

A young girl with dark hair, wearing a light-colored sweater, is shown in profile, blowing on a dandelion seed head. The dandelion seeds are blowing away in the air, creating a sense of movement. The background is a bright, green field under a clear blue sky.

Evolution of Bioenergy

- The importance of the ISO 13065 standard and its global relevance

Lena.Dahlman@svebio.se
+46 8 411 70 83

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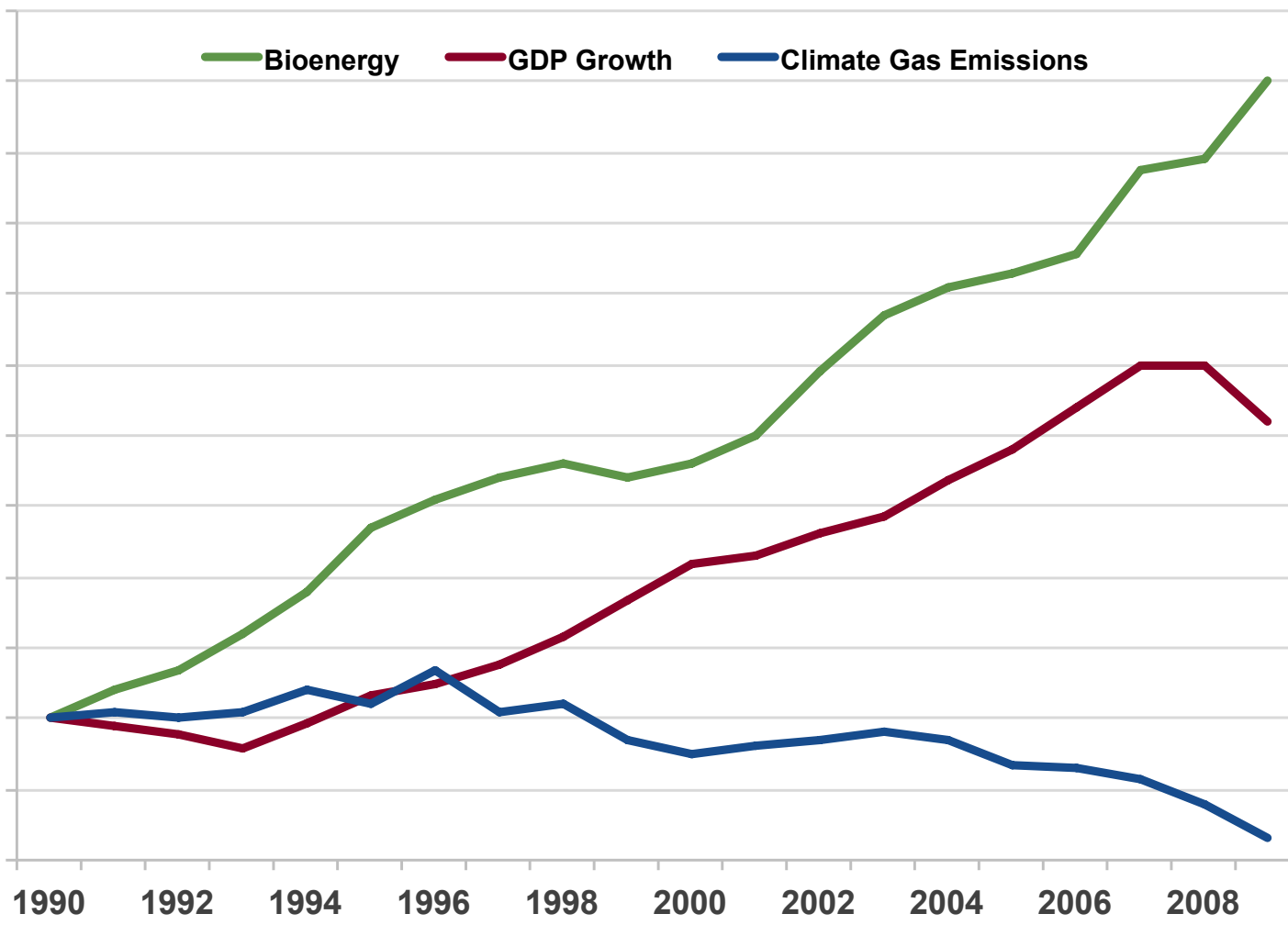
Dedicated to:

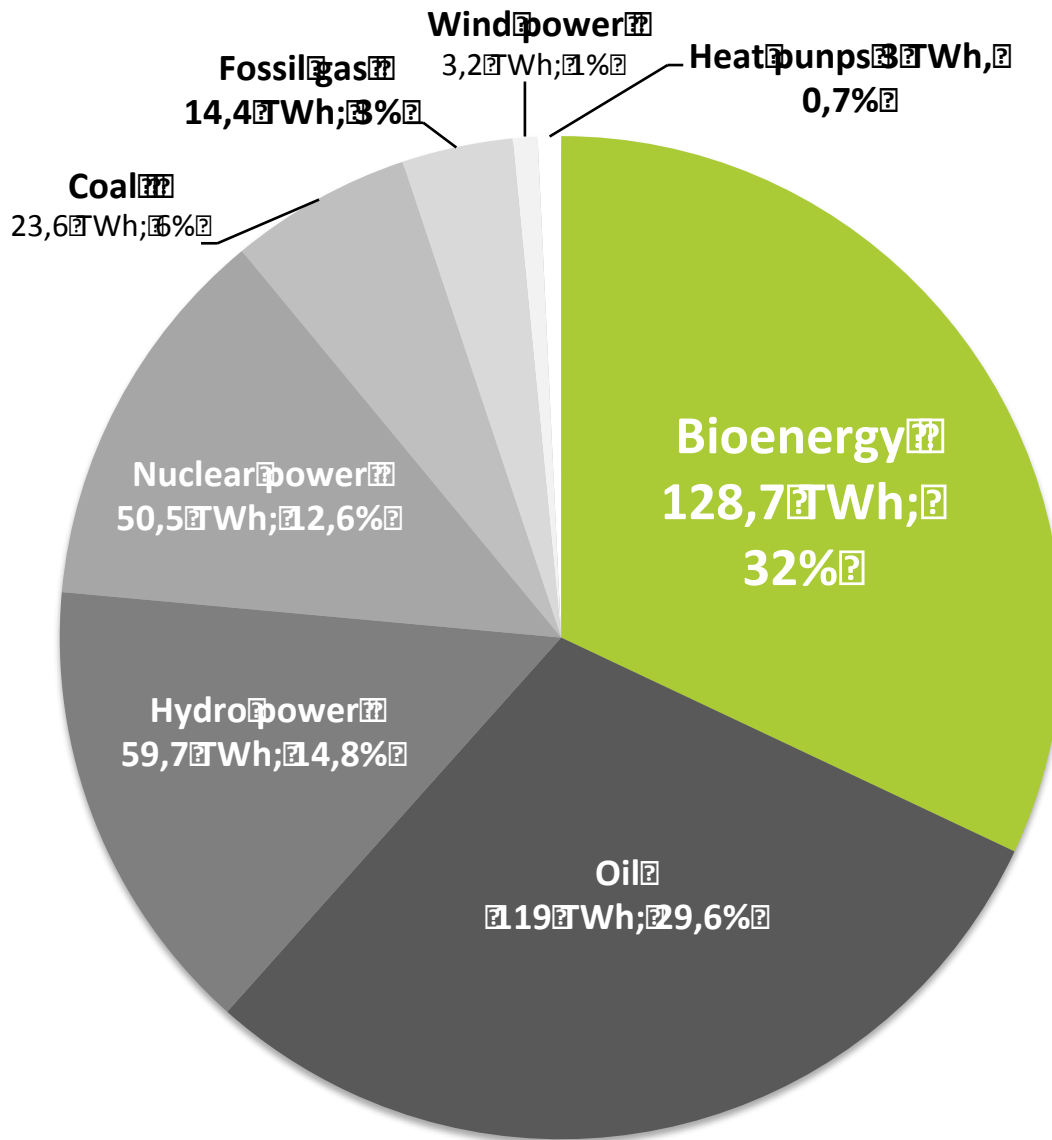
- Increase the use of bioenergy in an economically and environmentally optimal way.



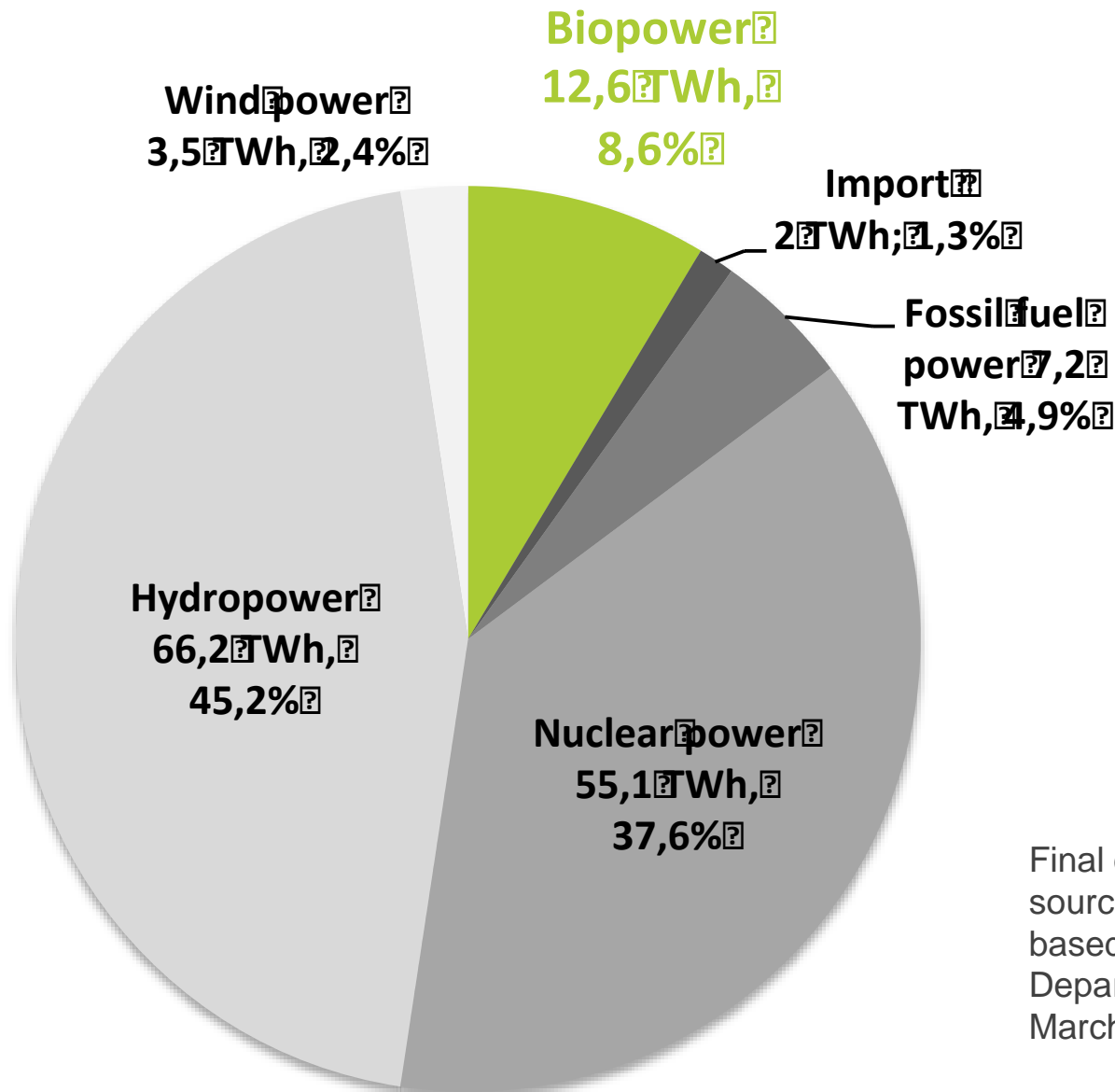
Plants give food and energy to man and animals.

- Bioenergy in a sustainable recirculation is renewable
- It is also a profitable and available today.



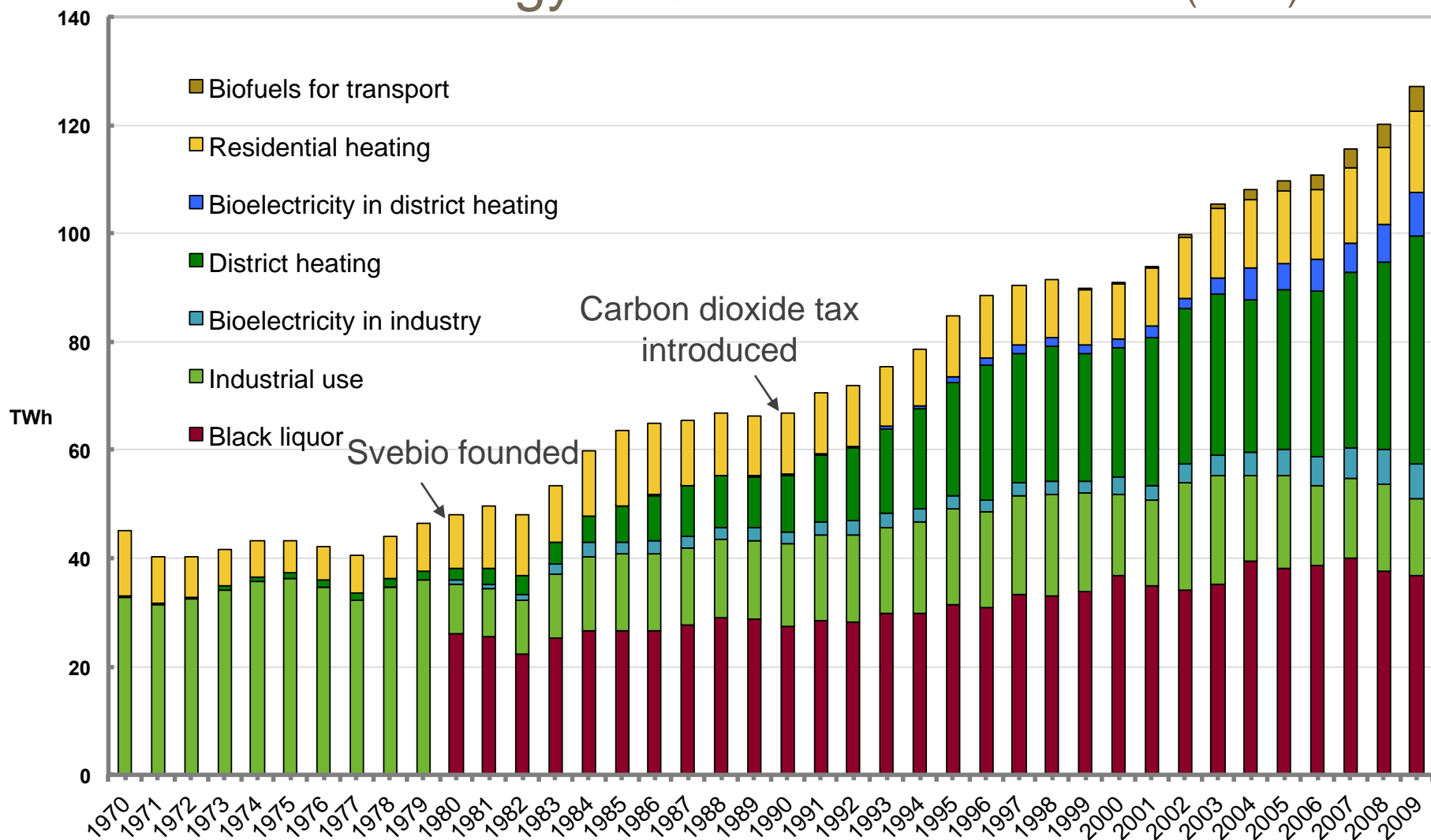


Final energy usage of energy sources 2010. The calculations are based on the Swedish Energy Departments short-term prognoses March 2011.

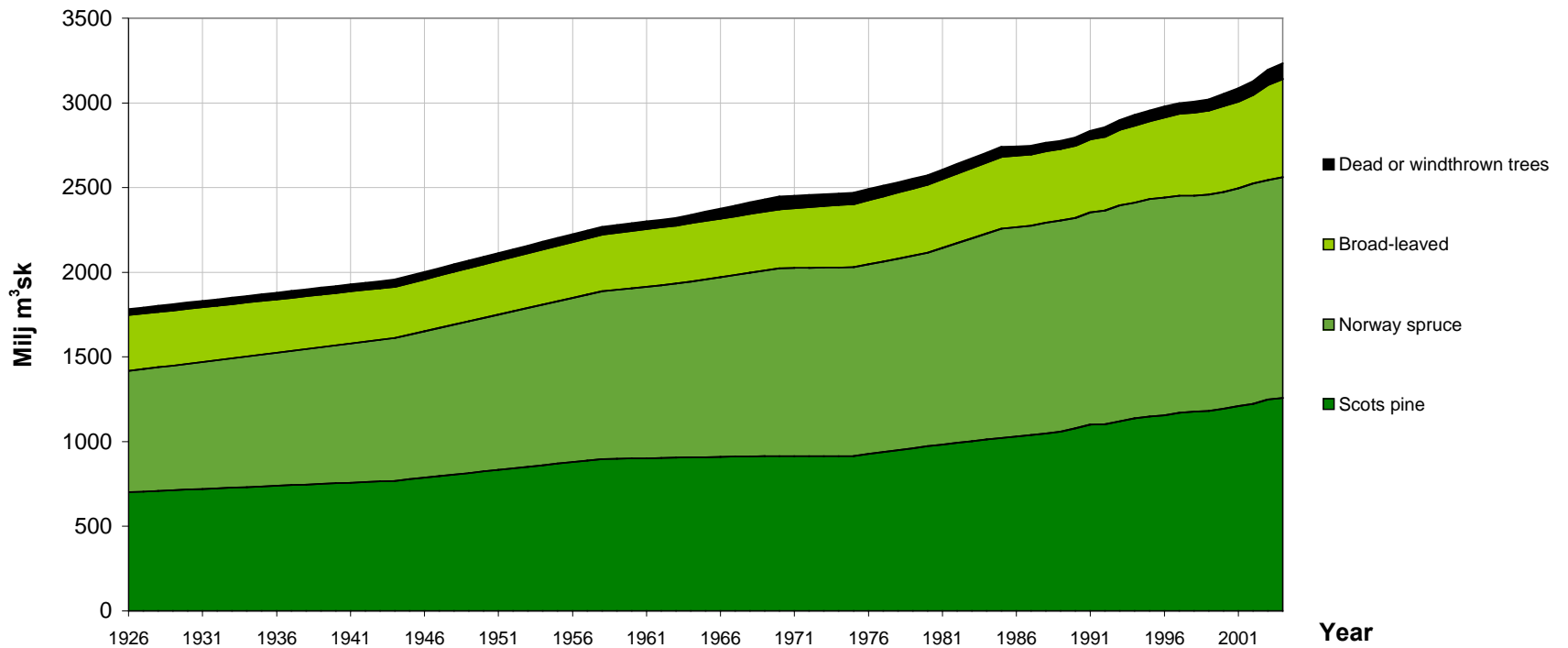


Final electricity usage of energy sources 2010. The calculations are based on the Swedish Energy Departments short-term prognoses March 2011.

Use of Bioenergy in Sweden 1970-2009 (TWh)

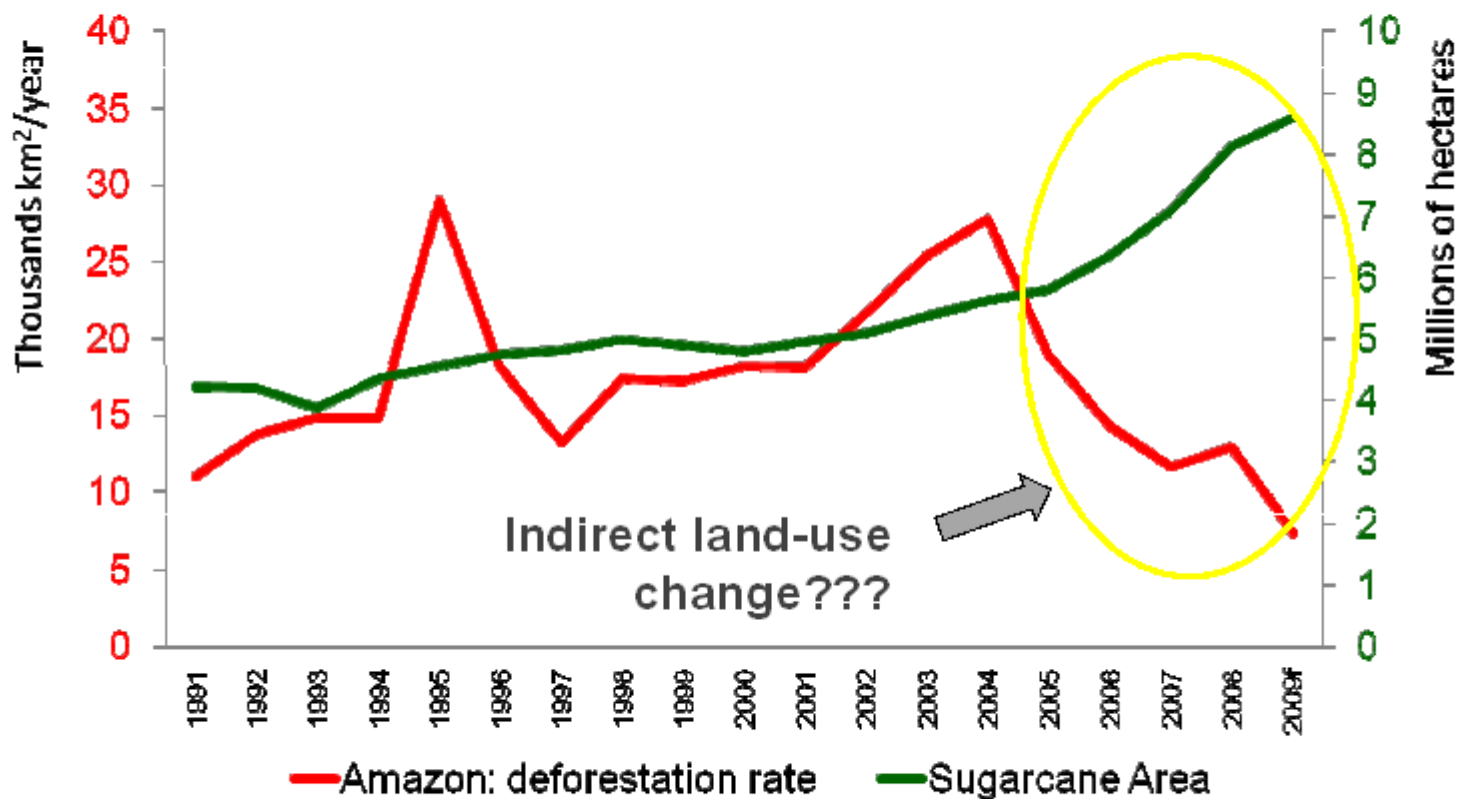


Trend for total standing volume since 1920, all land-use ¹



¹ Excl. high mountains, restricted military areas, urban land and water surfaces. Millions cubic metre standing volume (stem volume over bark from stump to tip) Source: National Board of Inventory

Sugarcane Area and Annual Deforestation Rate in the Brazilian Legal Amazon



f = Forecasted sugarcane area

Sources: INPE (deforestation rates) and IBGE (sugarcane area). Prepared by UNICA.

Bertebos Conference 2010 - Sweden, August 2010

Sweden is different but not unique



We have no domestic fossil energy sources

We have no industry campaigning for oil or coal

We have a clear political will to increase sustainable energy

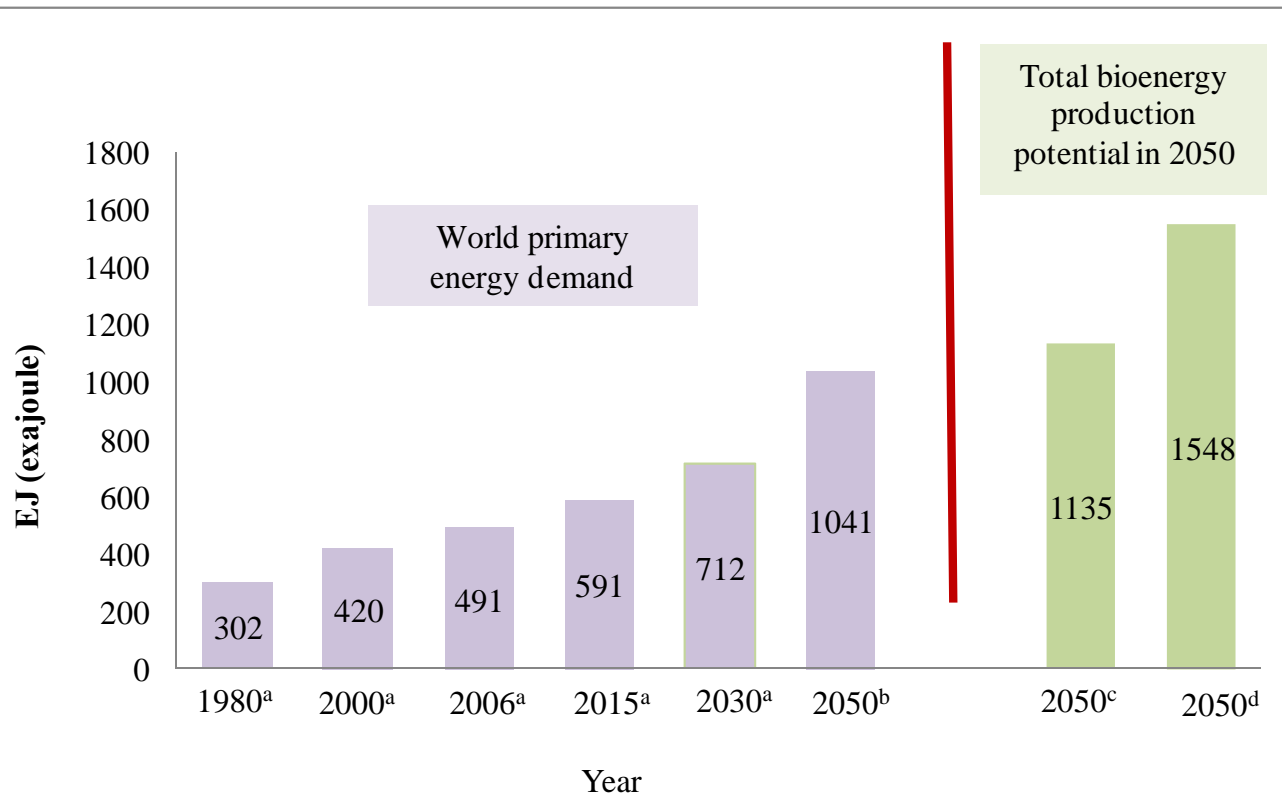
It is possible also in other countries



Raw material available in almost every country

We can have a common view on free trade and sustainability

We must have clear political targets



- Surplus forest growth; agricultural and forestry residues; dedicated woody bioenergy crops on surplus agricultural land
- Coal, oil, gas, nuclear, hydro, biomass and waste[!], other renewables

Source: Ladanai and Vinterbäck 2009, *Global Potential of Sustainable Biomass for Energy Report 013*
ISSN 1654-9406 Uppsala 2009

World primary energy demand for years 1980, 2000, 2006 and forecasts for years 2015, 2030 and 2050 and estimates for total global bioenergy production potentials in 2050

www.worldbioenergy.org

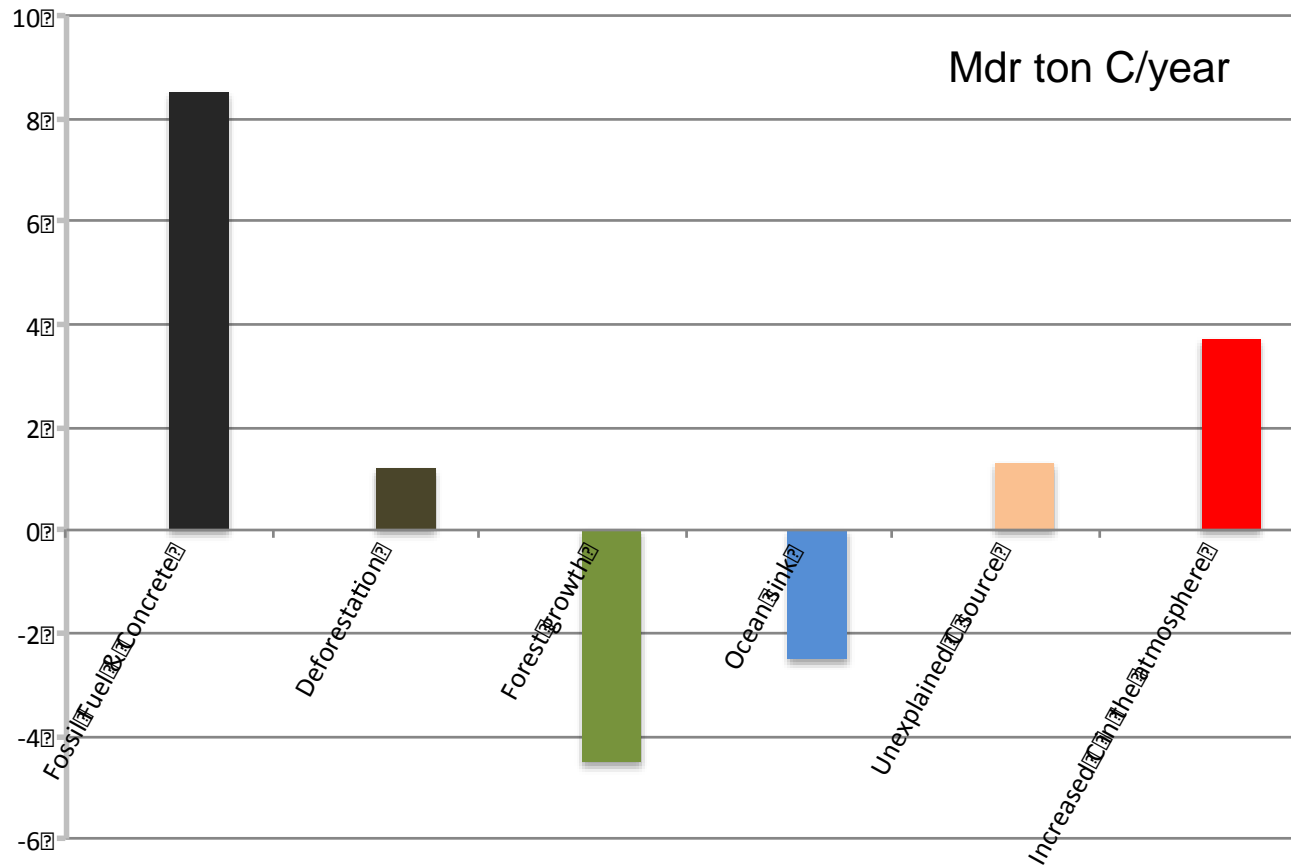
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Globala carbon: - sinks and sources, 2008



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Source: Corinne Le Quéré et al, Natures Geoscience 2009

TAKING YOU FROM KNOW-HOW TO SHOW-HOW

WORLD BIOENERGY 2012

29 - 31 MAY, JÖNKÖPING - SWEDEN

WWW.WORLDBIOENERGY.COM



WORLD BIOENERGY 2012

Conference & Exhibition on Biomass for Energy

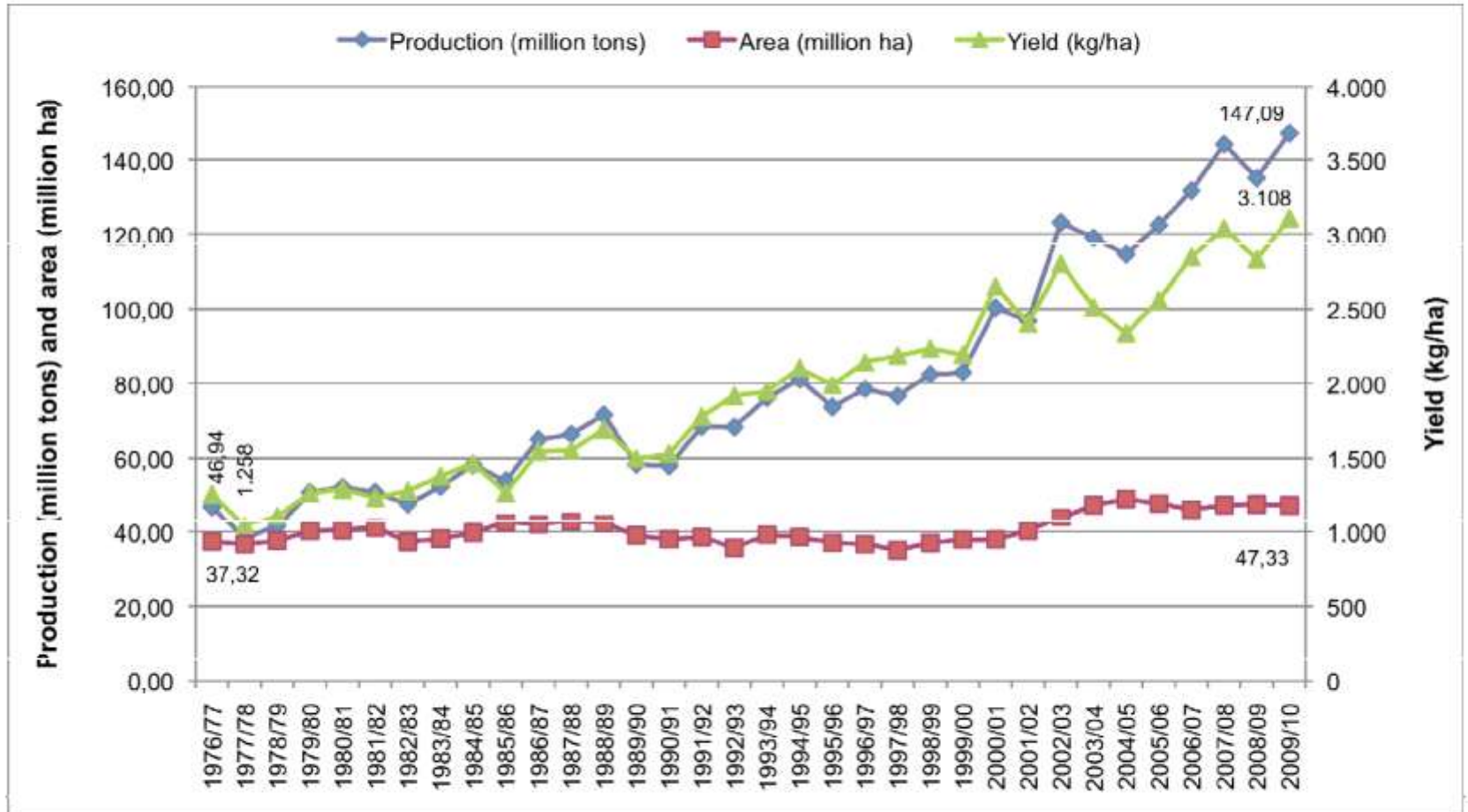
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Grains: Production and Area (1975/2010)

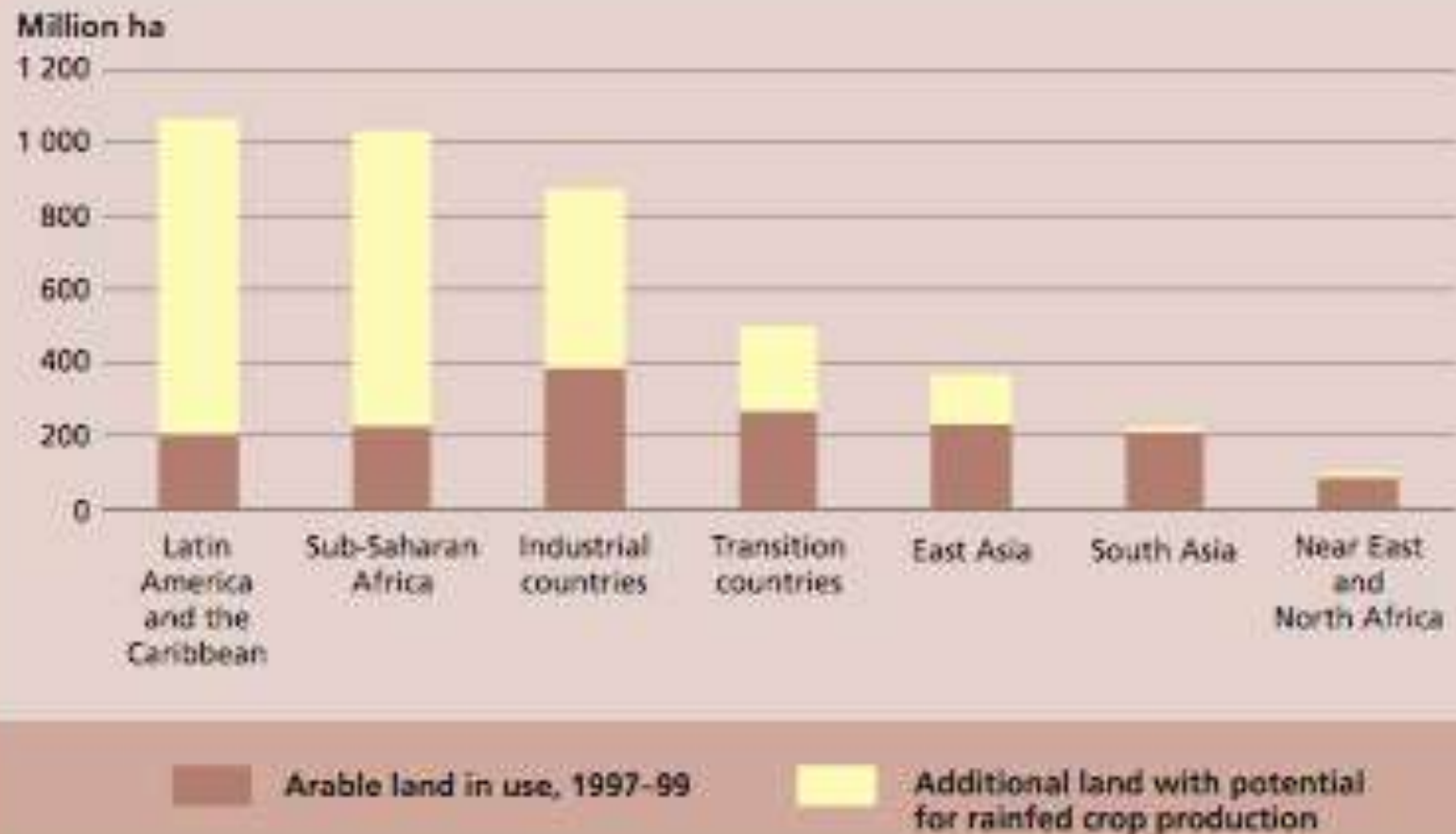
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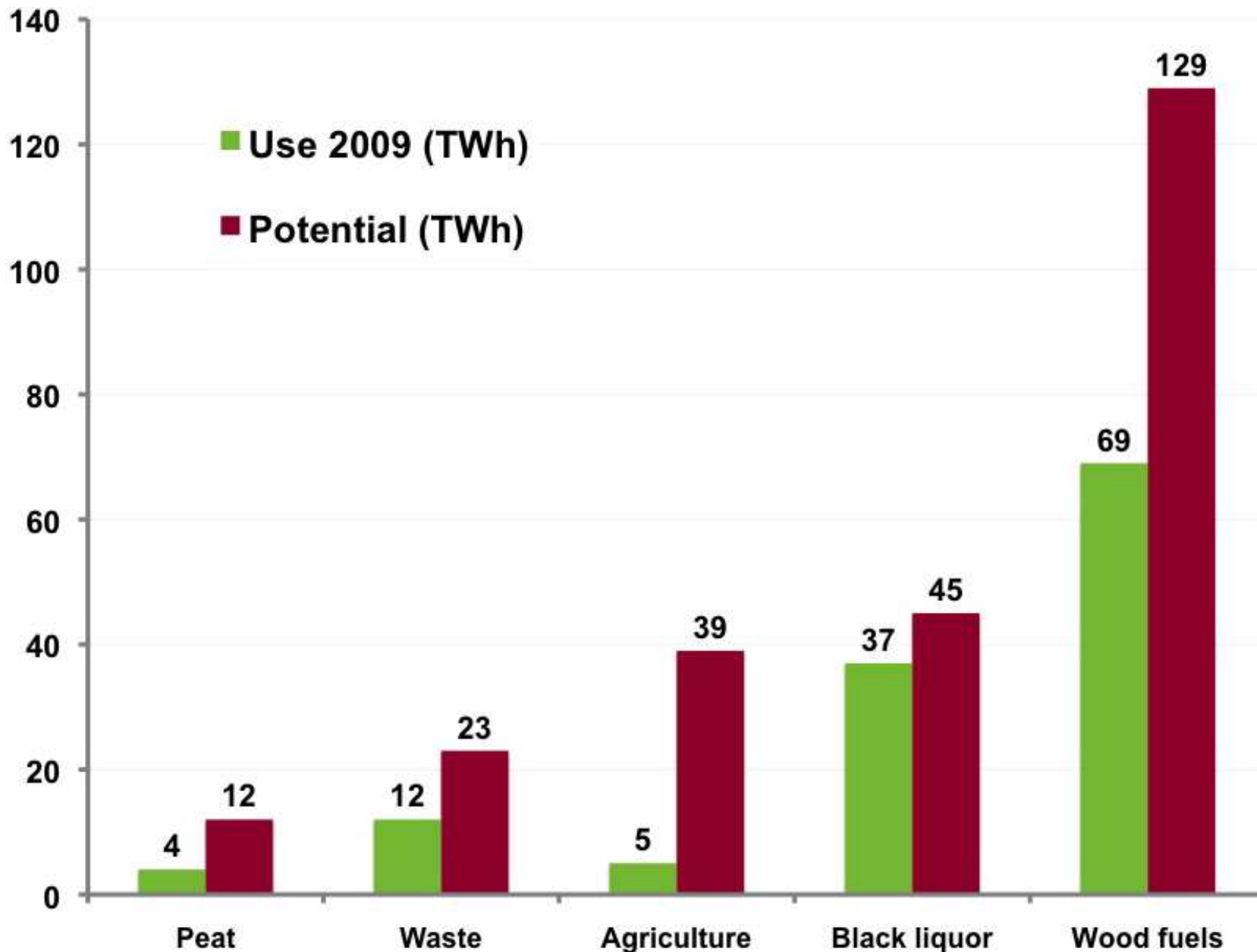
Source: after CONAB.

Bertebos Conference 2010 - Sweden, August 2010

FIGURE 24
Potential for cropland expansion



Source: FAO, 2003.



Forest residues



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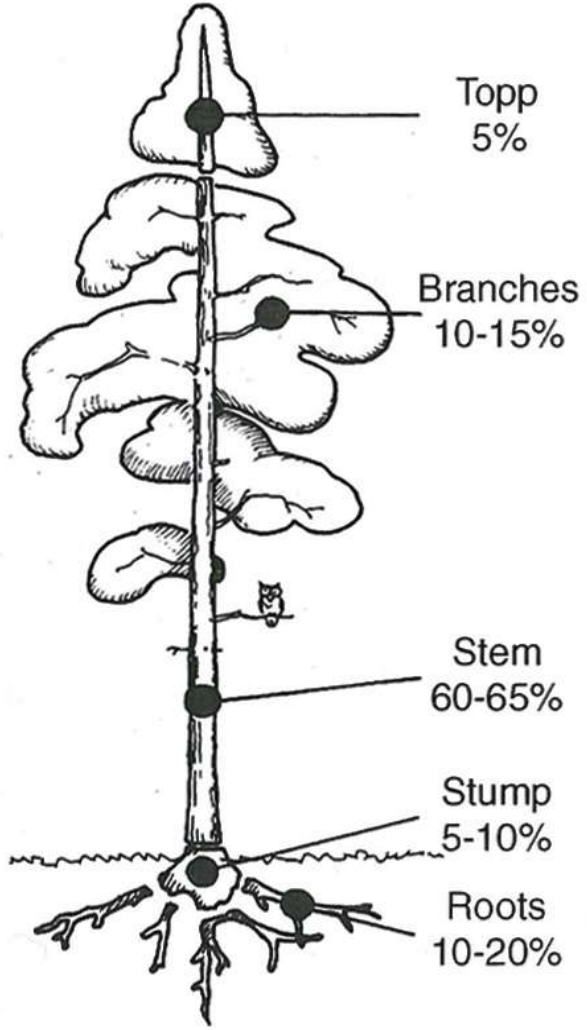


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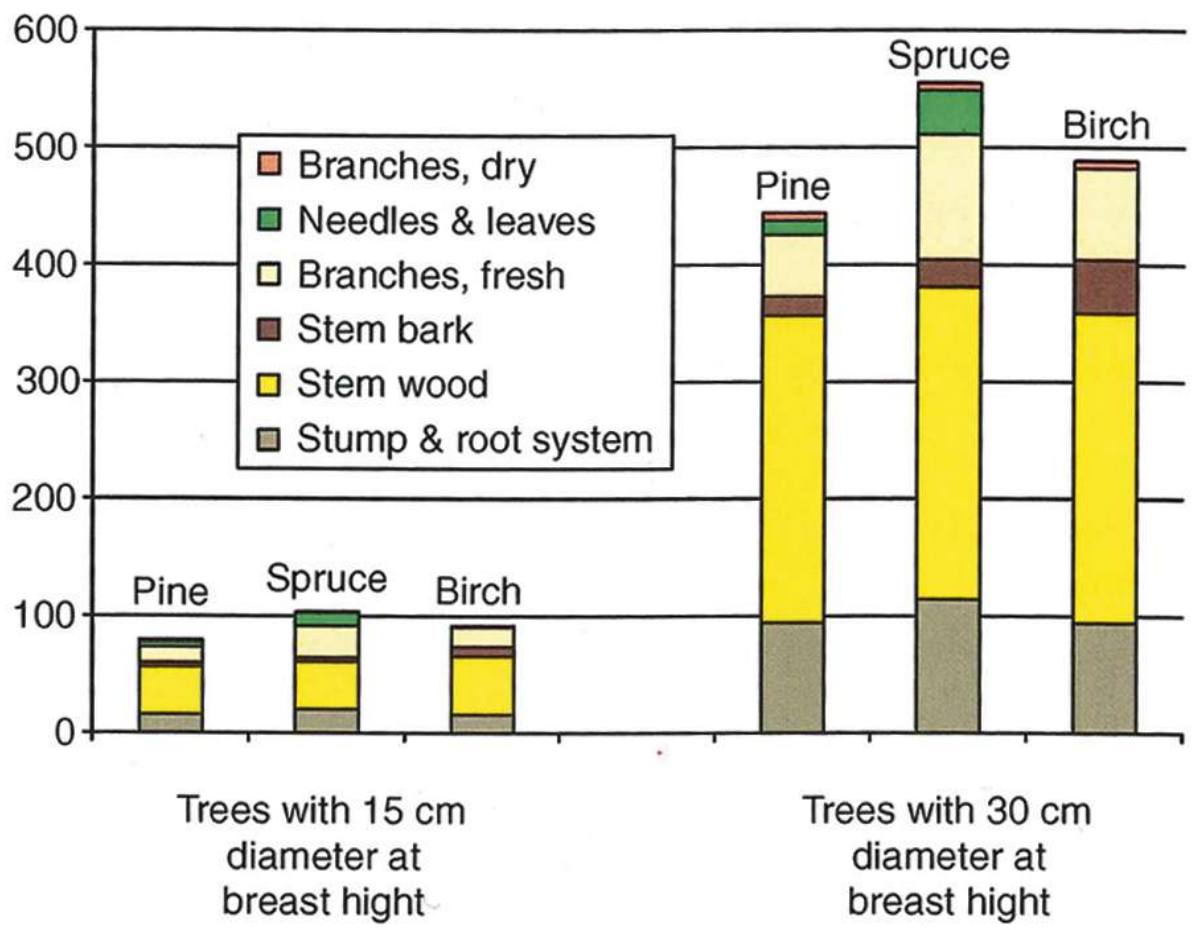
How much is available after cutting down the trees?



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kg dry matter

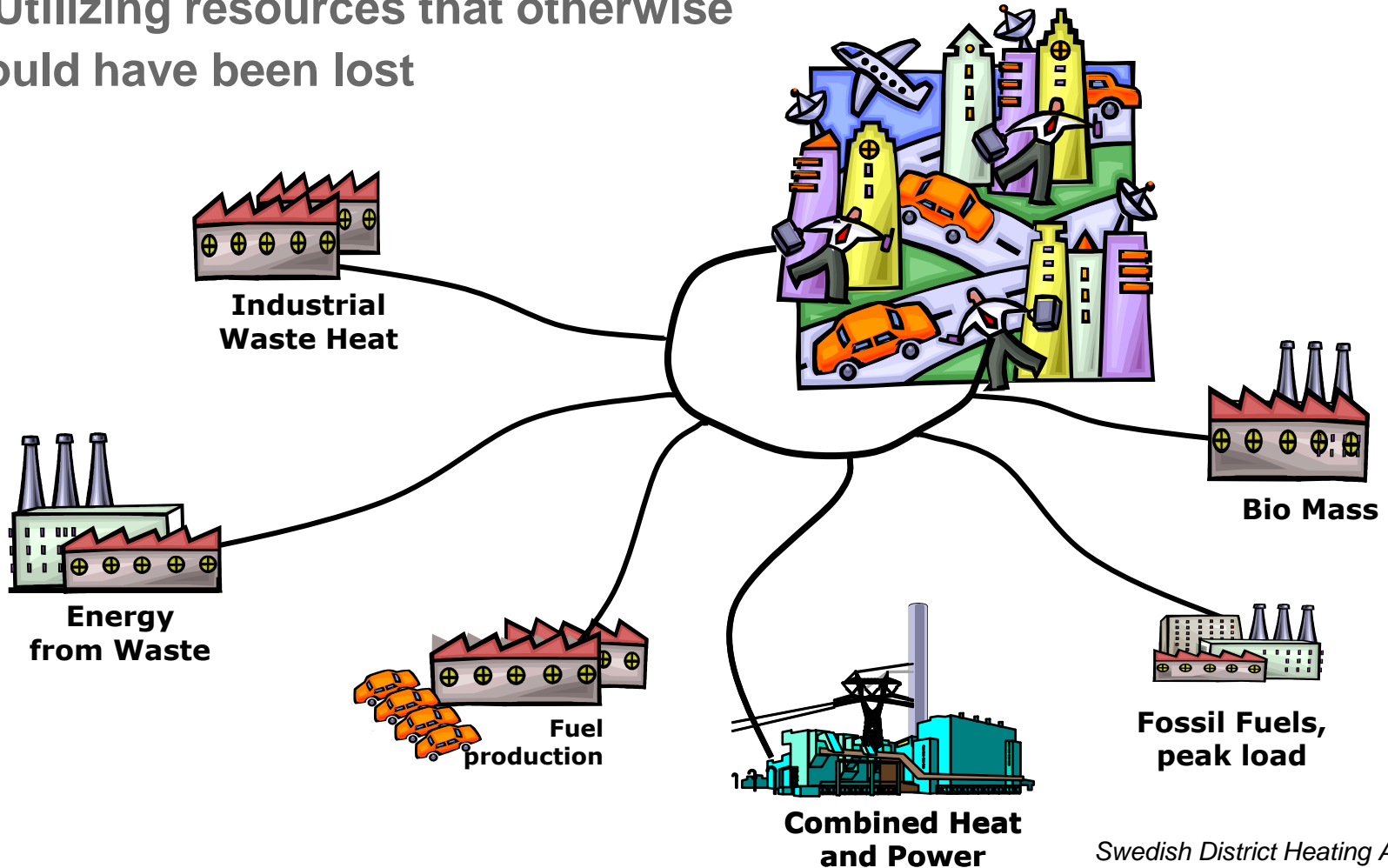


District Heating



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- Utilizing resources that otherwise would have been lost



Swedish District Heating Association

Efficient political instruments are:



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- General, PPP – Polluter Pays Principle
They who are responsible for an emission should pay for polluting. Then the legislation steer towards less emissions and better actions and habits. Example carbon dioxide tax, Sulphur tax, NOX-fees.
- Long term
Support restricted in time give uncertain investment situations and promote often wrong products and optimization of subsidies.
- Neutral to techniques
Mening that the most profitable solutions are chosen in competition with other possible solutions
- Simple and logical
Easy to understand and administrate

Forest volume increase in many countries



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- The available forest increase in every country with a GNP > \$ 4 600 per capita.
- The table shows the decade of "transition point" in different countries, that is when forest volume in the actual country reach its bottom level and starts to increase. The last column gives the forest area in per cent of national land area in 2005.

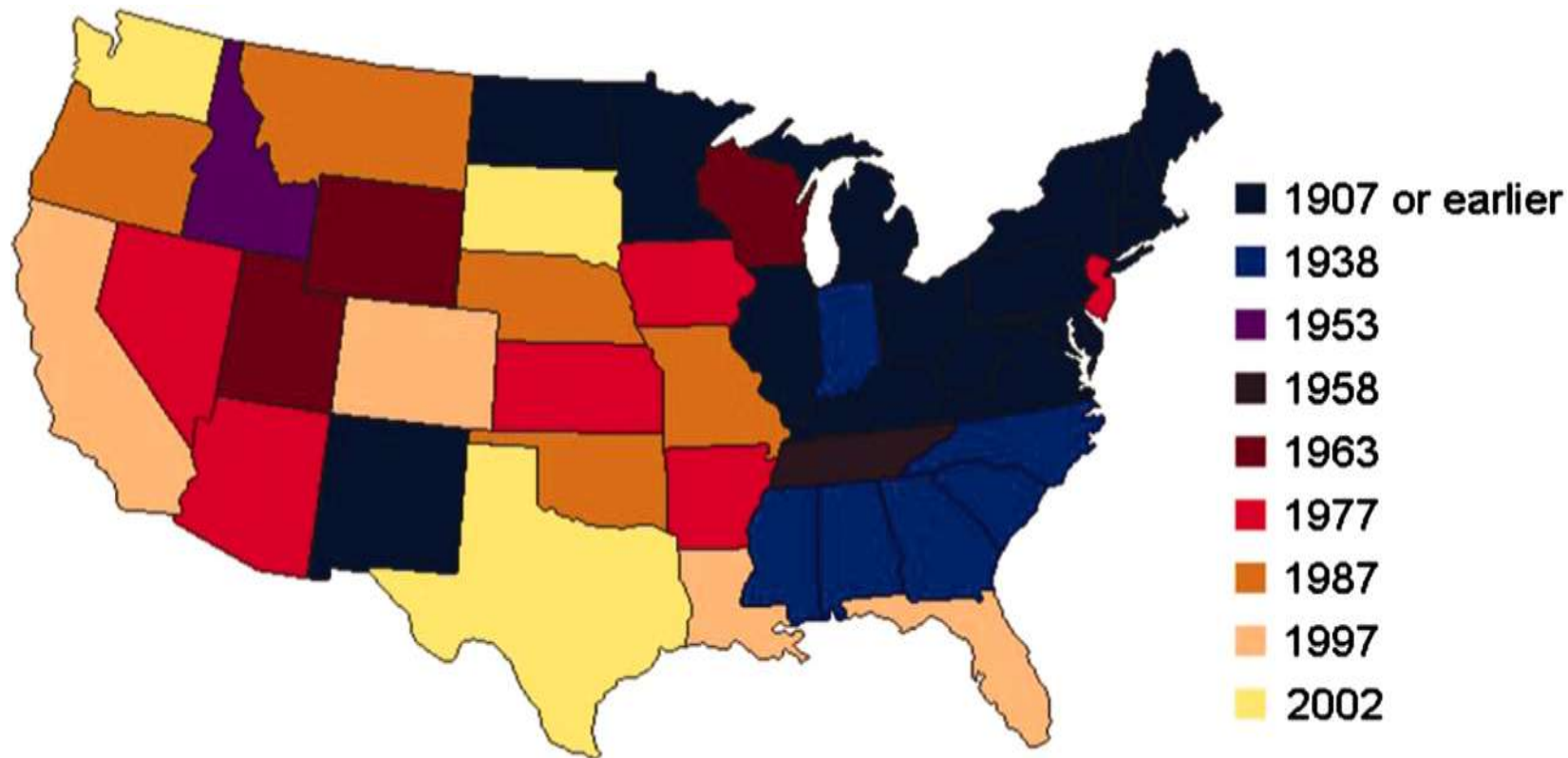
Example:	decade	transition point	year 2005
• Danmark	1810	4 %	11%
• Frankrike	1830	14 %	28%
• Portugal	1870	7 %	40%
• Schweiz	1860	18 %	30%
• Skottland	1920	5 %	17%
• Euro Ryssland	1930	28 %	39%

Källa Prof Pekka Kauppi, Department of Biological and Environmental Science, University of Helsinki, Calculations from data published in "Global Forest Resources Assessment 2005, FAO".

Forest transitions in the U.S.



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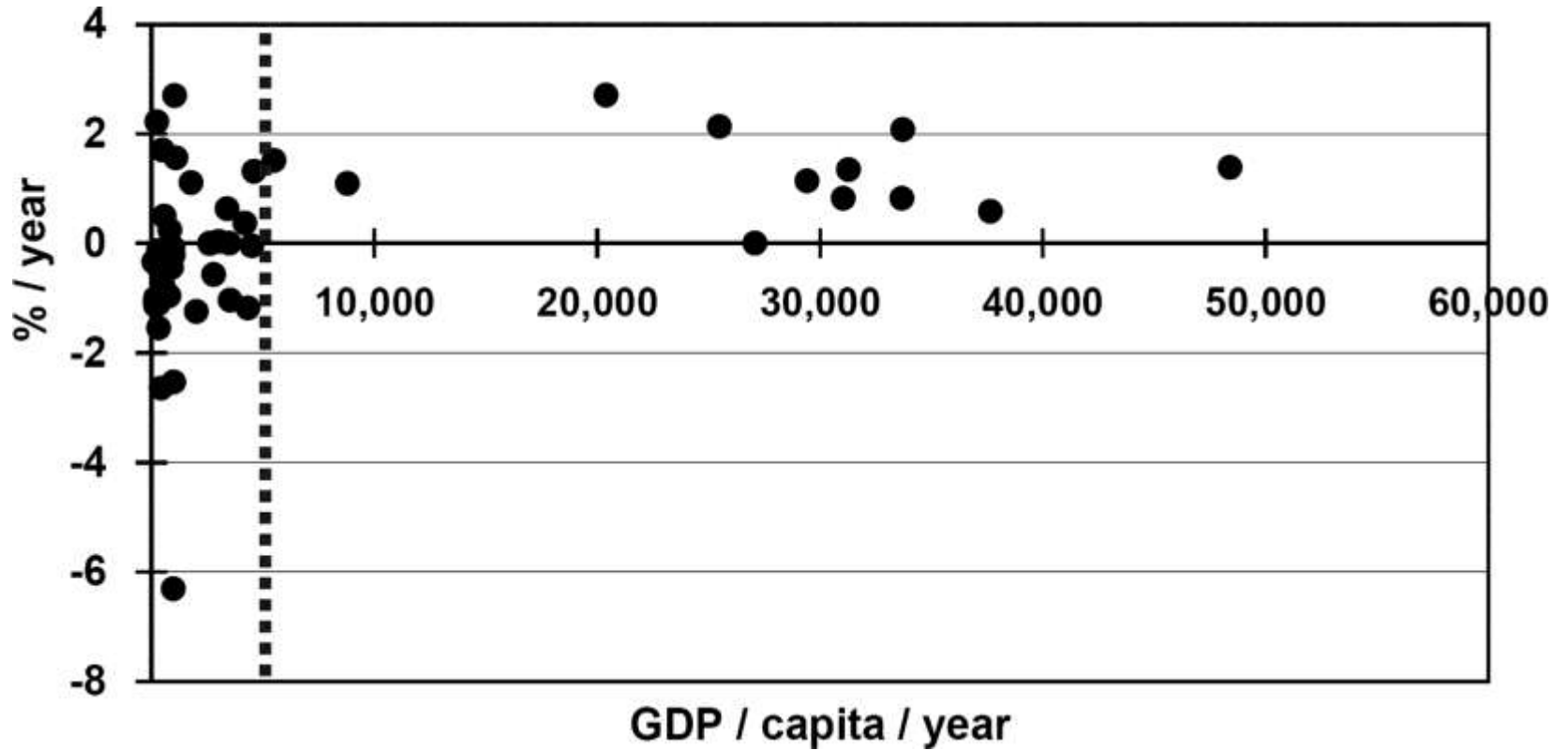


Kauppi P E et al. PNAS 2006;103:17574-17579

The average annual change $a + d$ of growing stock in nations plotted as a function of their GDP per capita.



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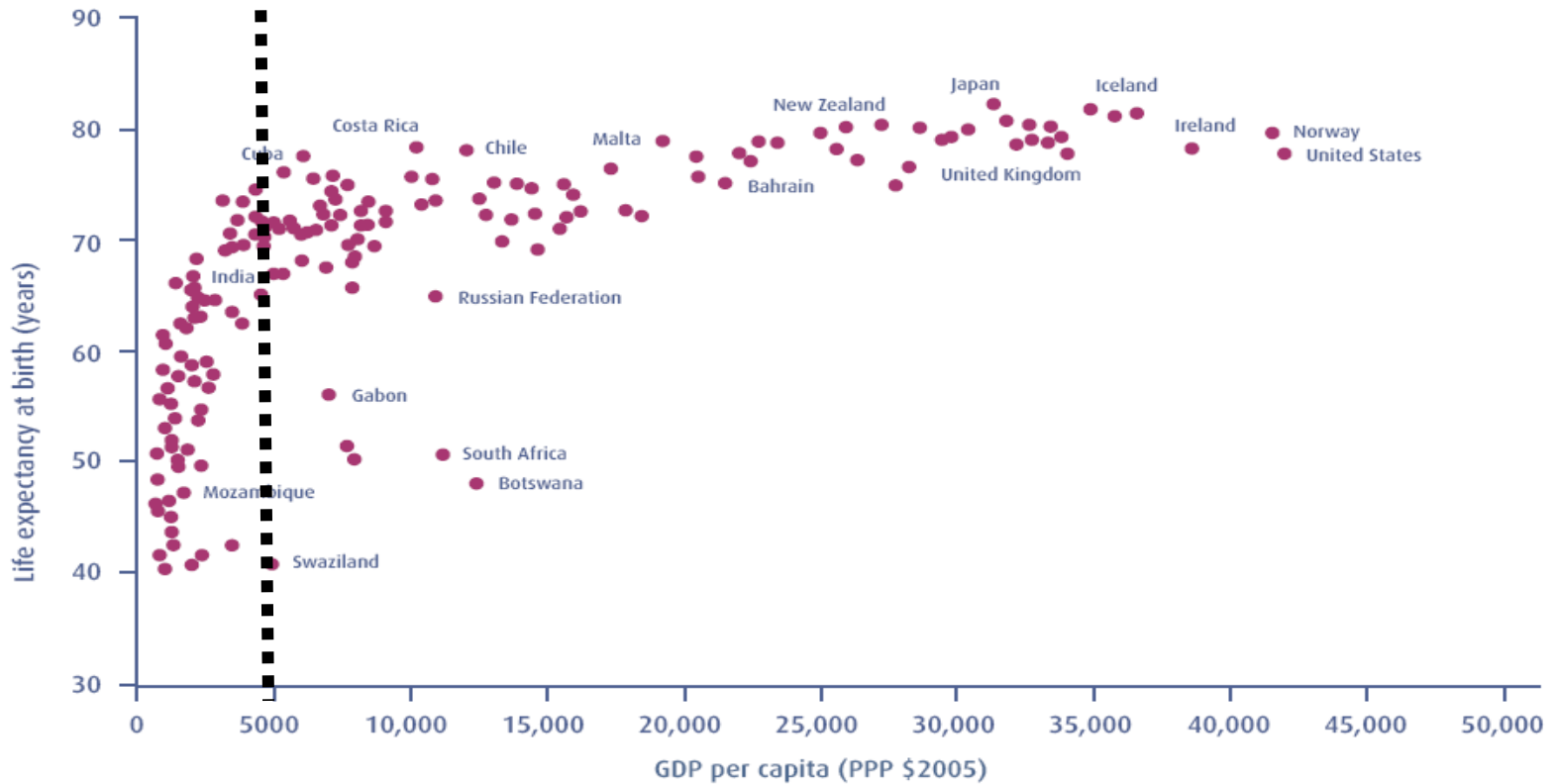


Professor Tim Jackson, University of Surrey, “Prosperity without Growth”:



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Figure 8 Life expectancy at birth vs average annual income¹⁶

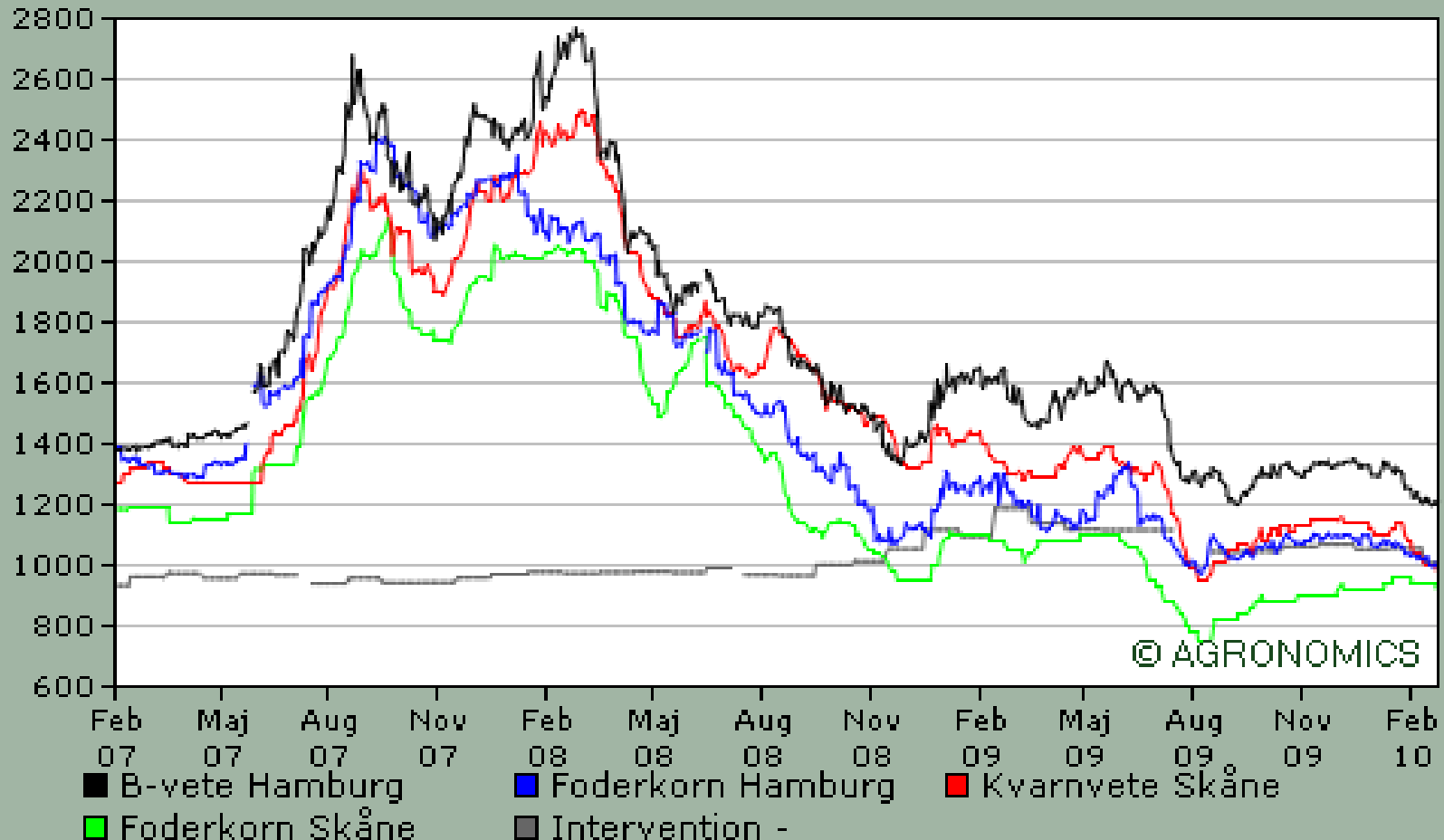


Spannmålspriser Hamburg



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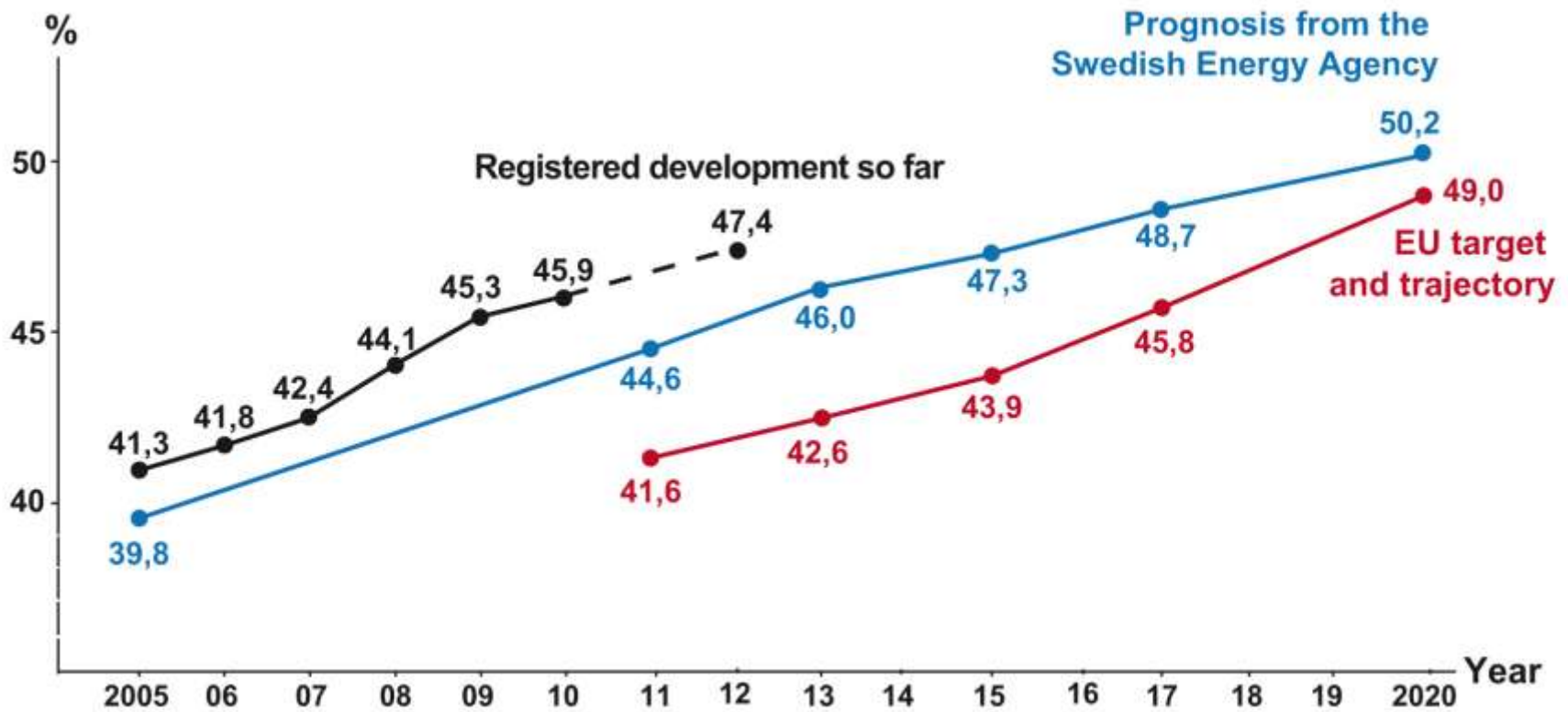
SEK / ton Spannmål - Hamburg & Lantmännen t.o.m 2010-03-12



Share of renewable energy in Sweden's energy use



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Share of renewable energy in Sweden's energy use



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