

Reconciling BECCS, REDD+ and Food Security

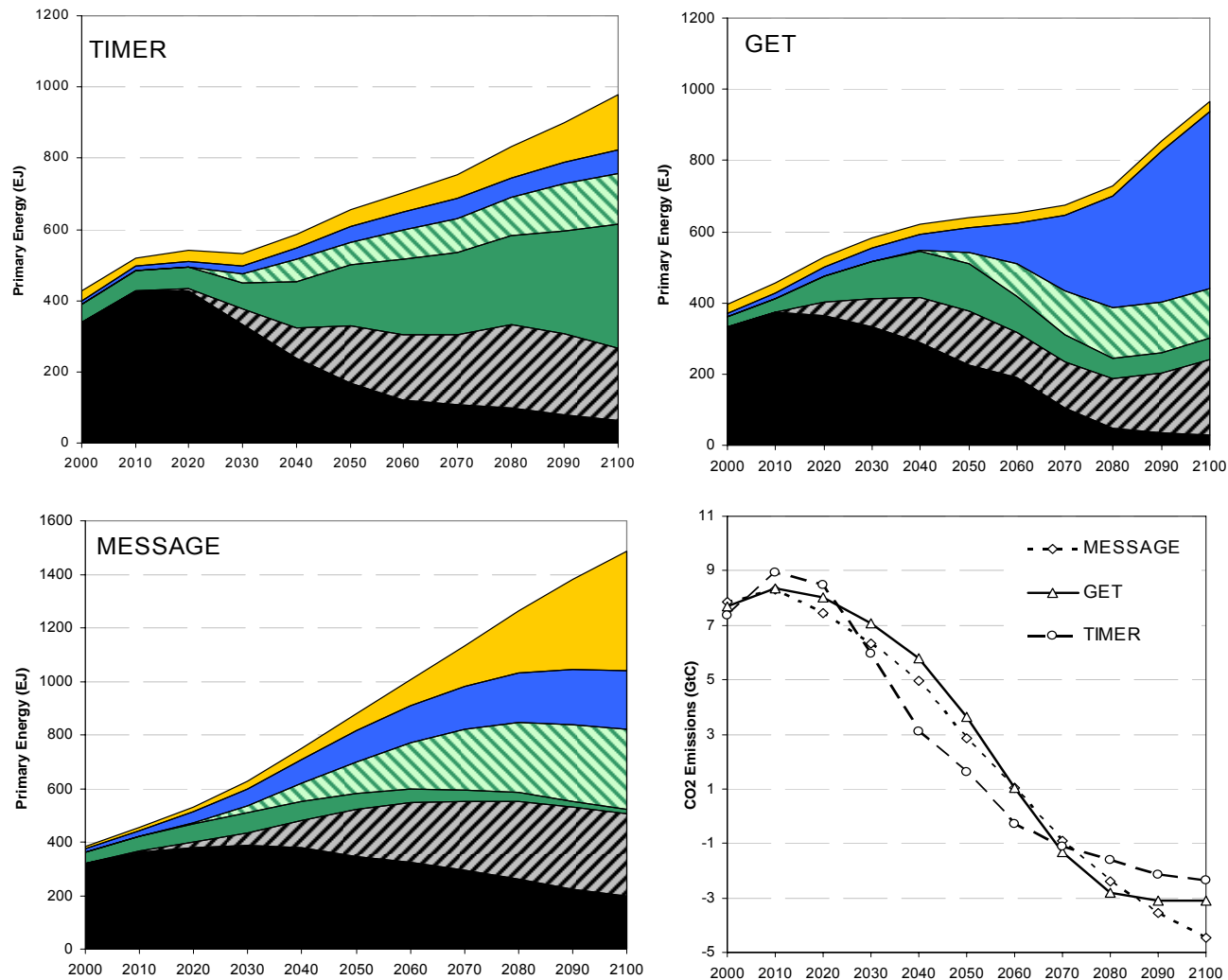
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Ecosystem Services and Management Program

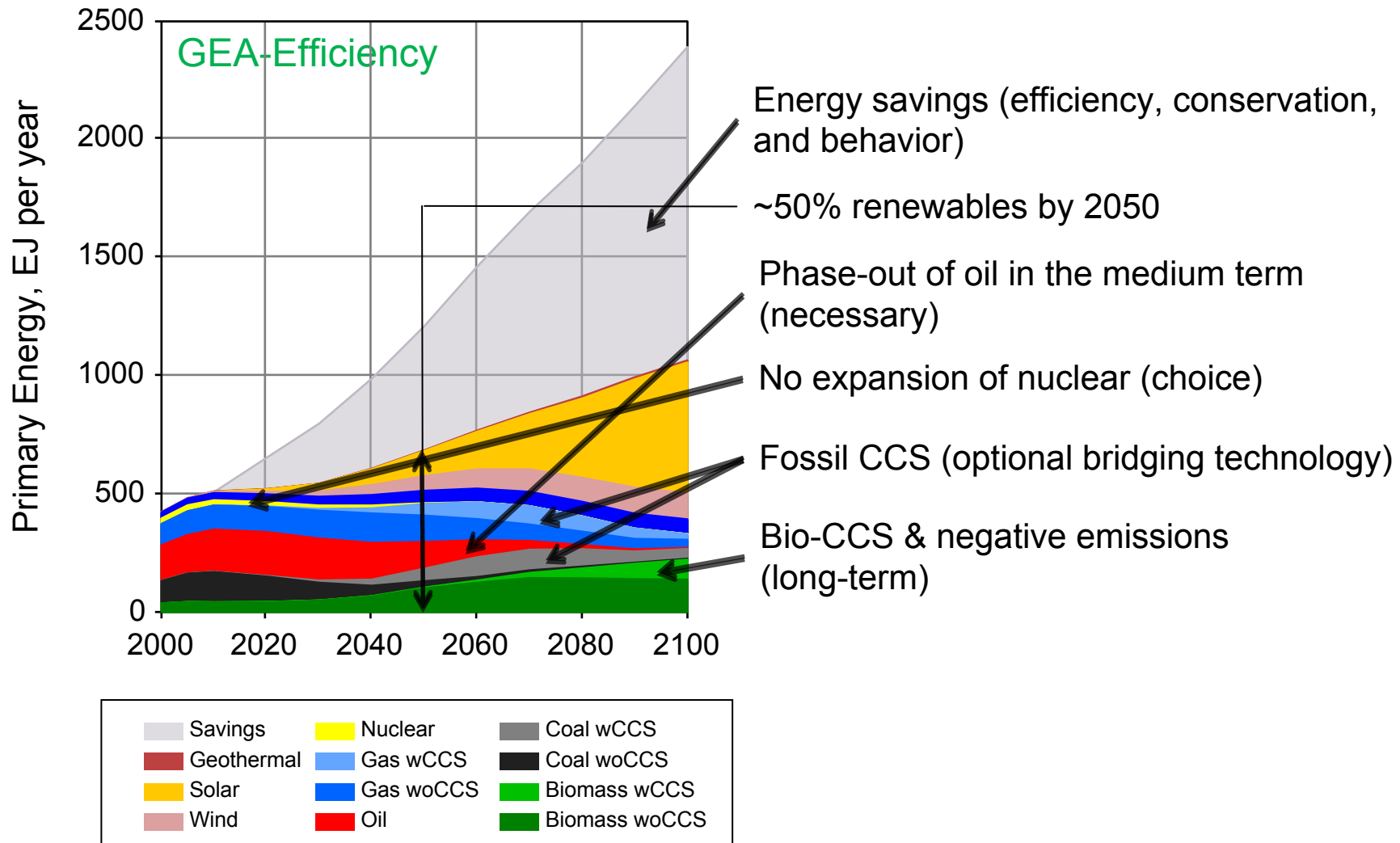
IIASA

BECCS AND CLIMATE TARGETS

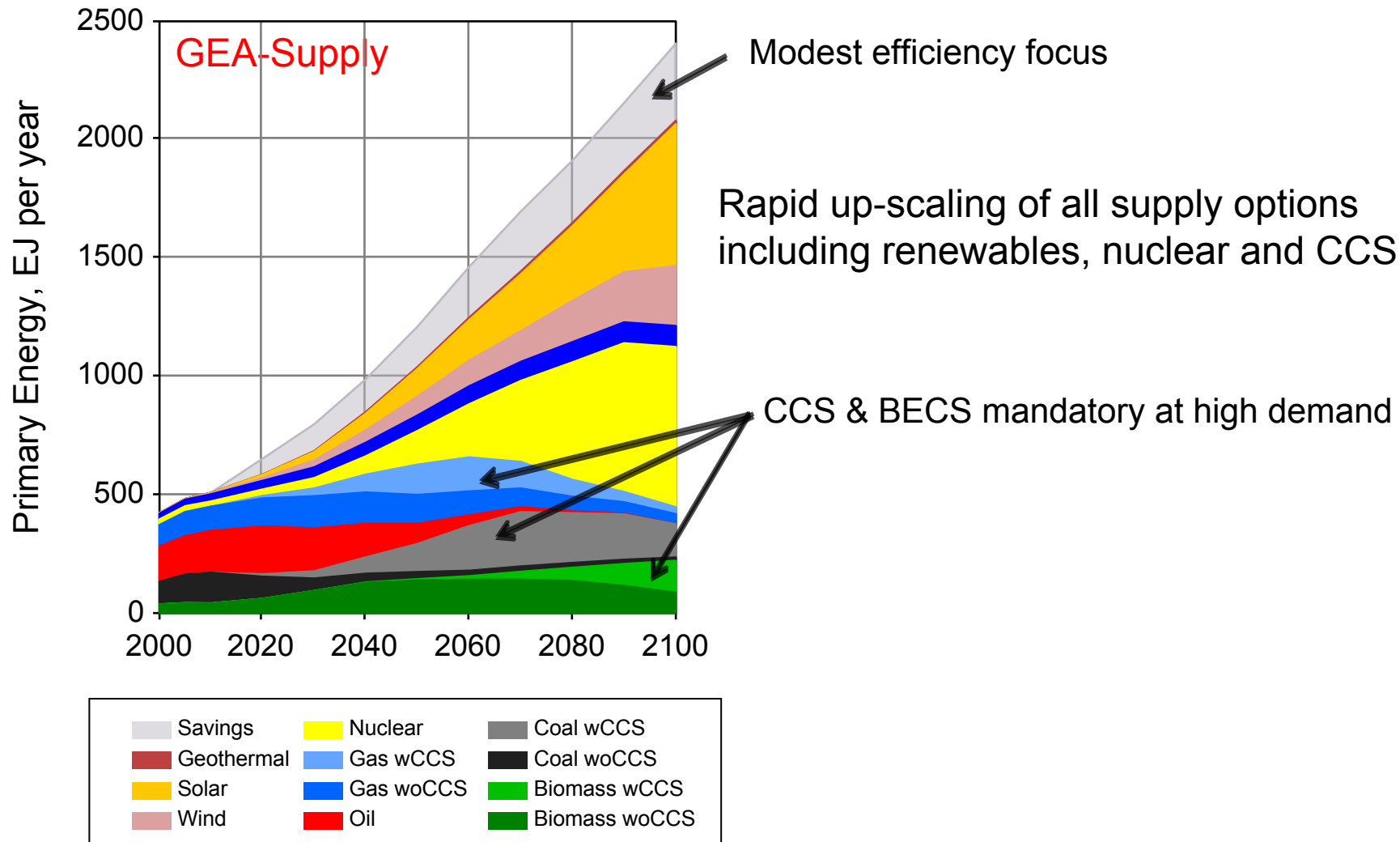
Global Energy Portfolio – 1.5-2DG target



Efficiency & Demand-side Focus (= high flexibility for supply)



Supply-side Focus (= high demand-side flexibility)



Value of Negative Emission Technologies (NETs)

- CO₂ becomes a designer gas
- Technological hedge against uncertain but anticipated climate tipping points
- Hedge against non-cooperation
- No need to bet for radical break through technologies

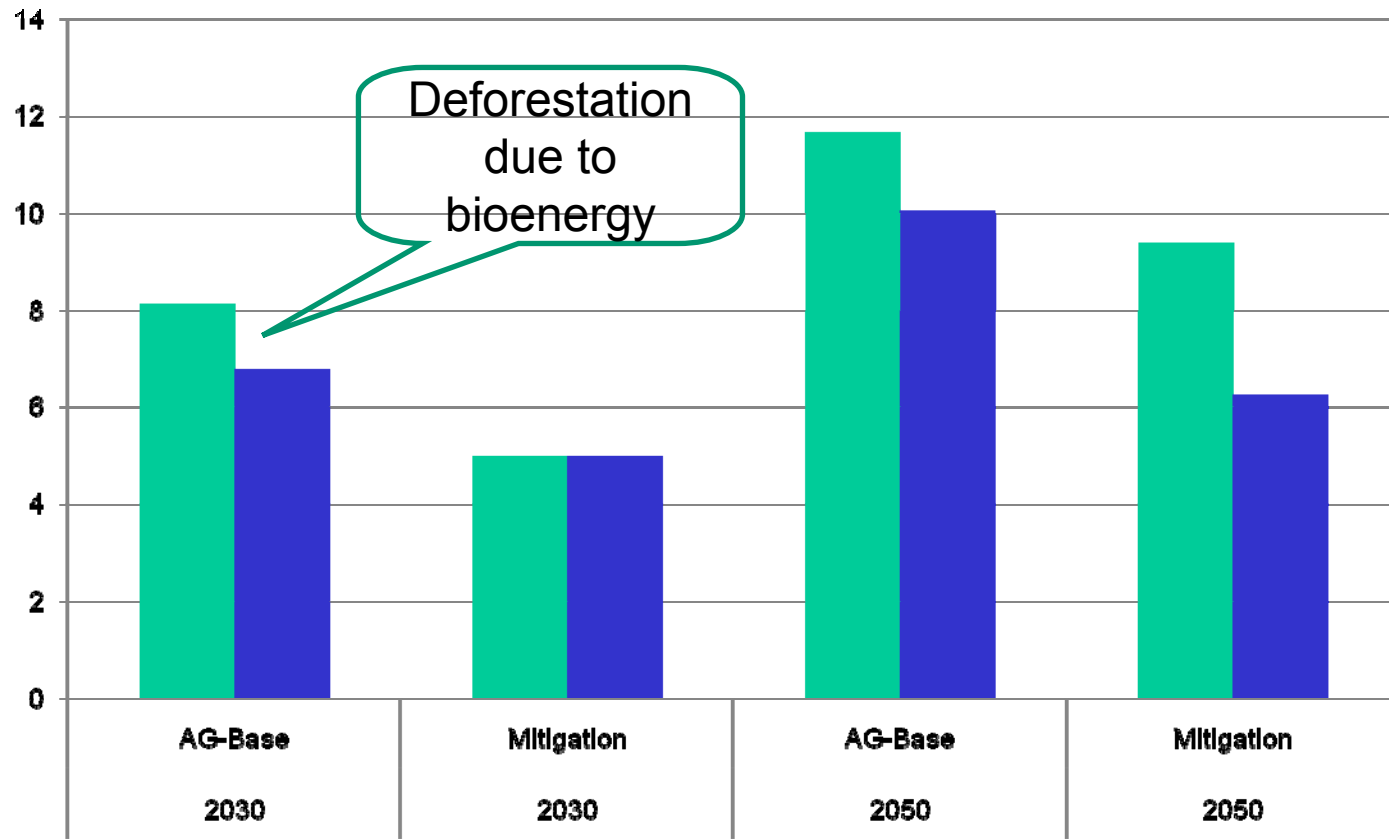
The Challenge of NETs

BECCs indispensable for climate securitybut, increases competition for land
REDD is a major climate and biodiversity wedge but, increases competition for land
Agricultural land expansion lead to cheaper food suppliesbut, competition by REDD+ and Biomass increases competition for land

BIOENERGY AND AGRICULTURAL MITIGATION

Deforestation (Mha)

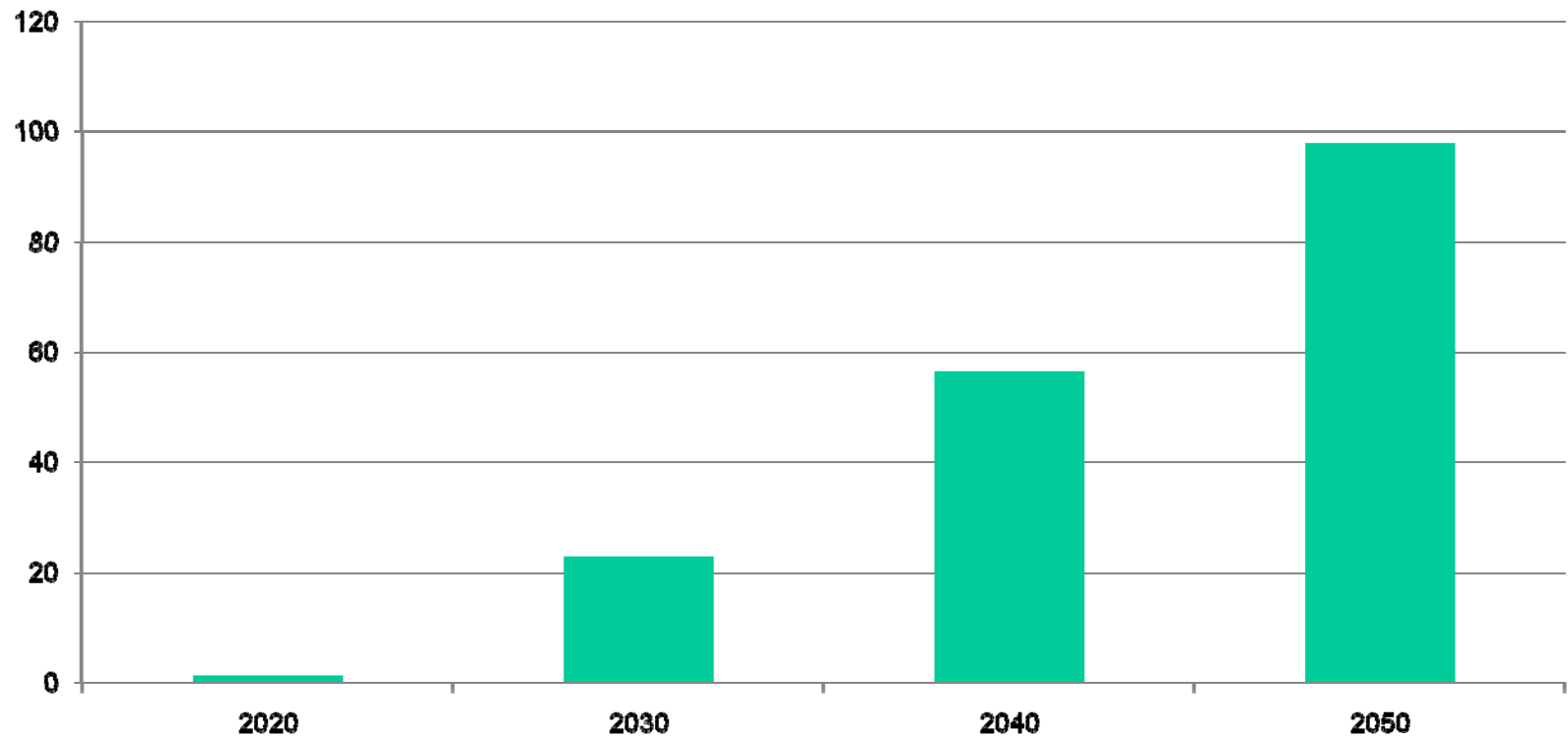
2^o BECCS, AG-mitigation and 2005 Bioenergy demand



BIOENERGY, AGRICULTURE MITIGATION AND REDD+

REDD+ Scenario

Marginal RED price \$/tCO₂



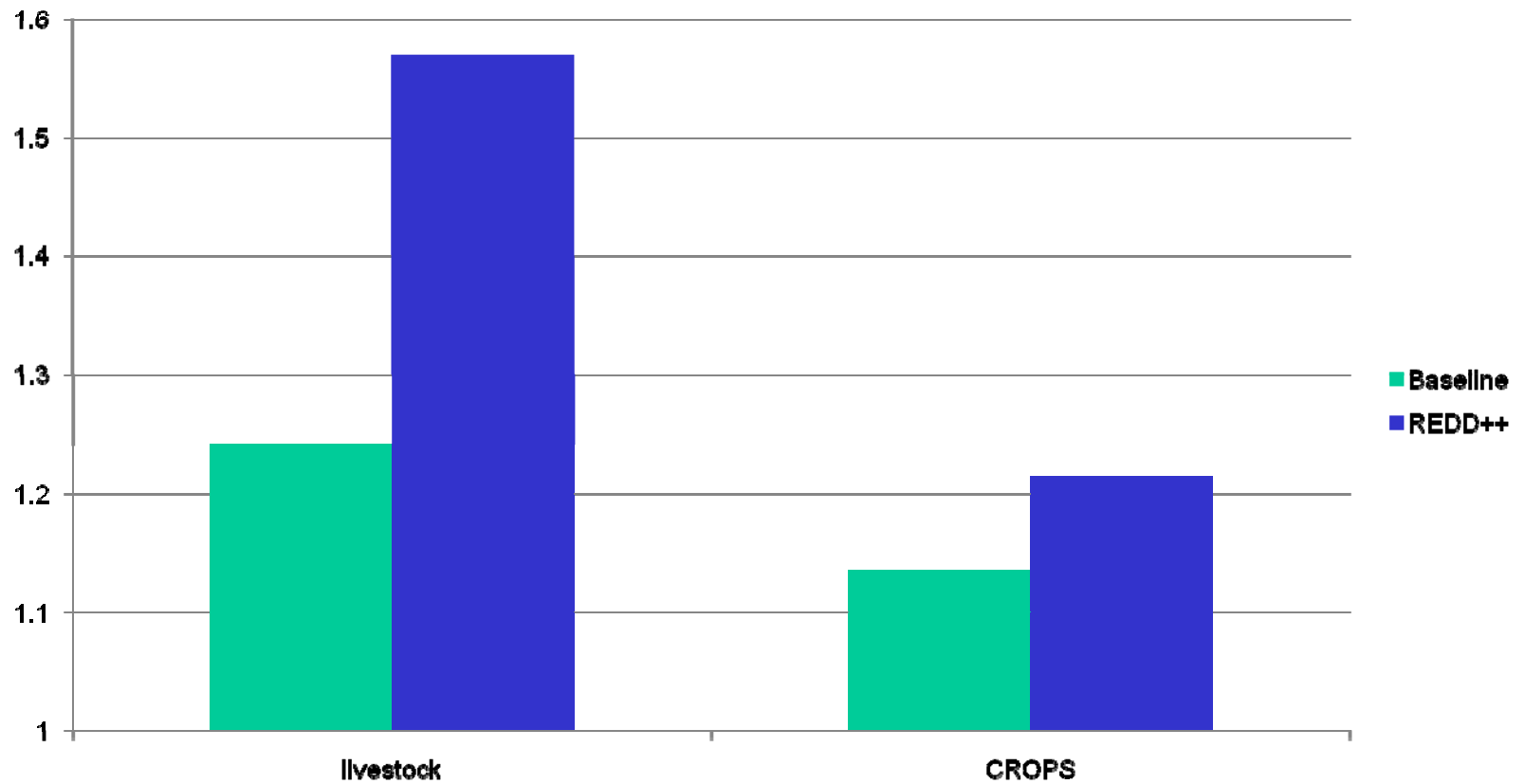
Before taxes and transaction costs

Deforestation can fully be avoided under 2° BECCS



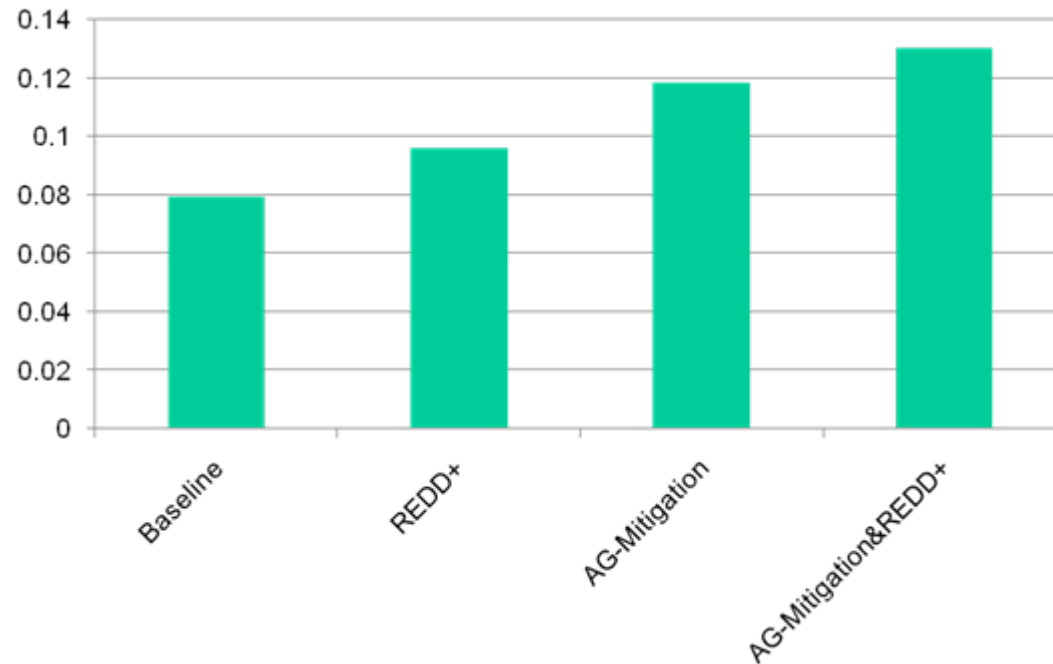
FOOD SECURITY CONSEQUENCES

Commodity Price



Concentration of Production

Wheat Traded (%) in 2050



More trade => Less volatility?

Conclusions

- BECCS, REDD+ and Food security are necessary for long-term sustainability
- BECCS, REDD+ and Food can be synergistic if efficiently planned.
 - Trade, Investment, Technology
- Only a global and integrated land use approach will deliver

In the 21st century mankind can no longer afford to be inefficient land managers!!! – we are simply too many...