



Financing the renewable energy transition

Bioenergy

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www.worldbioenergy.org



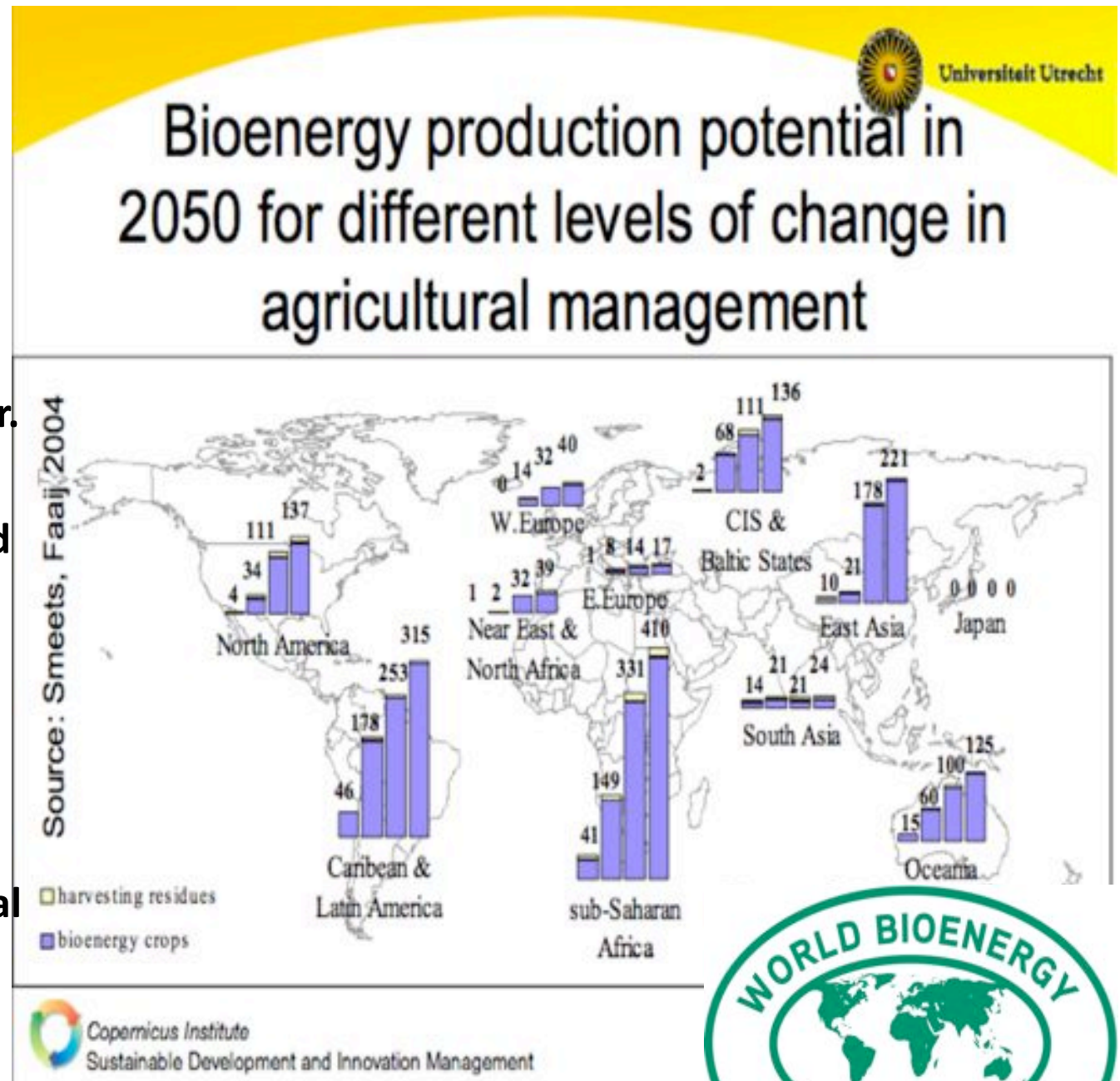
Agricultural bioenergy with different cultivation conditions

With optimal supply of water, nitrogen and phosphorus: 1400 EJ/year.

Due to infrastructural and other reasons: 250-500 EJ/year.

Current global commercial energy: 360-400 EJ/year.

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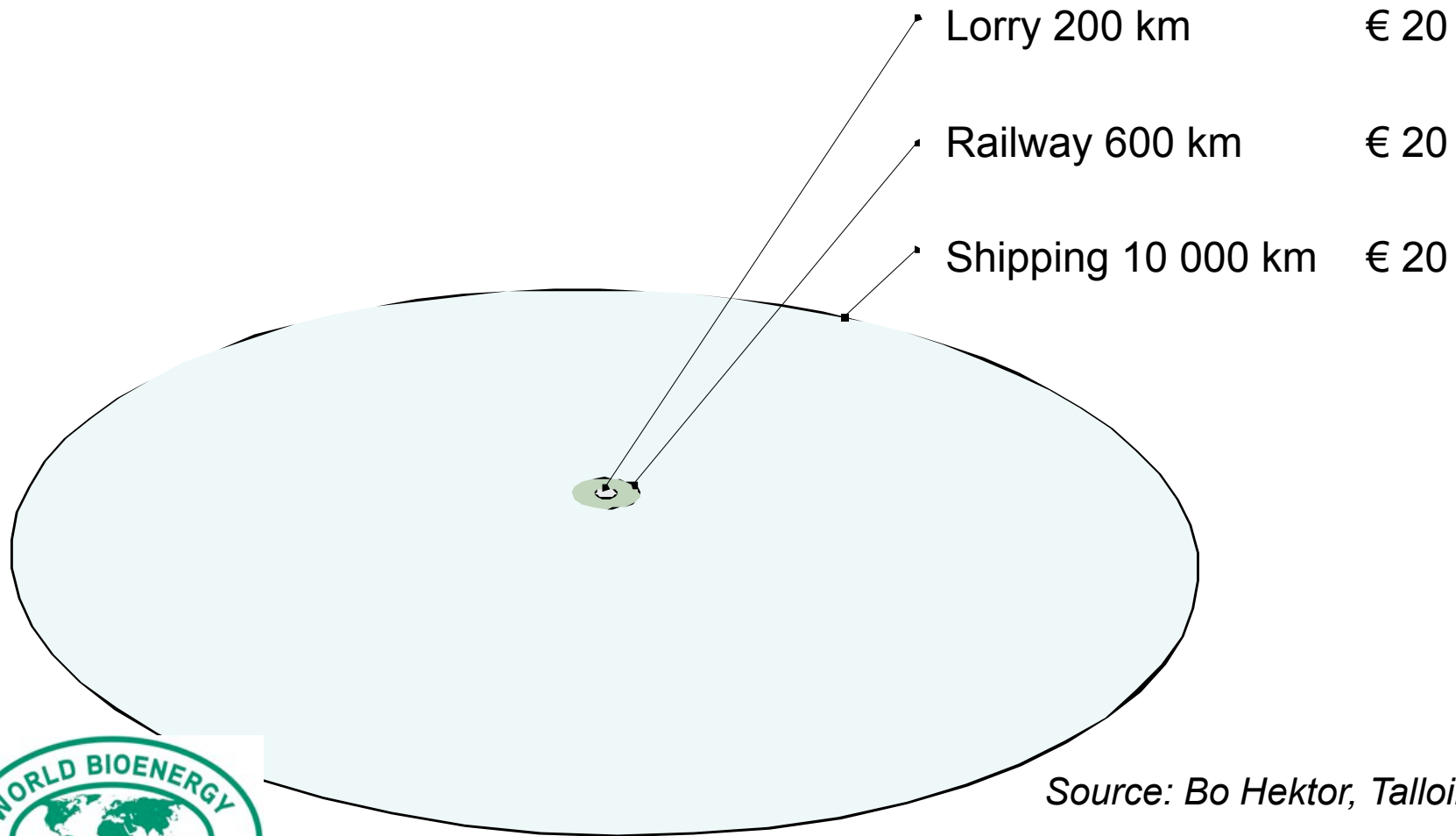


Mahatma Gandhi on global resources:

"There is enough for everybody's need,
but not enough for anybody's greed"



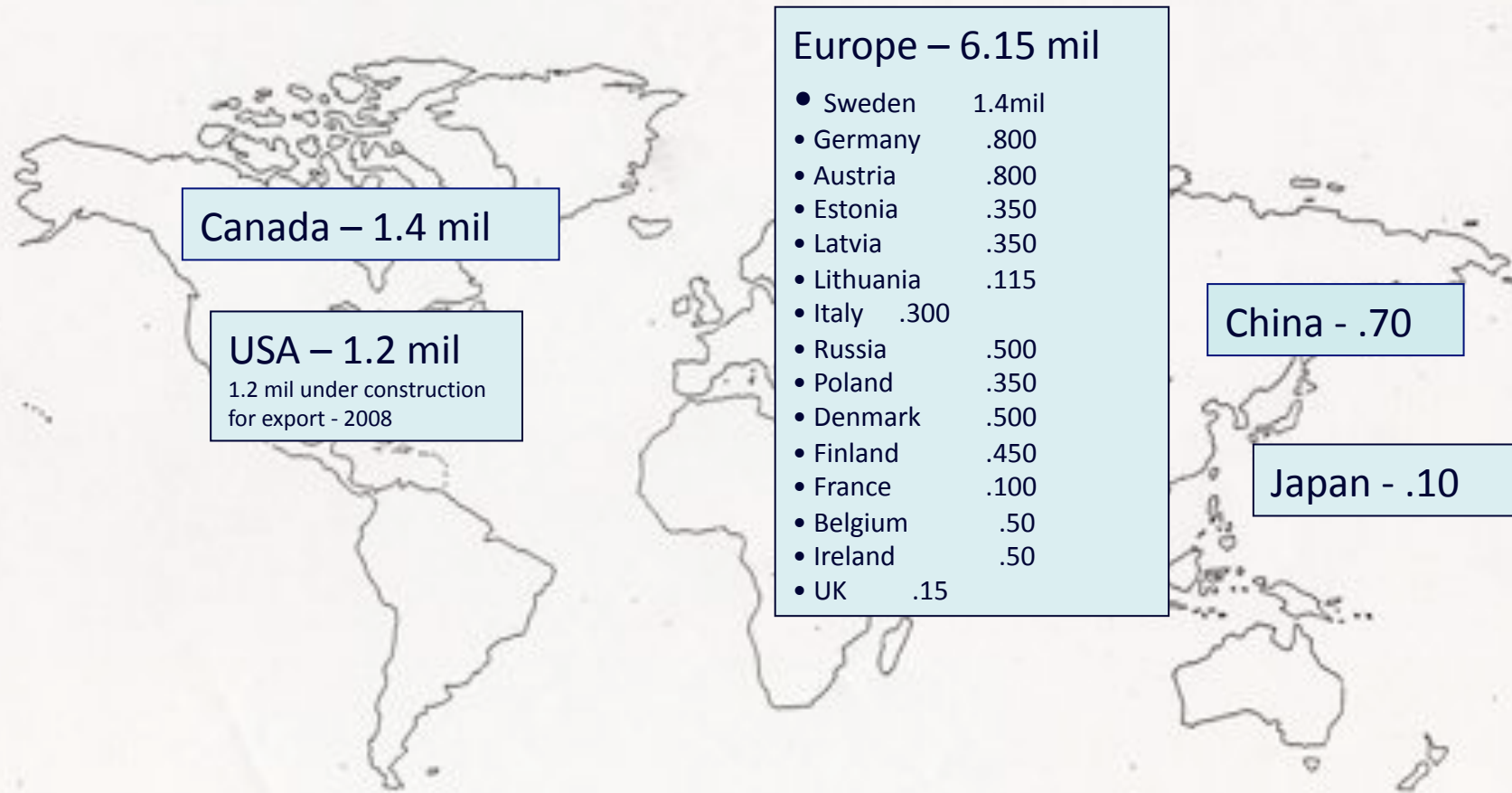
Transport costs:



Source: Bo Hektor, Talloil

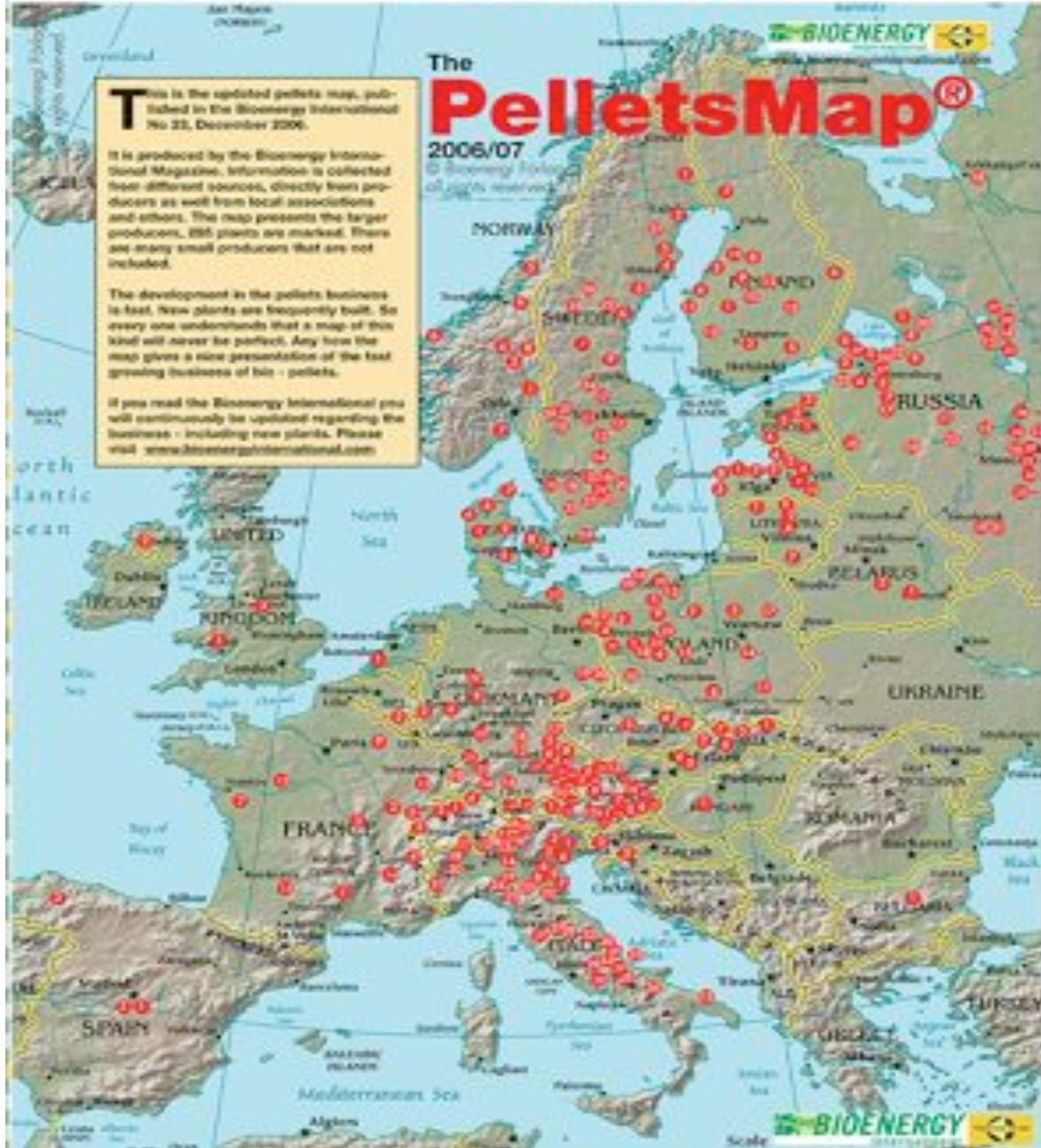


GLOBAL WOOD PELLET PRODUCTION "2007"



Total Production Global Capacity 2007
10,000,000 tons

New Zealand - .15





Shanxian

Ethiopia

Bio-Diesel

- 23.3 million hectares of land suitable for Bio-diesel crops (of which 17,2 million ha suitable for jatropha)
- Jatropha and castor seeds in Ethiopia are estimated to cost from 0.45 to 0.75 US dollars per lt
- Jatropha plantation is the most popular

Very important:

- Stimulate development of the biofuel sector
- Stimulate secure supply of food
- Production of biofuels must benefit the rural producers and not only the foreign investigators

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Employment

- To build the plants: very much depending on the automation and salaries. Up to 1:20.
- To supply the plant with fuels and to operate and maintain it: 300-500 employed per TWh in an industrialised country (corresponding to 80 000-150 000 per EJ).

In a developing country the figure is many times higher.



Barriers

It's just a matter of pricing and introducing of steering instruments.

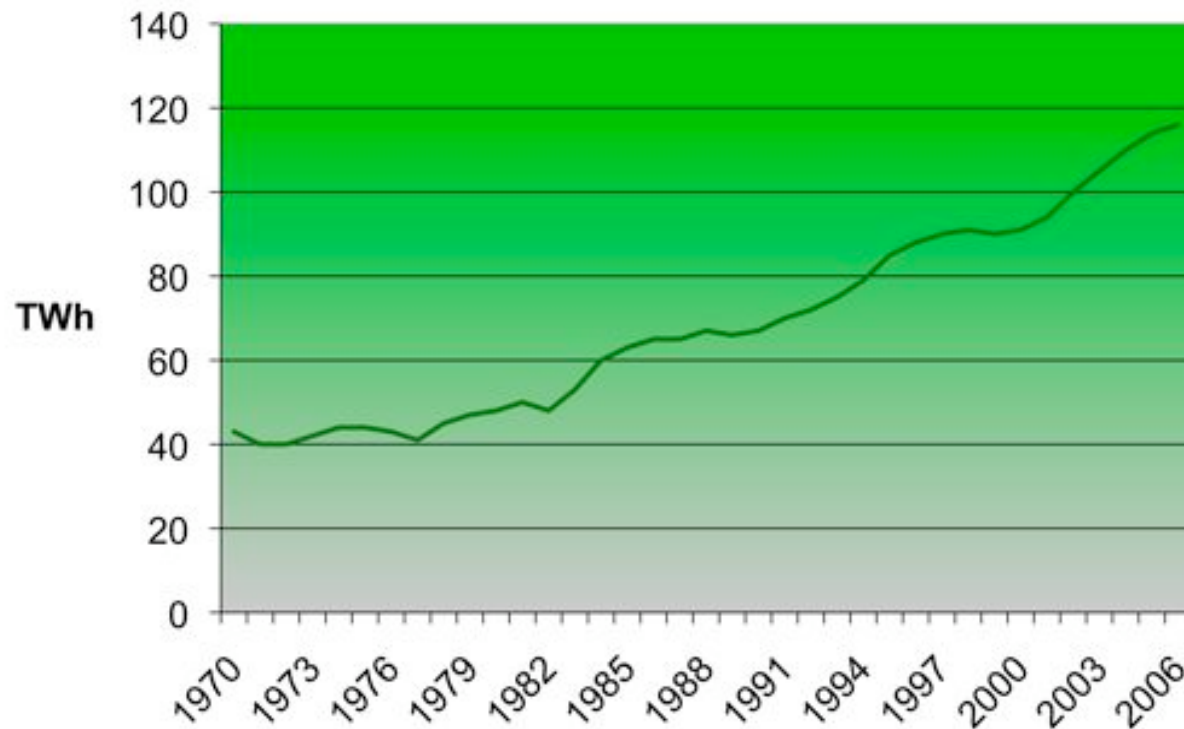
Implementing of bioenergy is commercial if we internalise externalities (let the polluters of greenhouse gases pay in stead of the tax payers).

If it is politically difficult to introduce a CO₂-tax - just replace another tax – an unpopular one.



Sweden as an example: CO2-tax introduced 1991

The bioenergy
share of the total
energy use



- 1970: 9%
- 1980: 11%
- 1990: 15%
- 2000: 20%
- 2005: 26%
- 2007: 29%

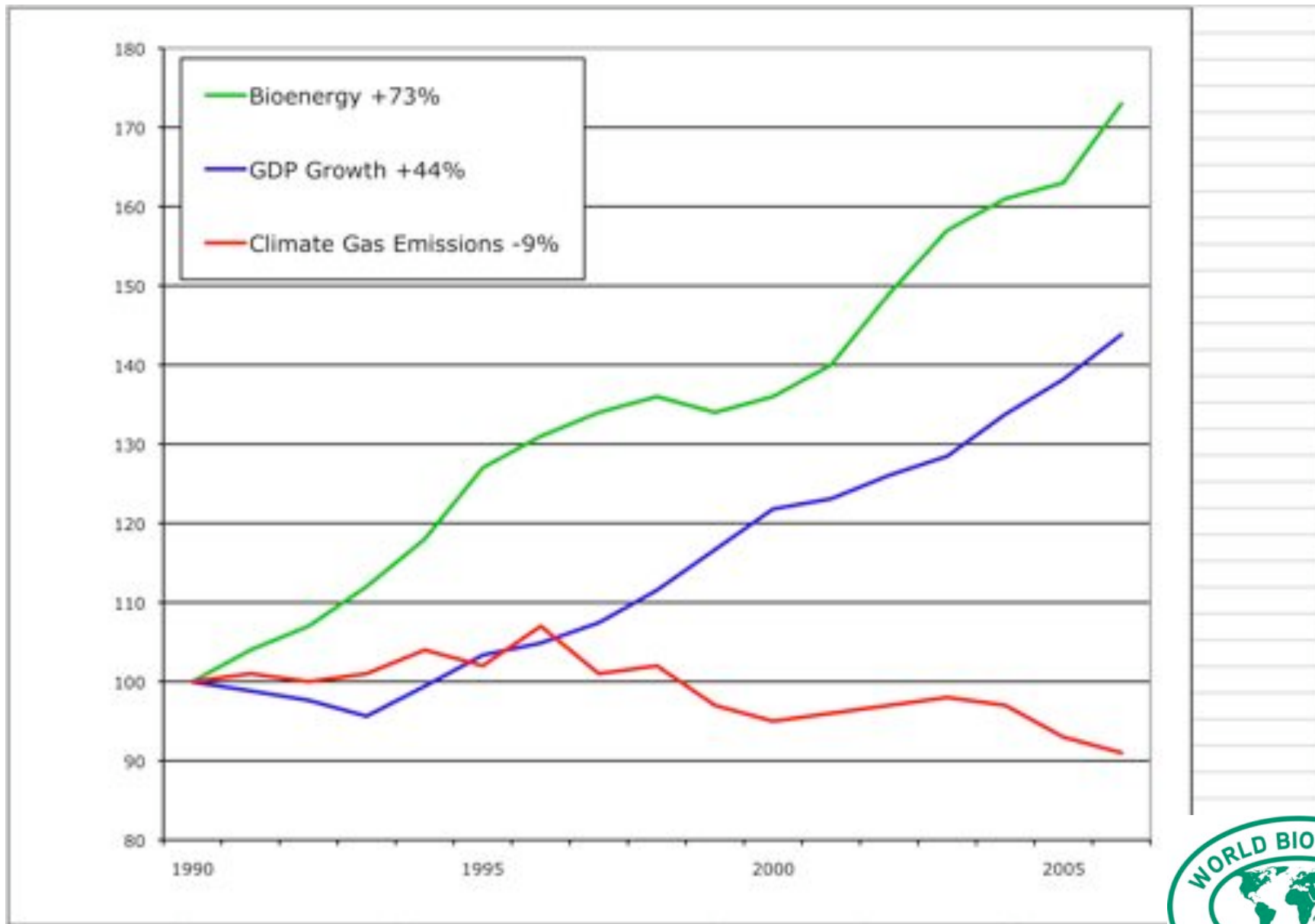


And in addition...

The introduction of a new technique – bioenergy technology - demands a new industry, which influence the GDP growth positively.



Decoupling 1990-2006



Recommendations

1. Introduce a political frame work which stimulates implementation of bioenergy
2. Arrange platforms for sellers and buyers of bioenergy equipment
3. Arrange a research platform for exchange of results and information



Thank you for your attention!



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