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INTEGRATED SINK ENHANCEMENT ASSESSMENT

I N S E A
P A R T N E R S

Mitigation in EU agriculture

GHG abatement and carbon sequestration costs

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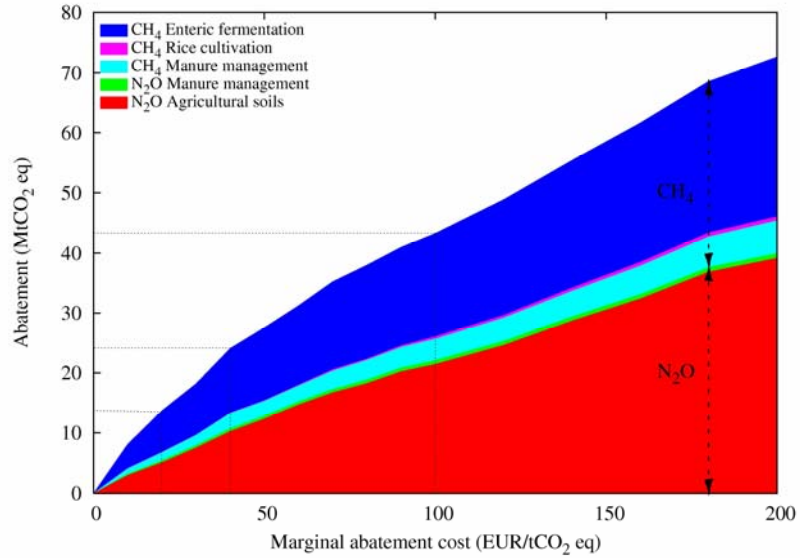
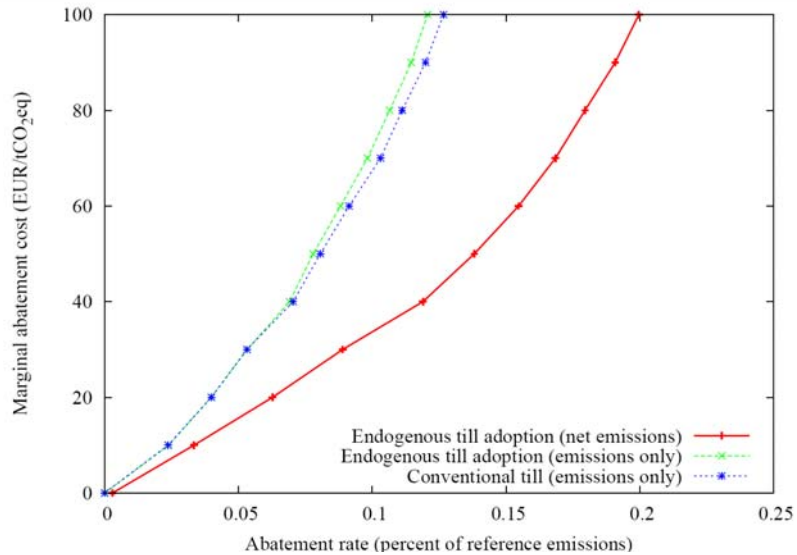
Goal and Main Questions

- Abatement cost assessment
  - How much does it cost to farmers to meet a given abatement target?
  - For a given CO2eq price, by how much farmers are willing to reduce their emissions?
- Heterogeneity of abatement costs
  - How do marginal abatement costs vary across regions and types of farming?
  - How does farm-type heterogeneity affect the design of economic instruments?
- Emission reduction and/or carbon sequestration through alternative tillage systems
  - How does the contribution of adoption of carbon-friendly practices compare with reductions of non-CO2 emissions?
  - How do carbon sequestration and emission reductions interact at the farm-type level?

Selected results

- The reduction in agricultural emissions amounts to 4% (~14MtCO2eq) for 20 €/tCO2. [GHG only]. Abatement rate is 21% for 200 €/tCO2
- Heterogeneity of abatement costs is important both between and within regions
- For a carbon price of 20€/tCO2, adoption of alternative tillage systems adds another 8 MtCO2eq as additional carbon sequestration





Conclusions

- Agriculture can play a significant role in closing the gap between European emission trend and Kyoto targets
- Marginal abatement costs heterogeneity is important
  - Cost-effectiveness is essential in the design of economic instruments
  - Uniform instruments are cost-ineffective and lead to large economic losses
- If farmers have to pay the value of what they emit, impacts on total gross margin may be large
- Economic instruments aimed at encouraging carbon-friendly practices raise different issues
  - Definition of baseline management
  - Monitoring and control issues
  - Carbon contracts over time
- Impact of CAP reform on emissions?

Heterogeneity of abatement costs