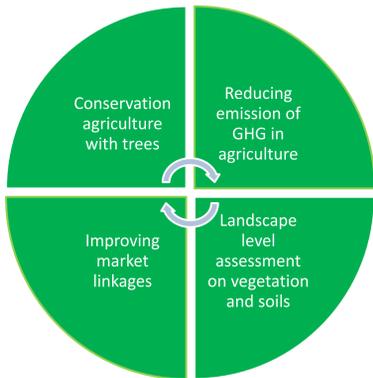


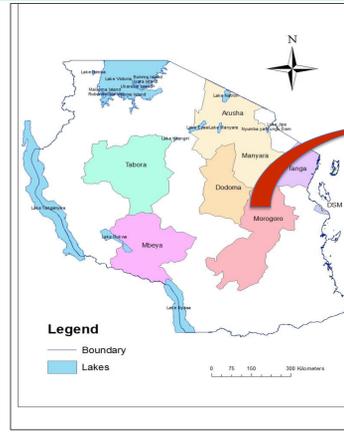
Introduction

The main goal of the Mitigation of Climate Change in Agriculture (MICCA) project is to facilitate transition toward low emission agricultural development. MICCA achieves this by identifying, verifying, and scaling up climate-smart agriculture practices in two regions, Kolero (Tanzania) and Kaptumo (Kenya)

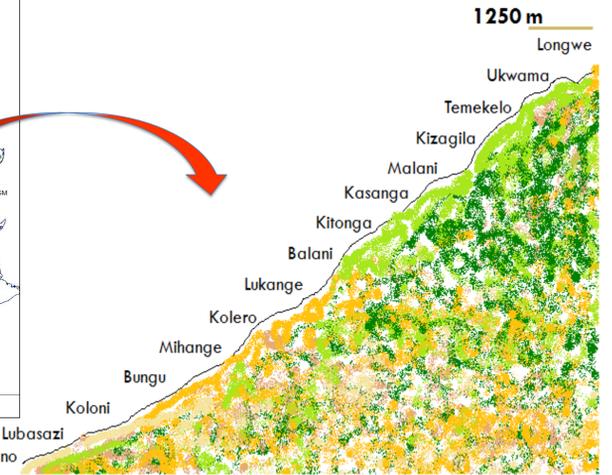
Key components of MICCA



Who is planting or removing trees....?



260 m



Elevation gradient of villages involved in MICCA project, Kolero landscape, Tanzania

Direct benefits from trees on farm...!

- Building material e.g. timber, poles, withies
- Fruits
- Fuelwood supply
- Herbal medicines
- Soil erosion control in hilly areas
- Strengthening river banks and watershed mgt
- Soil fertility improvement



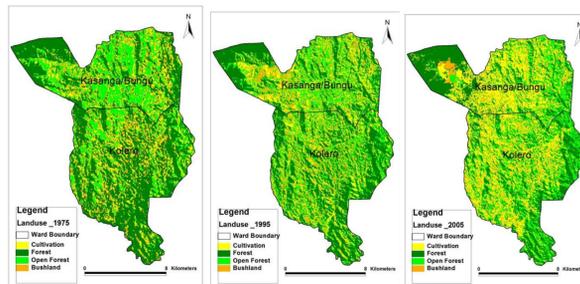
Nursery practitioners during training on grafting (left) and farm preparation (right), Kolero, Tanzania

✓ Individuals at household level	xx Land clearing for agriculture
✓ Local institutions e.g. schools	xx Extraction of building materials
✓ Community led initiatives	xx Wild fires

Tree cover transition in space and time...!

Stocking parameters data from 46 plots sized 50 x 20 m each from different land use zones i.e. farmland, fallow and forest patches in Kolero, Tanzania

Block	Parameters	Mean
Farms (n = 13)	N (no.ha ⁻¹)	64.61 (0.00)
	G (m ² h ⁻¹)	3.11 (0.72)
	V (m ³ ha ⁻¹)	36.71 (0.11)
Fallow (n=13)	N (no.ha ⁻¹)	178 (0.00)
	G (m ² h ⁻¹)	13.4 (0.22)
	V (m ³ ha ⁻¹)	168.1 (3.92)
Forest Patches (n=20)	N (no.ha ⁻¹)	343.0 (0.00)
	G (m ² h ⁻¹)	43.5 (0.28)
	V (m ³ ha ⁻¹)	525.2(4.7)



Land use/cover changes from 1975 to 2004 in Kolero landscape, Tanzania

Land uses	1975		1995		2005	
	Area (ha)	%	Area (ha)	%	Area (ha)	%
Closed forest	10,086.071	47	7005.148	32	6119.204	28
Open forest	3716.716	17	5739.65	27	5692.584	26
Bushland	2813.215	13	3142.305	15	979.108	5
Cultivation	4913.153	23	5639.29	26	8735.102	41
Total	21,529.155	100	21,529.155	100	21,529.108	100

Tree cover transition in space

- Farms have less tree cover due to clearance for agriculture
- Fallows encourages regeneration of trees
- Forest patches are still intact

Tree cover transition over time

- Decline of tree cover in the landscape from forest patches to less cover categories
- Increase of transformation to less cover landscape for cultivation

Trees link to ecosystem services...!



- Environmental amelioration
- Recreational areas
- Ritual sites e.g. Ghost site in Kolero
- Soil erosion control in hilly areas
- Nutrient cycling
- Stabilization of the river banks and watershed mgt

Stakeholders of tree (+ or -) change...!



- Smallholder farmers
- Traders of tree products
- Law enforcers for natural resources products
- Consumers of tree products in urban areas
- Policy makers at local and national levels
- International community e.g. researchers, NGOs

Leverage on real drivers of change....!

- Promote incentive schemes like REDD+ to encourage retaining of tree cover in the landscape
- Improve agricultural practices e.g. minimizing shifting cultivation
- Improve wise use of the tree resources e.g. use of improved cooking stoves, encourage high recovery rate from timber sowing
- Improve law enforcement to deal with illegal harvesting.