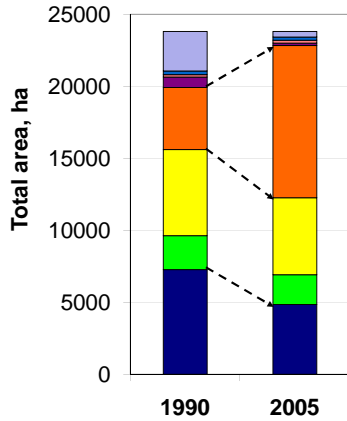
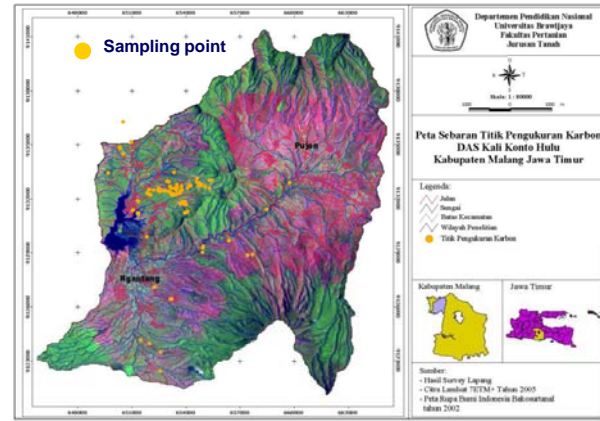
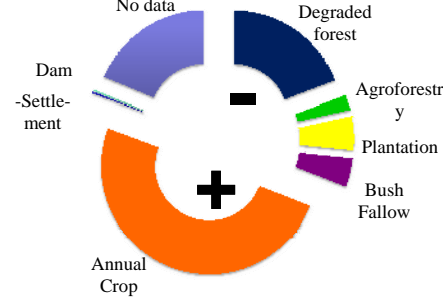


Land Cover Change (1990-2005)



Percentage change of area

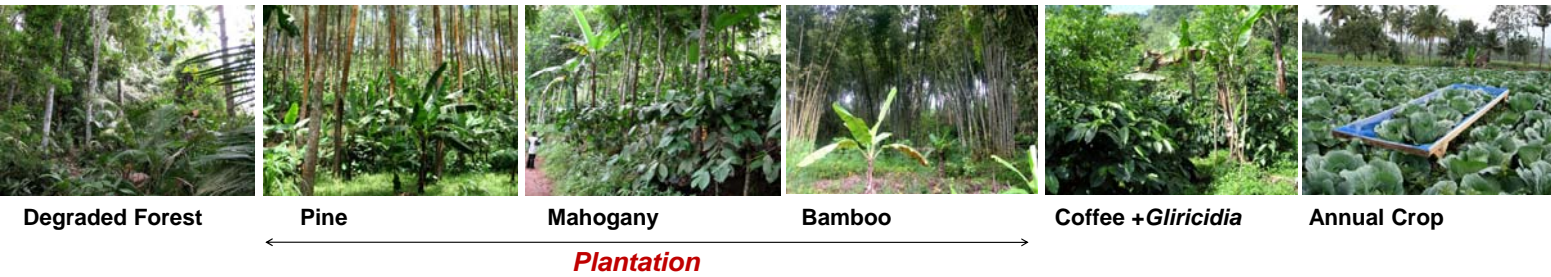


- Degraded forest
- Agroforestry
- Plantation
- Annual Crop
- Bush Fallow
- Settlement
- Water (dam)
- No data

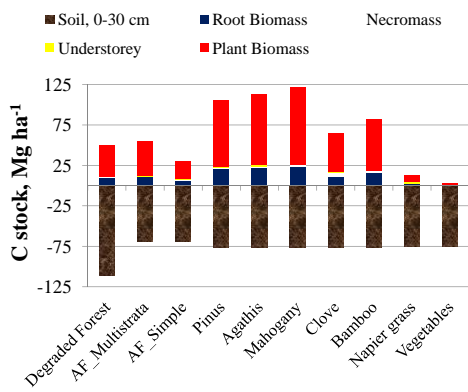


Carbon measurement at plot level

Land Use System in Kali Konto sub-watershed

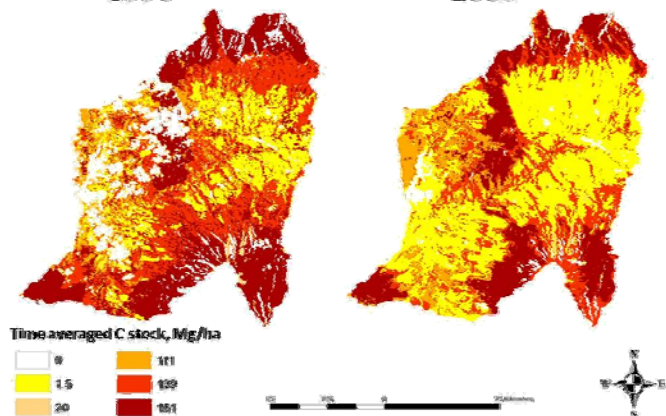


RESULTS



1990

2005



Total Carbon Stock and Time-averaged Carbon Stock

Land Cover	LUS	Total C stock Mg ha ⁻¹	Soil as % of total C stock	Max. Age, year	Time Avg. C Stock, Mg ha ⁻¹
1. FOREST	Degraded Forest	161	69	50	161
2. AGROFORESTRY	AF_Multistrata	123	56	30	111
	AF_Simple	99	70	30	
3. PLANTATION	Pinus	183	42	30	144
	Agathis	190	40	40	146
	Mahogany	198	39	50	212
	Clove	142	54	35	70
	Bamboo	159	48	15	121
4. ANNUAL CROP	Napier grass, 4 month	100	76	0.25	11
	Napier grass, 1 month	78	98	-	-
	Vegetables	79	96	0.25	1.5

CONCLUSIONS

1. Within 15 years, C loss for the whole watershed (23810 ha) was estimated to be 25,924 Mg yr⁻¹ or equivalent to a yearly C loss of 1.48 Mg ha⁻¹.
2. Carbon lost from natural forest was about 1.09 Mg ha⁻¹ yr⁻¹, tree plantations lost 0.25 Mg ha⁻¹ yr⁻¹. Carbon lost from coffee-based agroforestry systems was about 0.05 Mg ha⁻¹ yr⁻¹.
3. Planting more trees (damar, pinus, mahogany) in the landscape through the Reforestation Program in the 1990-2005 period was not able to replenish the C lost from the landscape, planting more trees in the landscape through agroforestry and plantation may compensate the loss of C through forest conversion.