

Indonesian – Swedish

Deforestation Experiences and

Forest Landscape Restoration

Scoping Workshop Jakarta 7 – 8 May 2013

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Deforestation and Restoration / afforestation

"Objective observations" on processes, societal drivers and innovations.

A bold perspective to start a dialogue – needs to be deepened ahead in our process.

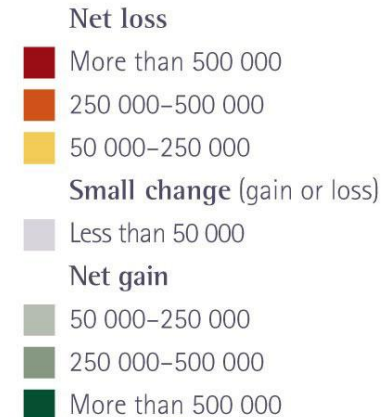
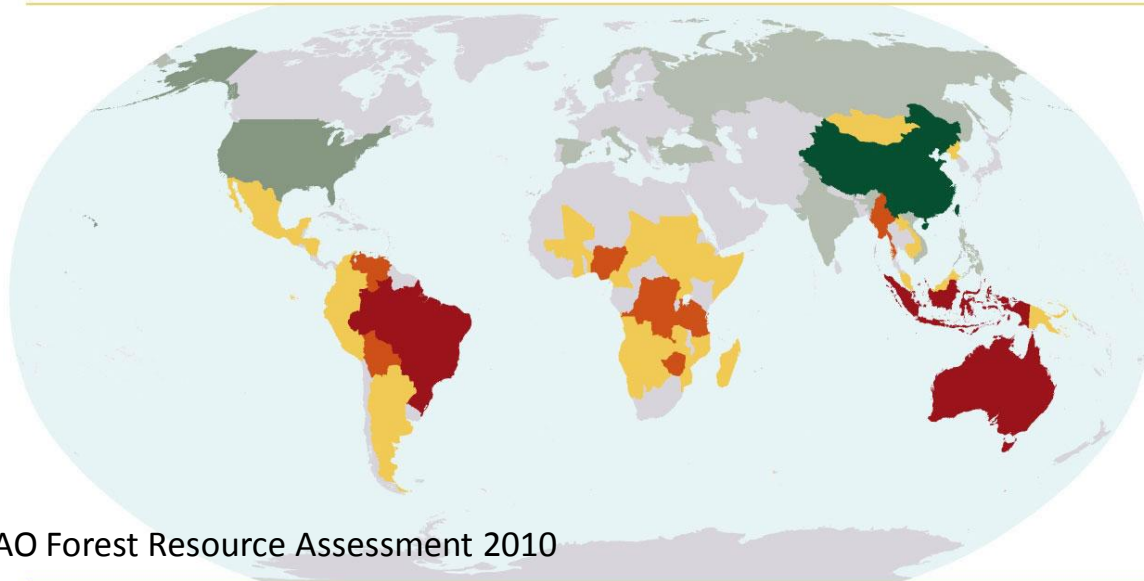
The development in Sweden is not transferable, not a homogenous process and not perfect...

But discussing and sharing experiences and understanding of processes is the base for innovation.

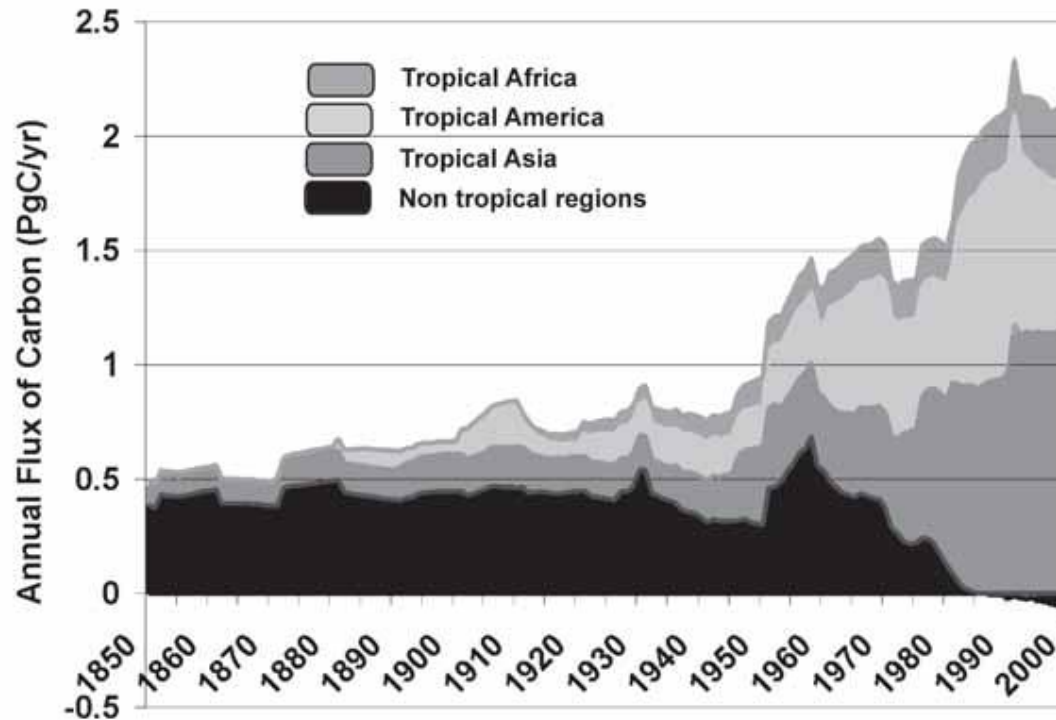
Today it is the forest landscapes in the tropical and near-tropical zone that is changing in peoples strive for development



Net change in forest area by country, 2005–2010 (ha/year)



Carbon emissions by forest clearing by regions



Deforestation happens now in the south and with much higher pace than the case was in the north

Global Agreements Call for Restoration

UN Millennium Development Goals

- Eradicate extreme poverty & hunger, ensure environmental sustainability

REDD-Plus

- Slow, halt, and reverse forest cover and carbon loss

Convention on Biological Diversity

- Restore 15 percent of degraded ecosystems by 2020



Defining “degraded” and “restoration”

(SLU Global workshop October 2012)

- Restoration and development of **ecosystem primary productivity** as can be interpreted by biomass production and by productivity of soils
- Restoration and development of capability of rural landscapes to **sustain or improve livelihoods**, including aspects of tenure, governance and policy
- 1 and 2 to include **“sustainable intensification”** in a broad sense including **socioeconomic development** as well as **delivery of ecosystem services** like water, NTFP’s, biodiversity, carbon storage etc. and **adaptation to climate change**.

*in relation to points 1 – 3 above one can see a **degraded landscape** as having lost potential for delivery of services for points 1 – 3 by unsustainable land use.*

Different Landscapes – Different Approaches

Each landscape calls for its own kind of restoration

Protected
Primary
Forest

Wide-scale restoration

Degraded Primary Forest

Plantations

Secondary forest

Secondary forest

Degraded
Forest Lands

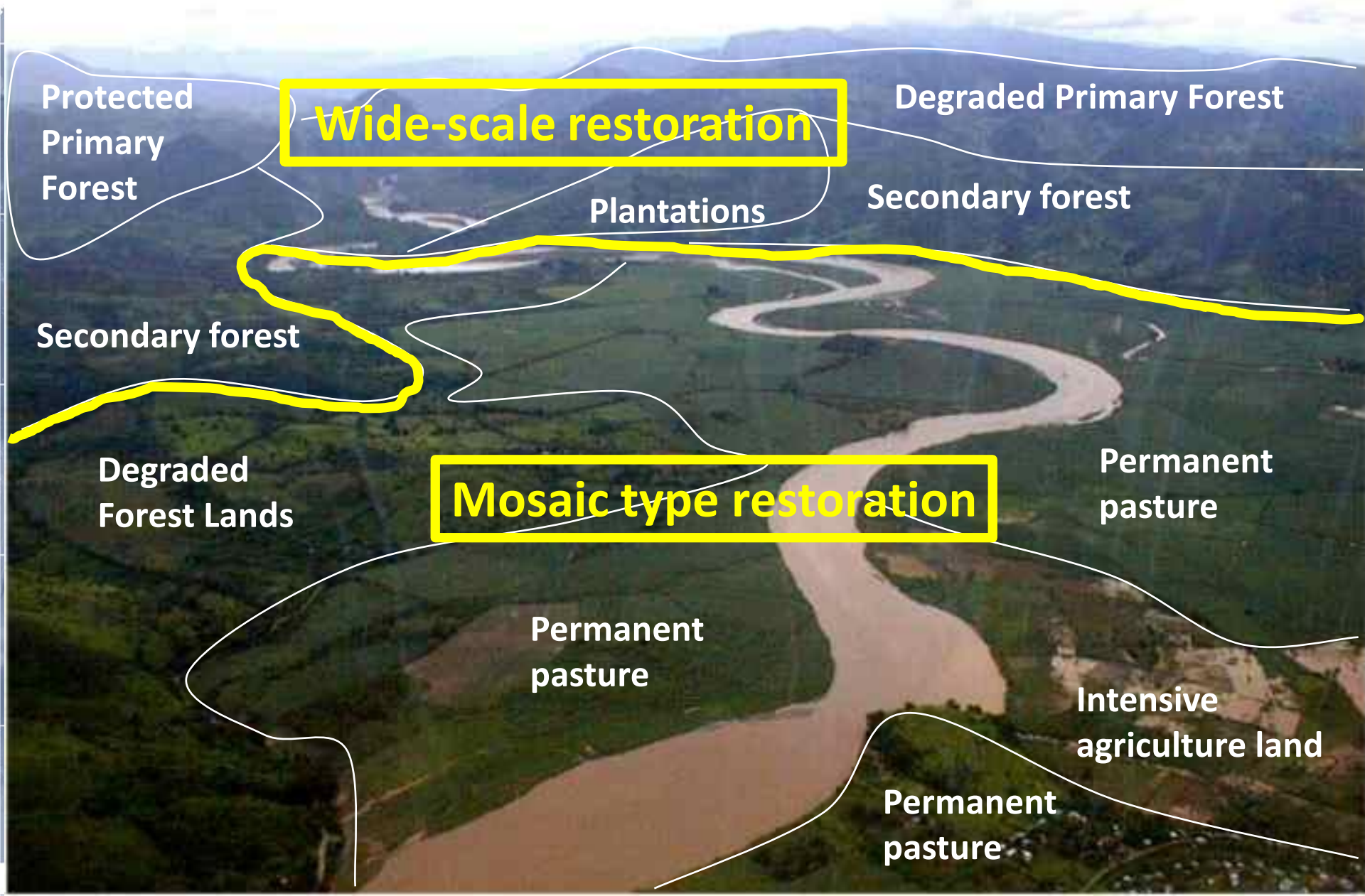
Mosaic type restoration

Permanent
pasture

Permanent
pasture

Intensive
agriculture land

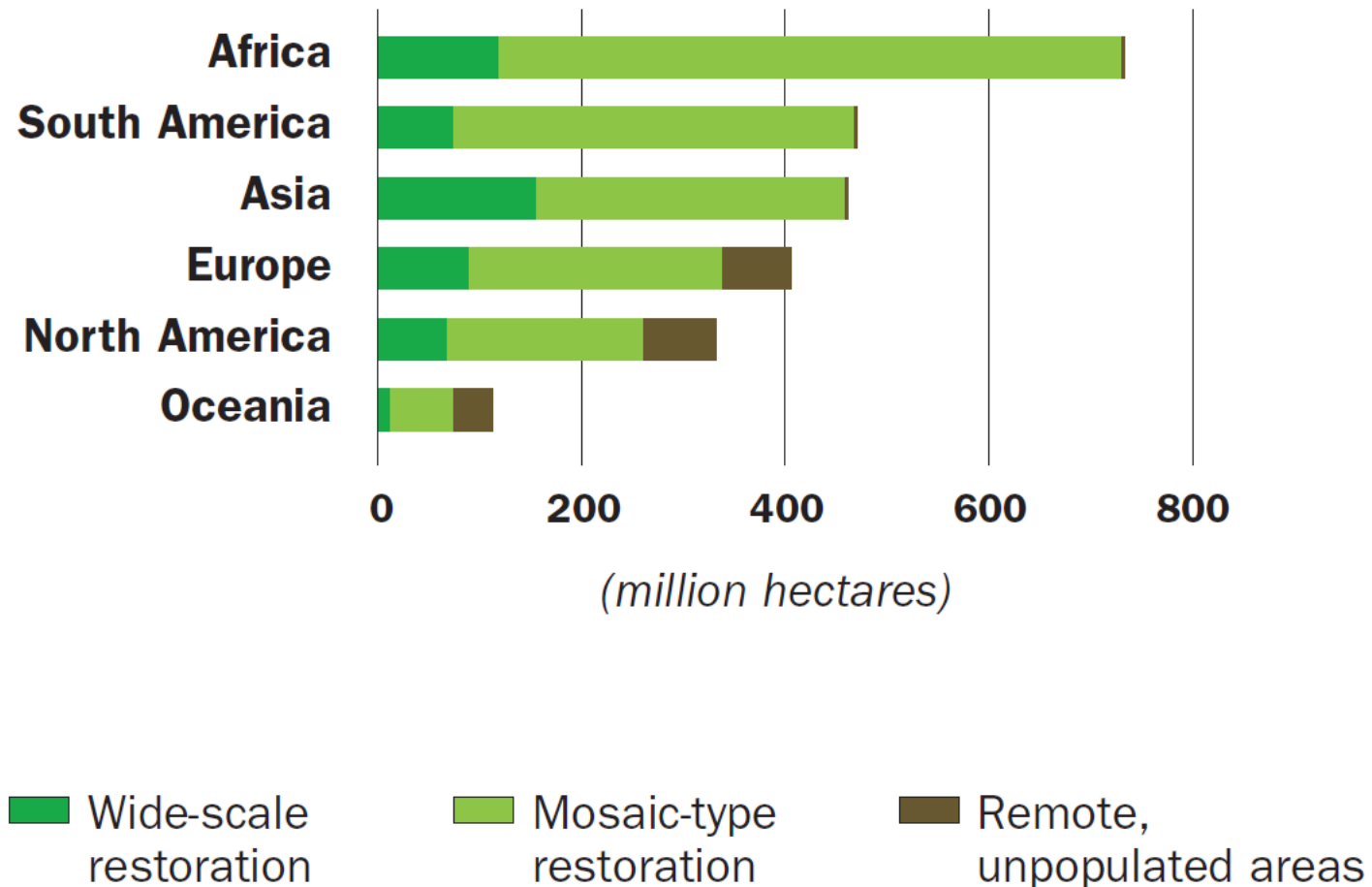
Permanent
pasture



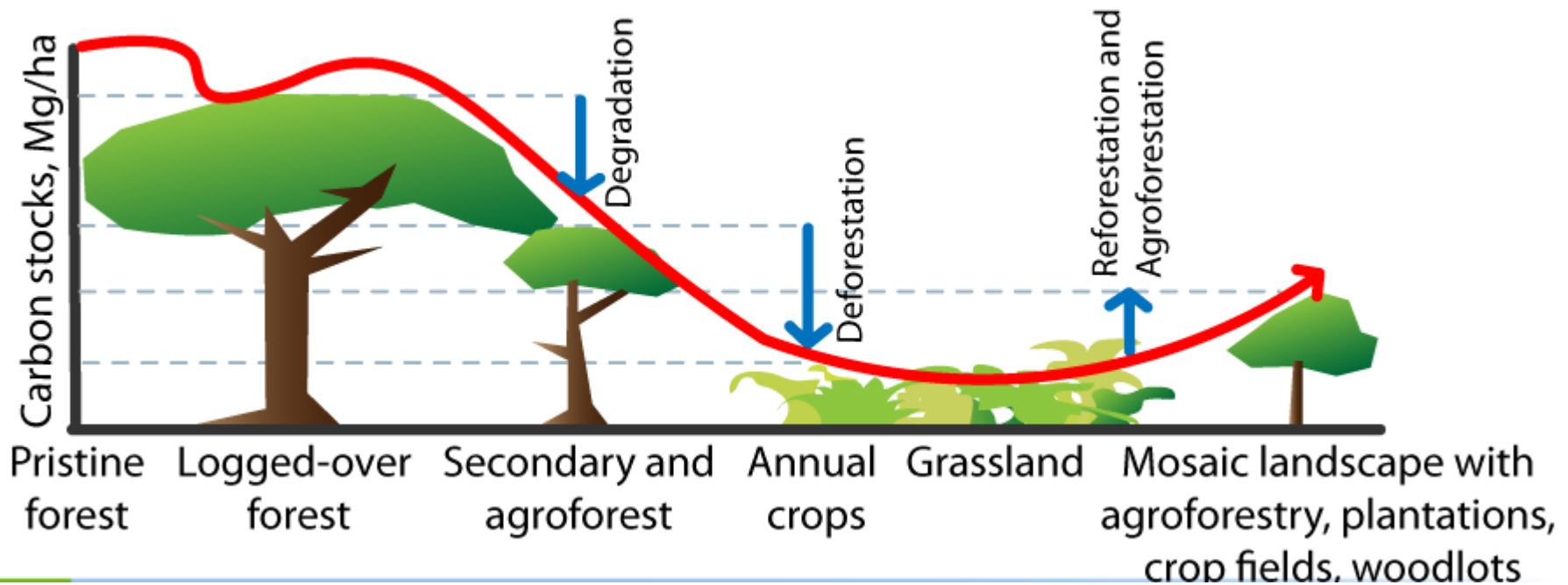
There are Opportunities Everywhere

The total opportunity area is 2 billion hectares

(World Resources Institute)



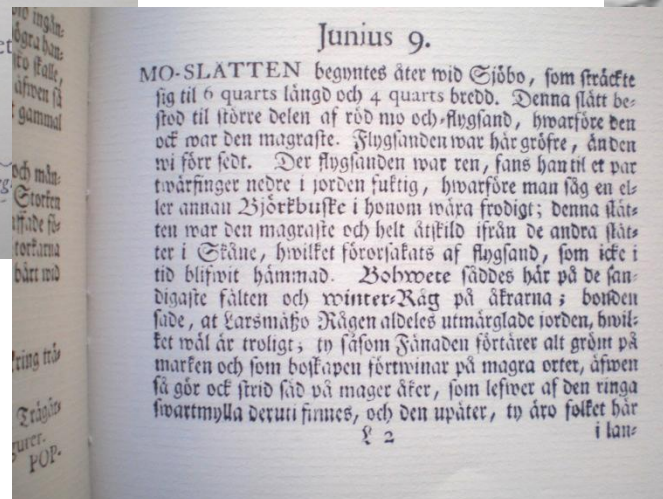
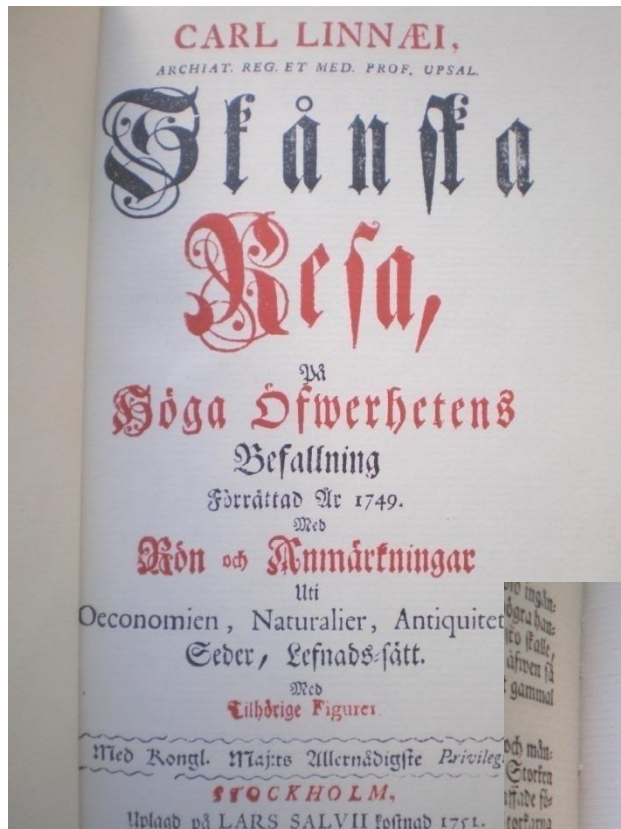
The forest transition curve



Most of **Sweden** have seen forest transition as a slow process over long time (South, Central and North costal)

- Most fertile land turned into mosaics 2500 – 400 yrs ago
- Some regions deforested with increasing population (shifting cult & grazing)
- Increasing forests again last 100 yrs with urbanisation and forest industry

Also Sweden has seen long periods of
deforestation and degrading soils



Report by
Carl von Linné 1749

Forest cover in province of Halland 1650 – 1920 (Carl Malmström, 1939)

C:a 1650

C:a 1700

C:a 1850

C:a 1920



grazing



broadleafed forest



coniferous forest

& agriculture

Various drivers for forest restoration in Sweden:

Industrialisation / urbanisation (leaving abandoned land)

1 milj Swedish immigrants to USA

Abolishing of grazing in forest land

Lack of timber in logged over forests combined with increasing demand i Europe

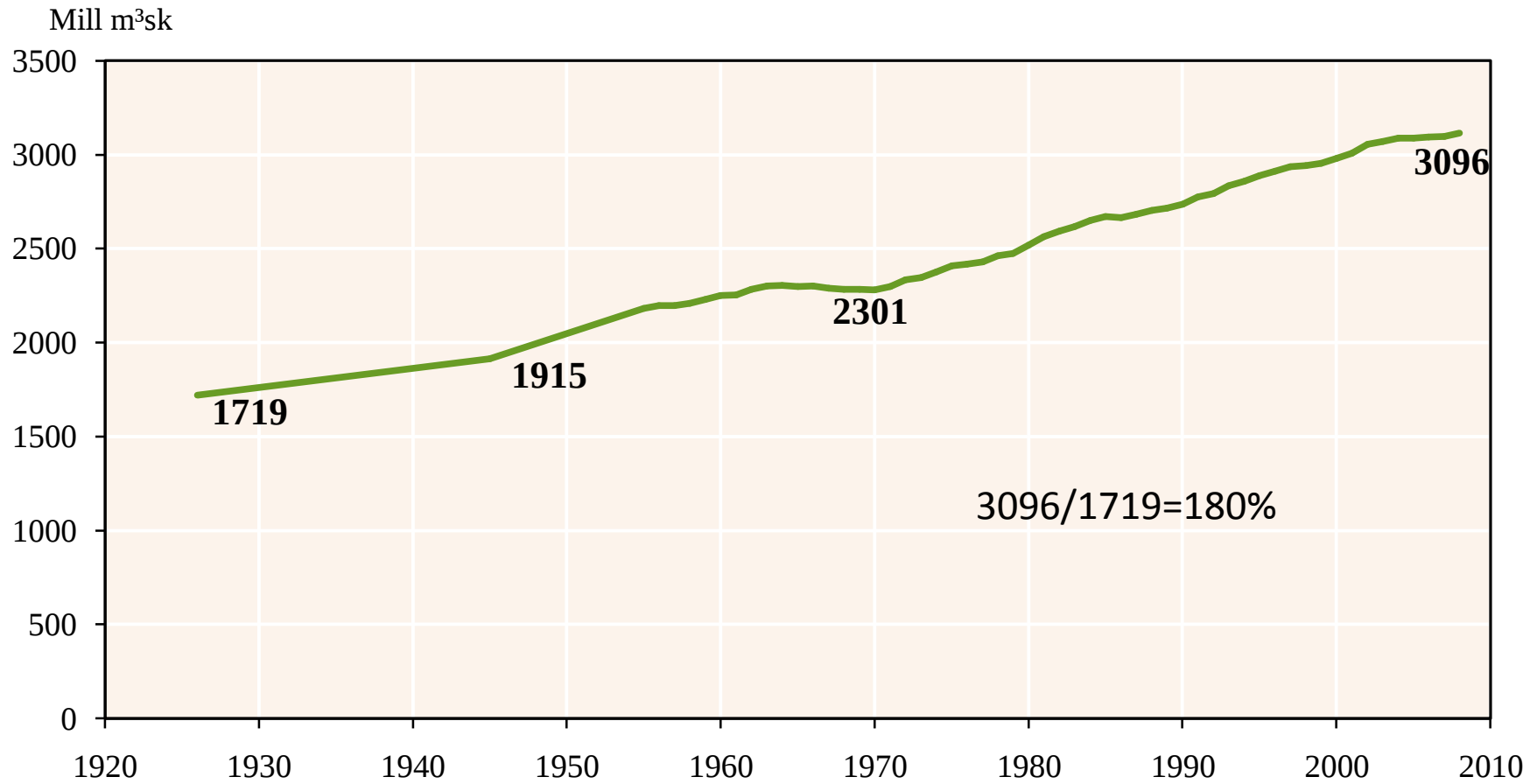
National forest inventory since 1923,

Large volume of governmental sponsored research and support for growing industry base for forest legislation

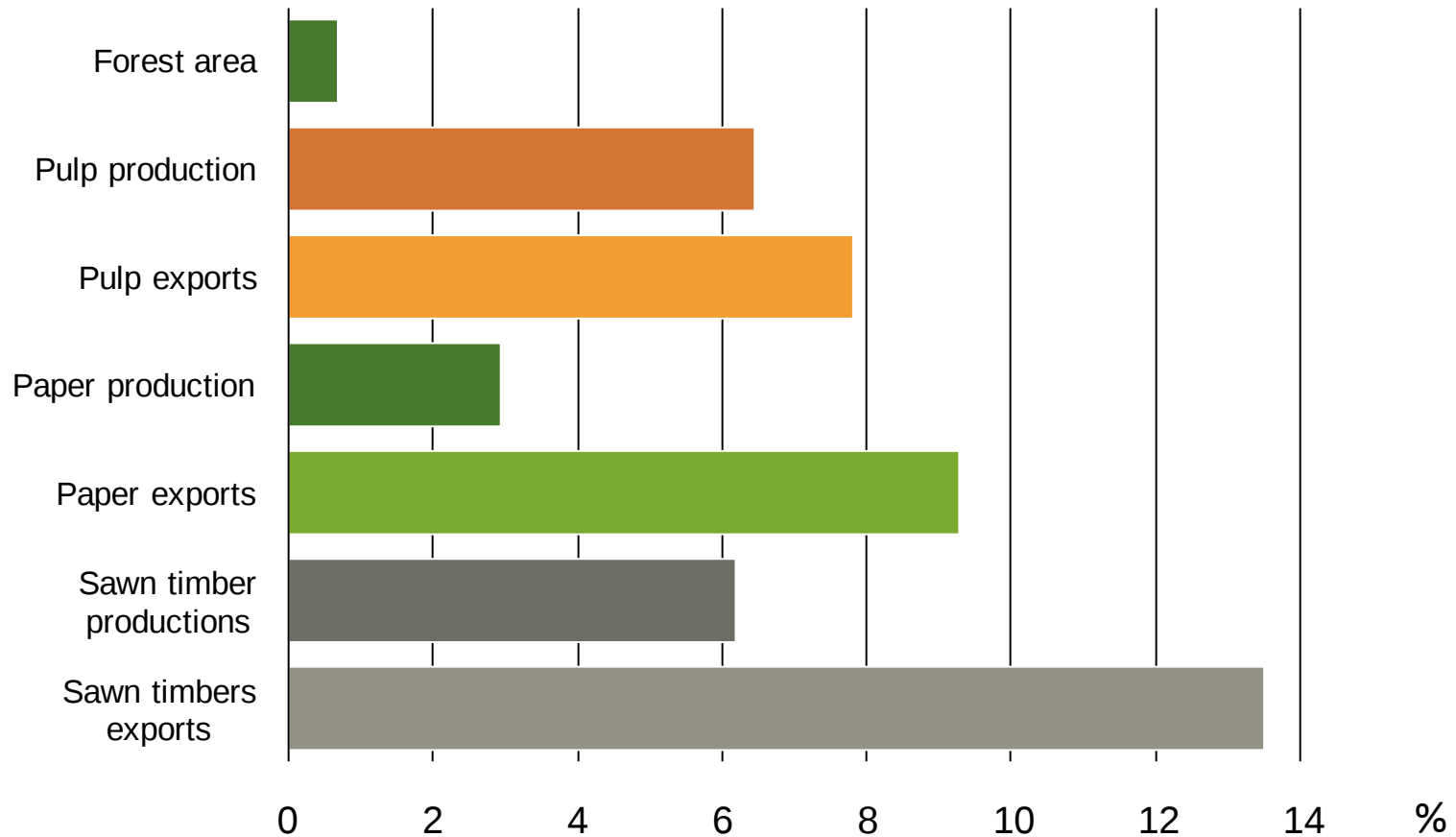
Cooperative cooperation between farmer forest owners



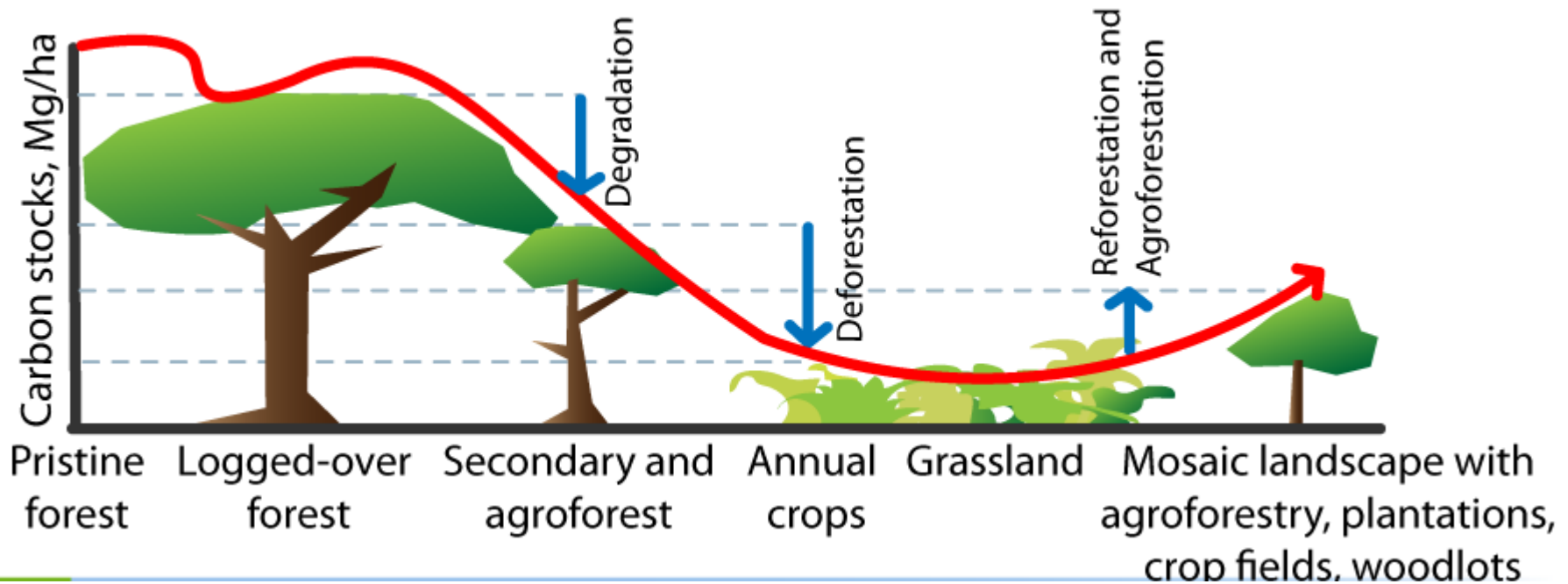
Total growing stock, National Forest Inventory



Swedens share of...:



The forest transition curve



Indonesia is a vast country and different regions represent different stages in the forest transition curve!

- Papua is pristine / logged over
- Kalimantan and Sumatra have large tracts of degraded forests and plantations
- Java is a mosaic landscape with long history

Current drivers of deforestation and forest degradation in Indonesia (Papua, Kalimantan, Sumatra)

- Conversion to other land-use

- Combinations of:

 - Commercial logging

 - Shortening fallow shifting cultivation

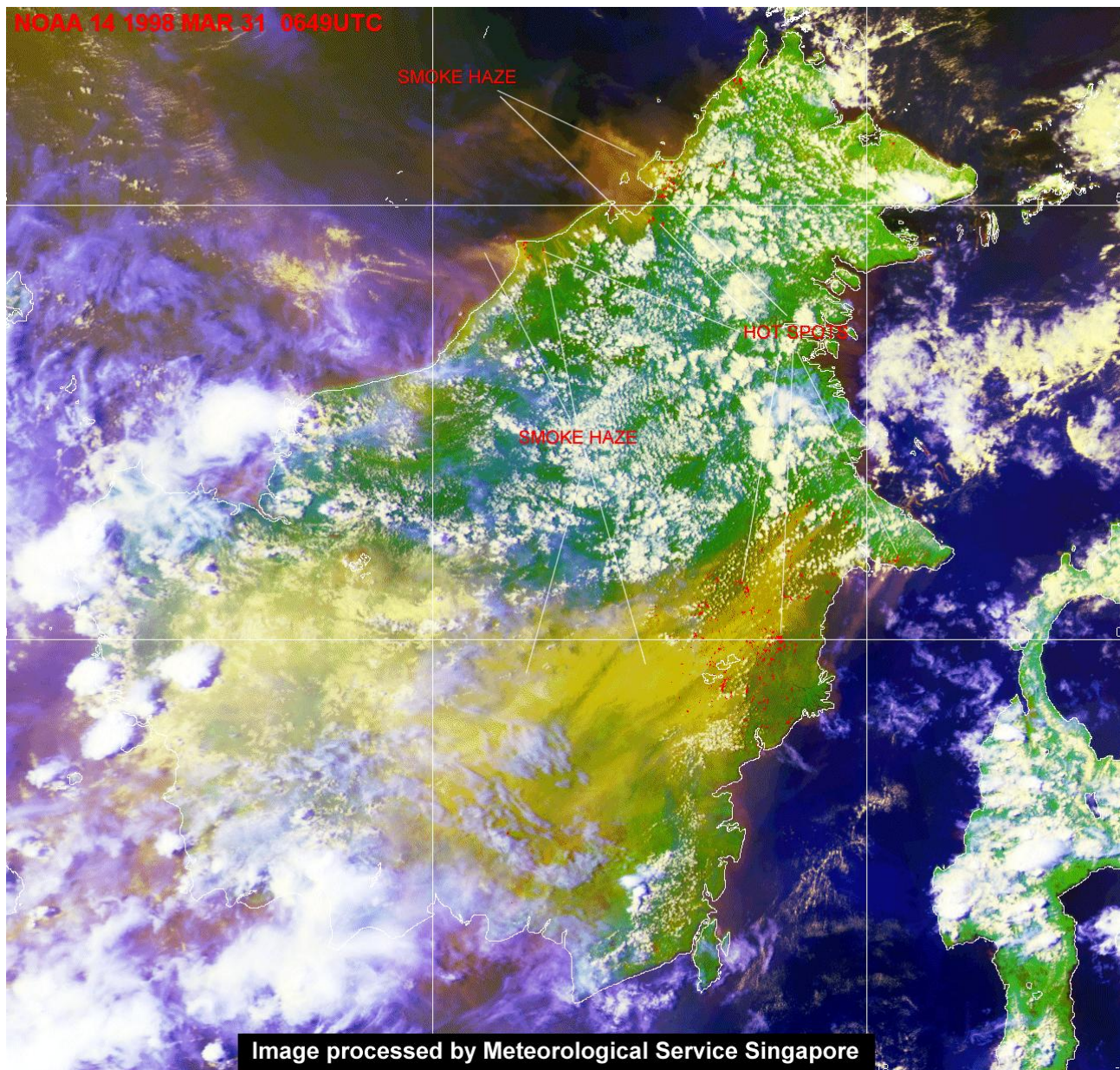
 - Repeated fires (accidental and/or land clearing)

It may be the climate is changing, but more significantly the ecosystems (forests) have changed.



A more typical humid tropical forest landscapes today is a mosaic of few primary forests and many different stages of secondary vegetation and agriculture with different degree of soil and vegetation "degradation".

NOAA 14 1998 MAR 31 0649UTC



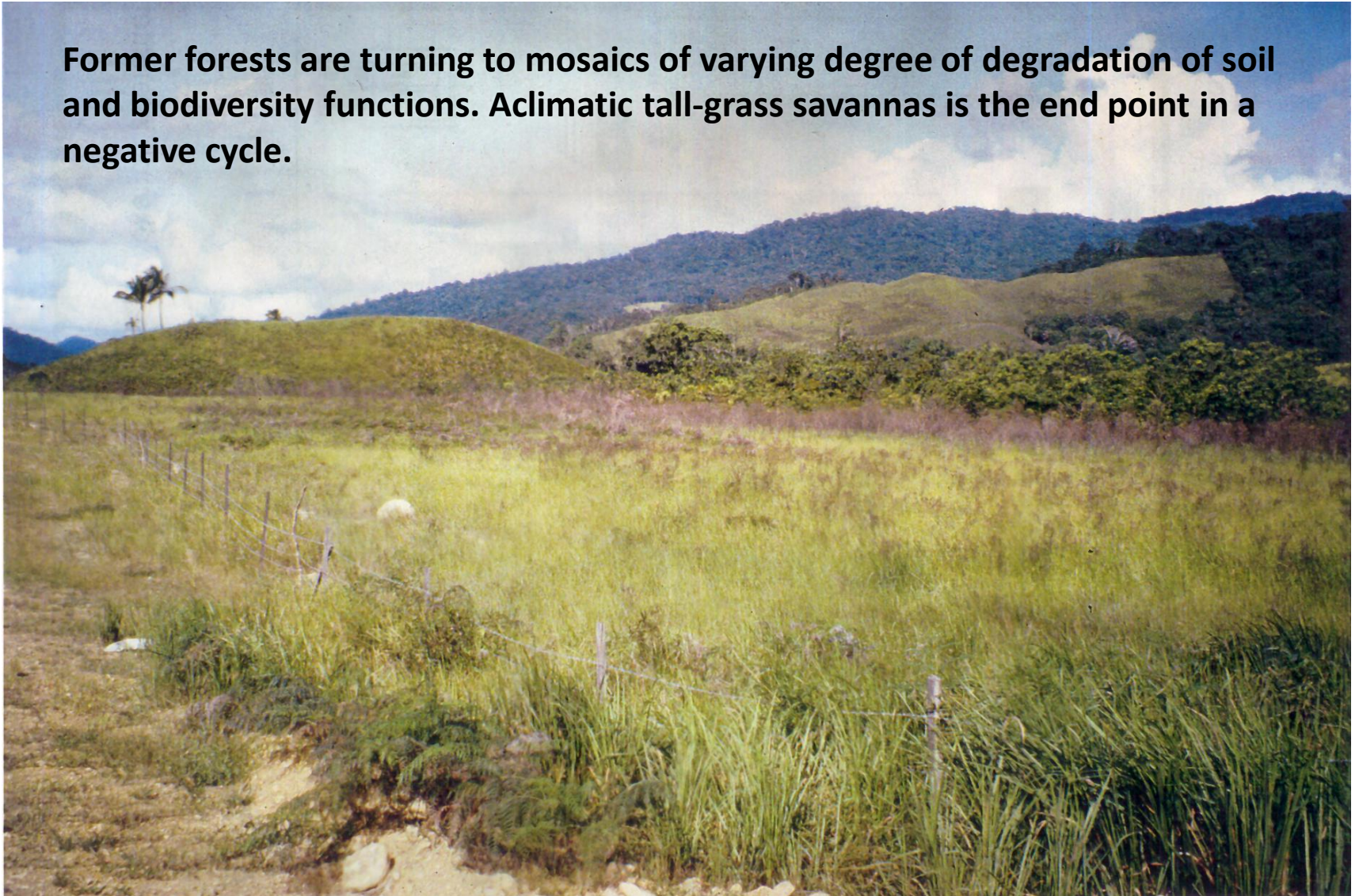
El Niño events may reduce annual rainfall to less than 50 % in several regions .
Make secondary forests burn over vast areas.

What can we learn for prospects of increasing droughts with climate change?

Costs for fire damages in SE Asia
was estimated to between 4.5 – 9
billion USD in 1997/98



Former forests are turning to mosaics of varying degree of degradation of soil and biodiversity functions. Aclimatic tall-grass savannas is the end point in a negative cycle.

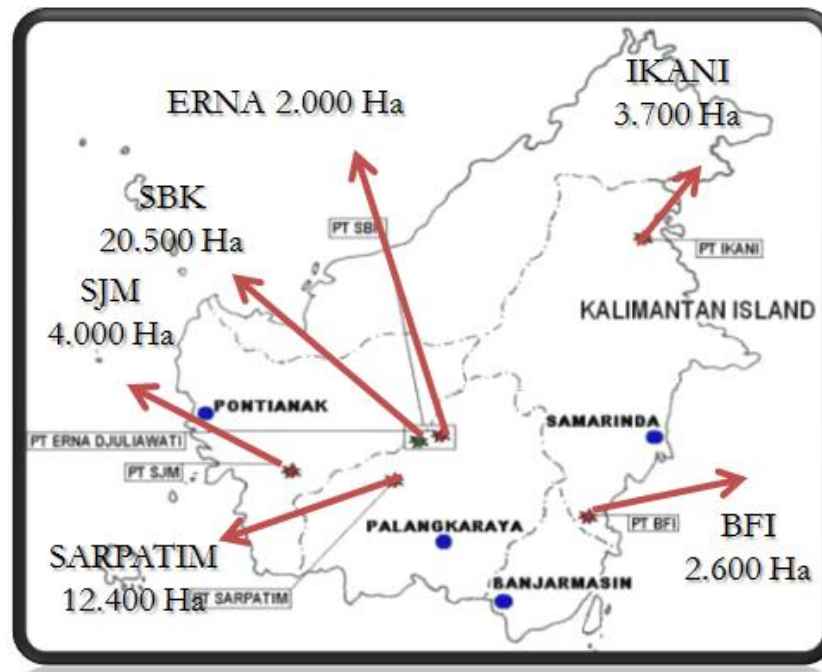


Possible drivers for forest restoration and afforestation in Indonesia?

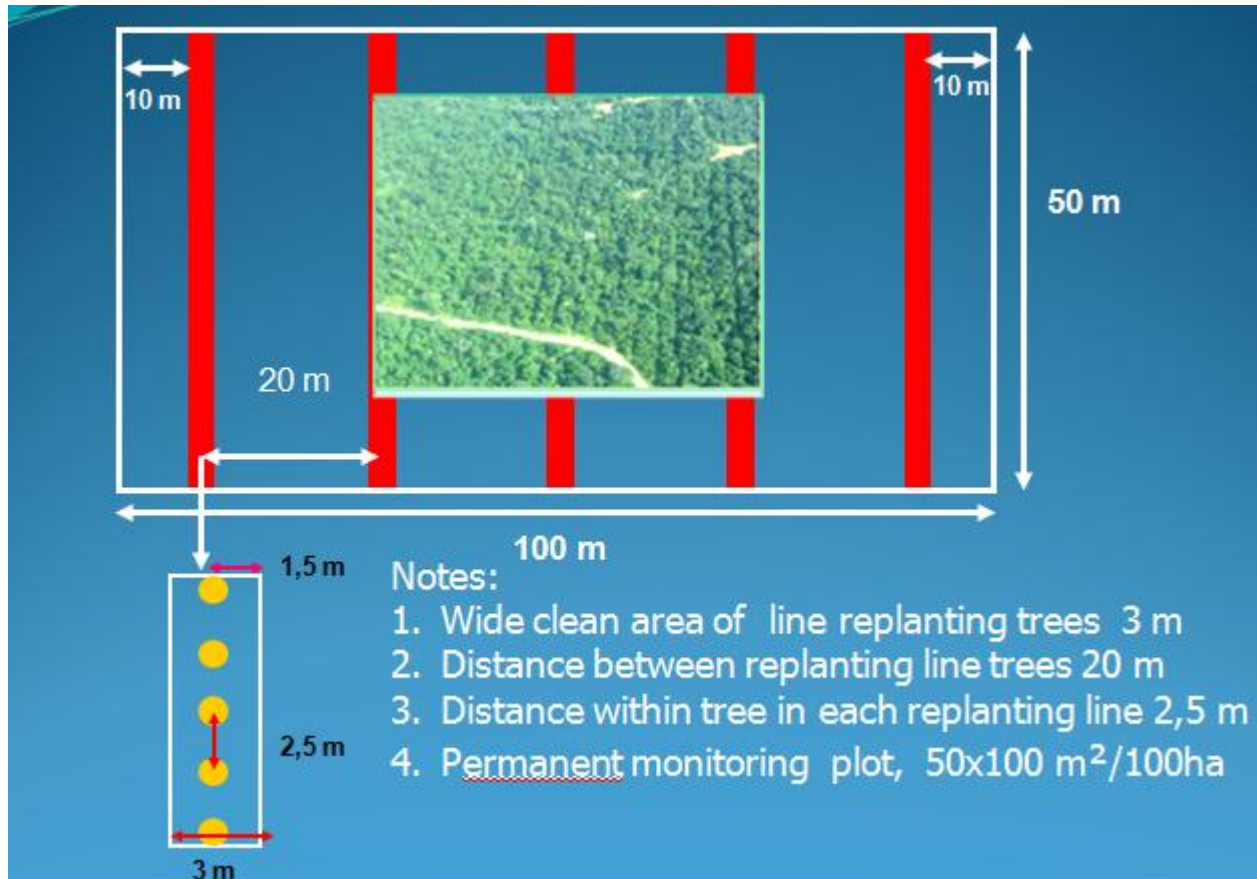
- Lack of timber for furniture industry
- Improving techniques for dipterocarp silviculture
- Market interventions or deregulation to promote investments in sustainable forestry
- Urbanisation of agricultural regions (Java)
- Improving techniques for small scale plantation forestry and agroforestry
- Development of local market and production cooperatives

SILIN, *Silvikultur Intensif* (Intensive Silviculture ie. by combining genetic improvement and environmental manipulation of enrichment planting on logged-over forests using commercially high value selected native timber species)

Example of Indonesian development of dipterocarp silviculture (UGM)
30 – 15 yrs rotations



SILIN is tested at commercial level in various locations and logging forests in Kalimantan, this to ensure that the approach could be adopted commercially



The configuration of SILIN in the field where the strip planting areas of the species target only cover 15% of the total areas so it is actually the productive way to conserve the tropical forests

as about 85% of the area are left intact, non-disturbed and will not be harvested

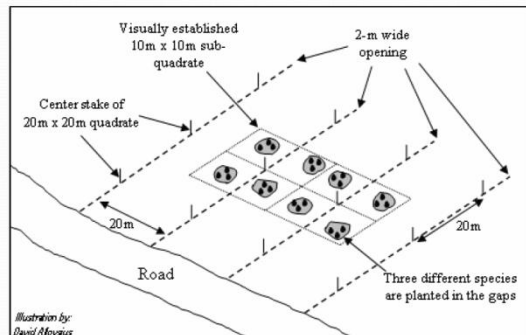
Rainforest restoration

Sabah, Malaysia

- Rainforest degraded by logging & fire
- Improving biodiversity by enrichment planting
- Started in June 1998 – now ~10 000ha planted
- Collaboration: Sabah Foundation – IKEA
- SLU provides technical & research supports
 - Site – species matching, light requirements, effects on biodiversity, method development, etc.

Gap-cluster planting

- Creation of a 2-m-diameter gap inside the 10 m x 10 m imaginary sub-quadrant
- 100 gaps per ha
- 3 seedlings per gap (Phase 1 & 2), 4 seedlings per gap (Phase 3)

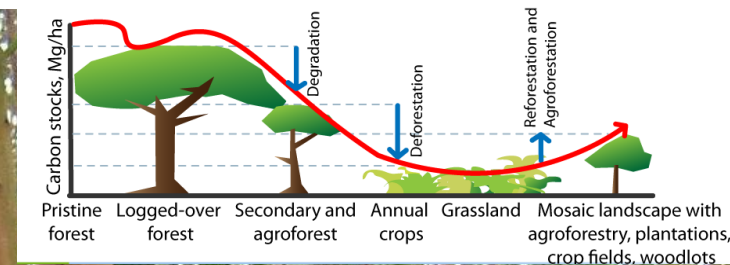


Hardwood plantation and agroforestry for depopulating agricultural areas in Java



When farmers plant trees (experiences Vietnam-Ethiopia):

- Tenure security
- Sustainable market opportunities
- Financial and political stability
- Households with capacity to invest
- Policy that favors investments
- Institutions and organisation in place
- Sufficient infrastructure
- Good examples
- Access to new knowledge and technology



Thank you

Let's discuss processes of change

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