

Avoided Deforestation

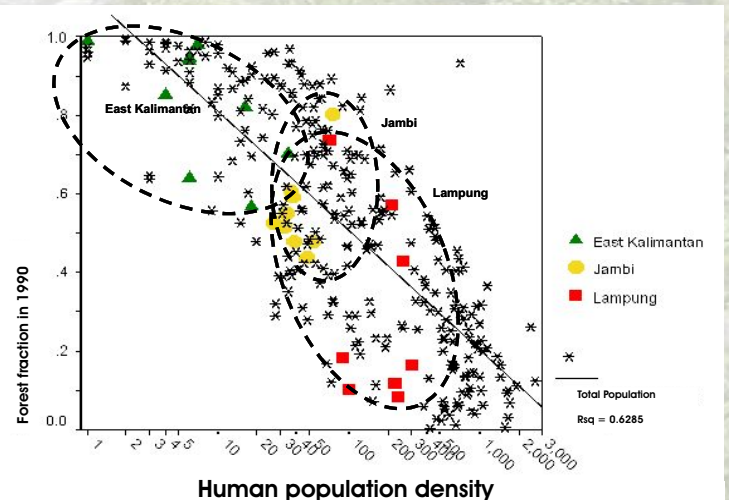
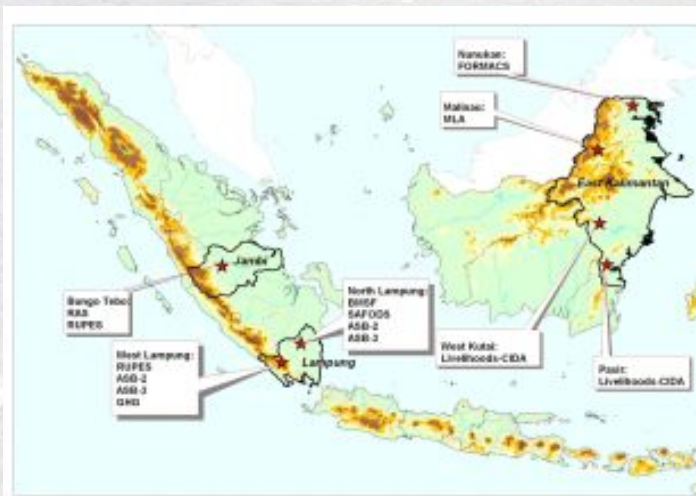
with Sustainable **Benefits** (ADSB) in Indonesia

Benefits, but not everybody will win

Emission reduction will be assessed against either a 'baseline' reference level or an 'emission reduction target' for future sale of emissions reduction credits. It will require a spatially differentiated analysis of what the pattern of emissions has been in the recent past both to strategize on priorities for change at the 'driver' level, and to assess outcomes and impacts for emissions and economic aspects of livelihoods.

Emission reduction will have to be outcome-based and responsive to the local drivers, trends and conditions. Good spatial data will be needed at least at what the IPCC guidelines describe as 'Tier2' system of carbon accounting. Can that be done in Indonesia at affordable costs?

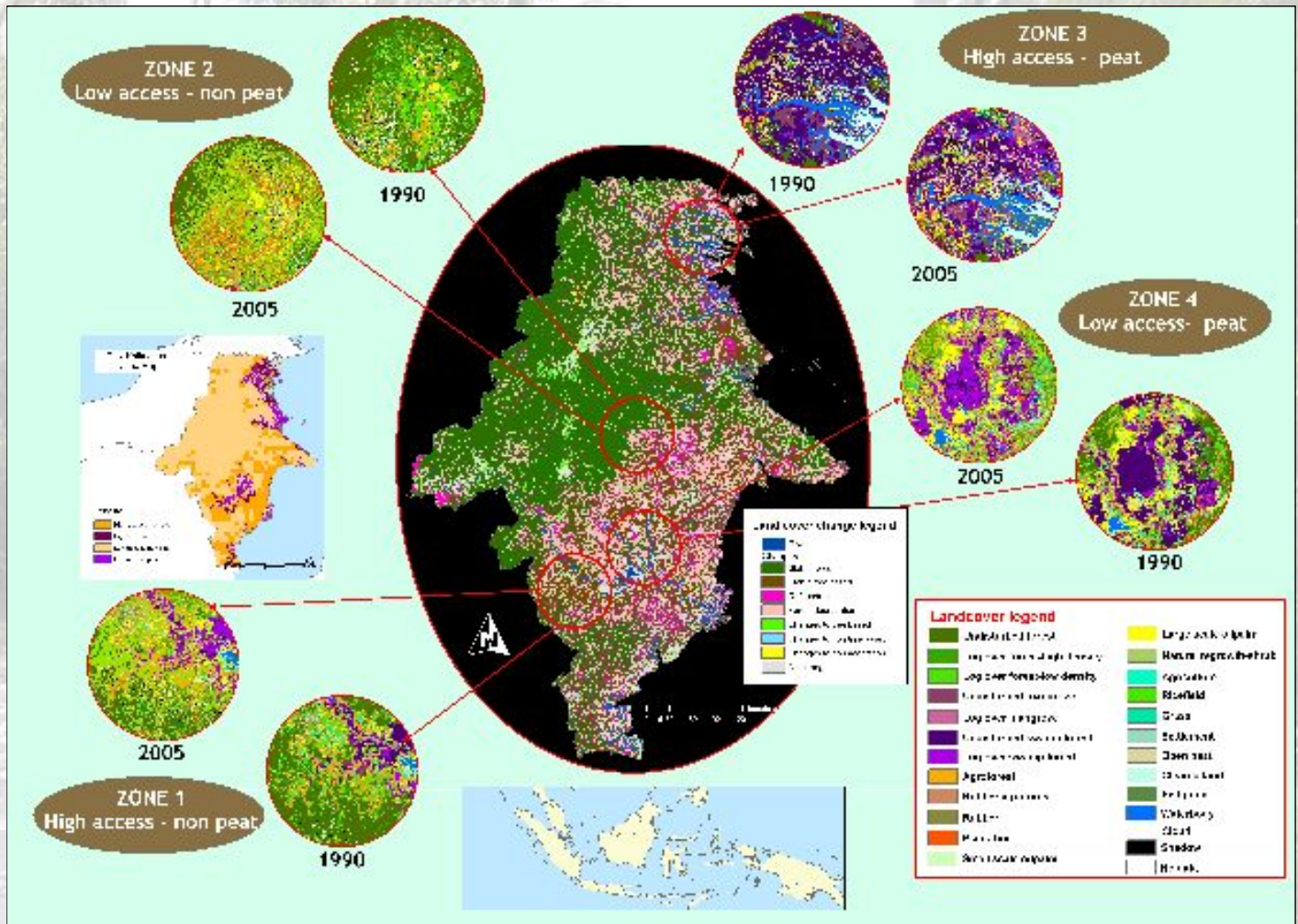
We combined the data that have emerged from more than a decade of research in three provinces of Indonesia: East Kalimantan, Jambi and Lampung (jointly 16.2% of Indonesia). Between these three provinces a wide range of settings with regard to human population density and remaining forest cover (ranging from 14% to 85% in 1990 and from 8% to 79% in 2005) is included. In the absence of intensive data for many other provinces, we can take the current results as a 'first indicator' of what relationships look like for Indonesia as a whole.



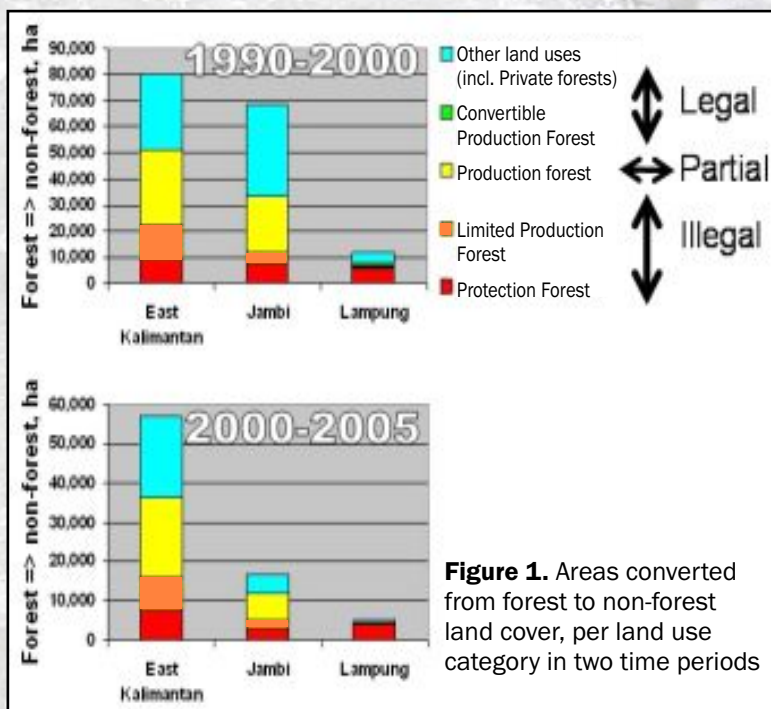
Time series of land cover change were analyzed using a hierarchical legend of land cover types, based on a total of 2164,1267 and 712 ground truthing points for the last decade in the three provinces, respectively. The resulting classification may still carry a misclassification risk of 15% at pixel level, but error in net emissions at aggregate level are likely to be much smaller.

Key points of this brief

- There are large differences between provinces in emission rates and baselines relate to 'accessibility' and 'peat versus mineral soils'.
- Carbon re-stocking takes place under current economic drivers, but is small relative to current losses.
- A large share of recent emissions was 'illegal' and we cannot directly reward the agents involved.
- Eligibility criteria and payment distribution mechanisms have to deal with complex realities and expectations.



The three provinces and two time periods demonstrate considerable variation in local drivers of forest conversion, linked to differences in terrain, accessibility via rivers or roads and in distance to markets and to source areas of migrants. While CO₂ emissions from forests on private lands and community lands outside of the 'kawasan hutan' is legal, the emissions from conservation plus protection forest are definitely not. Even the production forest was supposed to be managed under the sustainable and selective logging system, but in reality these forests have lost much more of their carbon stocks.



The considerable differences in recent emissions per province suggest that REDD mechanisms can have more impact in the peat soils of Jambi followed by the province of East Kalimantan, rather than in Lampung. When we look at potential per capita gains the distribution is even more skewed.

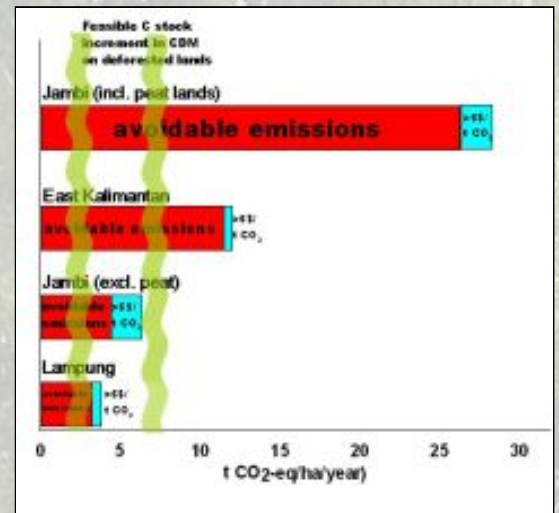
Yet, REDD can bring three types of benefits to all citizens of Indonesia:

- By committing to reducing its own emissions Indonesia can ask for international emission control, reducing negative impacts of climate change
- Some net benefits from marketing C credits; and
- Other environmental services retained in the country: biodiversity and watershed functions and landscape beauty as a basis for (eco)tourism.

When expressed on an average area and time frame, the 'avoidable emissions' that represent less than \$5/t CO₂e are 3- 30 t / (ha/year) (Fig. 2). This is higher than the additional C sequestration (of 1-2 t C/(ha/year) that is feasible with planting the right trees in the right place. Without reducing the avoidable emissions, efforts to sequester additional carbon are like pouring water into the sea.

Our case study has shown that a 'Tier 2+' accounting of carbon emissions across all AFOLU chapters is feasible in Indonesia, with existing data sources plus a limited additional effort.

Figure 2. CO₂ emissions from land cover change associated with less than \$5/ t CO₂e as 'avoidable'



Issues surrounding international incentives for forms of 'avoided deforestation'

Issue	Why was no agreement reached five years ago on avoided deforestation?	Why do we think it can be resolved now in the form of REDD?
International relations -- See ADSB Research Brief Avoided		
Technical aspects -- See ADSB Research Brief Deforestation		
Development Benefits -- See ADSB Research Brief Sustainable		
Relation to long term UNFCCC objectives		
10. Transition to sustainability	Transitions to sustainability will primarily depend on shifts in energy source as fossil fuels are the ultimate cause of high emissions; this was deemed separable from the land-use based emissions.	The 'biofuel' debate has shown that shifts to renewable fuels may lead to net increase in emissions if the links with land-based emissions (incl. REDD) is not accounted for
11. Flooding the market	Large emission reductions might be achieved at low cost, undercutting the efforts to transform industry and energy sector through CDM	Not achieving large emissions that can be achieved at low cost undermines credibility of the rest of the system; a substantive increase in total emission reduction will increase 'demand' and absorb the additional 'supply' of emission reduction credits
12. Scope	The popular association of terrestrial vegetation + soil sources and sinks with the term 'forest' lead to a need for tighter operational definitions of the term and uncertainty on inclusion/ exclusion of intermediate tree density vegetation	Important and avoidable emission sources will still be excluded if current REDD proposals go forward; a broadening of the scope to other chapters in the IPCC national GHG accounting is advisable

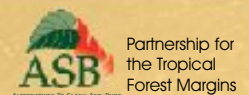
This is the fourth of a series of four research briefs prepared in 2007 in the context of UNFCCC COP-13 (Bali) on:

- A**voiding or reducing emissions at the tropical forest margins: urgent, cost-effective but not easy
 - D**eforestation: will agroforests fall through the cracks?
 - S**ustainable, efficient and fair: can REDD be all three?
 - B**enefits, but not everybody will win
- In Indonesia**

Further information on the ASB Partnership for the Tropical Forest margins can be found at: www.asb.cgiar.org ; see also www.worldagroforestrycentre.org and www.cifor.org
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How this document was prepared

This document combines analyses by ASB-Indonesia of land use change in three provinces of Indonesia with an 'issue paper' prepared for the Indonesia Forest Climate Alliance (IFCA) by ICRAF & CIFOR scientists.



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