The effect of deforestation rate on land tenure in Central Africa

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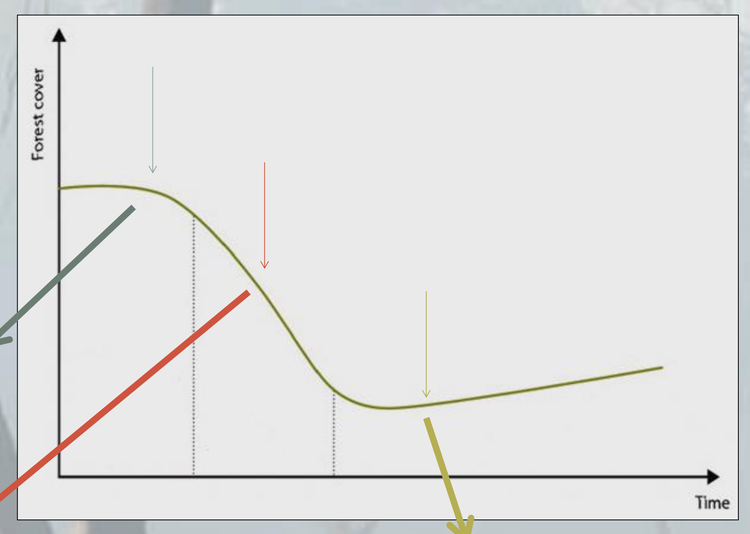
CONTEXT AND OBJECTIVES

The CoForTips project aims at the promotion of better management of the forest of the Congo Basin by presenting to the policy makers plausible scenarios of socio-ecosystems evolution. Scenarios will be built on a better understanding of the dynamics and tipping points of biodiversity and of the resilience of forest socio-ecosystems and on a participatory modelling approach. To meet these requirements, it is essential to focus on the impact of deforestation on land tenure mutation in Central Africa.

METHOD

This research is based on surveys, participatory observations, interviews and group discussions that took place on more than 200 villagers living in 9 villages of Central Africa located at three different stages on Mather's deforestation curve (*Figure 1*) between June 2013 and May 2014. We used the methodology made by LE ROY *et al.* (1996) to identify objects of land tenure like fishing or hunting area, fields or plantations and their location in the land tenure table. Land tenure theory, developed by LE ROY *et al*. (1996) was made to measure levels of ownership and co-management of the customary space. It is used to structure the policies of conservation and management of local cultural concepts but we assume that it can also be used to compare changes in land control occurring in a place during its progress on the transition curve.

Figure 1: Situation of the study sites on Mather's deforestation curve (MATHER, 1992) reviewed by ANGELSEN (2008)



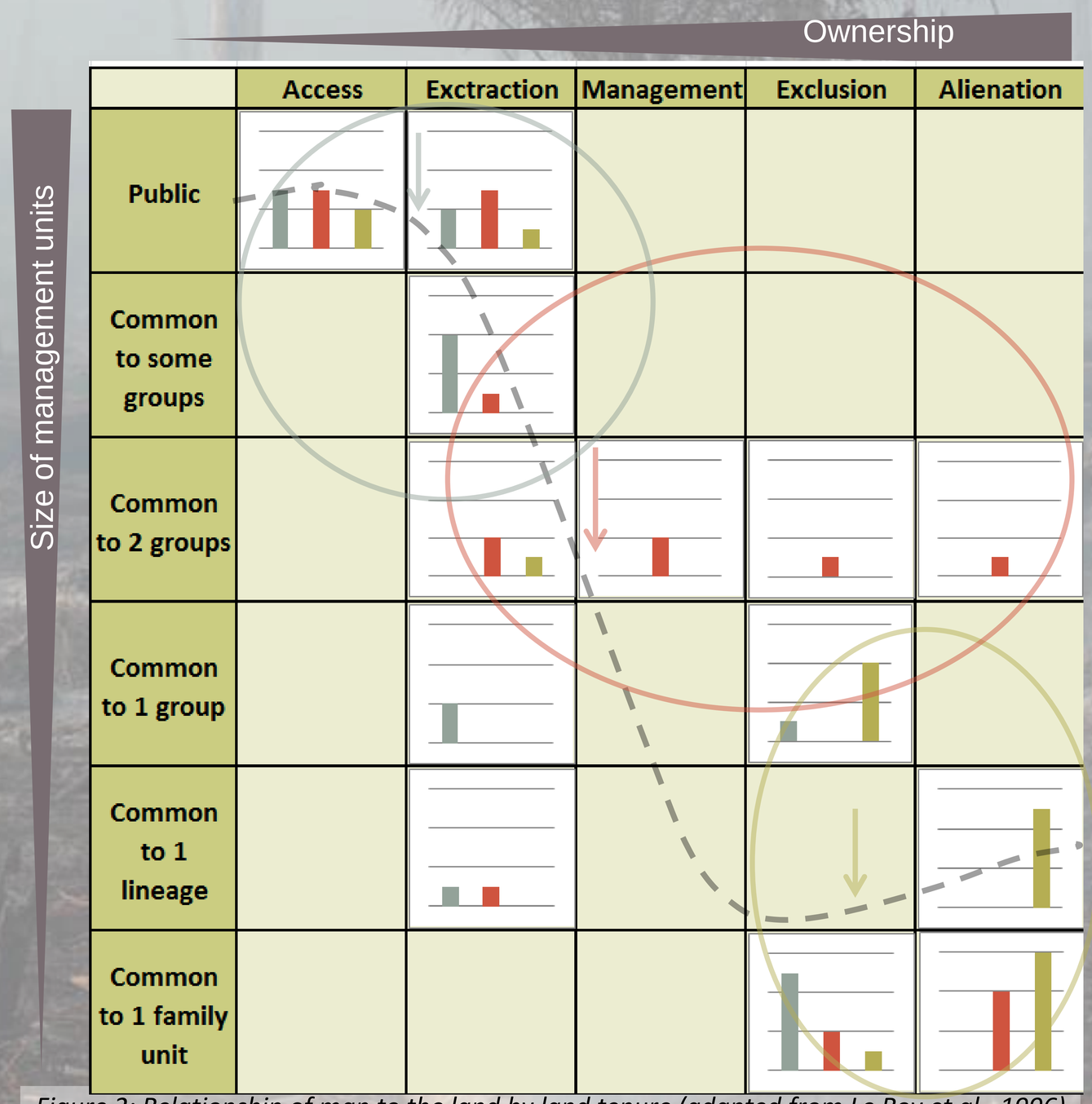


Figure 2: Relationship of man to the land by land tenure (adapted from Le Roy et al., 1996) from 3 study sites located on Mather's deforestation curve (dotted line): grey: little disturbed forest ; red: forest in degradation; yellow: advanced status of deforestation.

RESULTS

Figure 2 is made of a table in which the abscissa represents the level of ownership (from access only to alienation) and the ordinates the management entities (from public to individual). Bar-plots represent the number of objects of land tenure identified in the three study sites corresponding to certain land tenure intensity. The figure shows the translation of the majority of land tenure objects from a loose land control with an undefined management entity exercising low ownership control in the little disturbed forests (grey circle), to a strict land tenure with a precise distribution of land in a society oriented toward the individual rather than group in the deforested area (yellow circle). In the 'degradation in process' site (red circle) the land tenure rules are already strict for some objects but stay loose for other.

DISCUSSION

The level of agricultural expansion leads to a drastic reduction of land available to individual occupancy, leading to hardening of land tenure rules. This evolution ends in private land ownership and its commercialization. We demonstrate that individual land tenure increases along with the deforestation process, and continue along with the reforestation process where this one is a consequence of agricultural plantations on deforested lands.

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