Agricultural mitigation in the development context: opportunities, pitfalls and tools

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Two Goals of Our Time

1. Achieving Food Security
   - 1 billion hungry
   - Food production to increase 70% by 2050
   - Adaptation to Climate Change critical

2. Avoiding Dangerous Climate Change
   - ”2 degree goal” requires major emission cuts
   - Agriculture and Land use = 30% of emissions..
   - ..and needs to be part of the solution

Agriculture and Climate Change

- Contributing to Climate Change: Source of greenhouse gas emissions (30%)
- Affected by Climate Change
- Part of solution to Climate Change
- Adaptation & mitigation linked
- Multiple benefits for food security, adaptation, mitigation & development

Action	Can help Food Security	Can help meet CC Mitigation
Increase productivity (yields per area) under environmental and sustainability constraints	Yes	(yes)
Reduce expansion of agriculture and sustainable forest management		Yes
Effective water use	Yes	(yes)
Reduce losses in / more efficient agricultural practises	Yes	Yes
Reduce losses in food processing and handling	Yes	Yes
Improve agricultural markets and incentives	Yes	Yes
Carbon sequestration in vegetation and soil	(yes)	Yes

But solutions also depend on

- Demographic changes
  - population
  - urbanization
- Economic growth
- Structural changes in agriculture
- Consumption patterns

Remember:

Climate change mitigation will never be the main goal for agriculture.

Climate-smart Agriculture

Agriculture that sustainably:

- increases productivity
- increases resilience (adaptation)
- reduces/removes GHGs

AND

- enhances achievement of national food security and development goals

Key messages 1: Practises

- Climate-smart practices exist
- Ecosystem approach at landscape level is crucial
- Investments are needed in
  - filling data and knowledge gaps
  - R&D of technologies, methodologies
  - conservation and production of varieties and breeds

Climate Change & Agriculture Mitigation and Adaptation

- Crop diversification
- Soil and water conservation
- Use of integrated systems
- Livestock management
- Restoration of degraded lands
- Reducing emission from deforestation and forest degradation (REDD)
- Restoration of organic soils
- Cropland management
- Rangeland management
- Agroforestry
- Afforestation
- ……

Key messages 2: Policies

- Smallholders need institutional and financial support for the transition
- Strengthened institutions for dissemination and coordination
- Consistency between agriculture, food security and climate change policies

Key messages 3: Finance

- Available financing, current and projected, are substantially insufficient
- Combining finance (public/private, climate change/food security) improves options
- Fast-track financing must take sector-specific considerations into account

On scope of agriculture mitigation

- It is not only about soils.
- Vegetation in agriculture landscapes has a very large potential
- Emission reductions per produced unit will be a major contribution

Mitigation of Climate Change in Agriculture (MICCA) Programme

- Development of emissions database and life cycle analysis (LCA) & mitigation potentials and costs
- Global economic analysis of mitigation policy options
- Analysis of potential of various practices/technologies/investments to enhance food security, adaptive capacity and mitigation benefits
- 4 smallholder pilot projects