

Illustration: Natural Forest Management through Forest Concessions: A future or utopia?

Aménagement soutenu d'une forêt naturelle tropicale:
Une future – où une utopie?





Seedling of Wenige in Congo forest



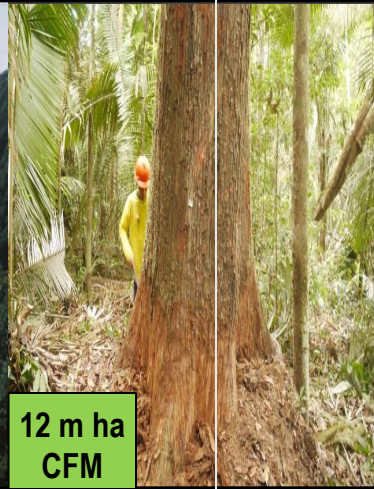
Canopy tree of *Triplochiton scleroxylon*. ©JBlaser

Forest Landscapes Humid Tropics; estimates 2015

420 million ha



160 million ha



650 million ha



280 million ha



Conservation forests:
including protected forests,
non-accessible forests

Production forests:
partly under
concession
arrangements

Accessible forests:
Degraded “primary”,
& Secondary forests

Planted forests,
Agroforests,
Commercial
plantations
Mosaic forests

Intact forest landscapes

Degraded/modified forest landscapes

Outlook Forest Landscapes Humid Tropics

estimates 2030

Conserving existing
primary forests:
approximately
450 million hectares

SFM of natural
production forests:
approximately
50-80 million
hectares

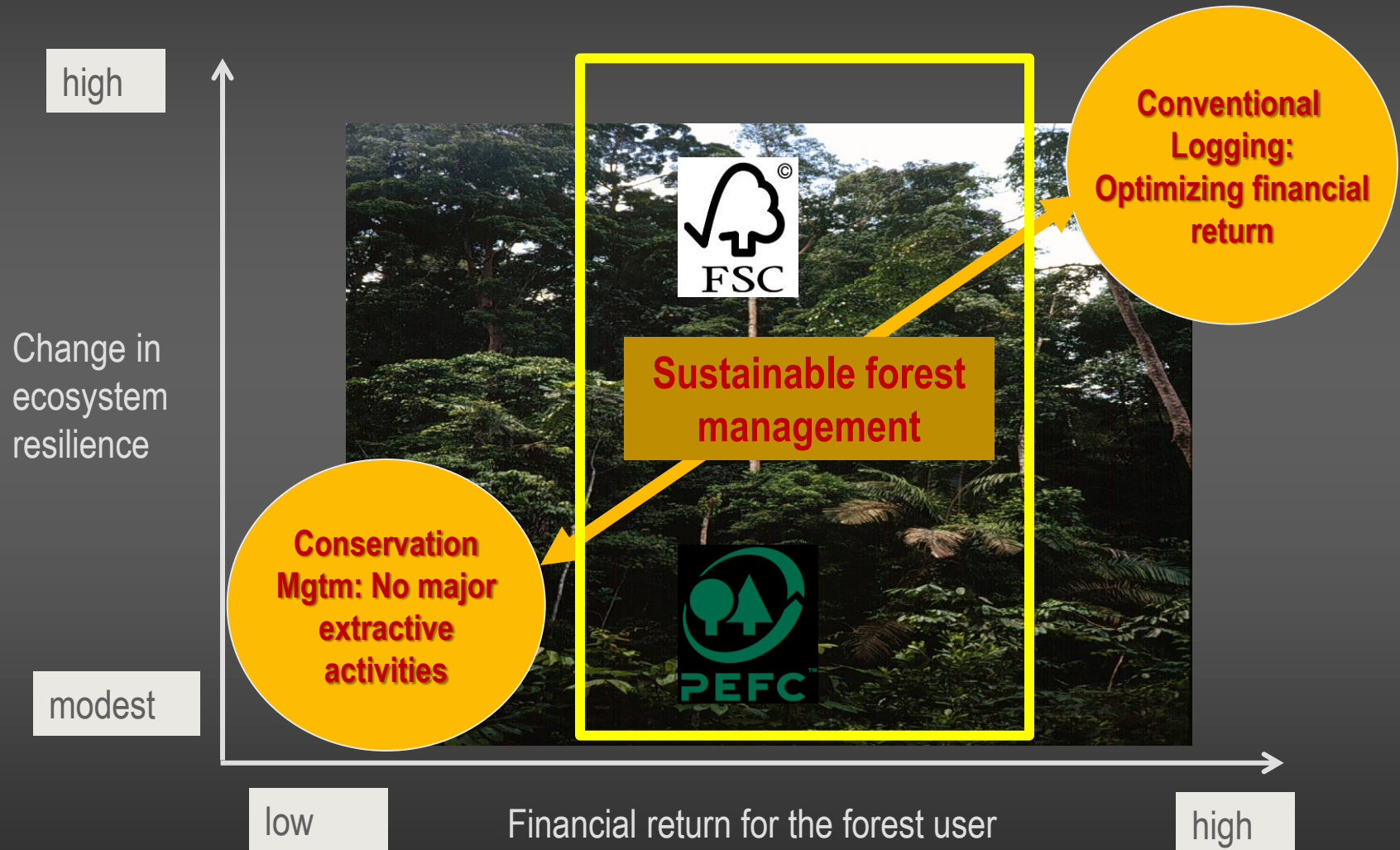


Restoring degraded
& secondary forests:
approximately
650 million hectares

Planting forests incl.
afforestation &
agroforests:
approximately
350 million hectares

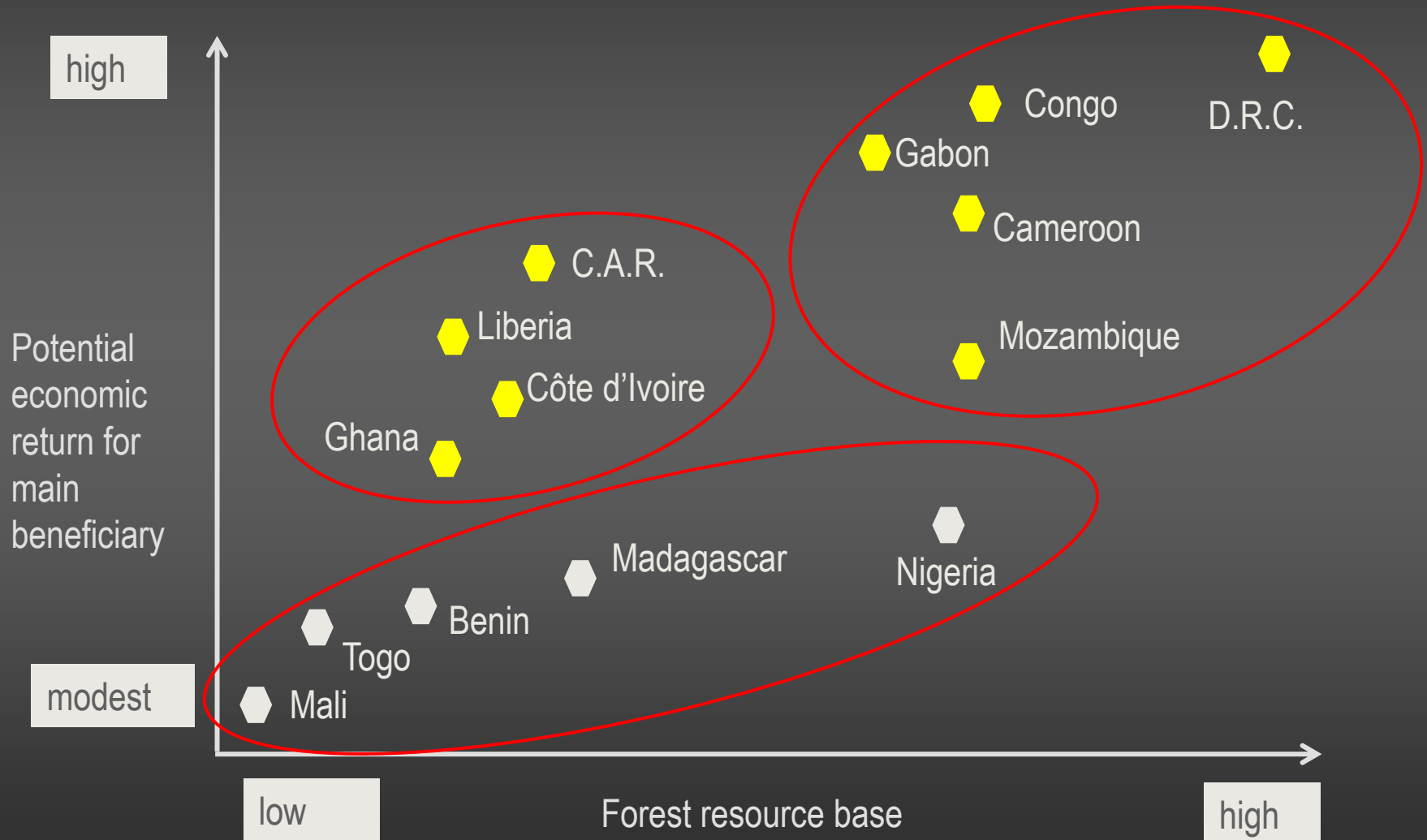


Sustainable (certified) forest management: more than a perception



Position of natural forest management in African ITTO member countries (focus: timber, carbon)

◻ Without forest concession arrangements; ◼ with forest concession arrangements



Forest Management of natural tropical forests

“away from logging”, towards management

With only few exceptions:

- Knowledge not used;
- Forest growth dynamics not included in the management schemes

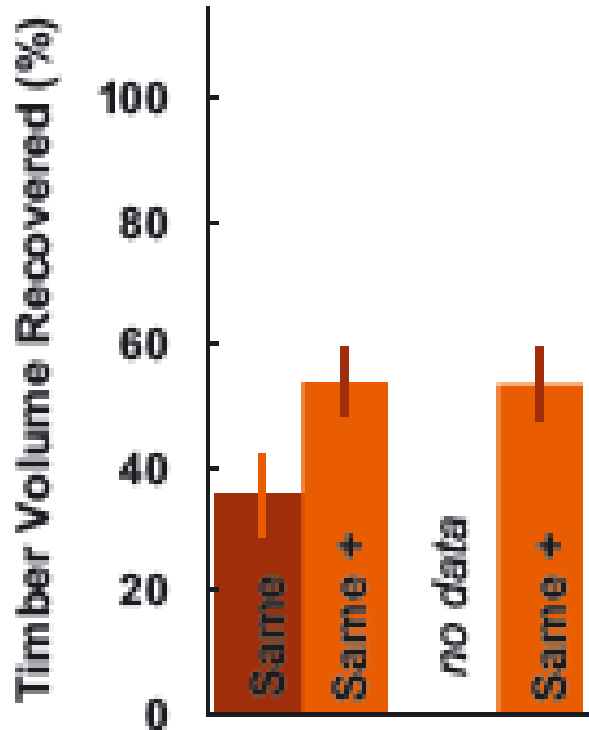
- Many tree species/ ha (Africa > 60; Amazon > 200), few used, many LKS;
- Big sized trees → often „over-matured“ trees (if not nomads, light demanding)
- Close-to-canopy trees: often the losers of competition: cannot react to changing light/environmental conditions; growth dynamic of species needs to be known
- Economic return of second rotation cut is closely linked to silvicultural treatment after first logging (at least growth monitoring essential)
- Second cut: sustainability can be reached for the forest stand, but not necessarily for a particular tree species → part of the equation (e.g. Sapelli)
- For economic and ecological reason, the area for the second cut needs to be larger than the harvesting area of the first cut

Forest sustainability:

Silvicultural monitoring is crucial to keep the assets alive!

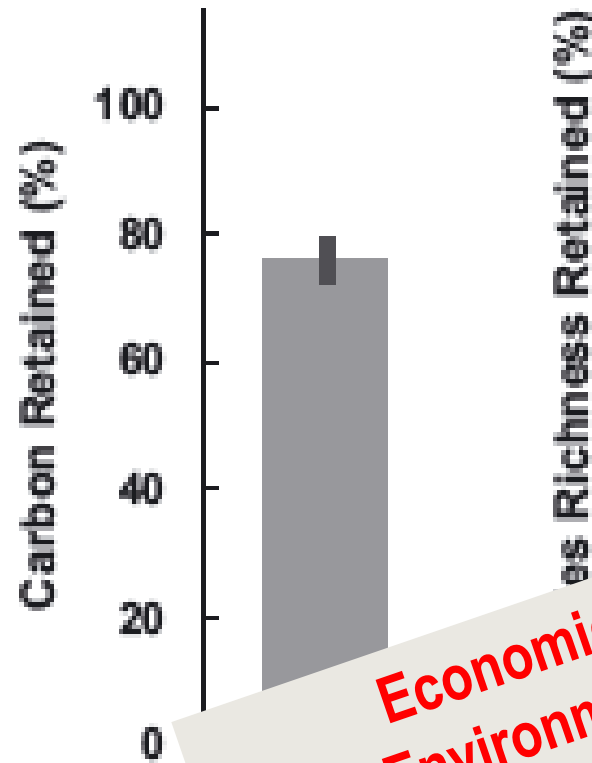
(Putz 2012; Sist, Pacheco, und Blaser 2014)

(a) Timber



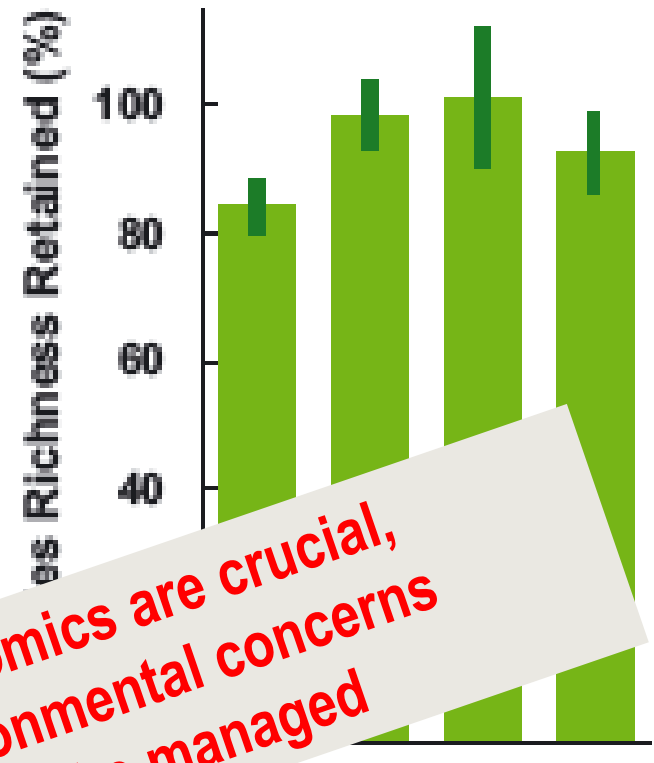
Second harvest
Third harvest

(b) Carbon



~1-y Post-harvest

(c) Biodiversity

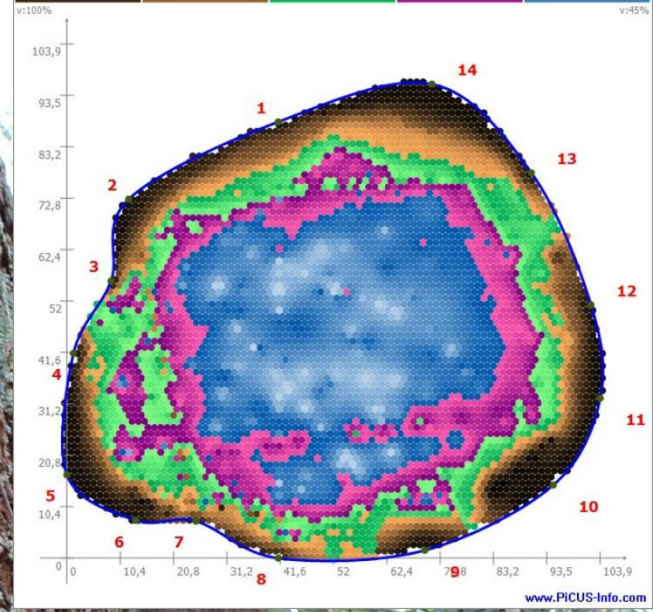


Birds
Invertebrates
Mammals
Plants

**Economics are crucial,
Environmental concerns
can be managed**

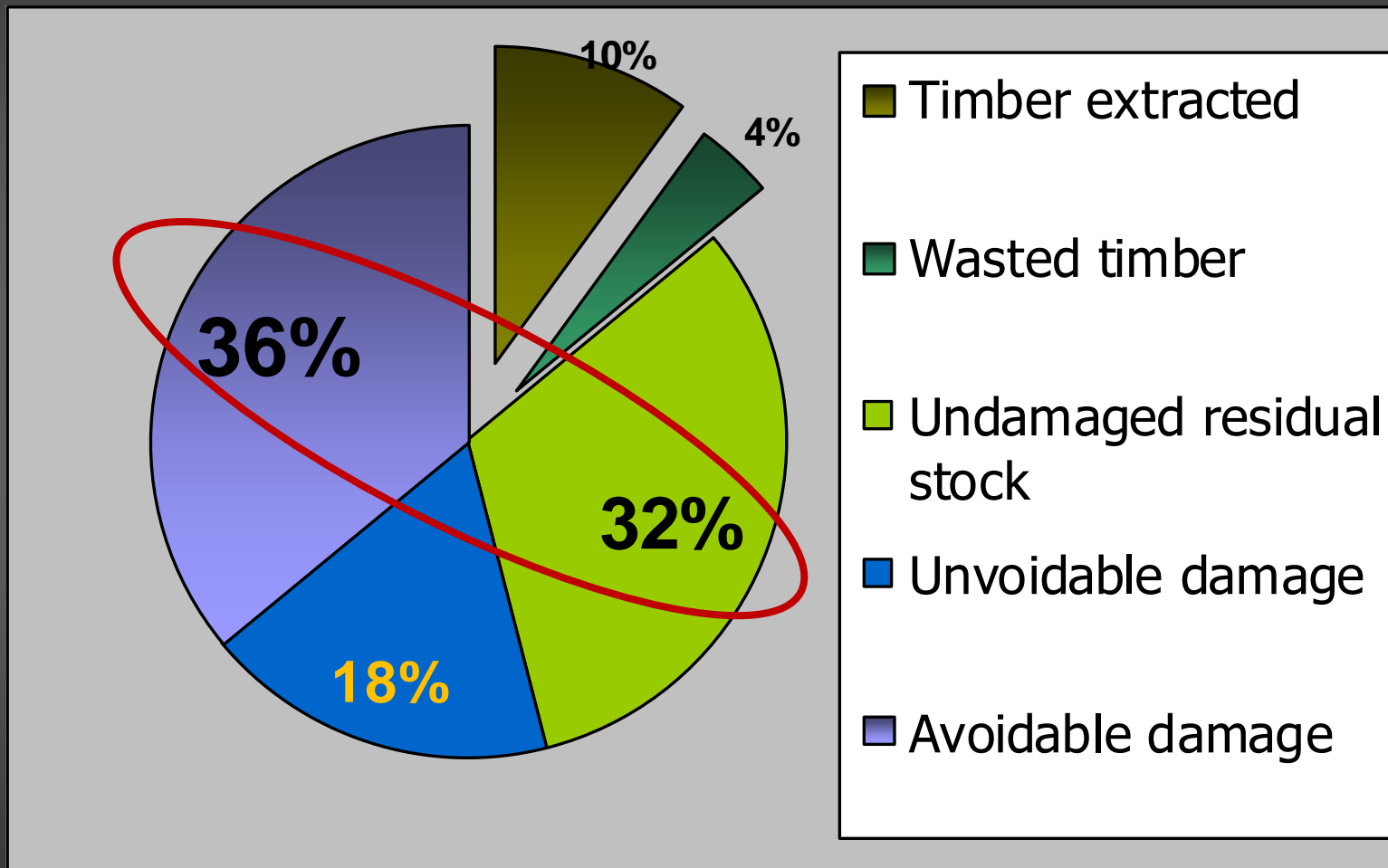
Approch 1: Silvicultural inventory:
(not only harvesting inventory), quality check,
resilience analysis





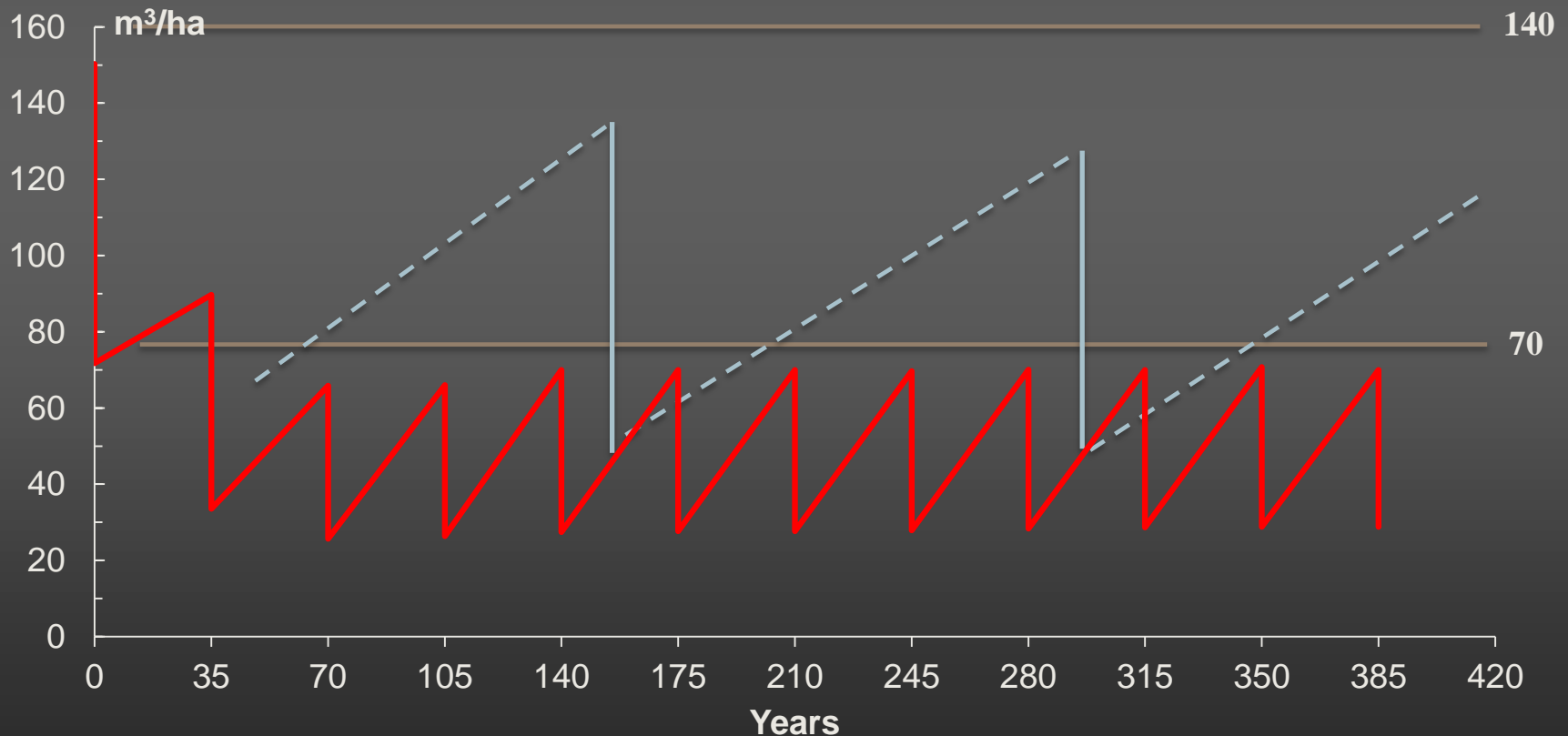
Approach 2: Reduced-impact logging

“keeping the standing capital alive”



Approach 3: Gradual conversion into a managed natural forest

Example demonstrating a 35-years rotation → condition for success: sufficient production area at disposal



Approach 4: Silvicultural treatment

- Use of existing knowledge
- Use of the considerable growth potential of selected tree species

First cut: over-matured trees should be kept in the forests

- Keeping over-matured trees in the forests
→ biodiversity carbon stocks, NTFPs
 - Not only ecologically wrong, but also high logistical costs (cut, transport...)
- +
- Silvicultural treatment in preparation of the second cut: „refining“, enrichment planting
 - Focus on light-demanding *nomad» species for second and third rotation



Logging, post-harvest, monitoring (short films)



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Approach 5: Products diversification: Continuous management of NTFPs: joint ventures, partnerships

Resins, essential oils:

e.g. in Amazon: *Protium heptaphyllum*

Food:

e.g. in Amazon: Acai palm, paranut, [palm heart enrichment in forests]

Biomass use of restwood → energy

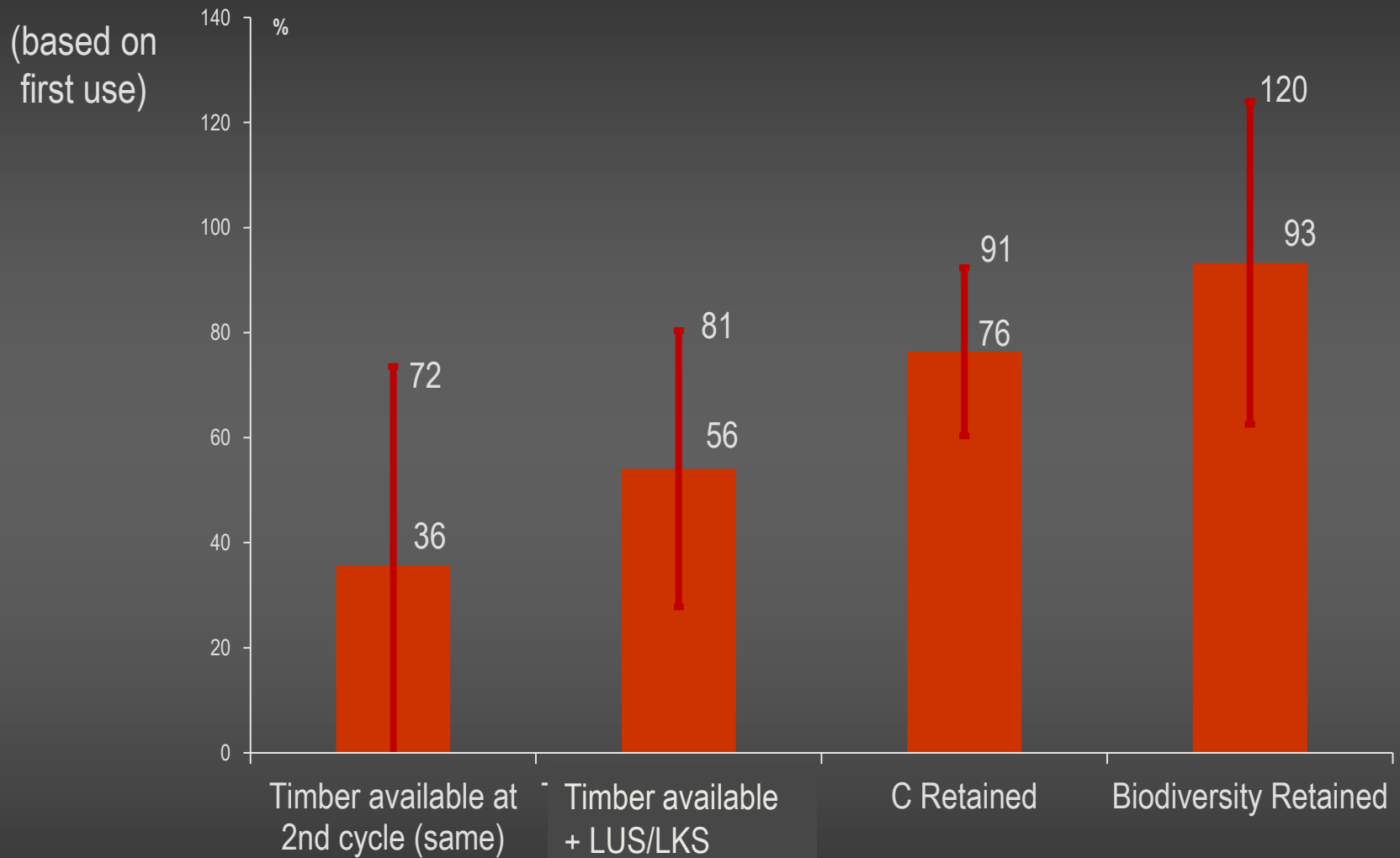
SMF in REDD+ : RIL and carbon sinks

Eco-tourism: animal viewing, bird watch; HCVF within the forest management unit



→ **But: needs changes in laws/concession arrangements (generally)**

PW Approach 6: Creating capital over time

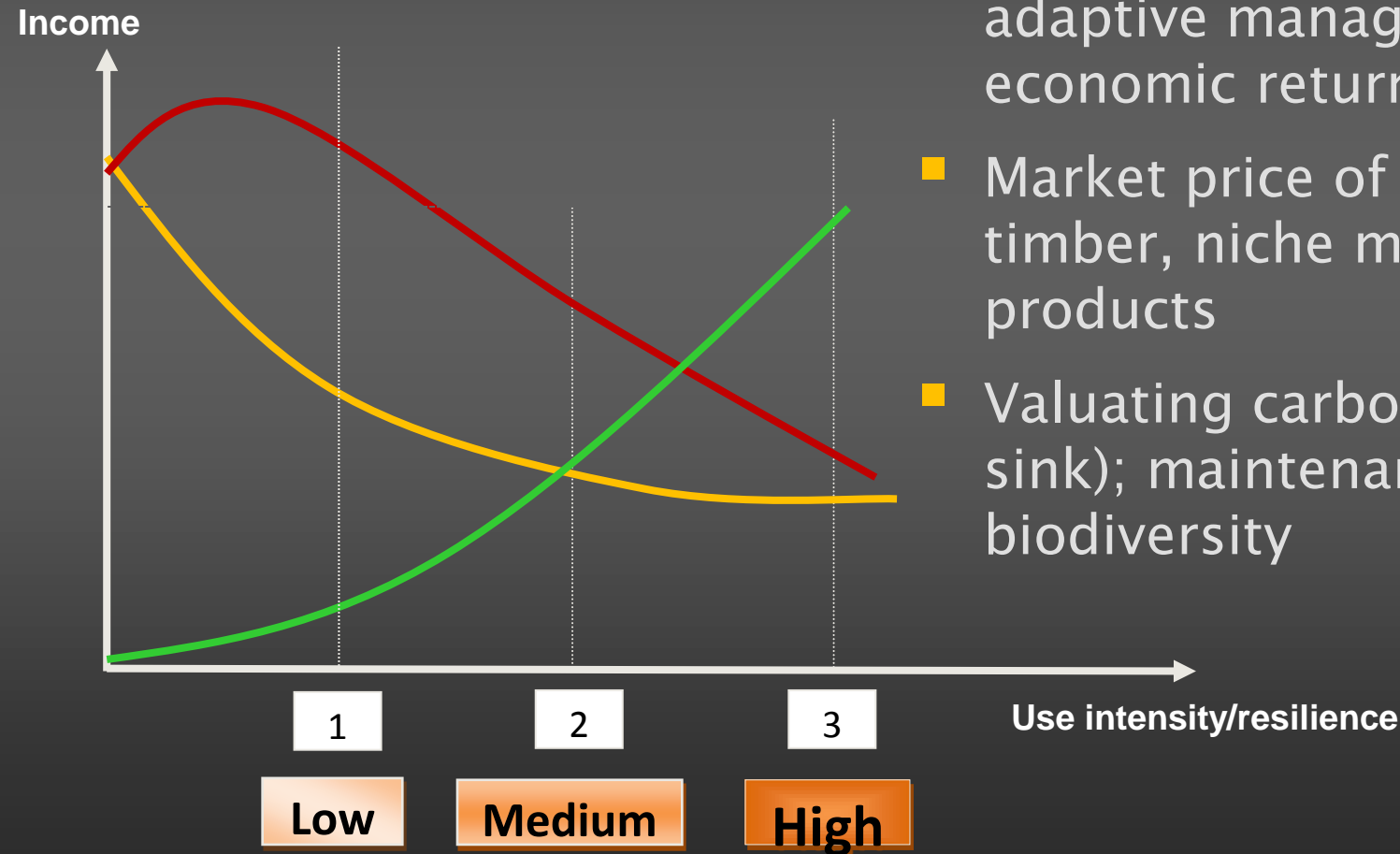


Natural forest management: valuation criteria

Biomass (carbon stock and sink)

Biodiversity (fauna & flora)

Production (timber, NTFP)



- Setting the right line of adaptive management → economic return is decisive
- Market price of high-end timber, niche market products
- Valuating carbon (stock and sink); maintenance of biodiversity

Summarizing the SFM approach in NF in Africa

⇒ Cluster 1

- ⇒ Collaborative inventory at landscape level, define jointly forest lots; inventorize; multi-use forest management
- ⇒ Local forest management: Qualitative assessment of trees
- ⇒ Trees in landscapes and agrofor systems; enrichment planting

⇒ Cluster 2

- ⇒ Second rotation assessment based on growth data
- ⇒ Collaborative management with emphasis on organized SMEs
- ⇒ Biodiversity hotspots, carbon stocks & sinks, biomass use as complementary measures;
- ⇒ Restoring degraded forests (REDD+ approaches, FLR)

⇒ Cluster 3

- ⇒ Major species: light-demanding focus; inclusion of LUS(LKS); use FLEGT approaches, markets, First/second rotation analysis, mainly species selection
- ⇒ Regeneration control, gap management

Matching public/private interests

under condition that governance context is adequate over longer period of time and resource use/tenure is secured:

⇒ Public interests

- ⇒ Ecosystem services: Carbon stocks and sinks, Biodiversity conservation
- ⇒ Economic management of forests and downstream industry
- ⇒ Creating social assets

⇒ Private interests

- ⇒ Green investments through continuously managing goods and services (timber, NTFP, valued ES)
- ⇒ Developing and maintaining assets: long-term return (thus secured profits)





Managing natural tropical forests sustainably is possible....