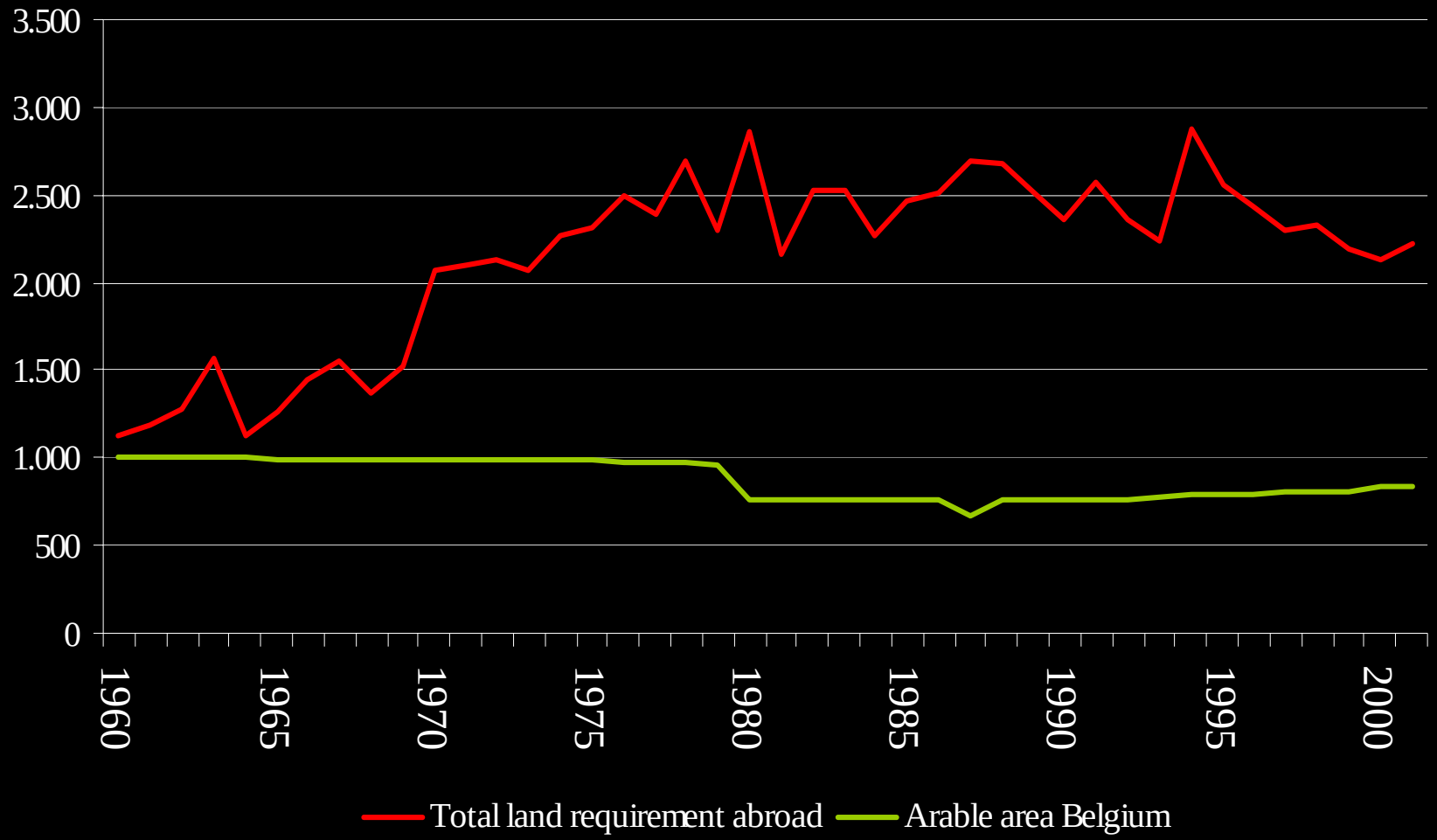


total carbon debt = 5787 million ton CO_2

$\overset{?}{=}$ 58 billion €

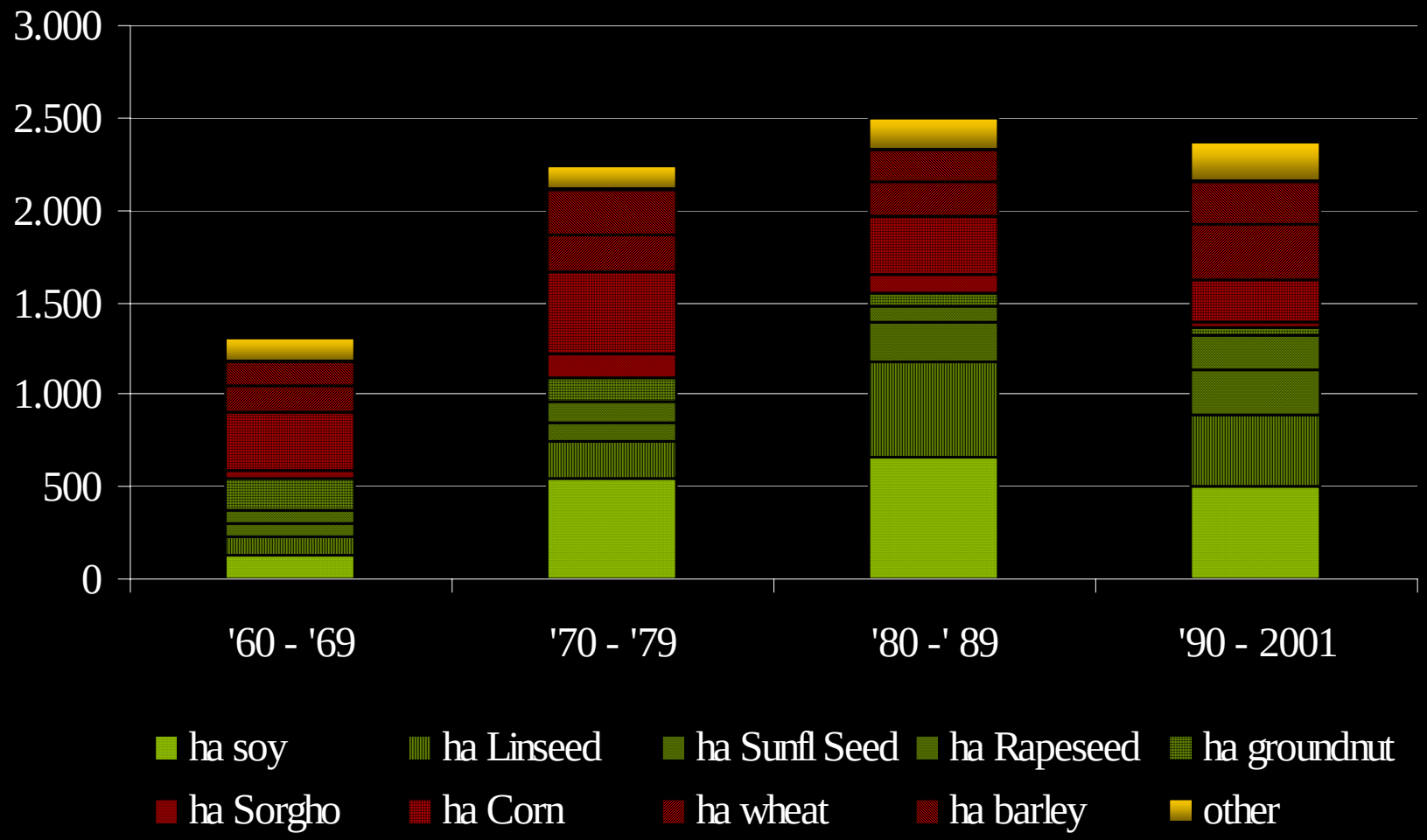
4. Ecological debt: Belgian agriculture / fodder crop production

Land requirement abroad (1000 ha) for the Belgian livestock sector



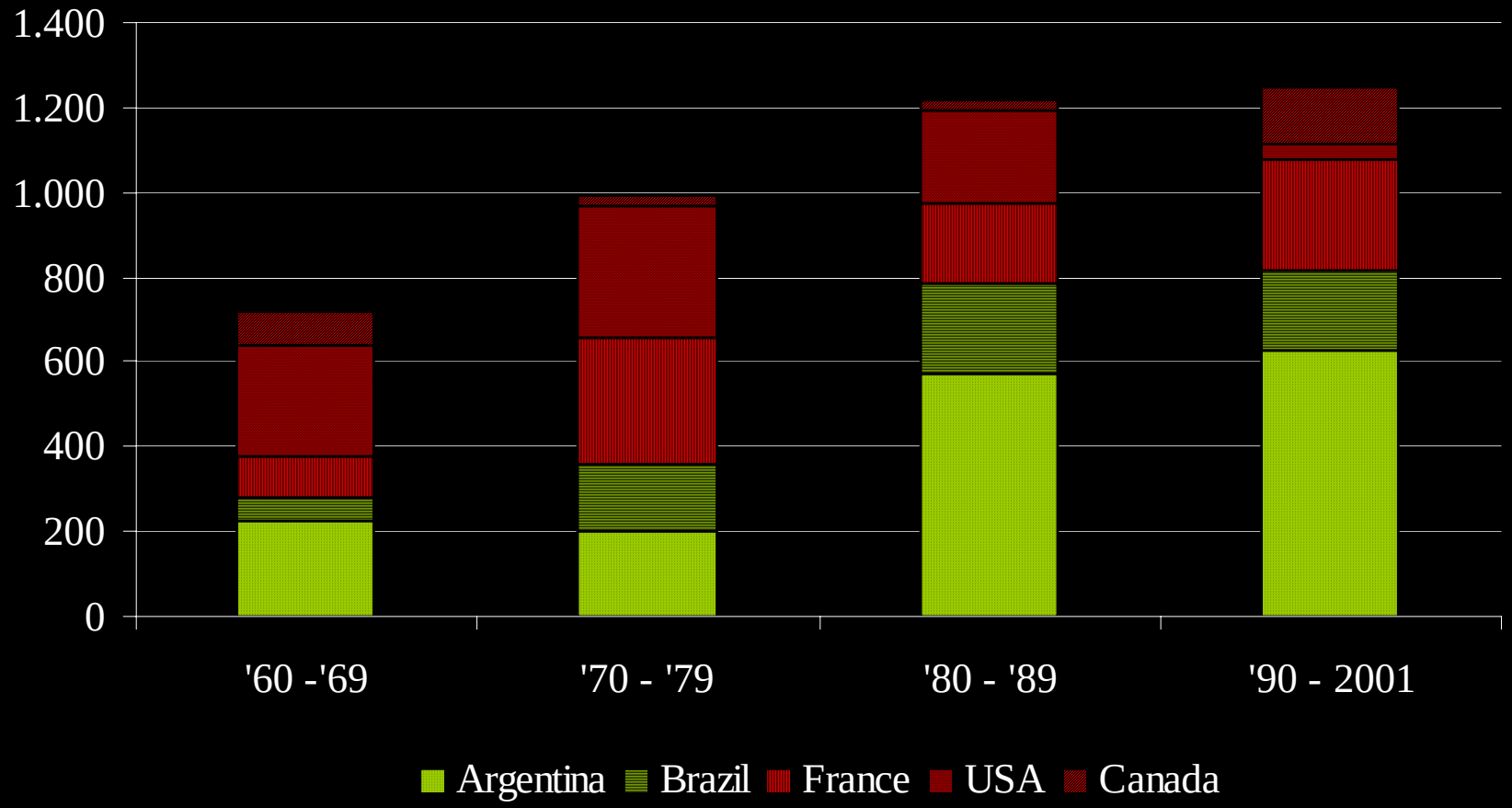
3. Land requirement abroad (1000 ha) for the Belgian livestock sector:

Per *crop* assessment



Land requirement abroad (1000 ha) for the Belgian livestock sector:

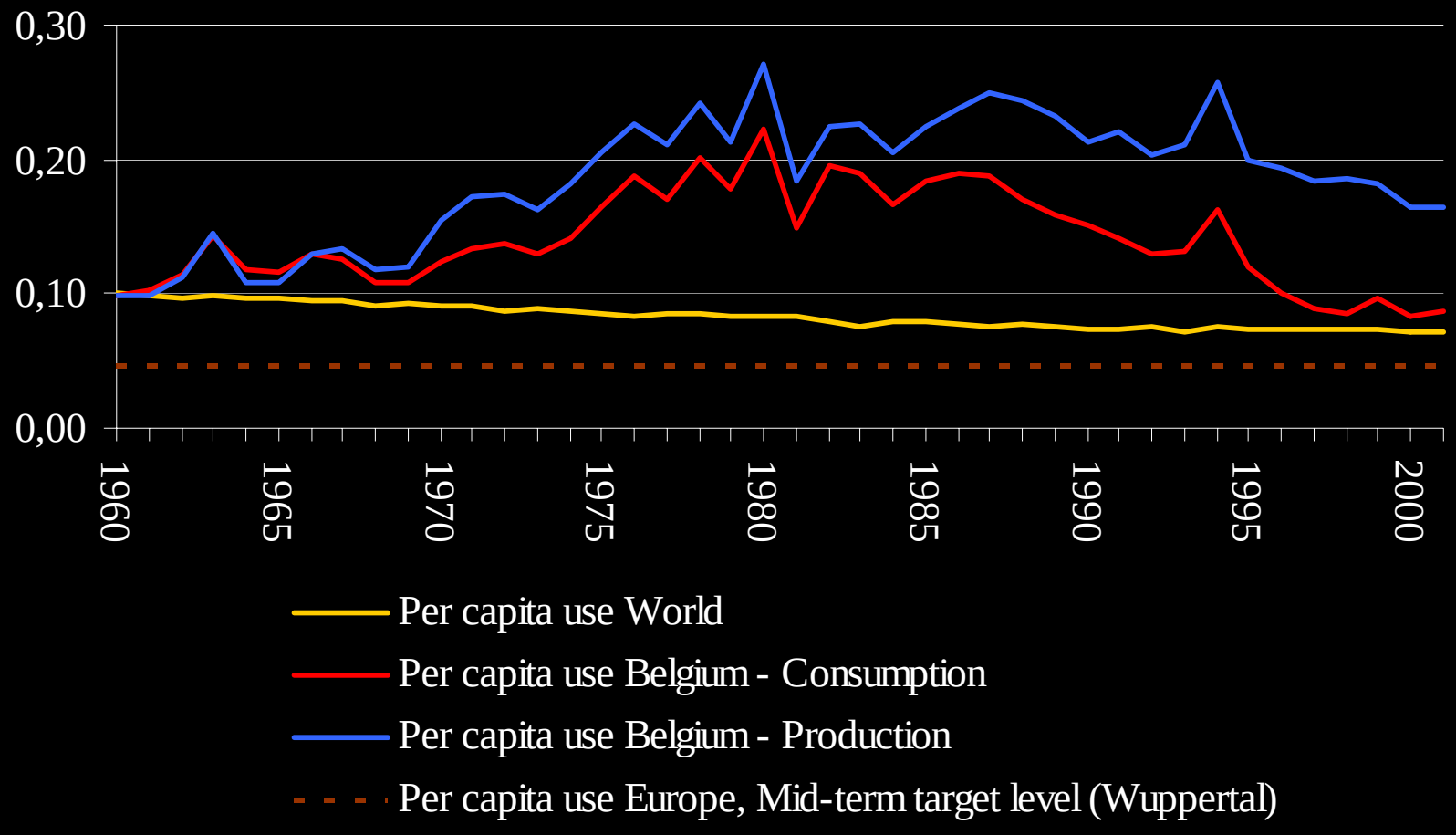
Per *country* assessment



Other important countries: Sudan, Thailand, Indonesia, Nigeria, Malaysia, Philippines, Paraguay, Russia, China

Assessing Ecological Debt of Belgium caused by its livestock sector

Equitable rights: Per capita use of fodder crop area (ha)



5. Provisional conclusions and questions

Trends for Flanders/Belgium

- Largest part of Flemish/Belgian resource use are foreign hidden flows: importance of TMR and ecological rucksacks as indicators
- Clear evidence of environmental burden shifting: reliance on foreign resources and space, with ecological impacts
- Evidence of use of ecosystem services and goods at the expense of the equitable rights by other countries

Some consequences for policy

- Need for an LCA-inspired approach: a resource strategy has to take into account effects from cradle to grave, also beyond EU-borders
  ⇨ need for indicators about impact abroad (e.g. 'ecological debt')

- A resource strategy cannot just be efficiency based, but has to take into account equity considerations

- A resource strategy should also be focused on stopping the accumulation of ecological debt

Some questions

- Is there a connection between relative dematerialisation and shift of the resource-intensive part of production towards the South?
- Ecological impacts are usually linked to social impacts: how can these be taken into account? EU's safety of supply, but what about the safety of the suppliers?
- Resource strategy focuses on efficiency in production, but what about sufficiency in consumption and production?