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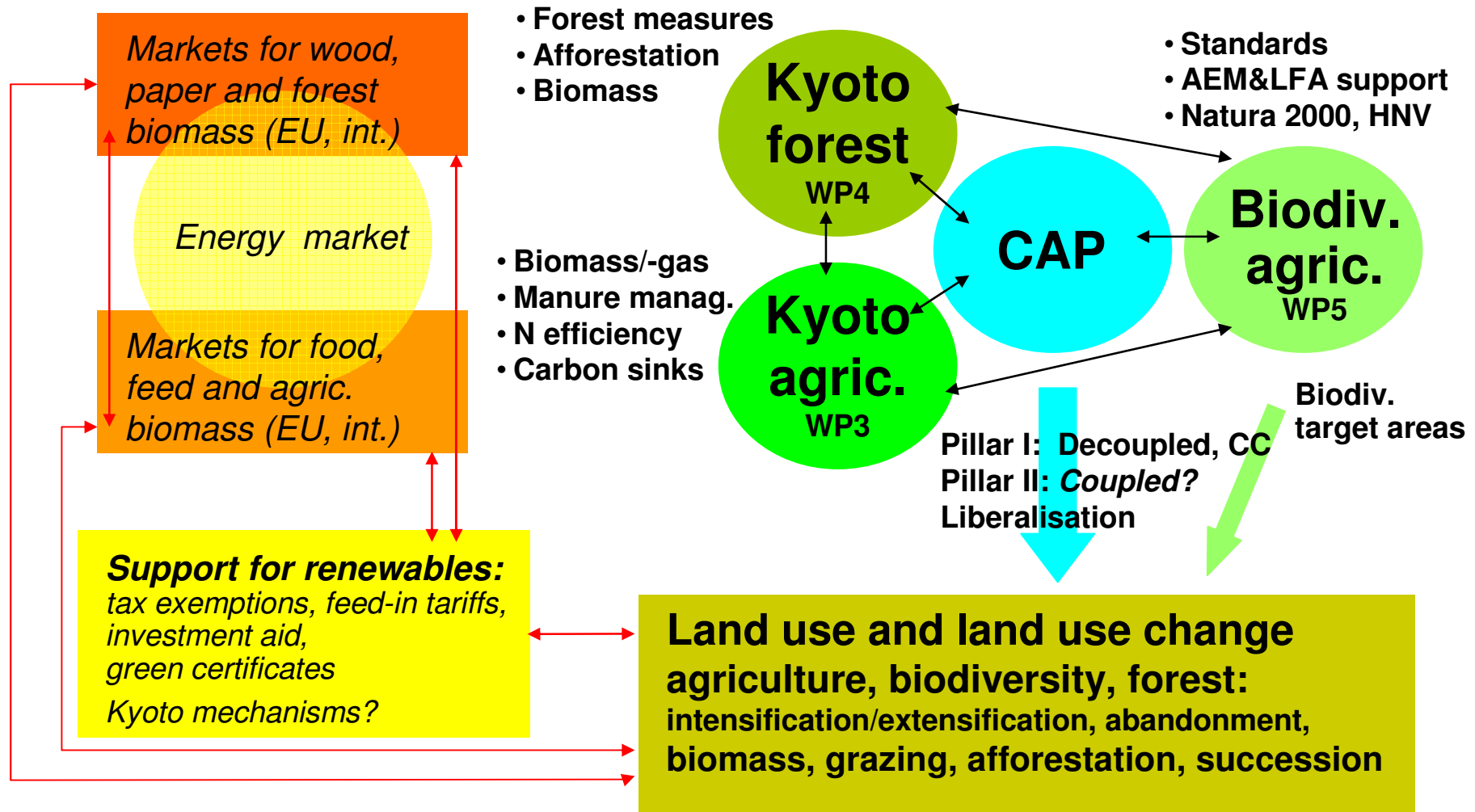
Links between the PICCMAT results and other European research projects:

MEACAP – Impact of Environmental Agreements on the Common Agricultural Policy



**PICCMAT symposium: Addressing the climate challenge -
what can agriculture do? Ideas from Europe and beyond
Brussels, 28 October 2008**

Kyoto Protocol, Convention on Biodiversity and the CAP – integration of MEACAP topics

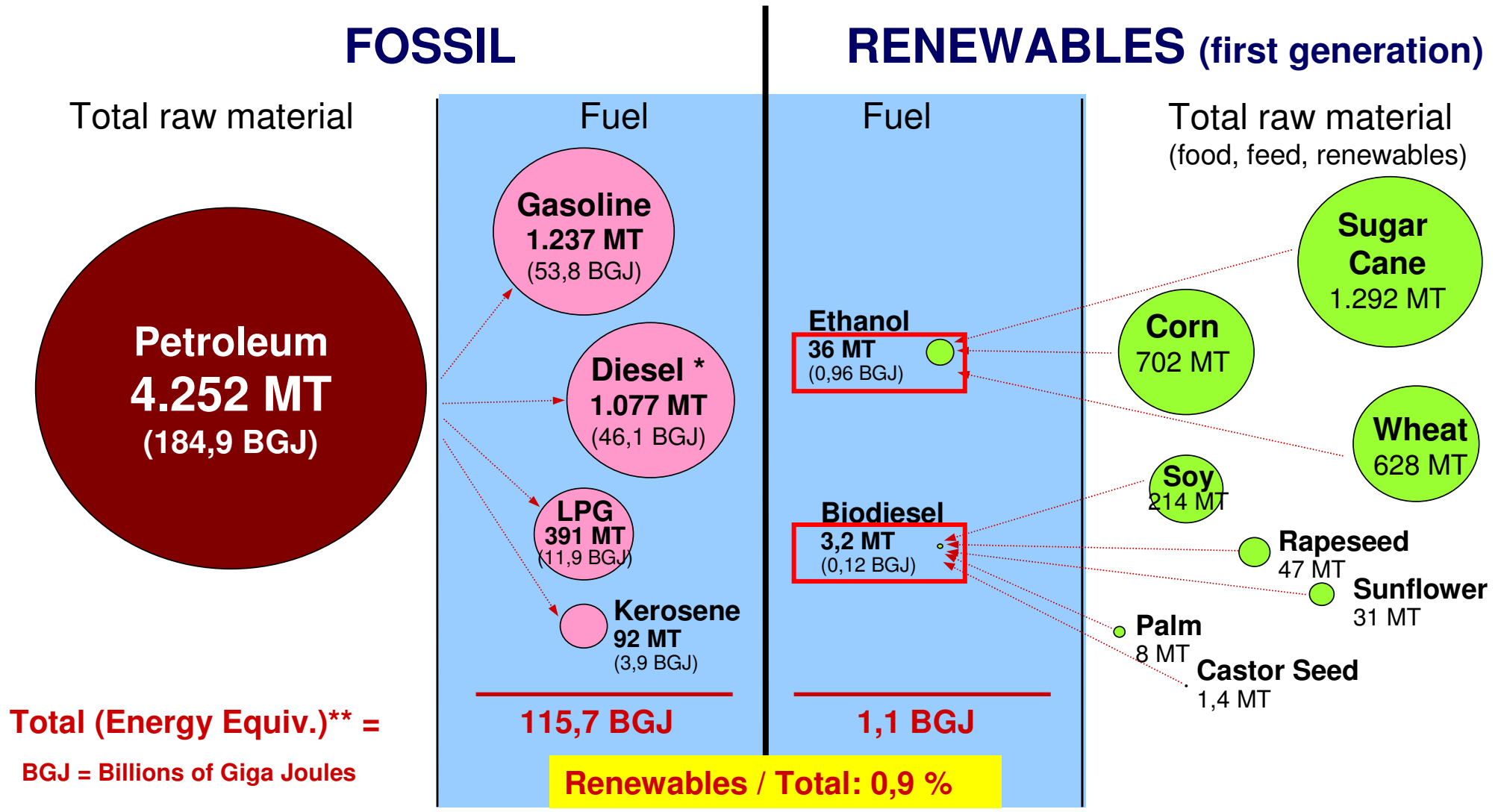


Renewable energy based on biomass from agriculture & forestry (substitution of fossil fuels)

- **Main driver is energy policy, not the CAP**
- **Support beyond reasonable CO₂ abatement cost leads to undesired side effects (intensification)**
- **1st generation biofuels: abatement cost >100 €/CO_{2eq}**
- **Better to focus on wood biomass for heat&power (lowest abatement cost) and manure-based biogas**



Liquid fuel for transport - world production (Million tonnes, 2005)



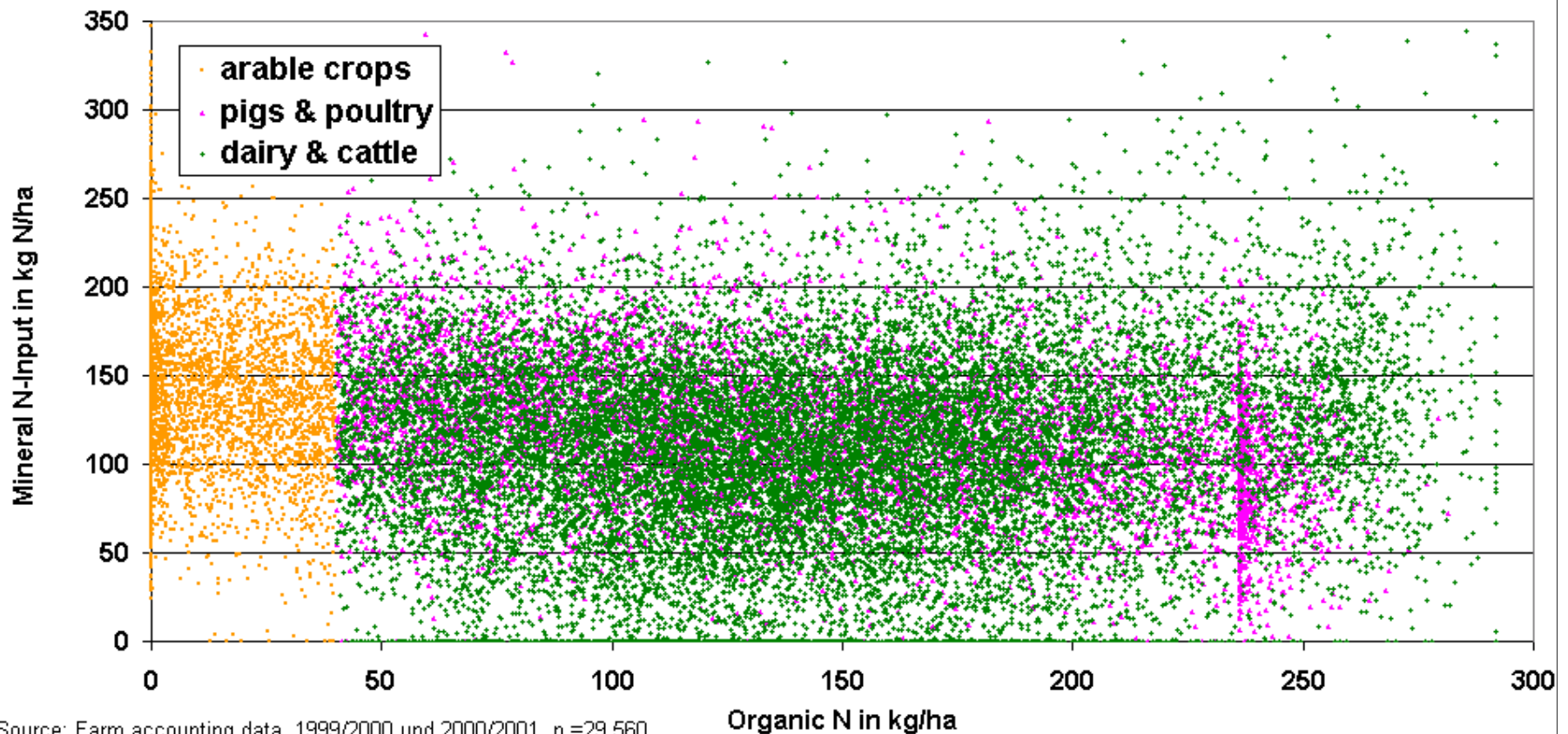
Notes: 2003 for palm, gasoline, Diesel, LPG and Kerosene. * Distillate Diesel. LPG: Liquefied petroleum gases.
Sources: von Ledebur, vTI-MA, based on ICONE, FAO, Oil World, F.O. Licht, LCM, EIA..

Biogas – a multifunctional technology

(substitution of fossil fuels, reducing CH₄ and N₂O)

- **Avoiding CH₄ emissions from manure storage and use of heat is essential** (abatement cost ≥ 50 €/CO_{2eq})
- **N efficiency of substrate use, nutrient recycling**
- **With incentives for co-fermented crops (maize), manure use in German biogas plants remained low**
- **Requirements for minimum share of manure/wastes, gas-tight storage, recycling of nutrients, storage capacity**

High variance of fertiliser input in homogeneous farm groups – scope for reduction?



Livestock density low ----- high

Problem of low N efficiency in many farms – need for an integrated N policy (reducing N₂O)

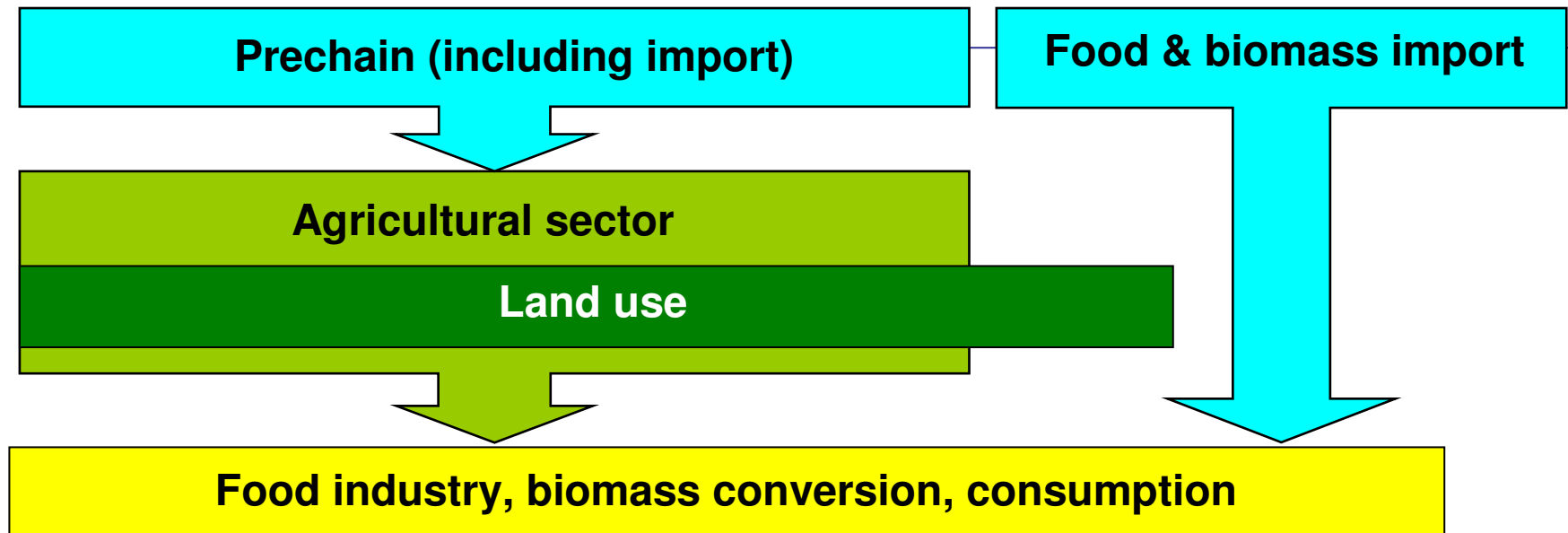
- **Other objectives to reduce unproductive N surplus: Water Framework Directive, marine pollution, NEC Directive, biodiversity and eutrophication, etc.**
- **Nitrates Directive – effects on N efficiency?**
- **CO_{2eq}-credit per 1 kg N surplus reduction to be considered (< 1 €/kg without prechain, <50 €/t CO_{2eq})**
- **Instruments: e.g. agri-environment measures, standards for minimum N utilisation levels or maximum N surplus, N tax, N surplus levy**



Need for an integrated land use policy

- **Competition between biodiversity objectives**
(High Nature Value farmland, low-intensity grassland)
and wood biomass production on *marginal* land
- **Options for restoration of organic soils**
(with biomass production instead of intensive farming)
- **Impacts of CAP support on land use decisions**
(direct payments, AEM, LFA)
 - **Eligibility rules** (short rotation coppice, restored organic soils, HNV land, managed succession)
 - **Cross Compliance** (maintain grassland, organic soil)

Fields for action and responsibilities



- **Land use policy** (also beyond agriculture, role of CAP?)
- **Agriculture: Efficient production** (technical progress, economic instruments, CAP, Good Practice)
- **„Sustainable consumption“**
- **Technical & social progress** (research, communication)