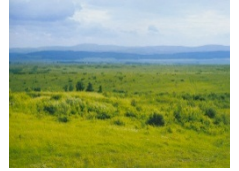




International Institute for
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Regional participation to meet climate targets: Managing trade-offs with food security

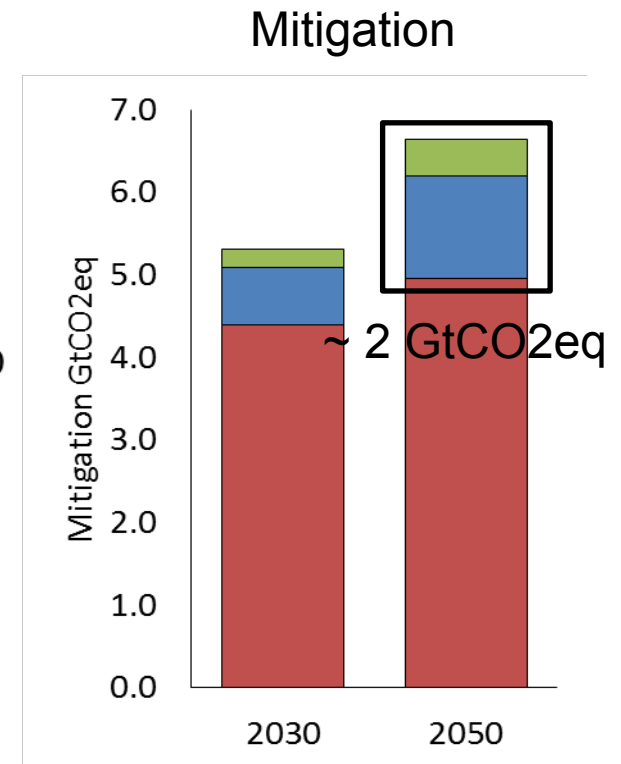
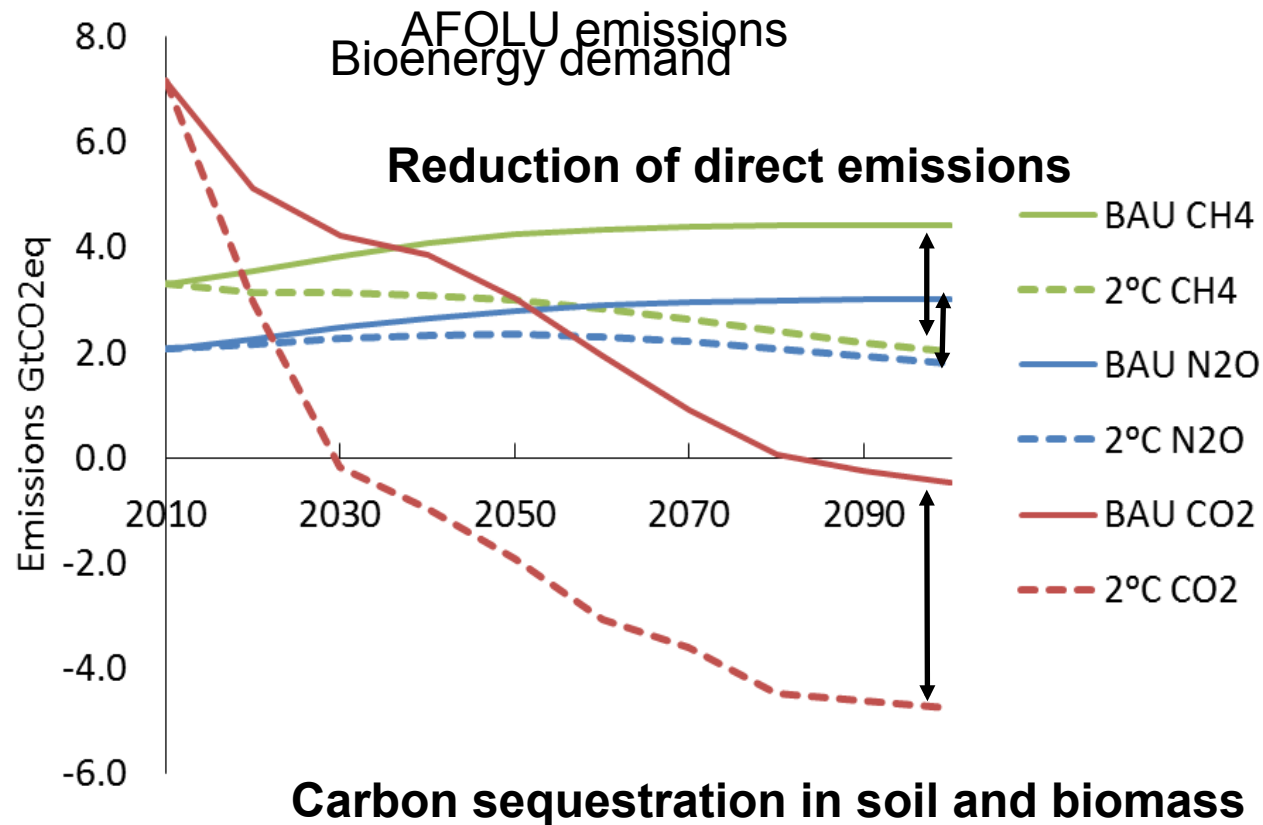
*Stefan Frank, Petr Havlík, Nicklas Forsell, Hugo
Valin, Antoine Levesque, Ulrich Kleinwechter,
Oliver Fricko, Michael Obersteiner...*



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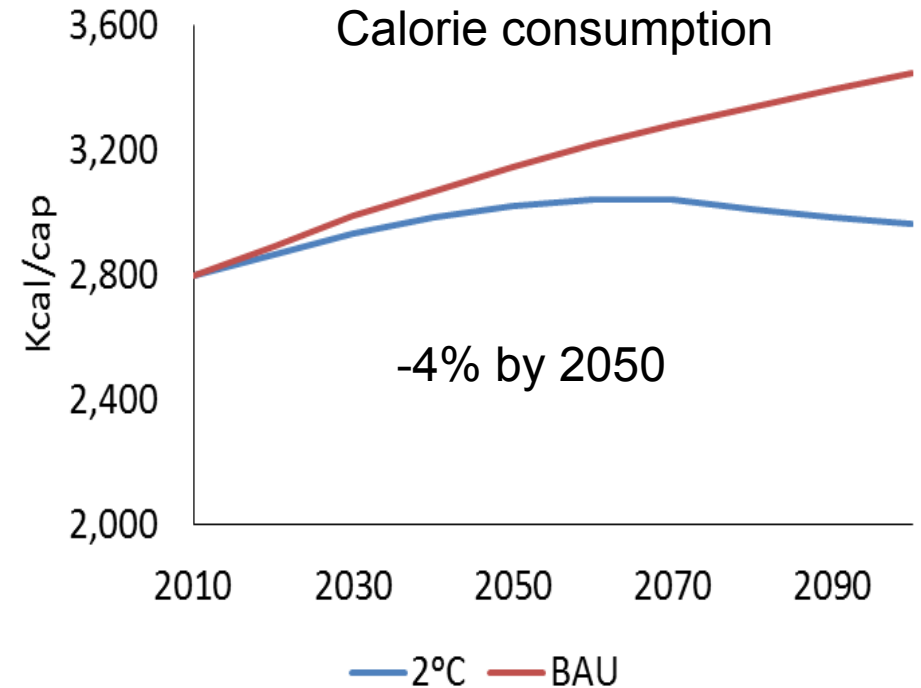
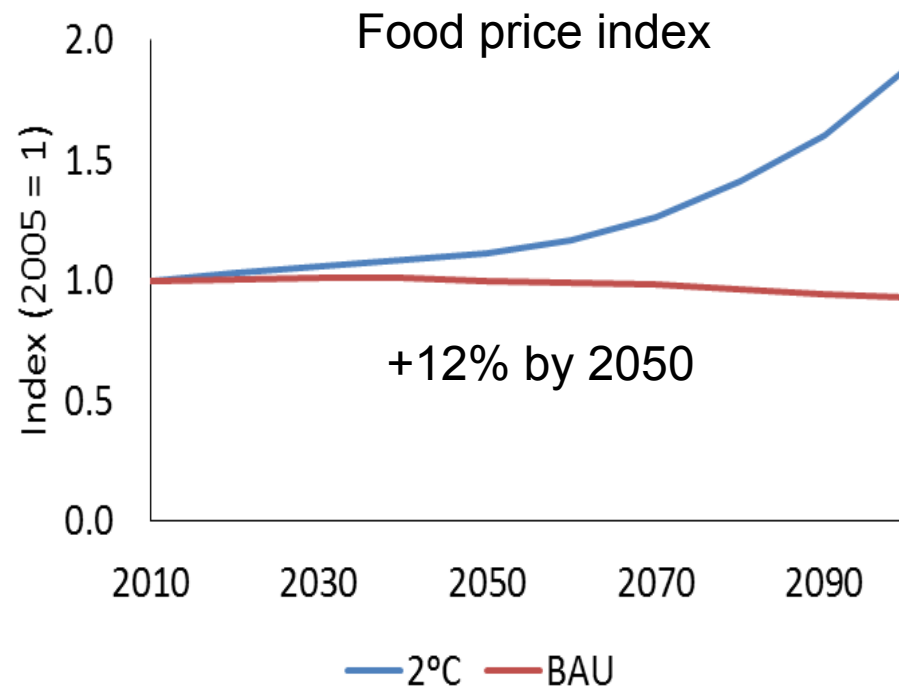
science for global insight

Reaching the 2 C target

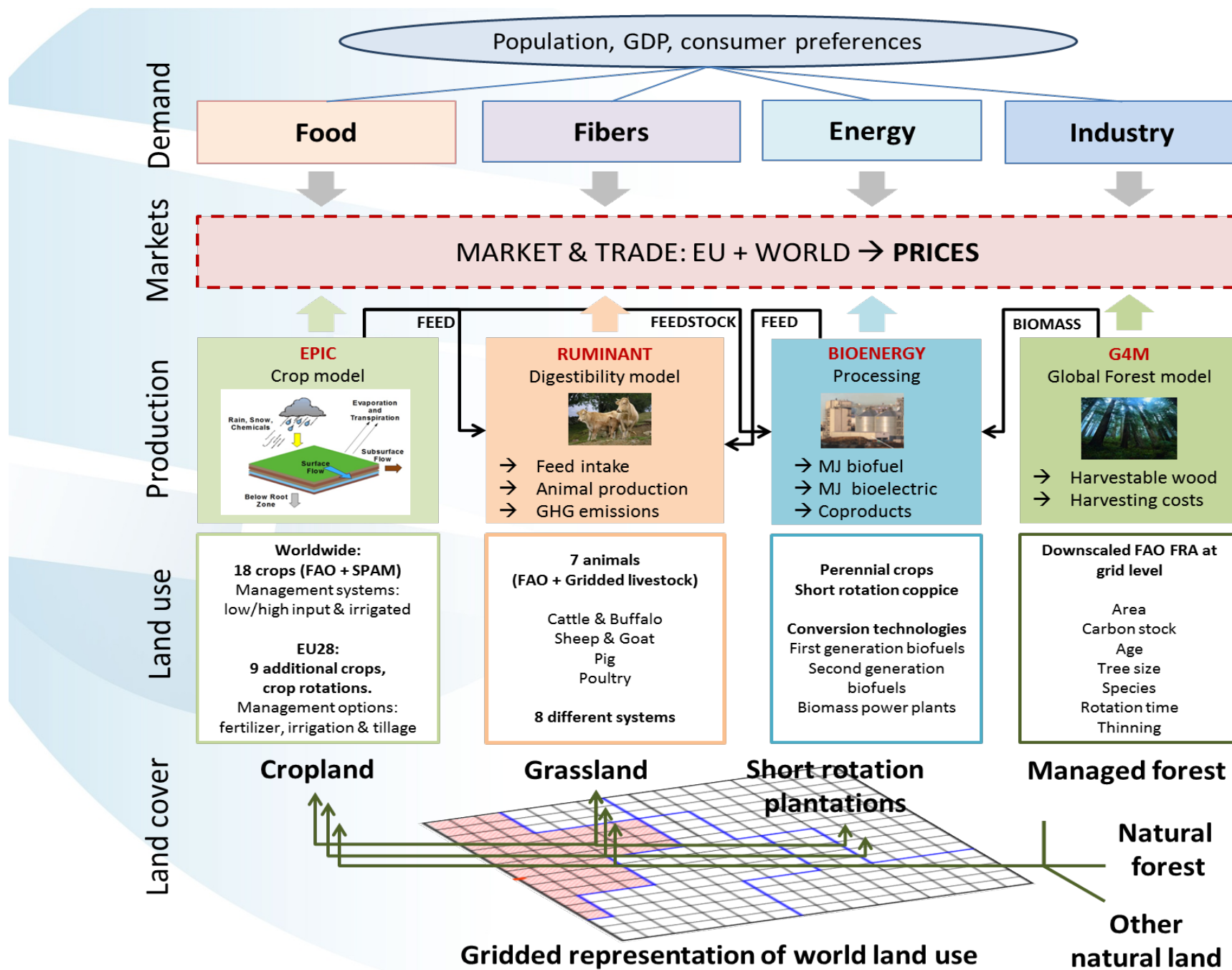


Provision of biomass for fossil fuel substitution

Reaching the 2 C target



Potential impact on food security!



Climate mitigation targets/policy assumptions

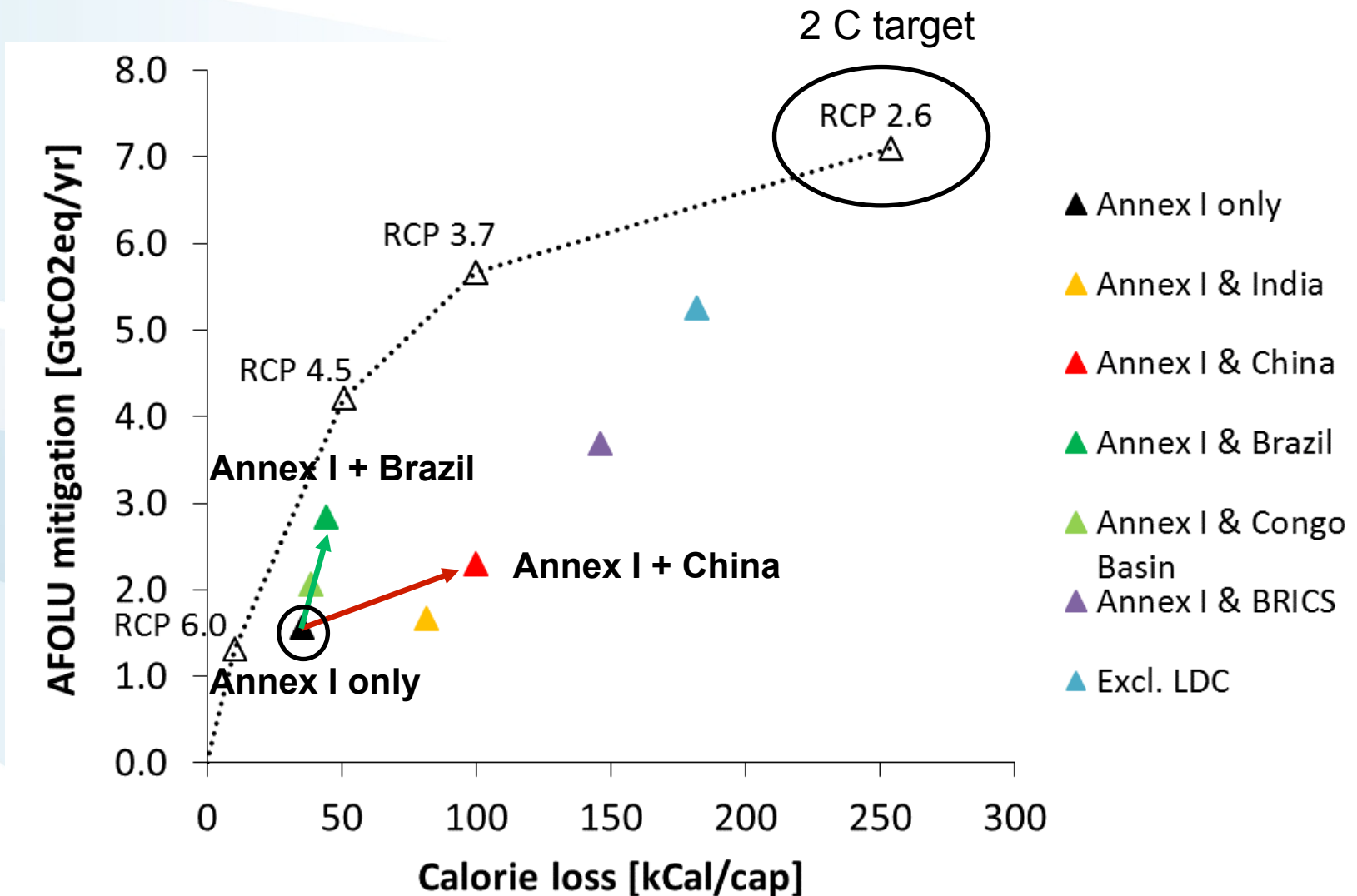
- Reference
 - business as usual, no climate mitigation
- RCP6.0
 - Carbon tax 2 USD/tCO₂eq in 2050
- RCP4.5
 - Carbon tax 13 USD/tCO₂eq in 2050
- RCP3.7
 - Carbon tax 34 USD/tCO₂eq in 2050
- RCP2.6
 - Carbon tax 124 USD/tCO₂eq in 2050
 - → **2 C target**

Participation in mitigation policies

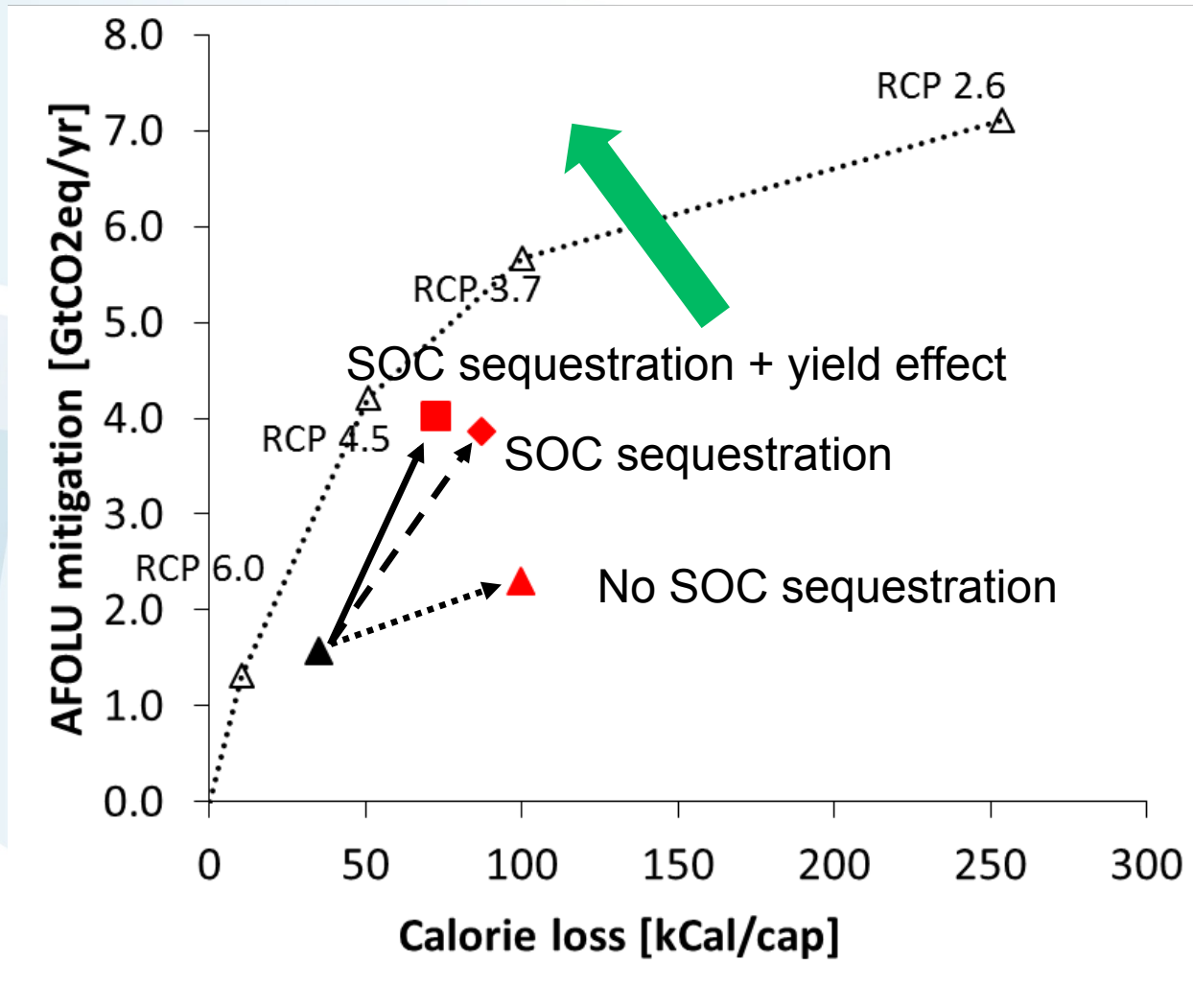
Should there be any exemptions for particular countries/regions to avoid conflict with food?

- Global actions vs.
- Annex I only
- Annex I + Brazil
- Annex I + Congo Basin countries
- Annex I + India
- Annex I + China
- Annex I + BRICS
-

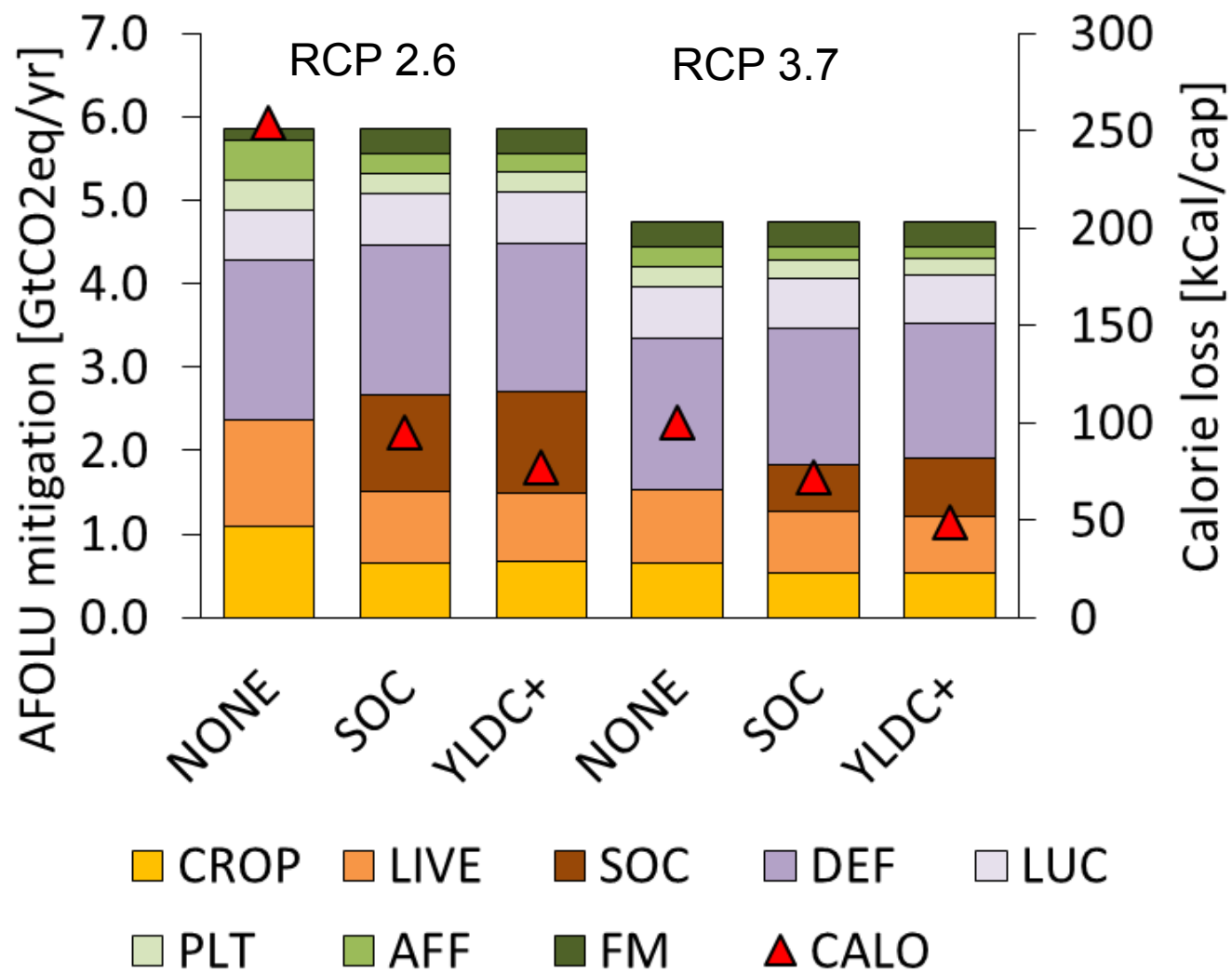
Regional climate change mitigation



Enabling SOC sequestration



Impact on calorie availability



Conclusions

Substantial contributions from the agricultural sector **expected** to attain ambitious targets.

Cost-effective mitigation hot-spots i.e. regions with large LUC emissions can provide major mitigation with little conflict with food.

Conclusions

Some mitigation options seem **win-win options** i.e. soil carbon sequestration or adaptation to climate change which relax trade-offs with food security. **These activities should be promoted** and would justify compensation of farmers further contributing to their income.



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