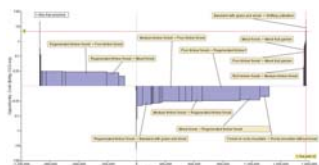


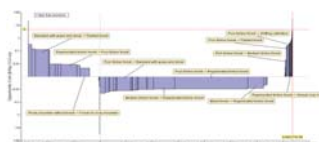


Trees link to ecosystem services?

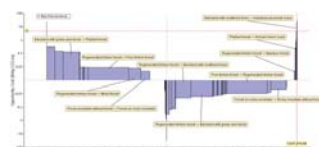
Past land use changes & carbon emissions (1990-2010)



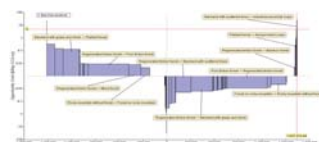
1990-1995



1995- 2000

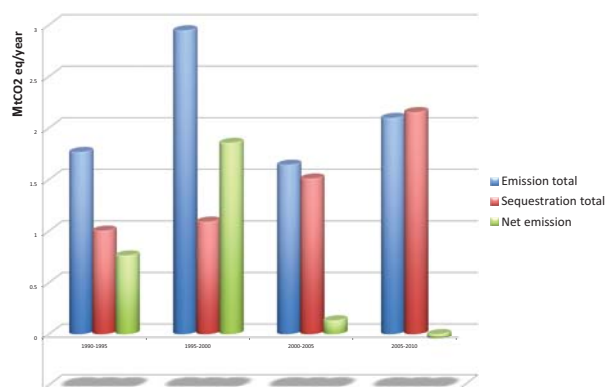


2000-2005



2005-2010

- Net emission increased from 1990-1995 to 1995-2000, and decreased sharply.
- Between 2005 and 2010, the net emission was -56,385 tCO₂eq/year, indicating that the landscape was significantly sequestering carbon during this period.
- However, total emission over 20 years (1990-2010) was still larger than total carbon sequestration, resulting in an average net emission of 539,014 tCO₂eq/year
- Almost all past land use changes were related to forest conversion (99.97% of total emission and 99.96% of total sequestration)

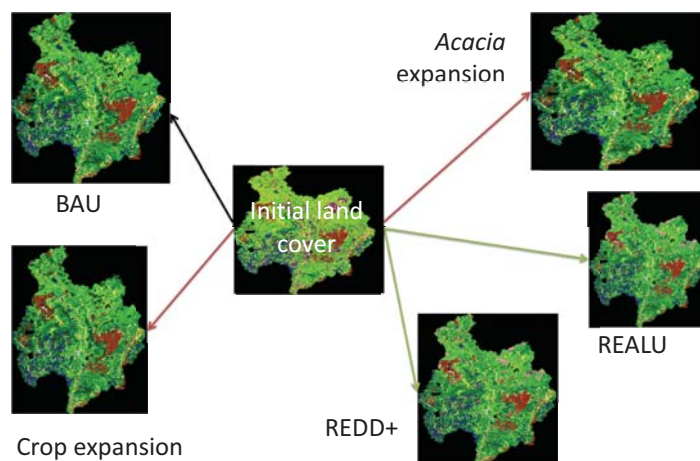


Future land use scenarios & landscape carbon stock (2010-2040)

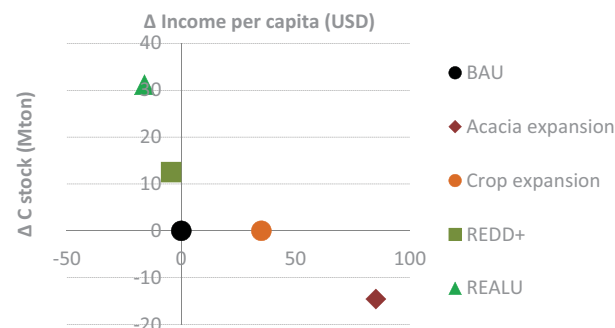
'Forest, Agroforest, Low-value Lands Or Waste?') (FALLOW) model was used to help local land use planners in designing 'greener' land use strategies.

Scenarios

1. Business as Usual (BAU)- free competition of all land uses based on economic profit
2. Acacia forest expansion-- subsidy is given to smallholders for establishing forest plantation
3. Crop expansion--subsidy is given to smallholders' for annual crop production
4. REDD+- bare lands of protection and special-used forest will be planted with forest tree species while illegal logging will be completely stopped
5. REDD ++ or REALU (Reducing emissions from all land uses)-- REDD+ and upland mono-cropping will be replaced by agroforestry systems



Trade-off analysis between scenarios



REALU (REDD+ & agroforestry on shifting cultivation land) is a better scenario in terms of landscape C-stocks, but it will only be feasible if an incentive mechanism is in place to compensate for income loss.