Introduction to High Carbon Rural Development and Possible Links to Carbon Finance

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Reminder of the REDD Decision at COP13

Urging methodology development, demonstration activities, and capacity building for Reduced Emissions from Deforestation and forest Degradation in Developing Countries

Recognizing and adapting to:

- **local-level action within national accounting and strategies**
- **the need for a national approach**
- **importance of knowing the drivers of deforestation & forest degradation**
- **the multiple claims and stakes in forest resources**
- **the different types of forests**

From UN-REDD Panel yesterday:

- **Truly meaningful participation by stakeholders and right holders**
- **REDD strategies consistent with sustainable development strategies**

Overview

At Loggerheads?

Agricultural Expansion, Poverty Reduction, and Environment in the Tropical Forests

Kenneth M. Chomitz

with
Piet Buys, Giacomo De Luca, Timothy S. Thomas, and Sheila Wertz-Kanounnikoff

Table 1 Forest Types and Their Challenges

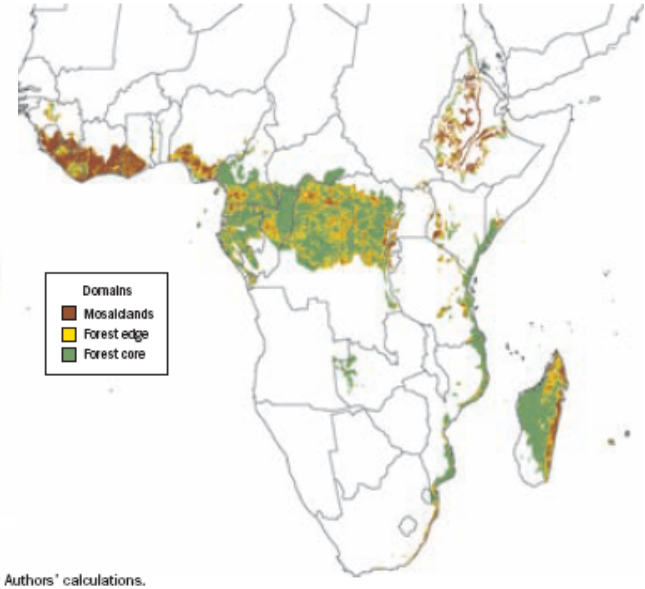
Type of area	Features
Mosaiclands with better-defined tenure	High land value; contain many of the world's forest dwellers but a small fraction of the forest
Frontier and disputed areas	Agricultural expansion; rapidly increasing land values in frontiers; conflicts over forest use in disputed areas
Areas beyond the agricultural frontier	Most of the world's tropical forests; contains a minority of forest dwellers but many indigenous people

Importance of mosaics & forest margins areas across humid tropics

Map 4 Domains in Latin American and Caribbean Tropical Forest Biomes

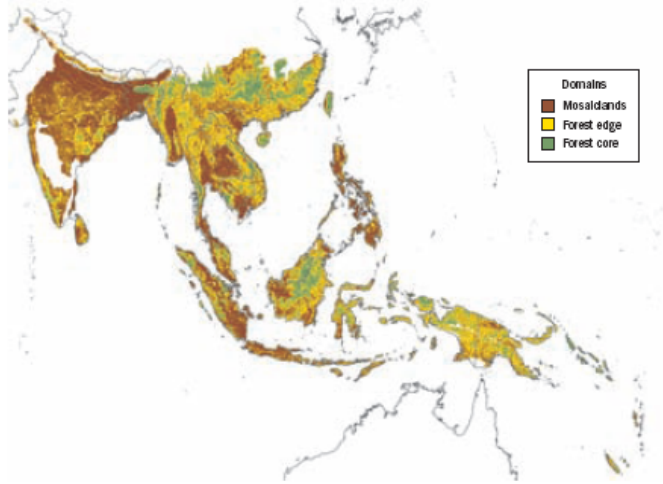
Source: Authors' calculations.

Domains in Africa's Tropical Forest Biomes



Source: Authors' calculations.

Map 3 Domains in Asia's Tropical Forest Biomes



Source: Authors' calculations.

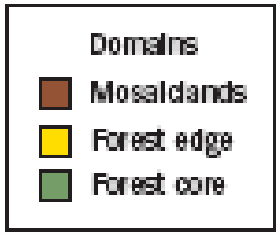


Table 1: Global distribution of forest type and population dependence

Forest type	Area (thousands of square km)	Population (millions)
Mosaiclands	6213	526.3
Forest edges	8089	358.6
Forest core	8160	108.7

Source: Summarized from Chomitz, (2007)

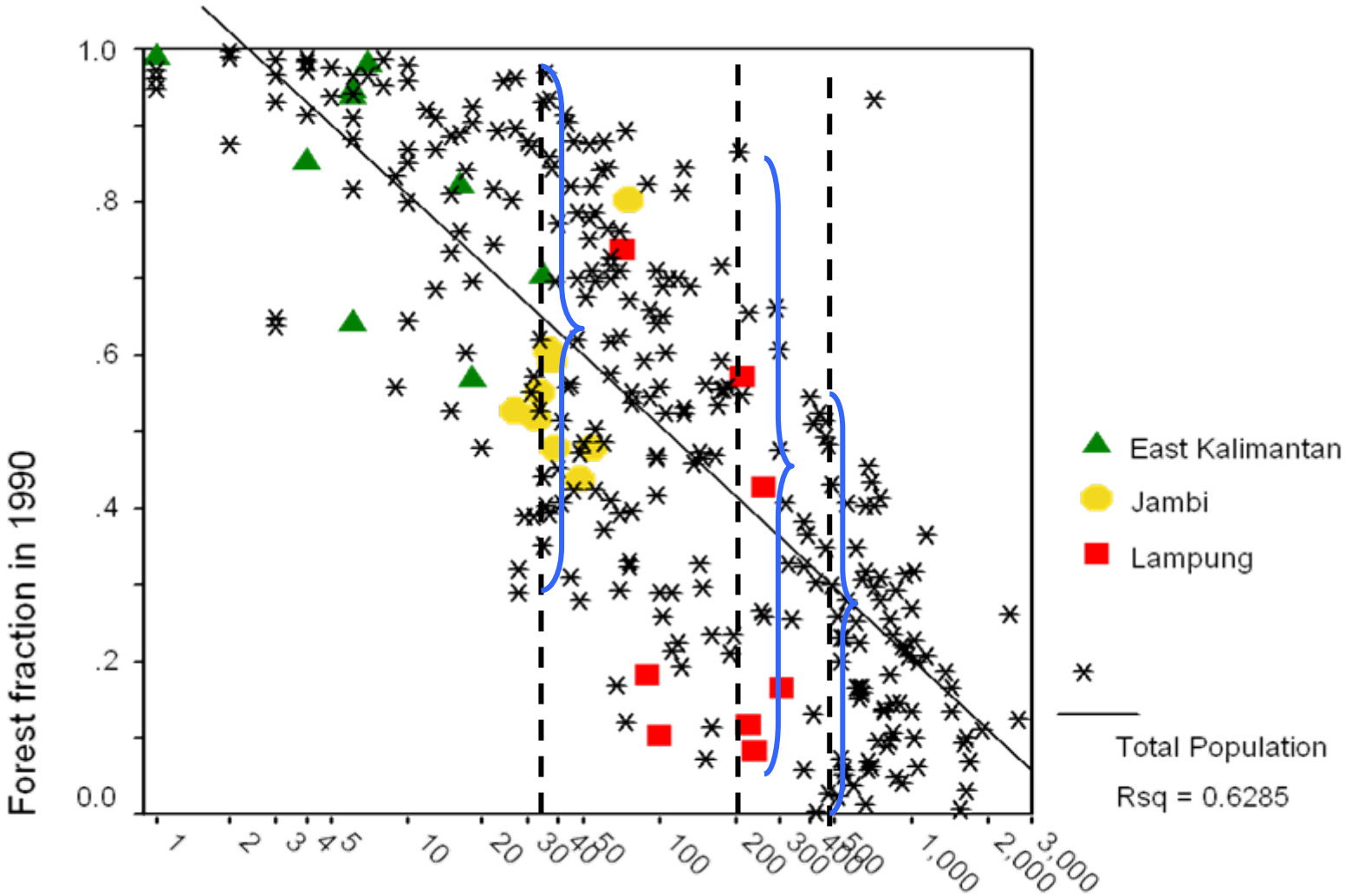


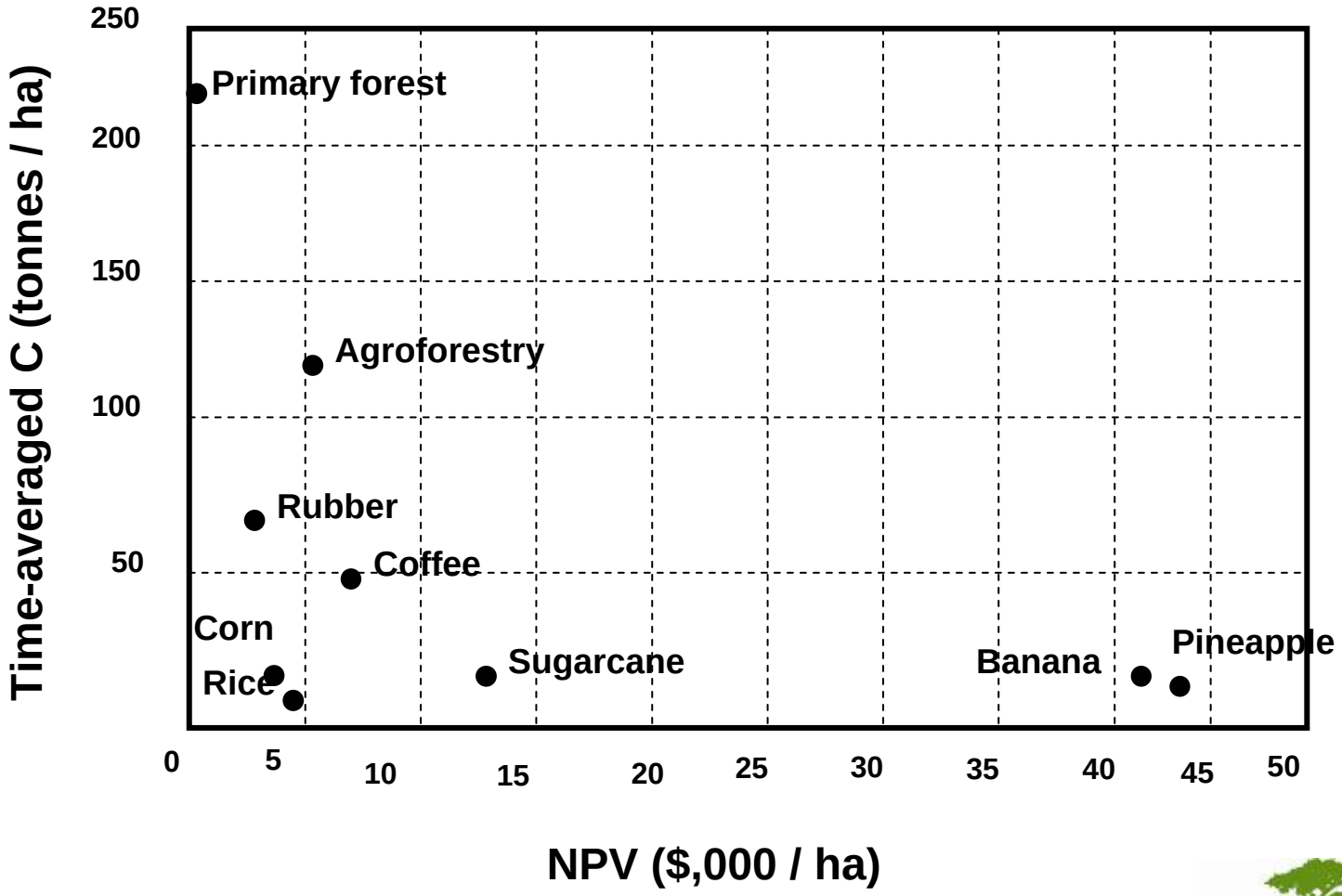
Figure 2.1. Relationships between population density and fraction of forest cover in Indonesian districts (Source: Murdiyarso et al., 2006).

Multiple land use types in mosaics & forest margin areas

Table 4.1 ASB meta land use systems and representative systems at the study sites

	Indonesia			Peru	Cameroon
ASB meta land use	**Jambi**	**Lampung**	**East Kalimantan**	**Ucayali, Peru**	**ASB benchmark site**
Forest	Undisturbed forest Logged over forest-high density Logged over forest-low density Undisturbed mangrove Logged over mangrove Undisturbed swamp forest Natural regrowth-shrub	Undisturbed forest Logged over forest-high density Logged over forest-low density Undisturbed mangrove Logged over mangrove Undisturbed swamp forest Logged over swamp forest Natural regrowth-shrub	Undisturbed forest Logged over forest-high density Logged over forest-low density Undisturbed mangrove Logged over mangrove Undisturbed swamp forest Logged over swamp forest Natural regrowth-shrub	Residual forest: Previously logged with some selective logging continuing and NTFP extraction. Tree canopies of 95, 80, 65, 50%.	High forest—relatively intact with some selective logging in the past. Some hunting and the gathering of NTFPs. Secondary forest—also important for collection of NTFPs.
Tree-crop systems	Home garden Coconut Rubber agroforest Cinnamon agroforest Coffee agroforest Rubber Oil palm Tea plantation	Home garden Coconut Rubber agroforest Cinnamon agroforest Coffee agroforest Rubber Oil palm Damar agroforest Fruit-based agroforest Coffee	Agroforest Rubber agroforest Cinnamon agroforest Coffee agroforest Rubber Small scale oil palm Large scale oil palm Plantation	Oil palm	Extensive cocoa—low productivity with limited use of fungicides (Akok only). Extensive cocoa with /fruit—same as above except fruit surpluses are marketed (Awae only). Intensive cocoa with fruit—more intensive use of fungicides and labour results in higher yield (500 kg/ha) (Awae only).
Crop/fallow systems	Agriculture Rice field	Agriculture Rice field Sugarcane	Agriculture Rice field	Shifting cultivation mosaic --combination of forest patches, pasture and annual crops Short fallow -- secondary forest converted to 3 years of annual crops (rice, maize, cassava, plantain, beans) followed by 2 to 6 years of fallow	Mixed food crop /short fallow rotation - groundnuts, cassava, plantain, okra, cocoyams, maize, leafy vegetables Long fallow rotation -- melonseed / plantain / long fallow rotation.
Other	Settlement Grass Open peat Cleared land	Settlement Grass Open peat Cleared land	Settlement Grass Open peat Cleared land	Native grasses or *Brachiaria*	

Carbon x profitability tradeoffs – Manupali, Philippines 2007



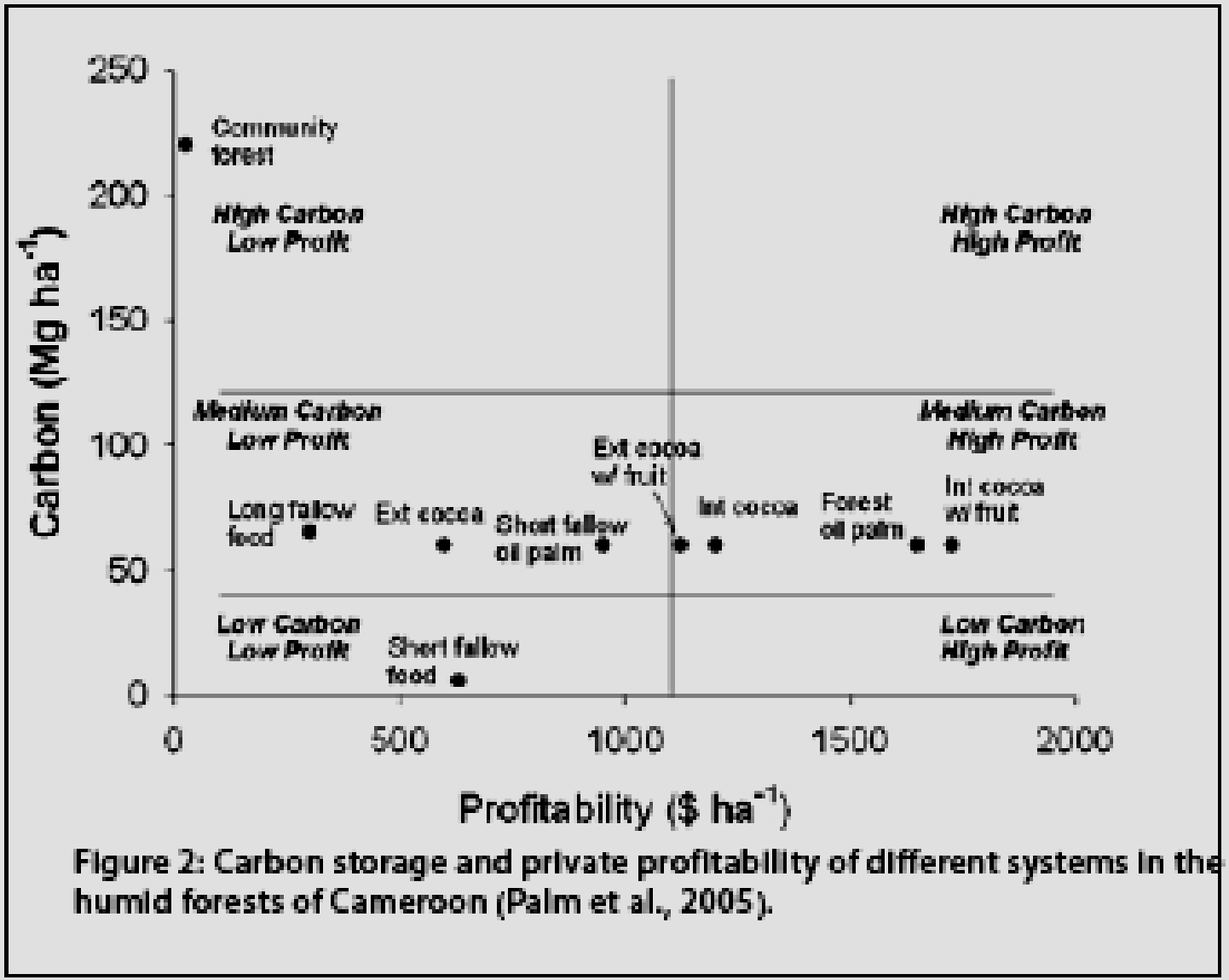
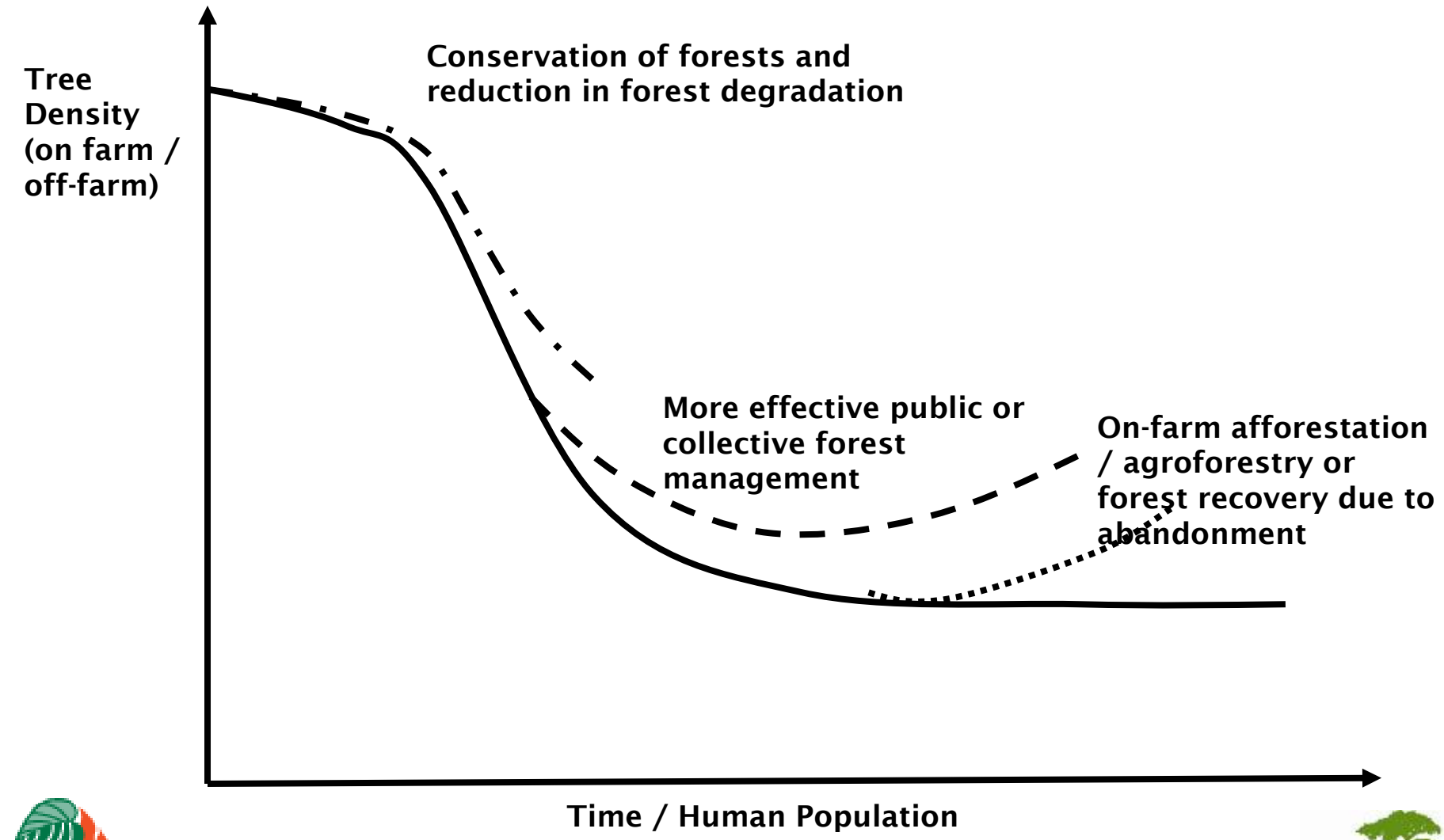


Figure 2: Carbon storage and private profitability of different systems in the humid forests of Cameroon (Palm et al., 2005).

High Carbon (Stock) Land Use Pathways



National REDD Strategies for High-Carbon (Stock) Development & Land Use Pathways

1. National REDD strategies and accounting systems need to consider all trees – forest core, forest frontier, agriculture – forest mosaic.

2. Smallholder tree crop systems can be a driver or stabilizer of carbon stock in the landscape.

3. National REDD strategies should be coherent with multi-sectoral rural development.

4. National REDD strategies must be adapted to the processes driving deforestation. Agricultural extensification is still a major driver in much of the humid tropics.

5. Financial incentives – combined with agricultural investments and land tenure reform -- can tip degrading land-use change processes toward high-carbon outcomes.