AGRICULTURE AND FORESTRY IN CDM

Sudha Padmanabha
Fair Climate Network

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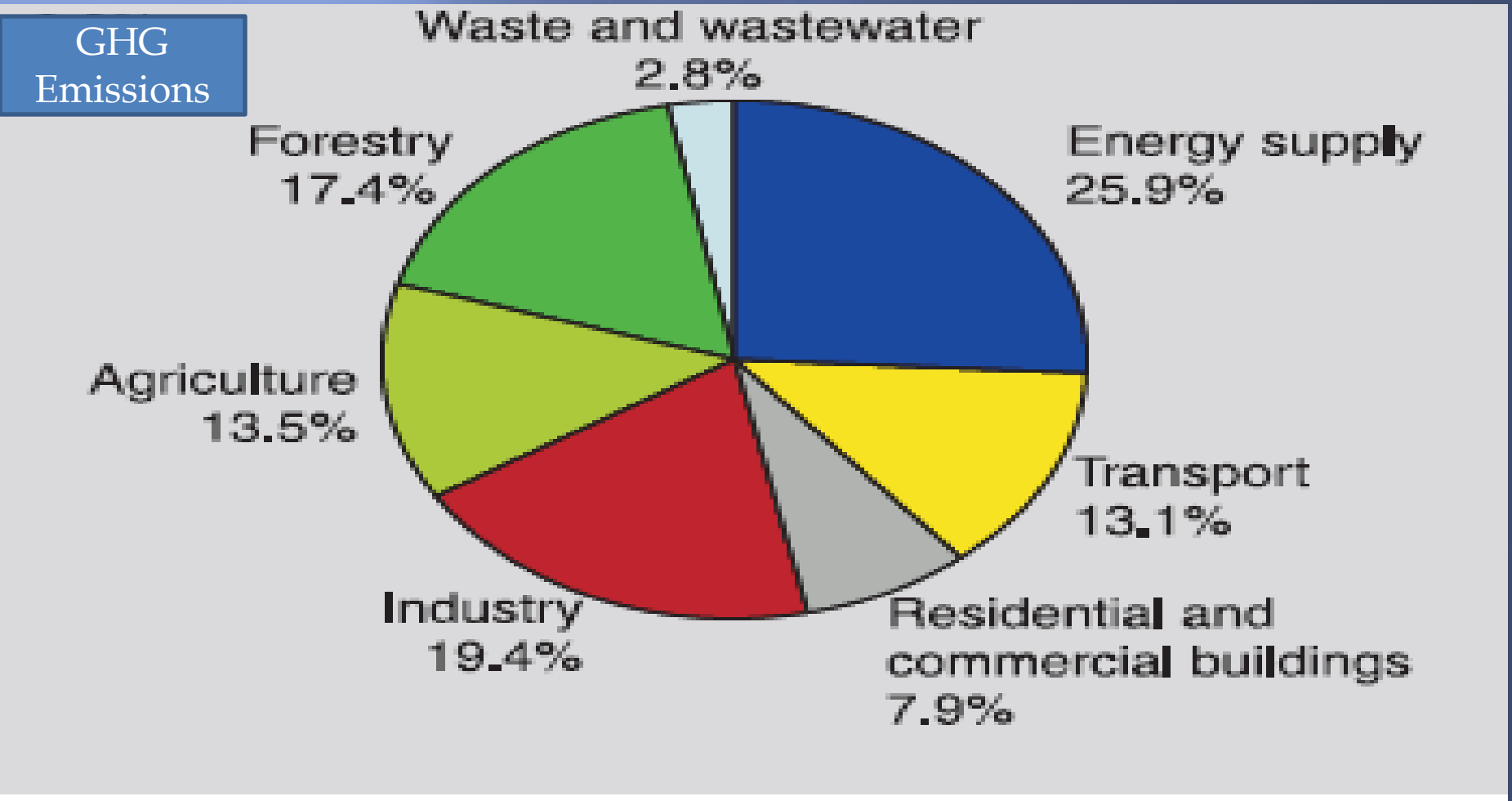
Presentation Outline

- Current trends of CDM both, in India and on a global scale
  - Agriculture sector
  - Forestry sector
- Strengthen the role of NGOs, activists and citizens in the CDM process
  - Identify barriers
  - Address barriers

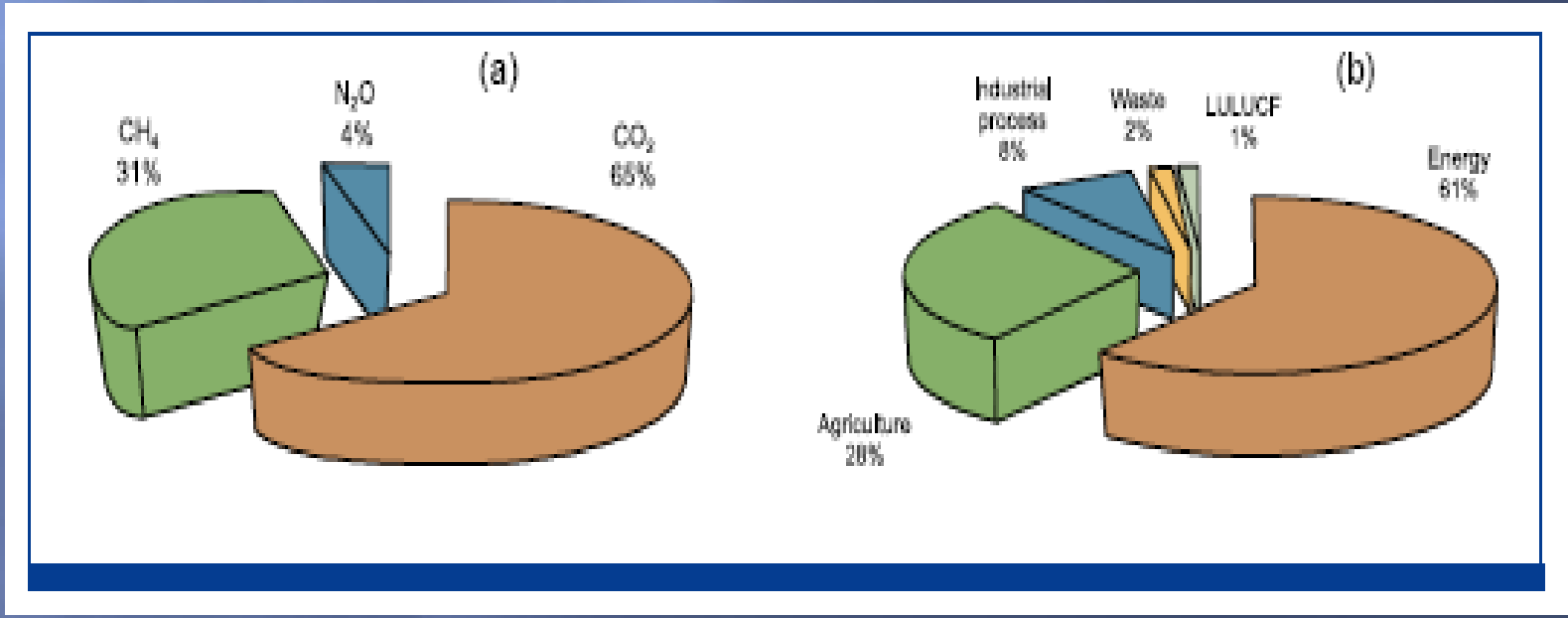
GHG emissions

GHG Emissions



AGRICULTURE SECTOR

- 14% of global GHGs / 6.8 Gt of CO_2 eq (IPCC 2007)
- 74% of emissions from developing countries
- EMISSIONS FROM INDIA



Mitigation Potential in Agriculture Sector

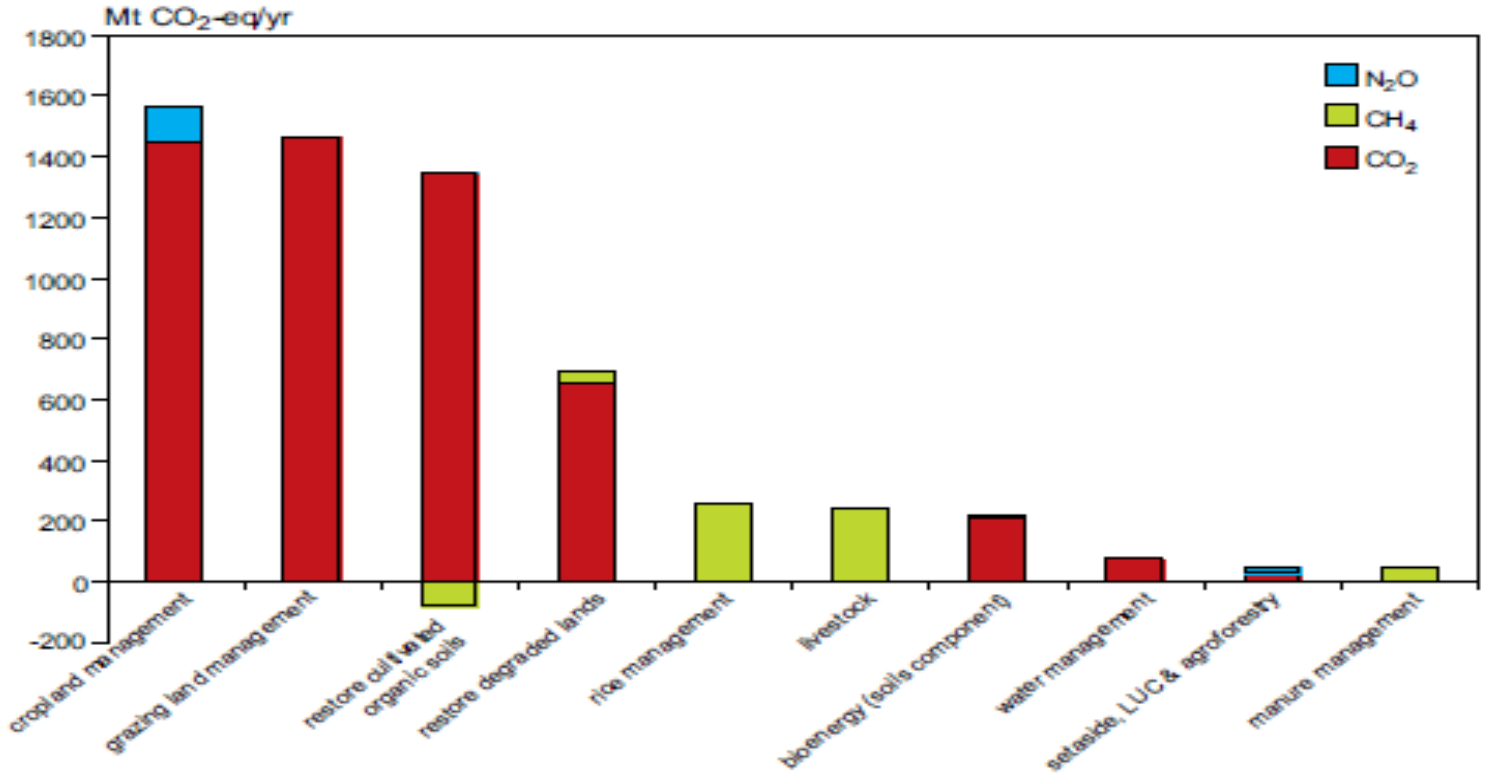


Figure 8.4: *Global technical mitigation potential by 2030 of each agricultural management practice showing the impacts of each practice on each GHG.* Note: based on the B2 scenario though the pattern is similar for all SRES scenarios.
Source: Drawn from data in Smith et al., 2007a.

- TECHNICAL POTENTIAL OF MITIGATION IN AGRI SECTOR
  - 5.5 – 6 Gt of CO_2 per year by 2030 (IPCC, 2007)

Options	**%**
Soil carbon sequestration	89%
Improvements in rice management and livestock/manure management	9%
Cropland management (N_2O)	2%

- Abatement costs
  - Cost neutral
  - Net profit positive – low capital investment
  - Technical options readily available

Mitigation Potential in Forestry Sector

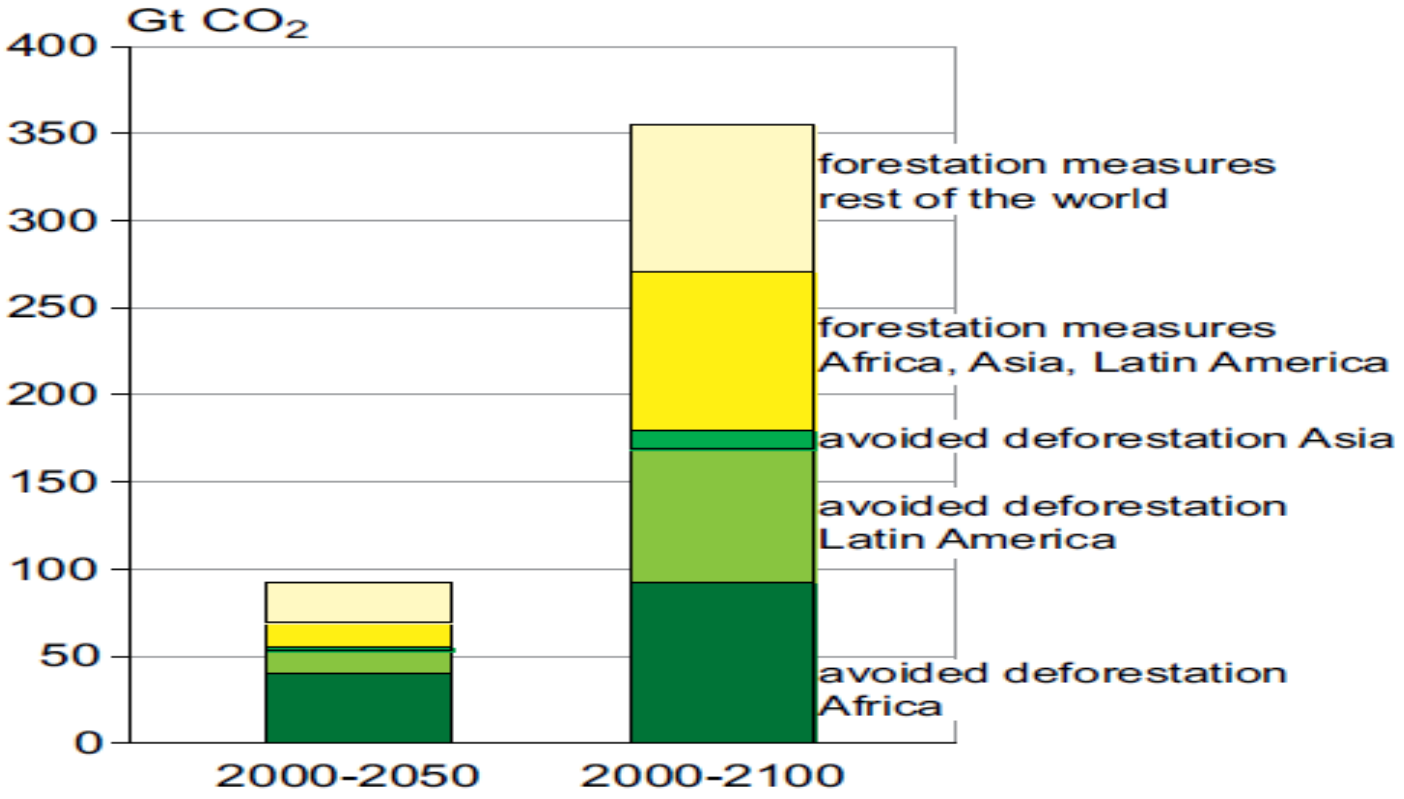


Figure 9.6: *Cumulative mitigation potential (2000-2050 and 2000-2100) according to mitigation options under the 2.7 US$/tCO2 +5%/yr annual carbon price increment*

Source: Sathaye et al., 2007.

Mitigation Potential in Forestry sector for India

Table 10: Comparison of estimates of Indian forestry mitigation potential across aggregate national and disaggregated AEZ-based estimates, using different methods (cumulative Mt C by year given)

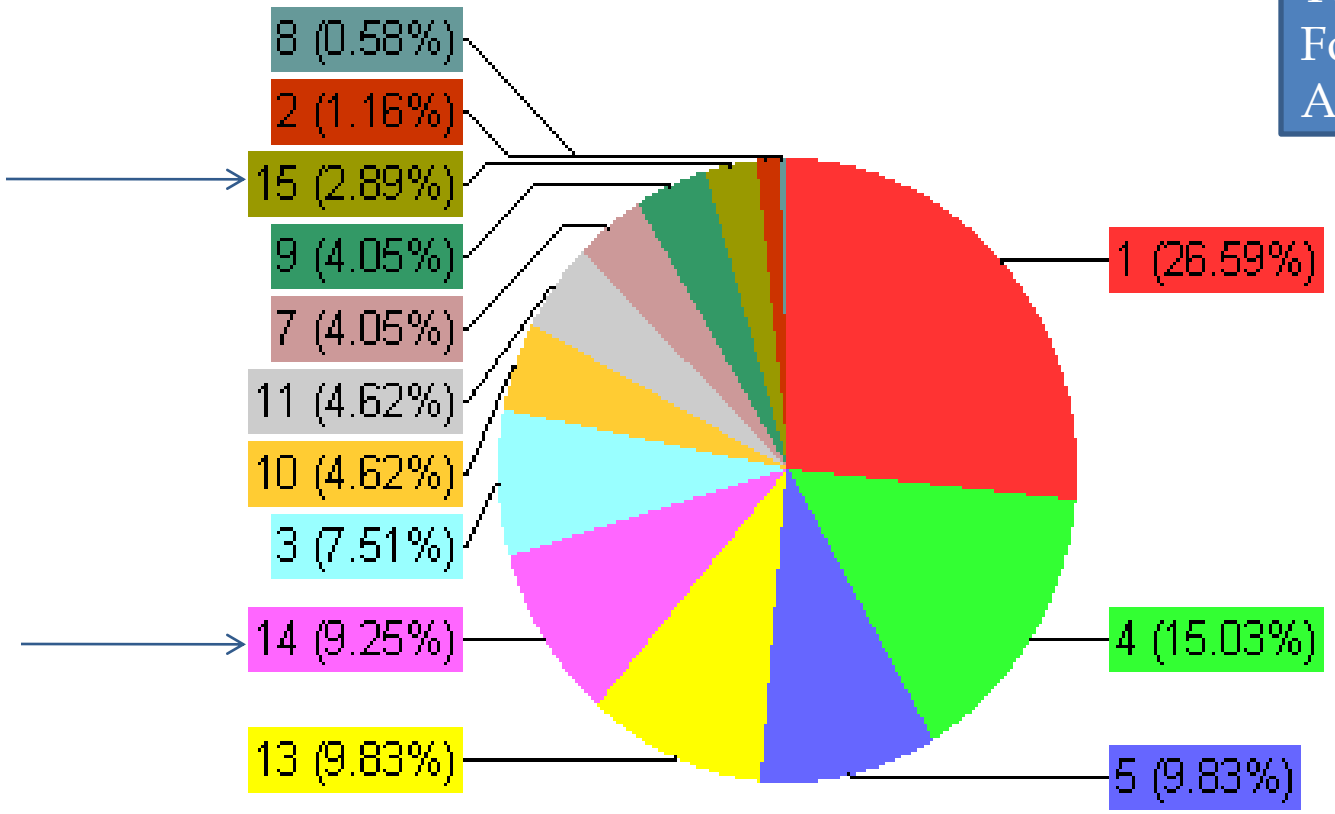
Mitigation options	This study: $100/t C, 30-year period, for 2 land classification systems, WL scenario 2005-2035		This study: $100/t C, 30-year period, for 2 land classification systems, WL+LF+MC scenario 2005-2035		Sathaye et al. (in press): $100, 2000-2030, GCOMAP National model	Ravindranath et al., 2001: 30-year period	Sohngen and Sedjo, in press): $100/t C, 30-year period, GTM model
	GTAP AEZ	Indian AEZ	GTAP AEZ	Indian AEZ			
Short rotation	51	34	75	67	348	25	NA
Long rotation	129	150	95	179	505	75	NA
Natural regeneration	80	75	254	273	NA	215*	NA
Total	260	258	424	520	853	315	210

*Notes: * Includes forest protection and natural regeneration options.*

NA = not available or not included in analysis

Approved methodologies by scope

Total = 173
Forestry = 16
Agriculture = 5



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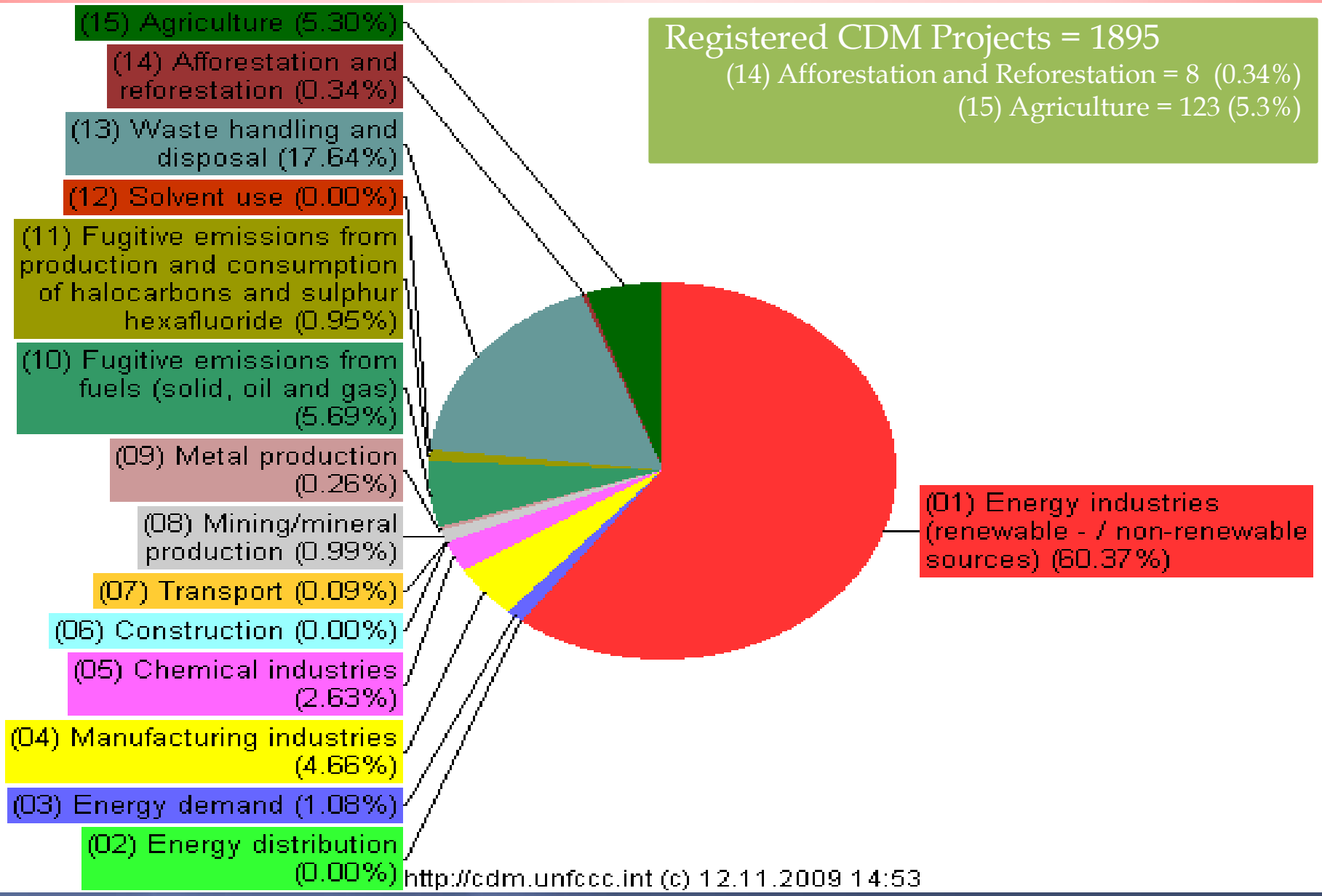
Distribution of registered project activities by scope



Mitigation Options in Agriculture Sector

- I. Increase amount of C added to soils (plant residues and manure)
- II. Reduce the relative rate of CO_2 release through soil respiration
  - Conservation Tillage – No Till or Reduced Till cropping
  - Increasing Carbon inputs from Crop Residue
  - Reducing Fuel Use
  - Reducing the use of nitrogen fertilizer
  - Residue management
  - Organic matter amendments
  - Restoration of degraded lands
  - Agro-forestry
- EXPLORE VER MARKET FOR SUSTAINABLE AGRICULTURE

Barriers to CDM

- Institutional Barriers
  - NGO Capacity Building
- Financial Barriers
  - Transaction Cost
  - Upfront Cost
- Technical and Managerial Barriers
  - Competent Technical Support
  - Strong Support Services
  - Marketing Strategies
- Technological Barriers
  - Eligible land area and use of modern tools like remote sensing
  - Lack of high yielding genetic planting material

- **Market-based Barriers**
  - Low CER buyers
  - Low rates of CERs
- **Institutional Barriers**
  - Need for indigenous DOEs to cut transaction costs
  - Weak institutional capabilities of Forest departments
- **Non-availability of database Barriers**
  - Baseline Carbon for different land use patterns
  - Sequestration Potential of various species
- **Investment Barriers**
  - Awareness for carbon related financing

Suggested Recommendations

- Opening of CDM Cells in State Forest Department
- Partnership between Forest Department, Research Organizations and NGOs to undertake CDM projects
  - Incorporation of CDM Component in JFM Programs
- Institutional Strengthening and Capacity building
  - Field visits to implemented CDM projects
  - Exchange of information
- Development of baseline for different eligible land use type
- Making the finance available for CDM Projects
- Creating Market for CDM A/R Projects
  - Impact of EU trading scheme
  - Better prices for forestry CERs

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- Distance between the communities and the implementing agency be bridged
- Address gender issues
- Considerable capacity building of all the stakeholders.
- Early accruing of benefits for the stake-holders

THANK YOU

sudha@fairclimate.com

sudhanil20@yahoo.com

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