

# Tigers, Orang Utans, Rubber Gardens and Conservation in Batang Toru, North Sumatra

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## BIODIVERSITY



Adult male orang utan in agroforest Sibulanbulan – 27-04-2006 (© CI)

One of the last 7500 free-living Sumatran orang utan



Tiger near the Aek Latong road 26-11-2006 Endri Martini (© ICRAF)

**Syrax** (the source of benzoin or kemenyang) is common in secondary regrowth – it can be tapped but in Si Bulan Bulan the farmers prefer other activities as the price is low

**Gaharu** (eaglewood) – source of valuable incense: new technology for controlled production can be introduced

### KEBUN LINDUNG:

Interface of introduced trees (rubber, cacao, coffee) and local forest resources (sugar palm, salak palm, durian, eag-wood, *syrax*, a.o.) in various stages of domestication



## BACKGROUND

- Batang Toru landscape has had a long history of human use with a gradient of land use intensity that ranged from ricefields and homegardens, via agroforests (kebun) of various types to forest where the intensity of use decreases with distance from the settlement
- This village-forest gradient has so far been compatible with conservation of globally important biodiversity, including orang utan and tiger that have a specific protection status
- Customary rules of ownership of the kebuns specify the local rights to use, plant develop and harvest forest products in various stages of domestication, including kemenyang, durian and gaharu.

## LIVELIHOODS



Rubber agroforest with internal regeneration and a mix of forest species that is 'tolerated' or 'managed' for other products

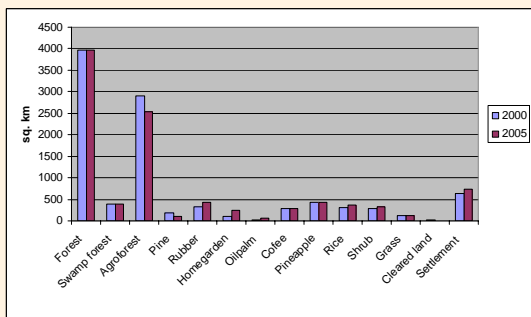
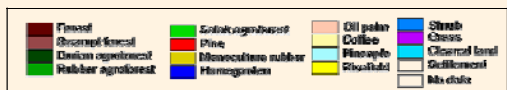
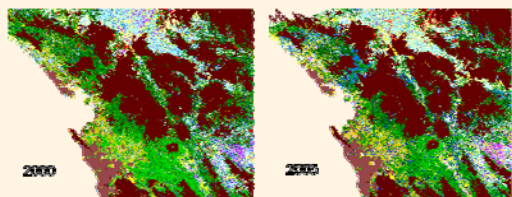
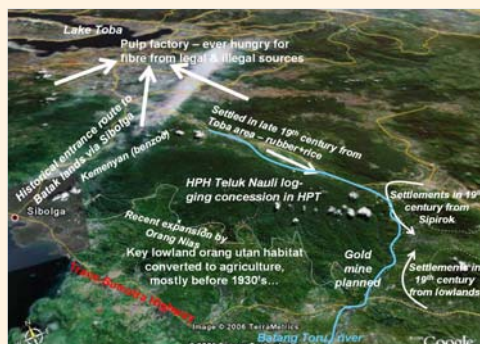


Main concern of the farmer we interview: How can he kill the timber trees in his plot, because the new 'illegal log-ging' rules will bring him into trouble if he harvests the timber; so he better takes them out and uses the space for more rubber



Sugar palm – Arenga  
Bleeding the flower stalks of mature palms yields a sugary liquid, that is transported in bamboo shafts to a local processing unit, where the sugar crystallizes after boiling

## Create new protection area?



### Need for increased protection status of the Batang Toru area

- Although forest cover is stable and habitat has so far been protected by the rough terrain, encroachment, fragmentation by new roads, logging and mining activities remain as threats;
- Beyond habitat loss, hunting is a concern.
- The area is a key connection point in the North Sumatra ecological corridor

### Enhancing the protection status

- Increasing awareness of protection status of orang utan and other endangered species + patrols to support law enforcement
- Realistic, voluntary, conditional and pro-poor agreements ('RUPES') with local community to achieve habitat protection surrounding the core forest area

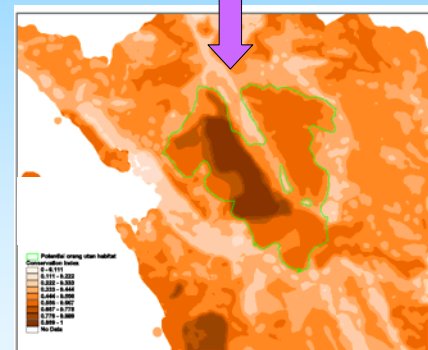
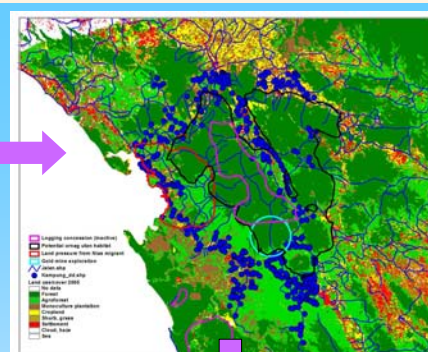
Spatial planning to reduce threats to existing habitat by enhancing protection status (TaHuRa, National Park, Hutan lindung, Cagar alam) of core forest area + re-alignment of roads + land use restrictions on surrounding lands

### Conservation & Livelihoods Index (C&L I)

C&L I = Ecological index + External environmental threat – Livelihoods index – External economic drivers

- Ecological index is valued based on potential orang utan habitat (delineated by Conservation International (CI) combined with present land use/cove map.
- External environmental threats are identified as logging concession, Nias migrants inducing land conversion, gold mine (planned), tenurial systems (results of scoping study and also zoning map)
- Livelihoods index is formulated as a combination of valuation of current land cover/use and market access (derived from road access)
- External economic driver considered here is the population density in the surrounding area (at subdistrict level)

C&L I is calculated by overlaying different layer above and the final result is smoothed over 0.5 km radius.



The C&L I maps resulted above shows dark areas of high conservation value for orangutan and low livelihoods opportunity loss under the present socio-economics and biophysical landscape.  
Such analysis could be useful in two accounts :  
-The result can be used to produce zonation for the protection area to get maximum trade-off between conservation and livelihoods.  
- The process in deciding what layers to use, the weighting scheme and the trade off structure to apply under different scenarios can provide a useful tool for multistakeholder discussion.

### For more information

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