

# Greenhouse Gas emissions from biofuel transportation

## Accounting of international biofuels trade in national greenhouse-gas inventories

B Schlamadinger, L. Gustavsson, G. Jungmeier

IEA Bioenergy Task 38



**[www.joanneum.at/  
iea-bioenergy-task38](http://www.joanneum.at/iea-bioenergy-task38)**

# Options

---

- **CDM / JI projects**
- **Electricity trade**
- **Green certificate trade**
- **Biomass trade**

# To be considered

---

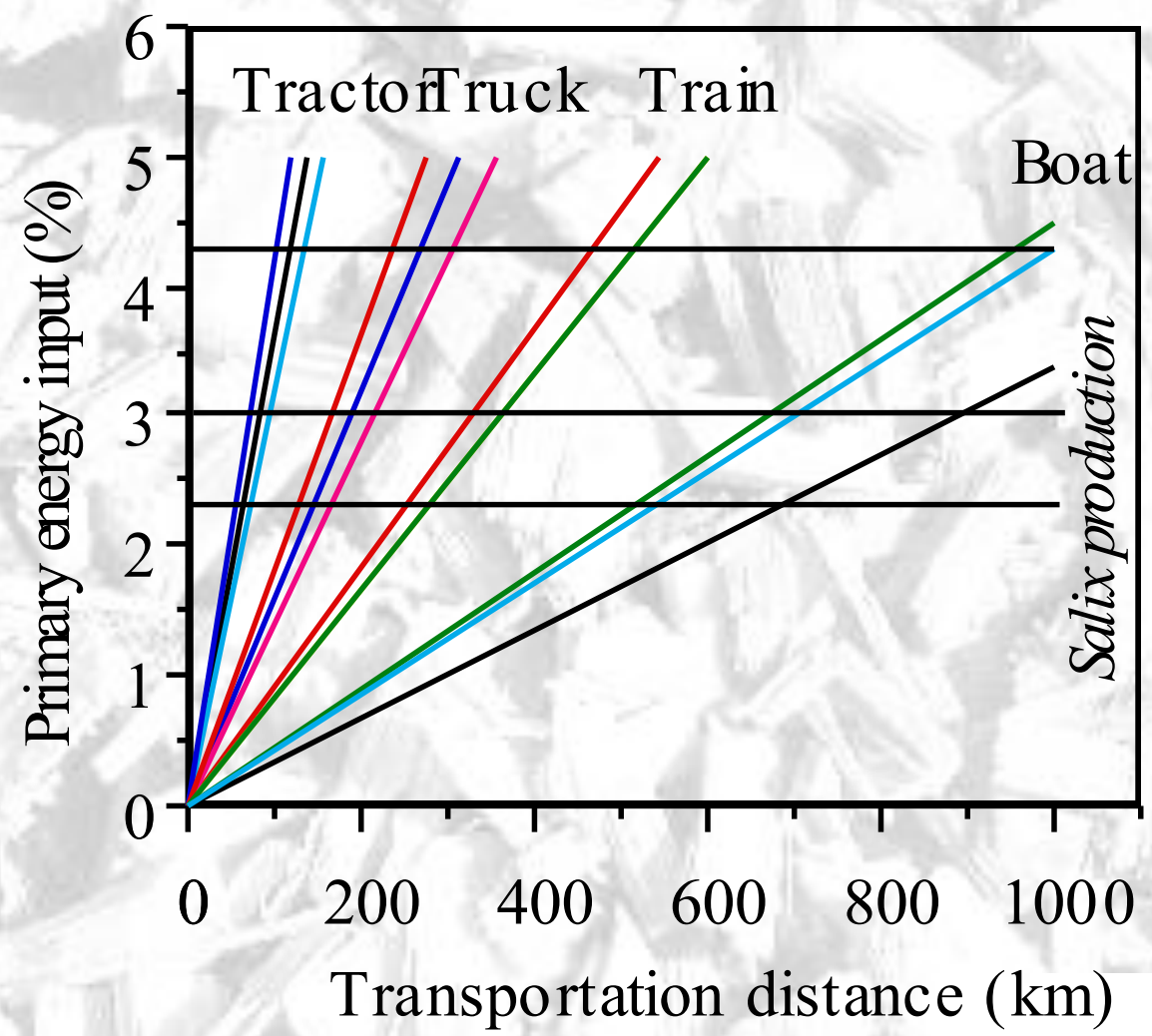
- **Total emissions of energy systems**
- **Site-specific baselines and energy inputs**
- **Possible leakage of „auxiliary“ emissions to non-Annex I countries**
- **Sinks maximization in Annex I countries as a source of leakage**

## Transport: GHG emissions depend on:

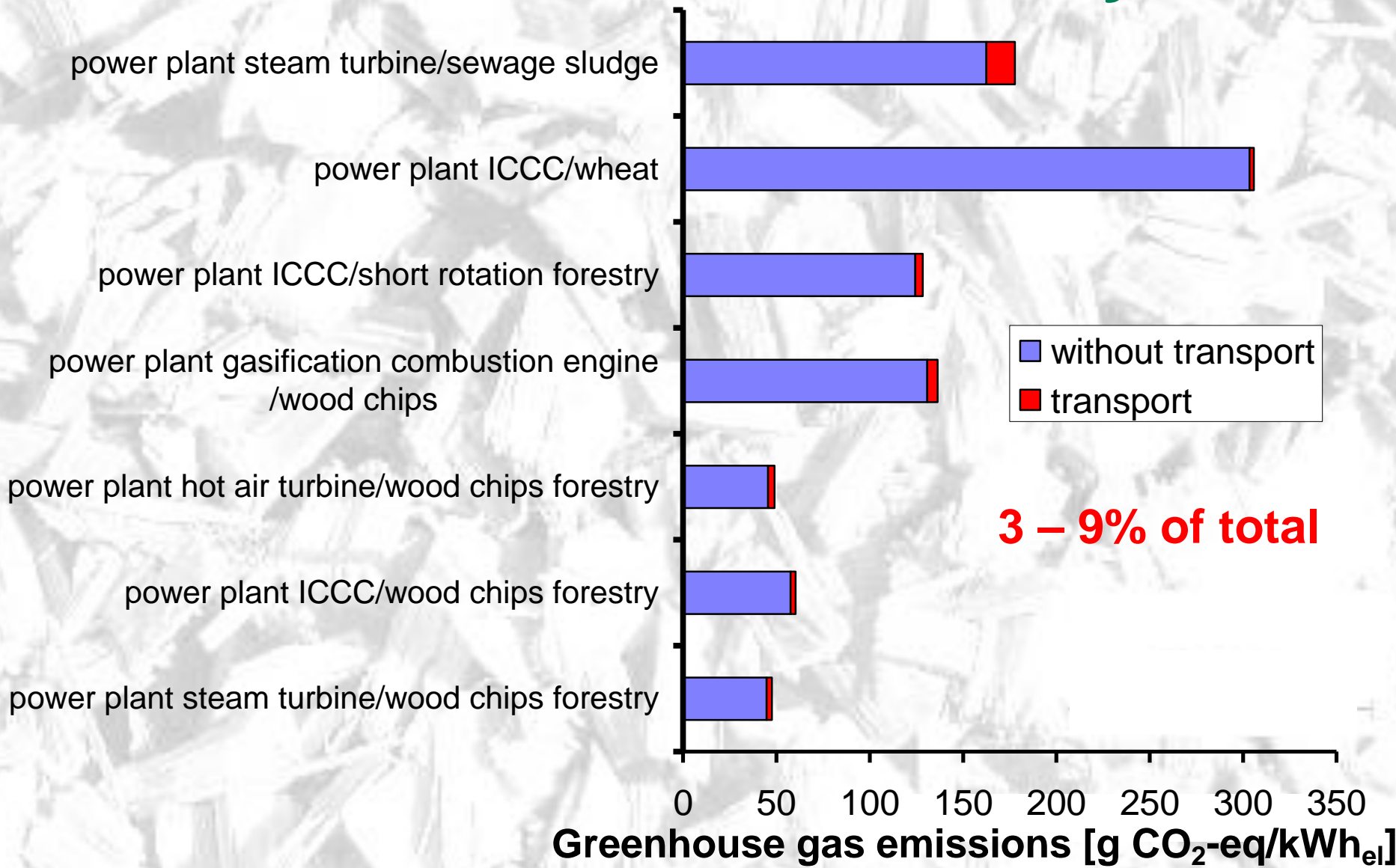
---

- **Transport mode**
- **Distance**
- **Fuel use**
- **Type of fuel shipped (density and dry matter losses)**

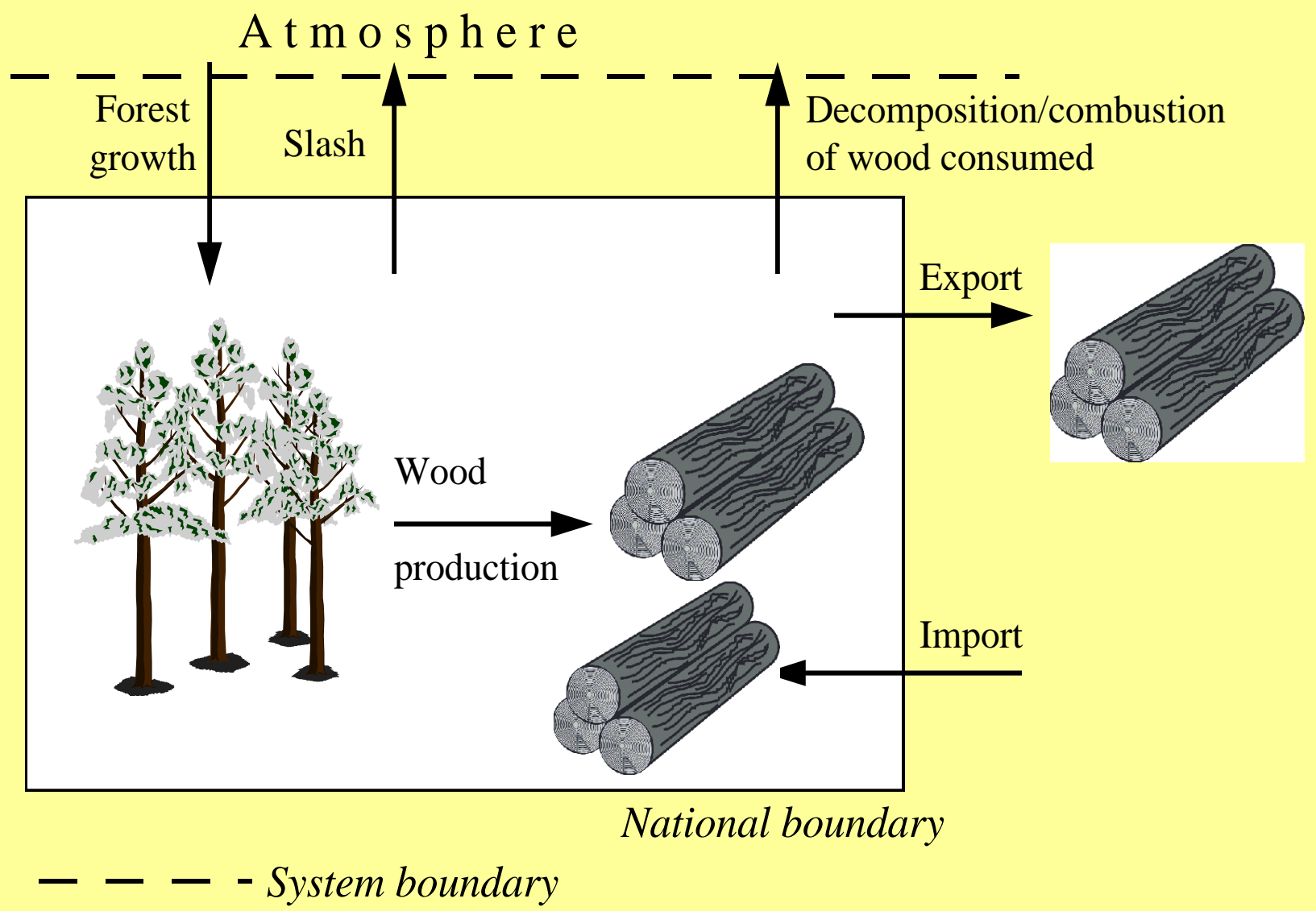
# UNFCCC - Task 38 contributions



# GHG Emissions Bio-Electricity

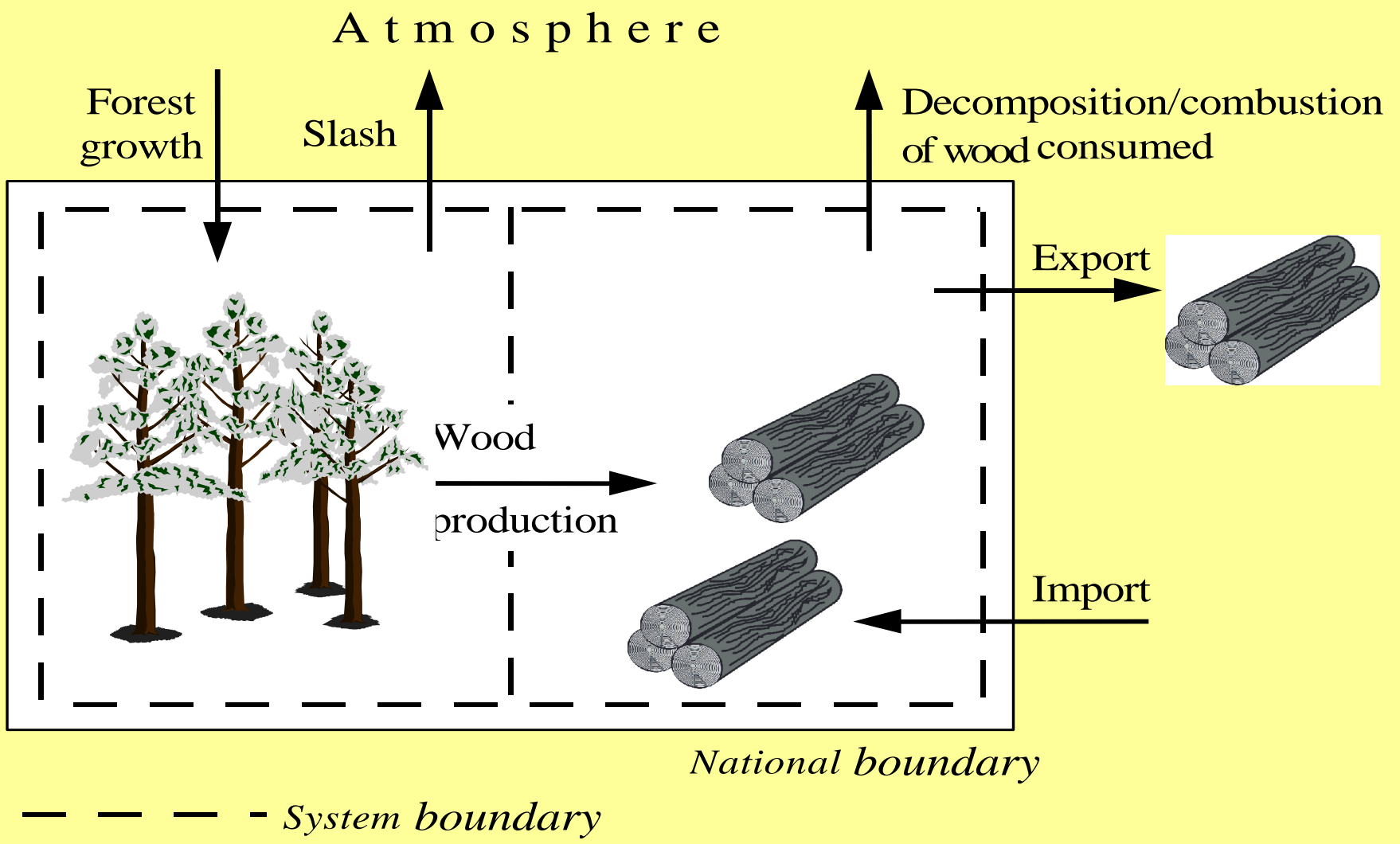


# Atmospheric flow





# Stock change



## Hypothetical examples

Case	CO <sub>2</sub> flow method			Stock-change method		
	Country A	Country B	A+B	Country A	Country B	A+B
2	0	----	----	0	----	----
1	+1	-1	0	0	0	0
3	0	-1	-1	-1	0	-1

Case 1: Country A manages its forest with no net carbon stock changes and uses 1 unit of harvested wood itself to produce energy.

Case 2: Country A manages its forest with no net carbon stock changes and exports 1 unit of harvested wood to country B where it is burned to produce energy. Country B has no forest.

Case 3: Country A harvests its forest without regrowing it (deforestation) and exports 1 unit of harvested wood to country B where it is burned to produce energy.

# Criteria for evaluating approaches

- Accuracy
- Simplicity
- Scale Independence
- Precedence
- Incentives