

# *Steps involved to develop & implement agricultural carbon finance projects*

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# *Steps involved*

## Phase I: Piloting

- National readiness process incl. tech. & economic potential studies
- Supporting early action projects, to develop methodologies & to build local capacity in a learning by doing approach
- Capturing and disseminating the lessons learned
- Generating compliance & voluntary demand e.g. by:
  - Building alliances among like minded organizations & countries

## Phase II: Up-scaling

- Establishment of a national terrestrial carbon GHG inventory:
  - 2<sup>nd</sup> national communication on climate change
- Developing sectoral approaches & supporting agric. mitigation activities in the framework of the national rural policy:
  - Establishing cap & trade systems between sectors or provinces

# *Results of the agricultural mitigation potential screening in Kenya: Focus on smallholder mixed cropping systems & shade coffee*

Commodity	Smallholder Mixed cropping systems	Maize	Bio-fuels	Coffee	Tea	Sugar
Area available in mio ha	3	1.6	Semi-arid: 0.9	0.15	0.15	0.14
GHG mitigation activities	SALM: Agronomy Nutrient mgmt Water mgmt Agroforestry Set aside land	Residue mgmt.	Jatropha/Cro ton 1) Fuel-switch 2) AR	1) Shade trees, multiple cropping 2) Mulching 3) Fertilizer use efficiency	Inter-cropping no option in Kenya	1) No/ burning of residues 2) Mulching systems 3) Fertilizer related emissions
Existing extension service	0	0	0	+	++	+
Tech. GHG mitigation potential in t CO <sub>2</sub> e/ha/y.	2 - 5	0.5	1) 1-12 2) 2.5-5.0 High bandwidth	3 – 8	-----	7.8 in 3 years 14 in 10 y. 20 in 20 y.
Economic mitigation potential	++	?	?	++	0	+

# *Stakeholder driven assessment of opportunities & challenges for agricultural mitigation projects that have to be addressed in the project design*

## **Challenges**

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- Large areas have to be aggregated to reach an economically feasible project size
- Aggregation of smallholder farms results in desired development and ecological co-benefits, but high initial investment costs
- Functioning extension system required
- Mechanisms to aggregate & distribute carbon revenues providing incentives to implement GHG activities & ensuring equity

## **Opportunities**

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- Restoring agricultural production by lowering adoption barriers
- Reducing climate change vulnerability
- Rewarding farmers for providing environmental services (carbon, water conservation, biodiversity)
- Synergies between mitigation projects & climate change adaption, e.g. financing & monitoring mechanisms can be shared



# *Joint Government of Kenya & World Bank BioCarbon Fund support for early action agricultural mitigation projects*

- **Commodity specific capacity building workshops for potential project developers**
- **Public tender for project ideas**
- **Coaching support provided to short-listed project developers to prepare high quality Project Idea Notes**
- **Supporting two pilot projects to generate carbon credits**

Western Kenya Smallholder Agriculture  
Carbon Finance project



Carbon Finance Opportunities in the  
coffee sector in central Kenya



# *Features of the two early action agricultural mitigation projects in Kenya*

Features	Western Kenya Smallholder Agriculture Carbon Finance project	Carbon Finance Opportunities in the Kenya coffee sector
Project region	Western Kenya, close to Kisumu & Kitale (116,000ha, adoption area: 86,000ha)	Central Kenya, close to Mt Kenya (phase I: 8,500ha, 50% coffee, 50% subsistence agriculture)
Project developer/extension provider	SCC-VI Agroforestry	ECOM Agroindustrial Corp
Aggregator	Registered farmer associations covering an area with about 80,000 farms	Komothai smallholder farmers cooperation, 9000 members
Agricultural objectives	Restoring agricultural production, adopting farm enterprise approach Reducing climate change vulnerability	Restoring coffee production and producing certified specialty coffee using best coffee practices Reducing climate change vulnerability
Expected VERs (IPCC 20 y. default period)	129,000 tCO <sub>2</sub> e/y. (1.5tCO <sub>2</sub> e/ha/y.)	30,000 tCO <sub>2</sub> e/year (3.5tCO <sub>2</sub> e/ha/y.)

# *Menu of Sustainable agricultural land management activities*

Management practices		GHG Mitigation Potential tCO <sub>2</sub> e/ha/yr
Agronomy	Improved crop varieties	0.5-1.5
	Cover crops and green manure	
	Multiple cropping: -crop rotations -intercropping	
Nutrient mgmt	Mulching	0-2
	Improved fallow	
	Manure management	
	Composting	
	Improving fertilizer use efficiency	
	Reduced tillage	
	Residue management	
Water mgmt	Terracing/Water harvesting	0-3
Agroforestry	Various activities	2-15 (1.83 SOC)
Set-aside land	Various activities	1-10

Source: adapted from IPCC, 2007

# Baseline establishment & monitoring concept

