



Future Challenges of Transport and Environment

24-25 June 2008 - Berlin

The future role of biofuels

A skeptic view with regard on GHG and sustainability aspects

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Policy Target:



Biofuels shall provide a significant contribution to the GHG reduction efforts in the transport sector.

European / German strategy to reach there:

→ Enforcing high admixture quota by law:

EU: Draft RES-Directive 10%

DE: Biofuel Quota Act (2006) –
enhanced by Meseberg Convention (2007)

→ 20% volumetric.

→ Meantime: reducing other subsidies.

BUT ...

... are biofuels the right solution?

Some crucial issues:

- Biofuels (1st generation) need cultivation,
 - claim area and land use
 - probably land use change → natural habitats
 - land use competition → food vs. fuel
- Agriculture (as it is practiced) involves noticeable environmental impacts:
 - decrease of biodiversity
 - input of nutrients to environment

Hopeful Expectation ...



The 2nd generation biofuels:

- Using currently un-utilized (low level utilized) residues from agriculture, forest management, landscape management.
 - no land use
 - (→ probably land use change due to changes in agriculture/forestry management)
- Using any kind of organic waste:

BUT: the technology is not yet available.

Policy makers are aware of that



Germany:

accounting for the quota (acc. to Biofuel Quota Act)
requires evidence on:

- Sustainable cultivation;
- Protection of natural habitats;
- A minimum rate of CO₂ mitigation.

→ Biomass Sustainability Regulation (BSR) Draft 12/07.

EU:

rather similar requirements and regulations

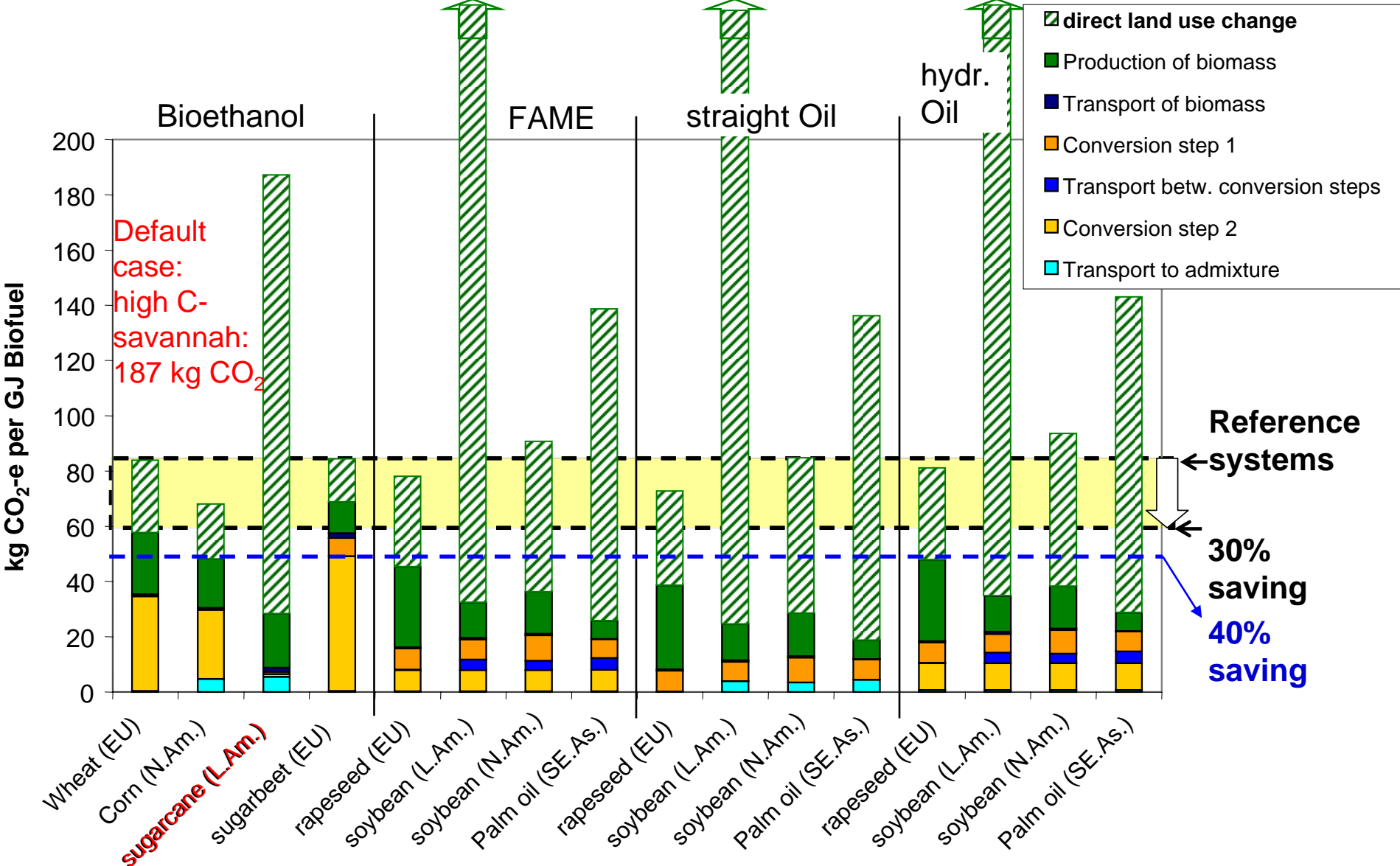
Thus: Need for certification



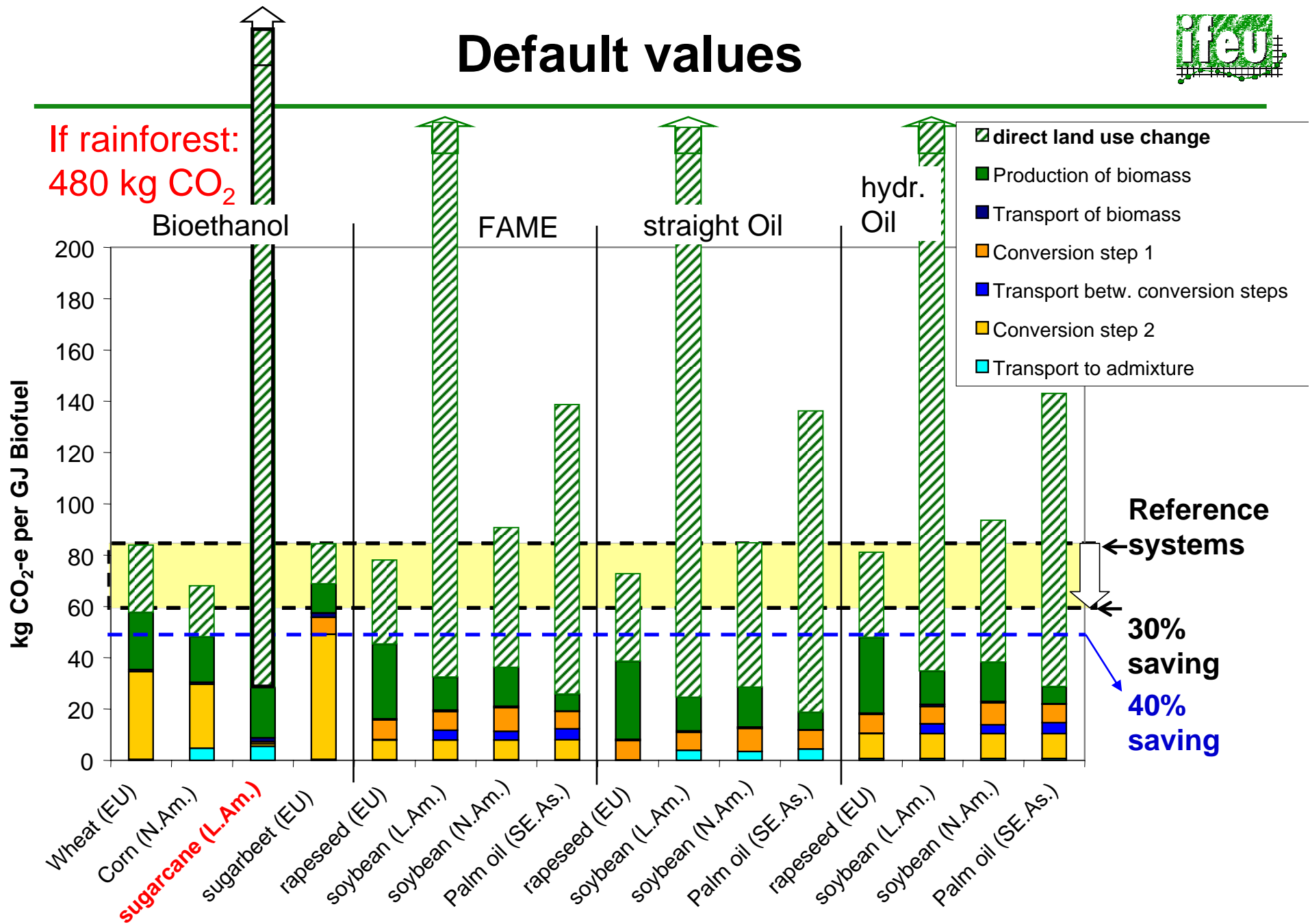
and a case by case GHG calculation for each accountable batch of biofuel:

- Considering the **whole production** chain, from land use change (LUC) to fuel use;
- Considering conservative **Default values** in case specific data are not provided or not verified.

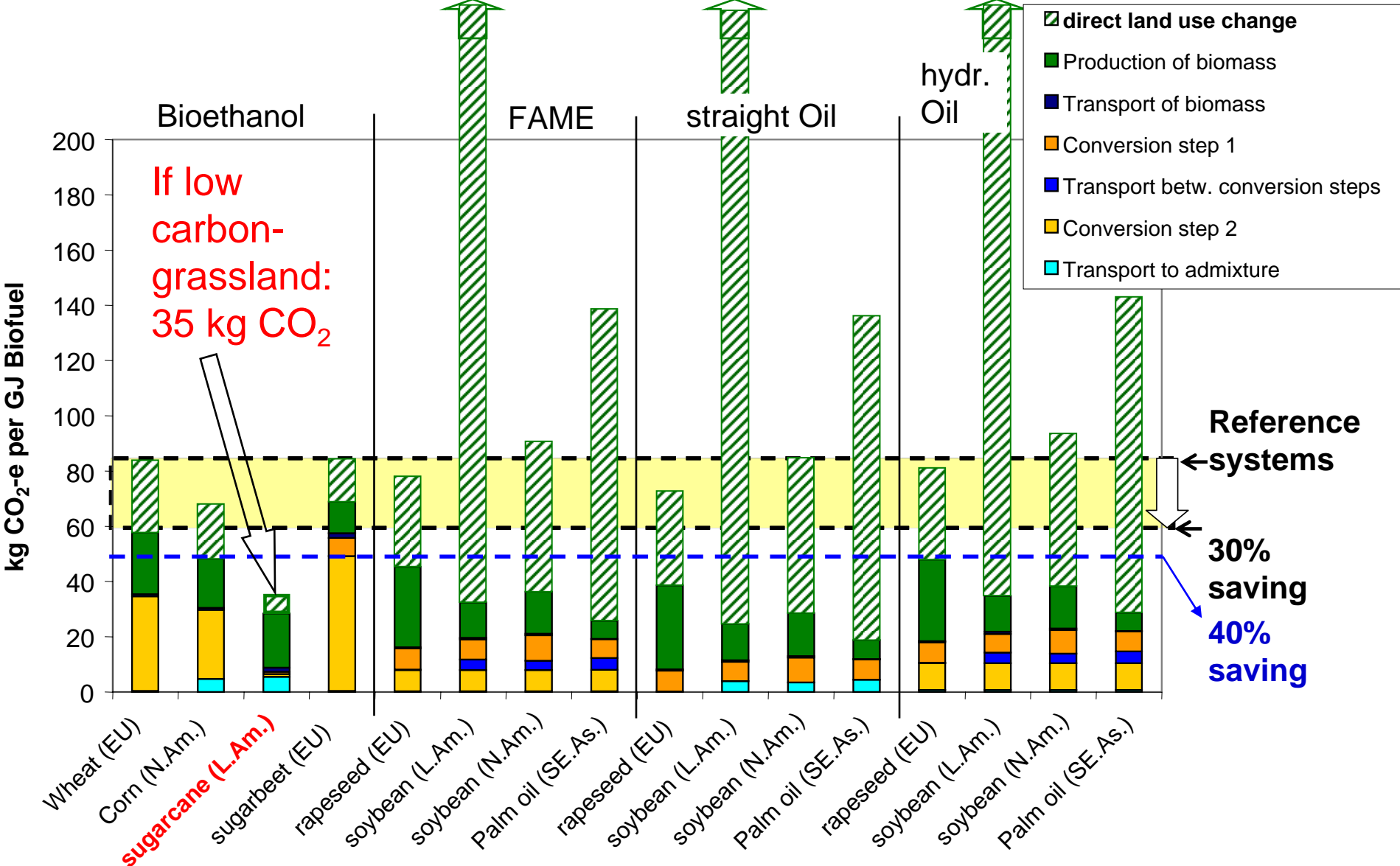
Default values



Default values



Default values



BUT...

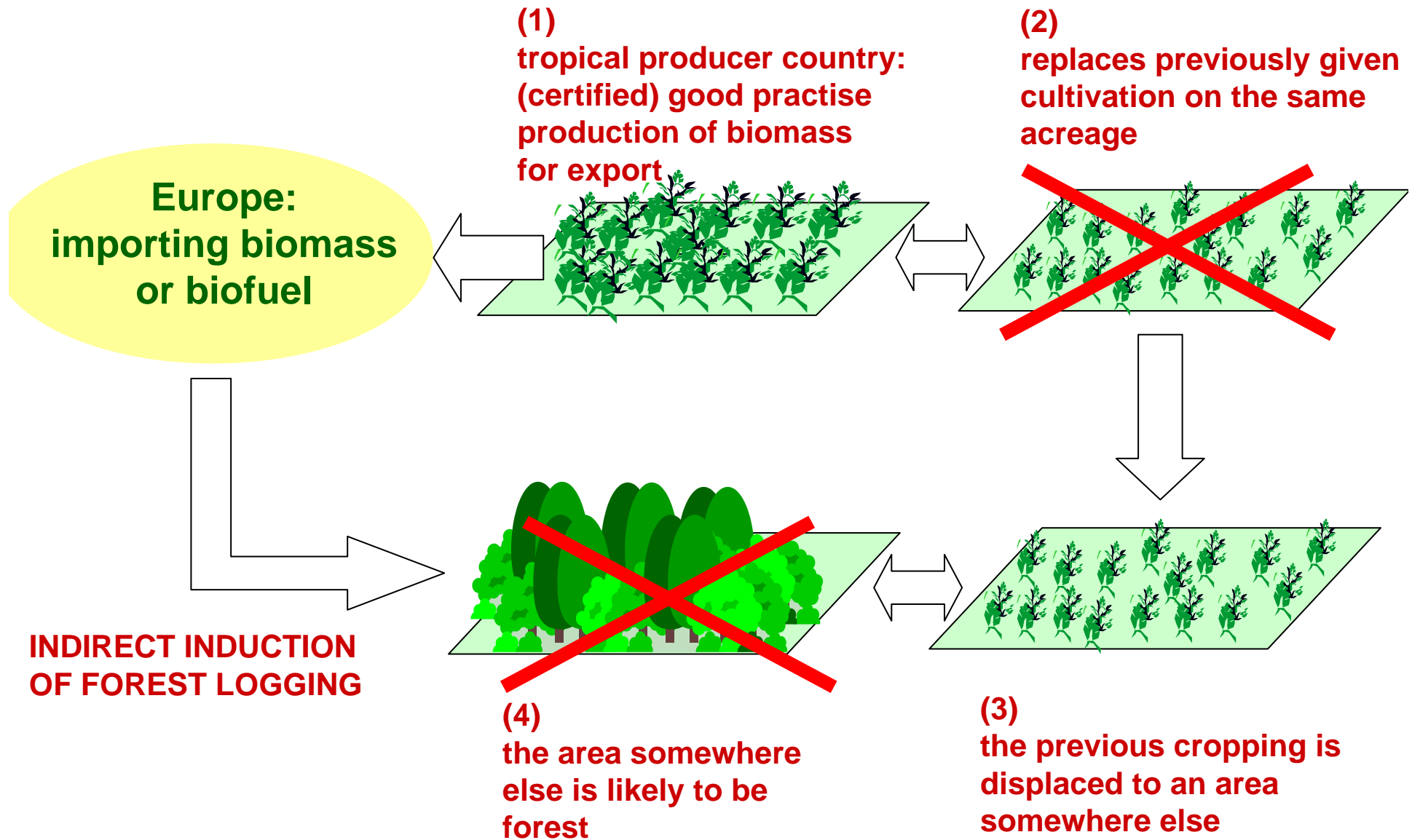
... land use change is even more sophisticated

Direct LUC does not cover the issue at all!

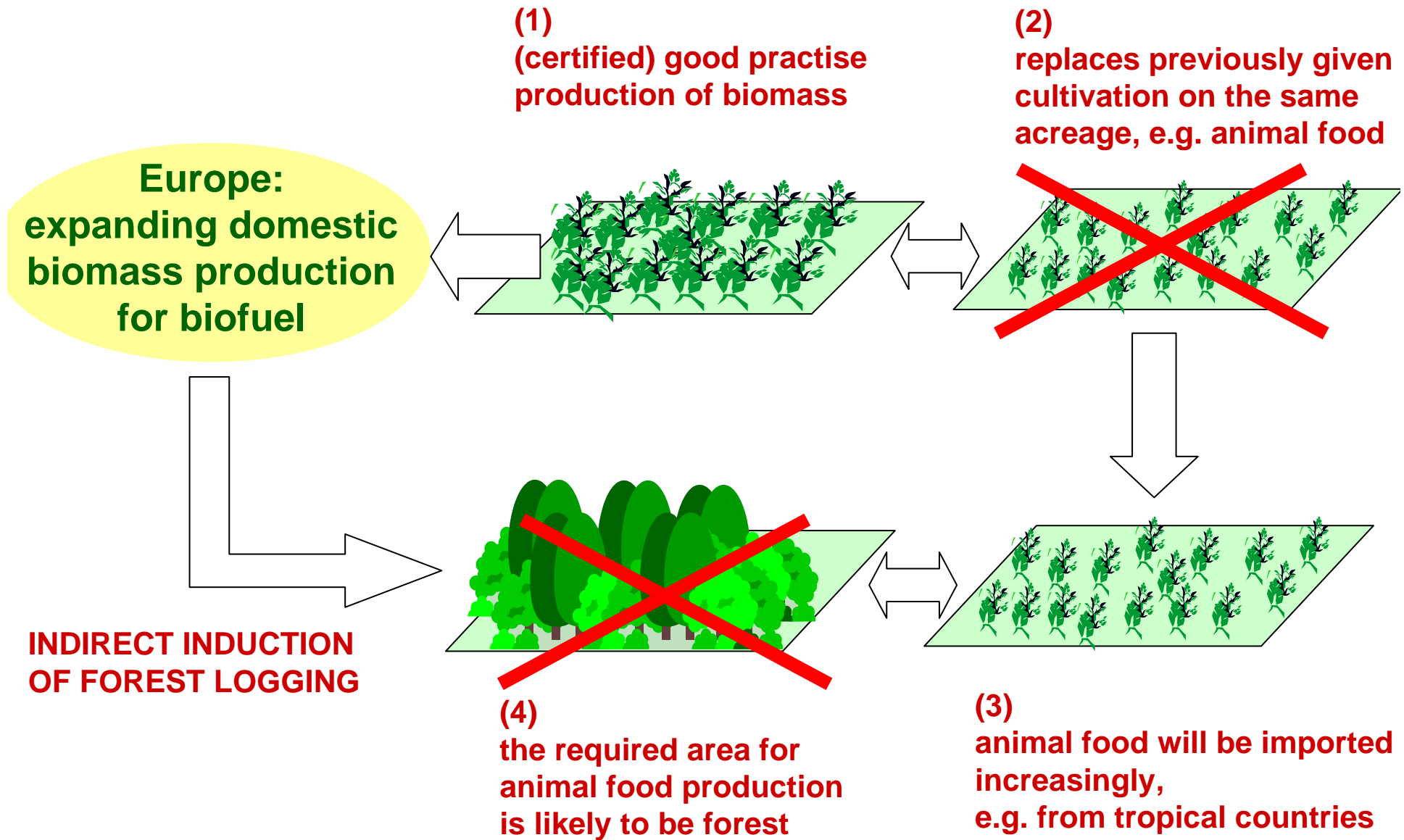
Indirect LUC is a systemic side-effect, that can't be avoided as long as land under cultivation is used to grow biomass for biofuel production.

No matter where the production happens!

Indirect LUC 1



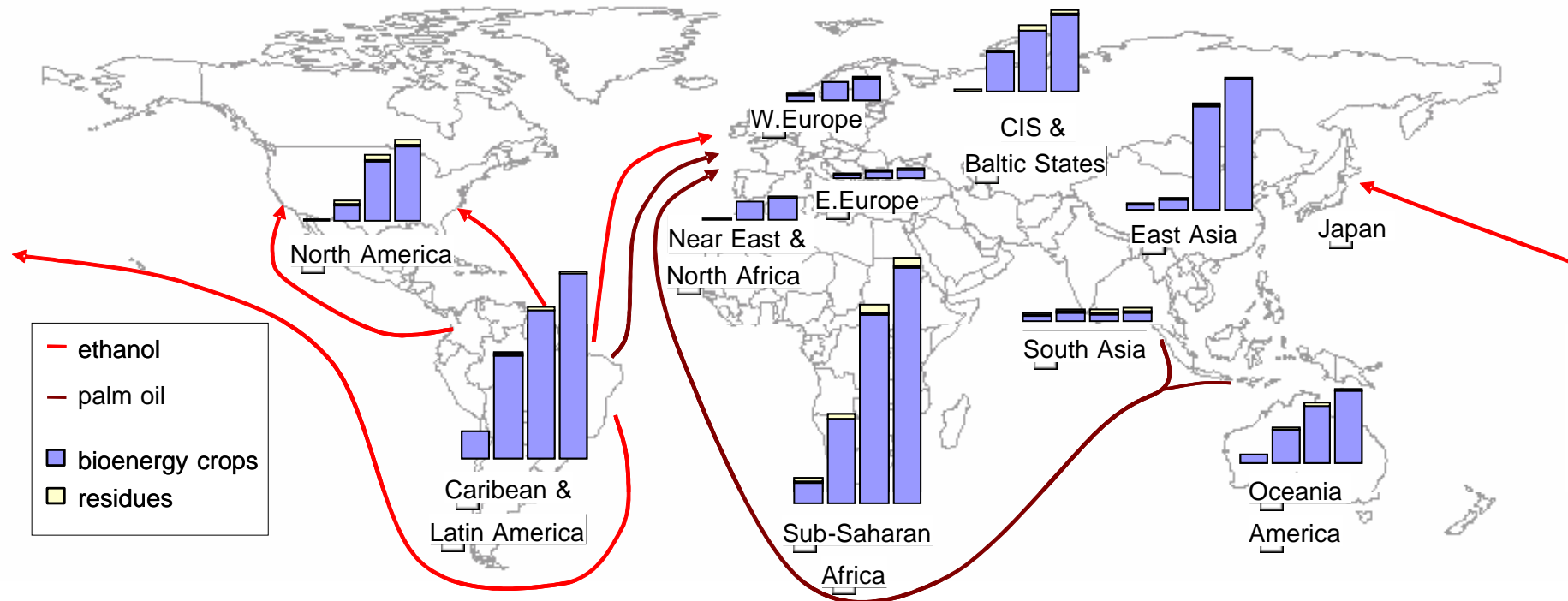
Indirect LUC 2



Coming back ...

... to the topic “future role“

Biofuels will be traded! as long as they are an economic commodity!



Source: adapted from U. Fritsche (2008)

Coming back ...

... to the topic “future role“

Biofuels will be traded! as long as they are an economic commodity!

and national policies are favouring biofuels (high quota, subsidies)

BUT ecologically sensible policy must limit the production to those granting strictly sustainability criteria!

Coming back ...

... to the topic “future role“

1. Globally limited area

- Limited by food competition
- by high nature values and biodiversity concerns

2. regionally limited water resources

are the no-trespass limits for biofuels (1st gen.)

→ **NO LEAD ROLE!**

Thank you for listening

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