



Climate policy design and forest carbon sequestration: transitioning to a global forest carbon market

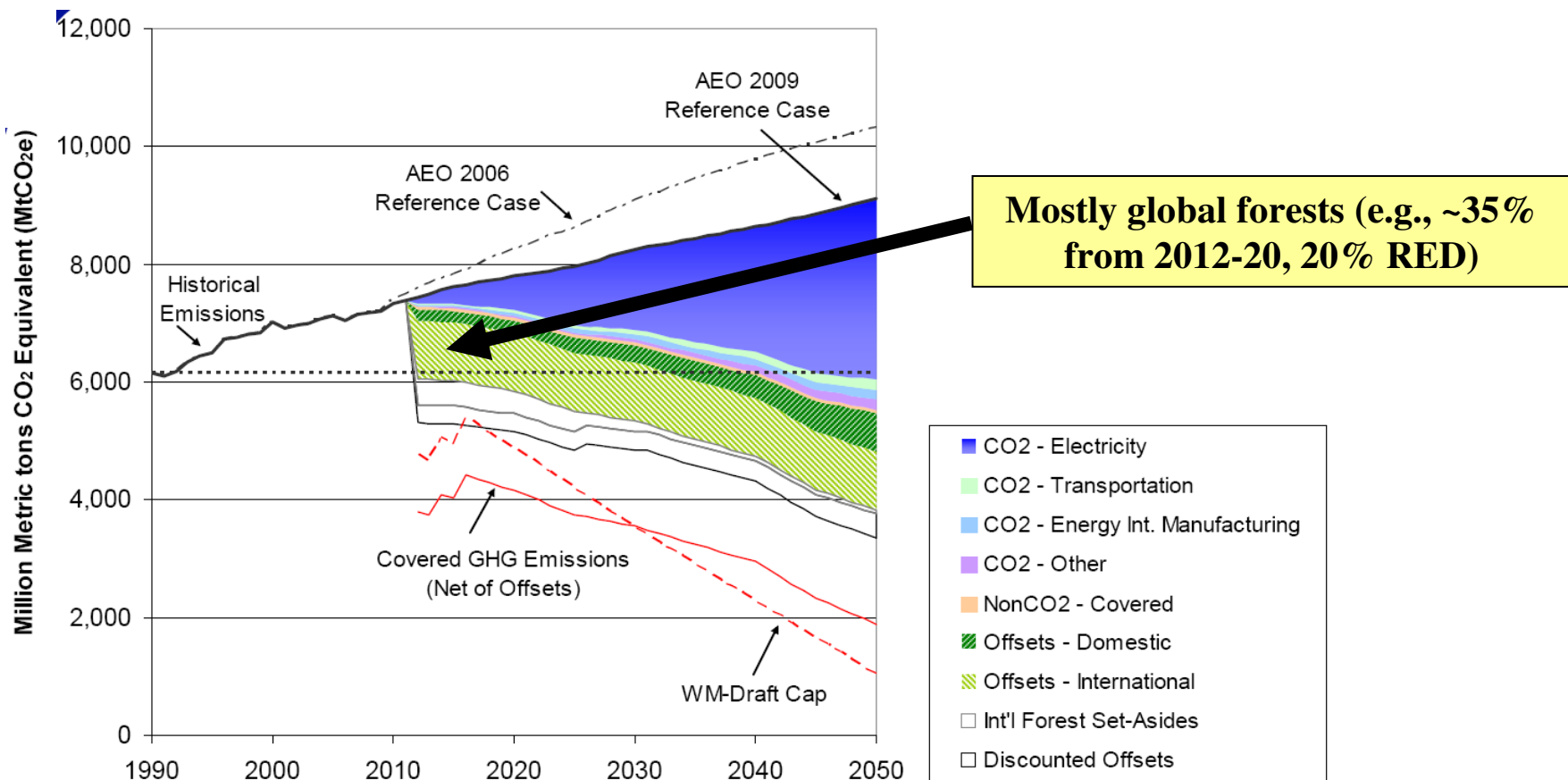
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Brent Sohngen (Ohio State University)

November 9, 2009

London Energy Forum, Nov 9-10, 2009, The Royal Society

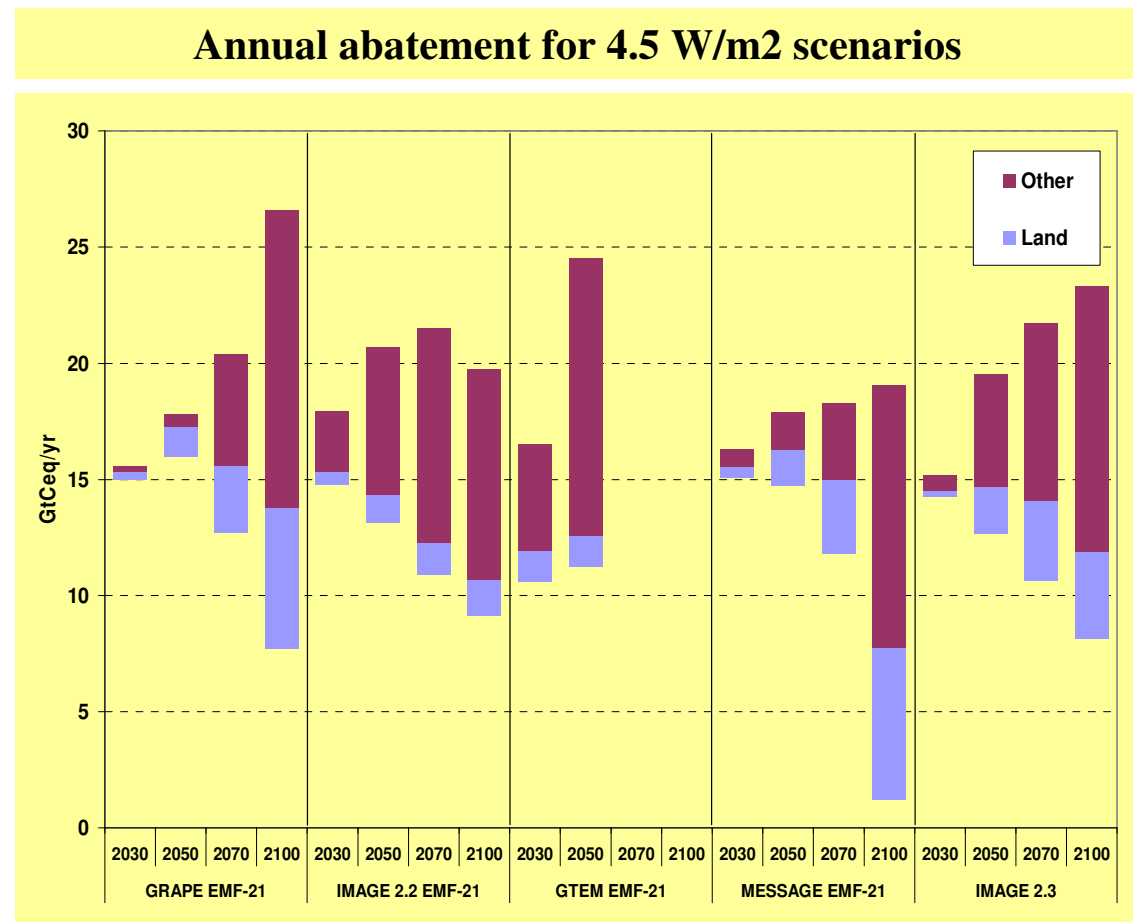
Global forests have a potentially large mitigation role – in domestic offset programs




Source: U.S. EPA Preliminary Analysis of the Waxman-Markey Discussion Draft (4/20/2009)

And in climate stabilization

- Forestry 4–15% of cumulative abatement across the century (all land 15–40%; Rose et al., 2008)
- Others (for 550 ppm CO₂eq stabilization)
 - Forestry 70% of abatement over the next few decades (Tavoni et al., 2007)
 - Forestry reduces the carbon price ~\$270/tCO₂ in 2080 (~\$1000/tC) (Wise et al., 2009)



Source: Rose et al. (2008)

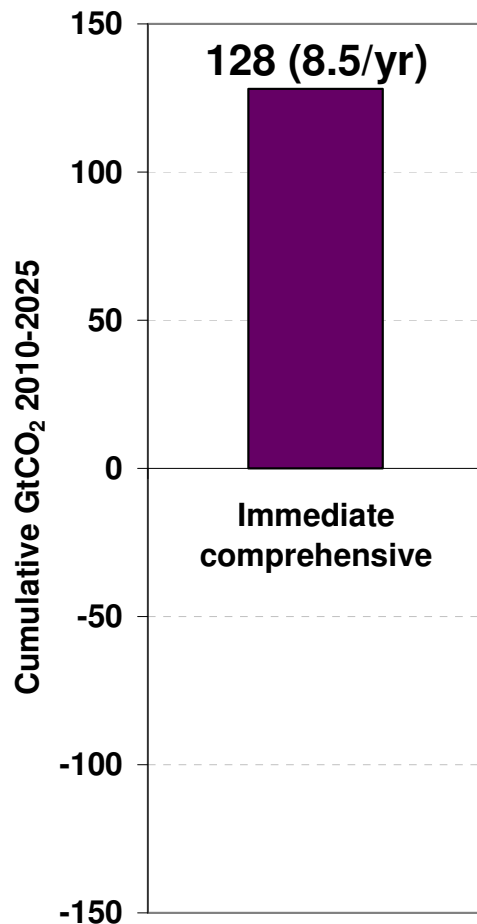


**However, all assume a
immediate, comprehensive, and global
forest (and land-use) carbon policy**

Which is infeasible. Implications?

***Insights from analysis using the Global
Timber Model...***

Near-term: immediate comprehensive global forest carbon policy infeasible

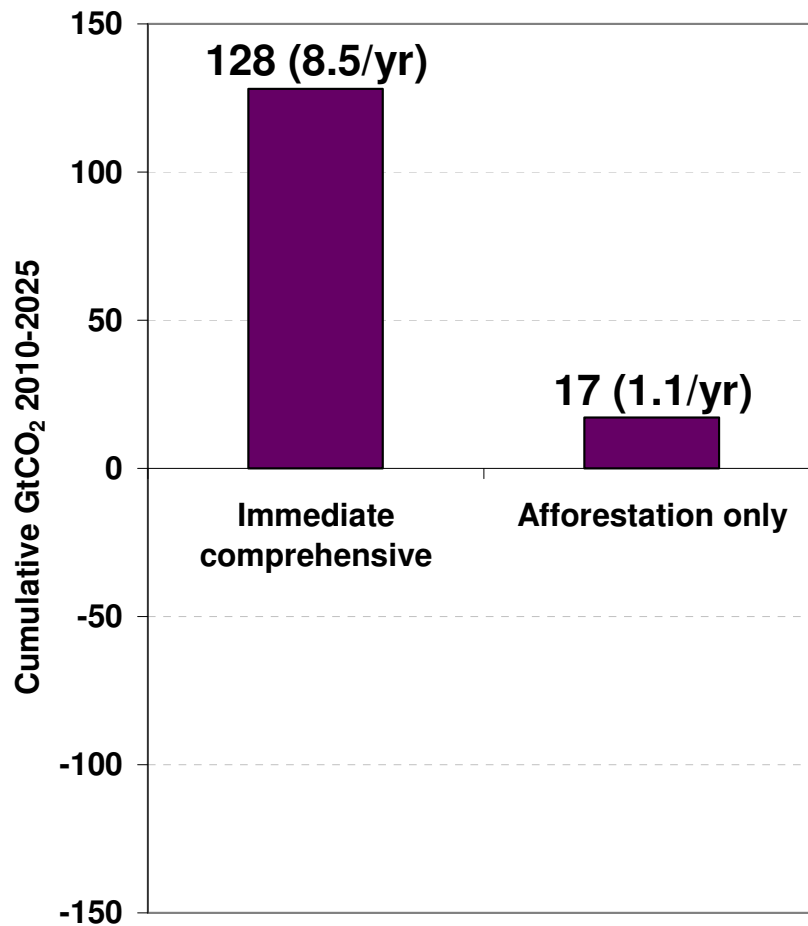


*Cumulative mitigation 2010-2025
with \$15/tCO₂eq (in 2010) + 5%/yr
(\$250 max)*

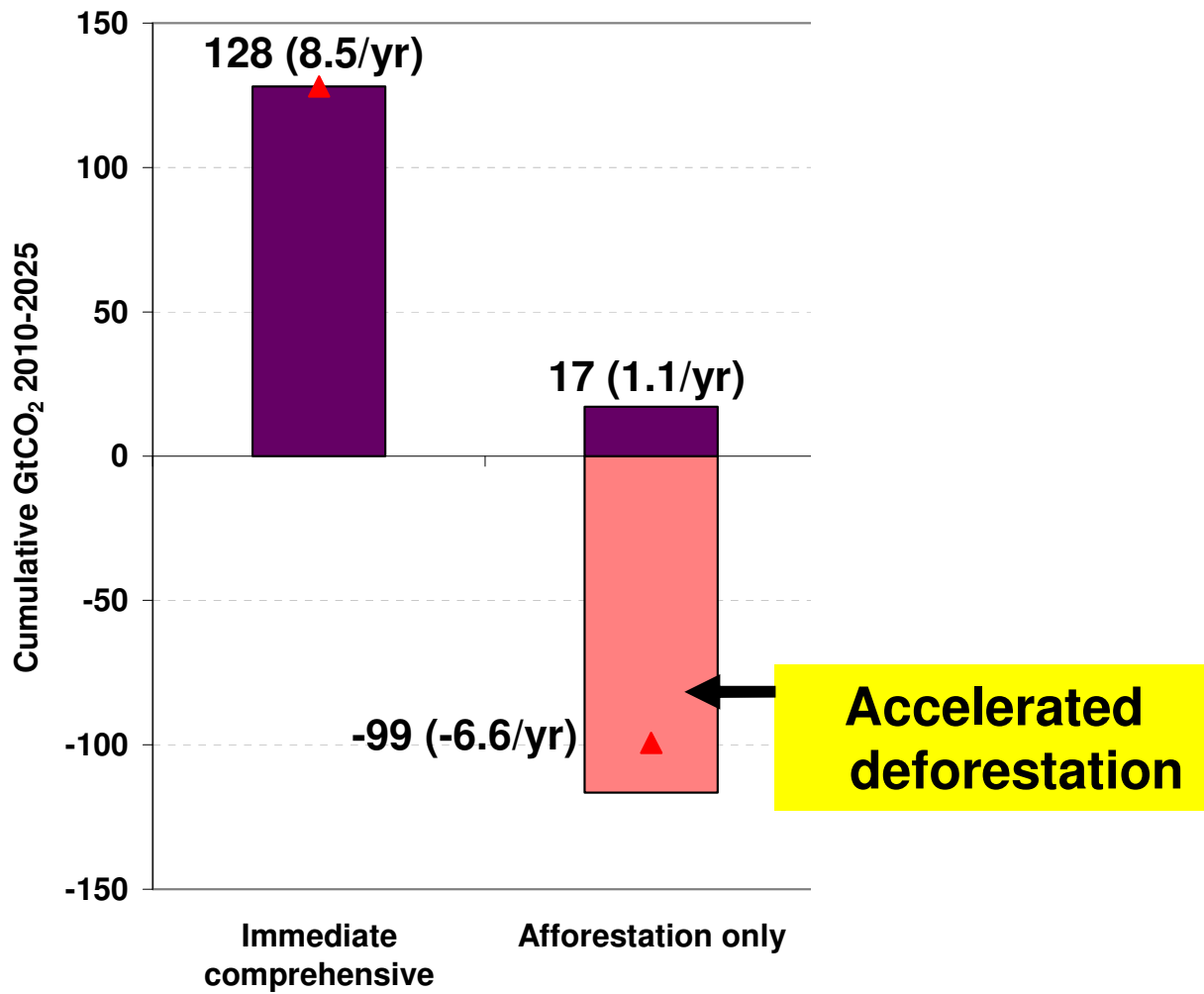
Immediate = 2010

*Comprehensive = afforestation,
avoided deforestation (RED),
& forest management*

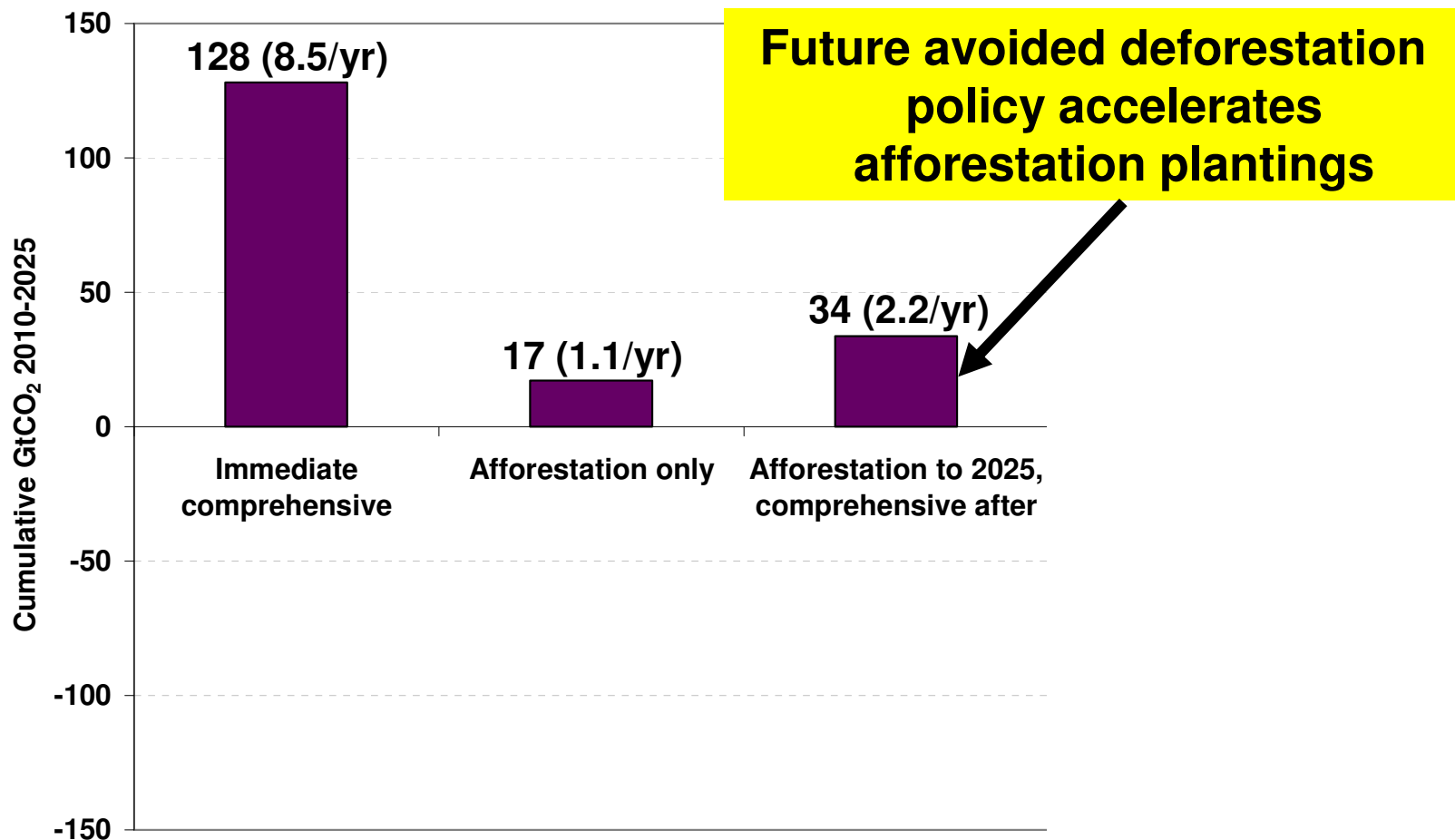
Immediate afforestation only policy



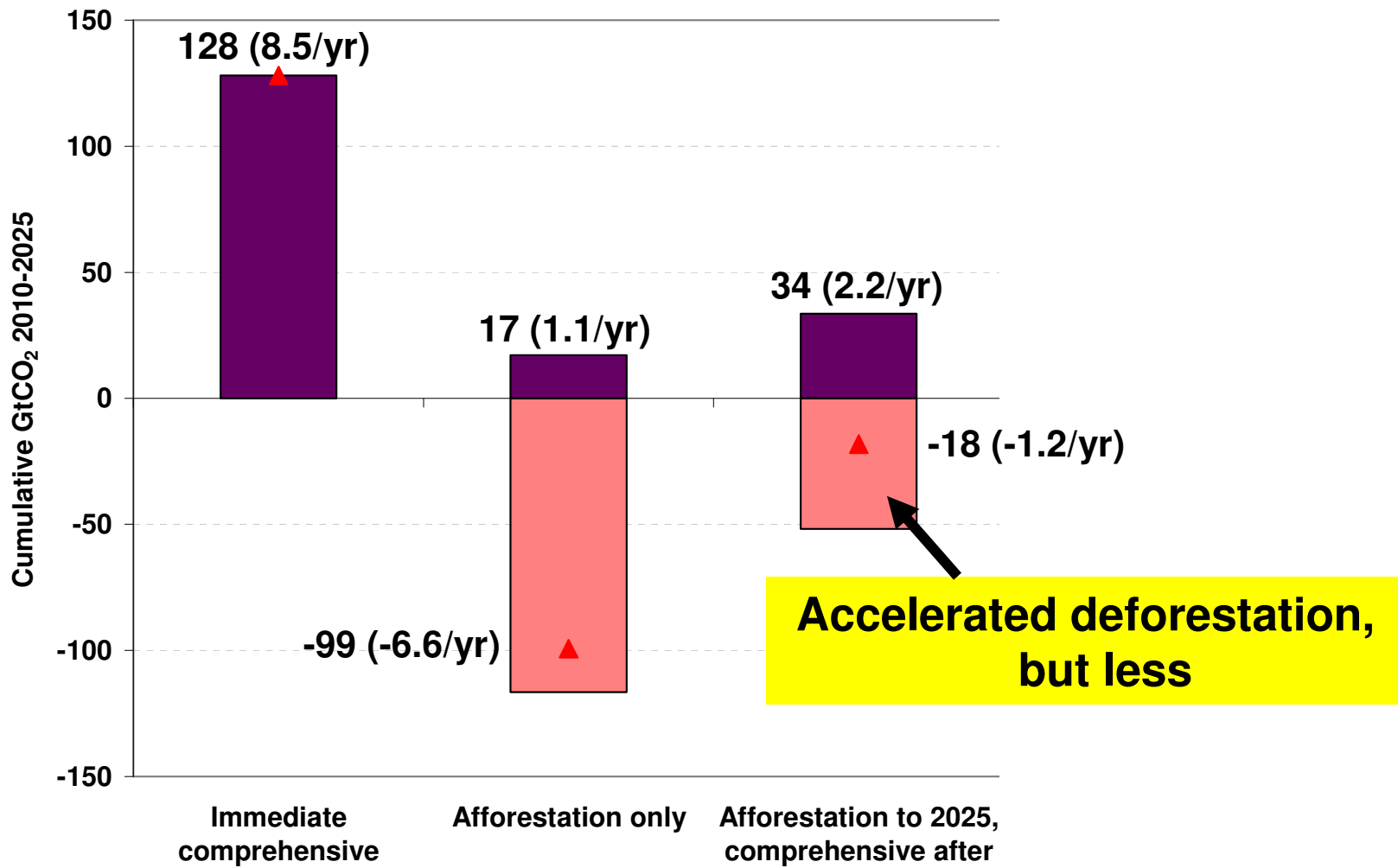
Gaining carbon from afforestation, but losing carbon from existing forests



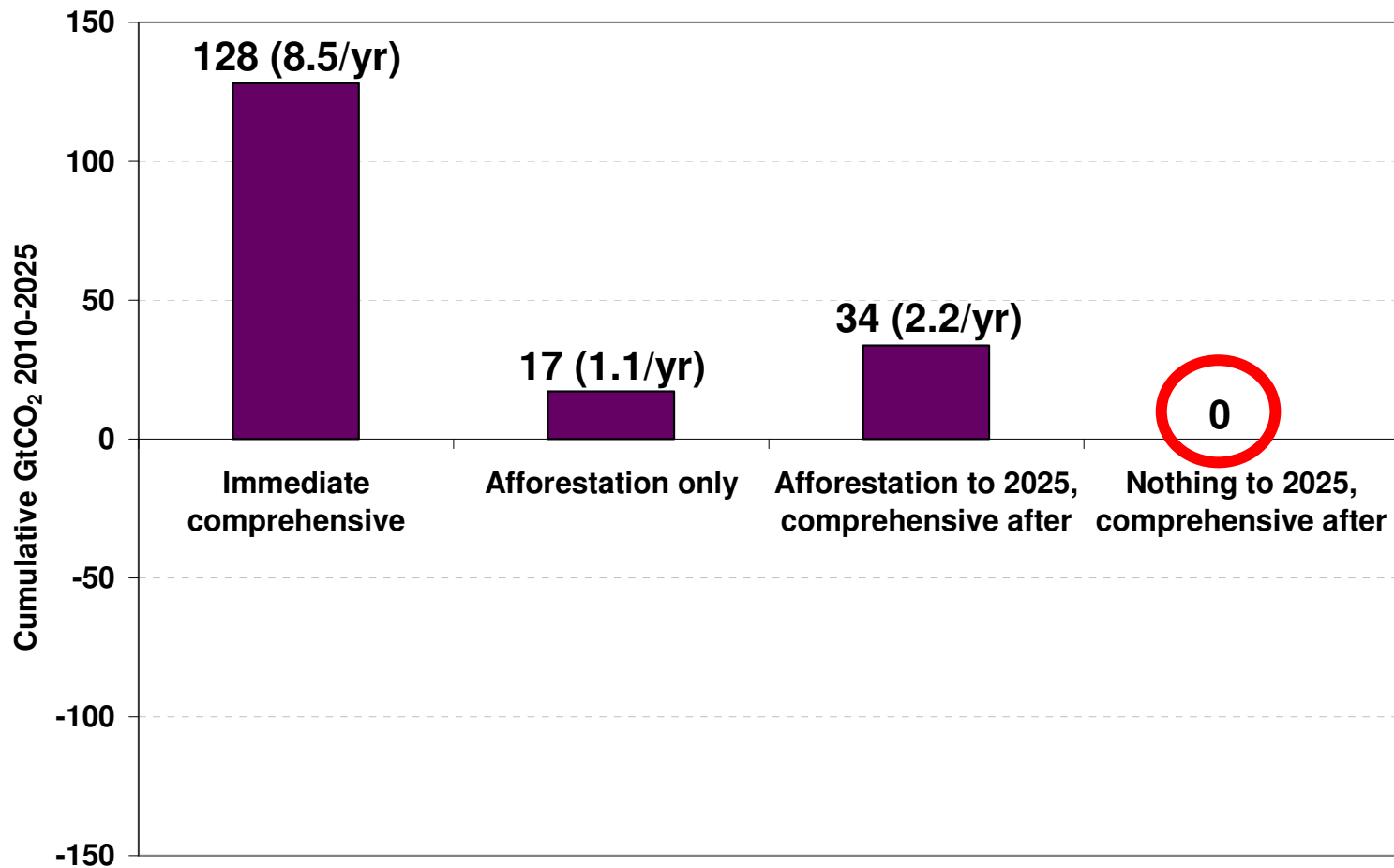
Delayed comprehensive policy – Afforestation to 2025, then comprehensive



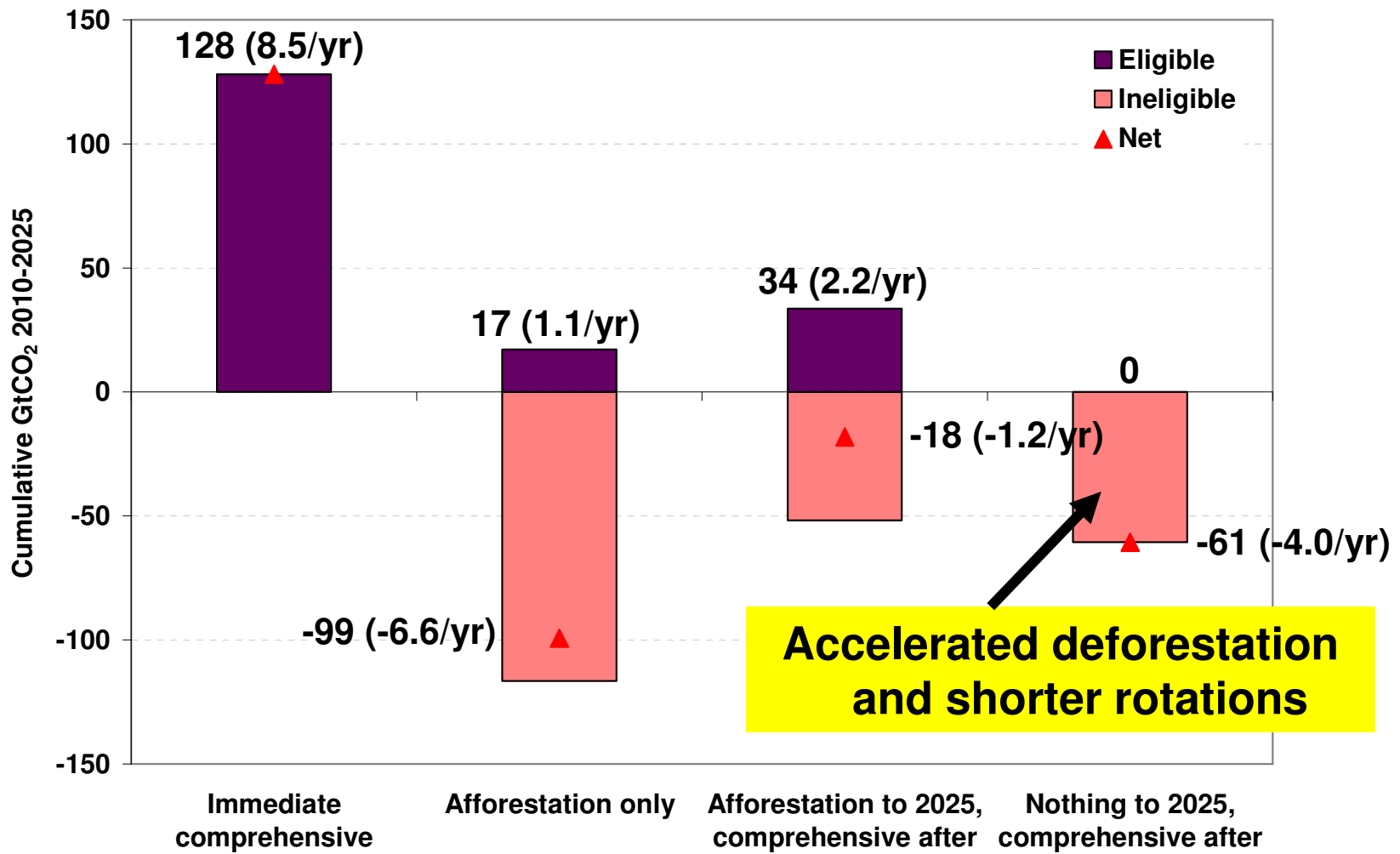
Still net loss of sequestered carbon



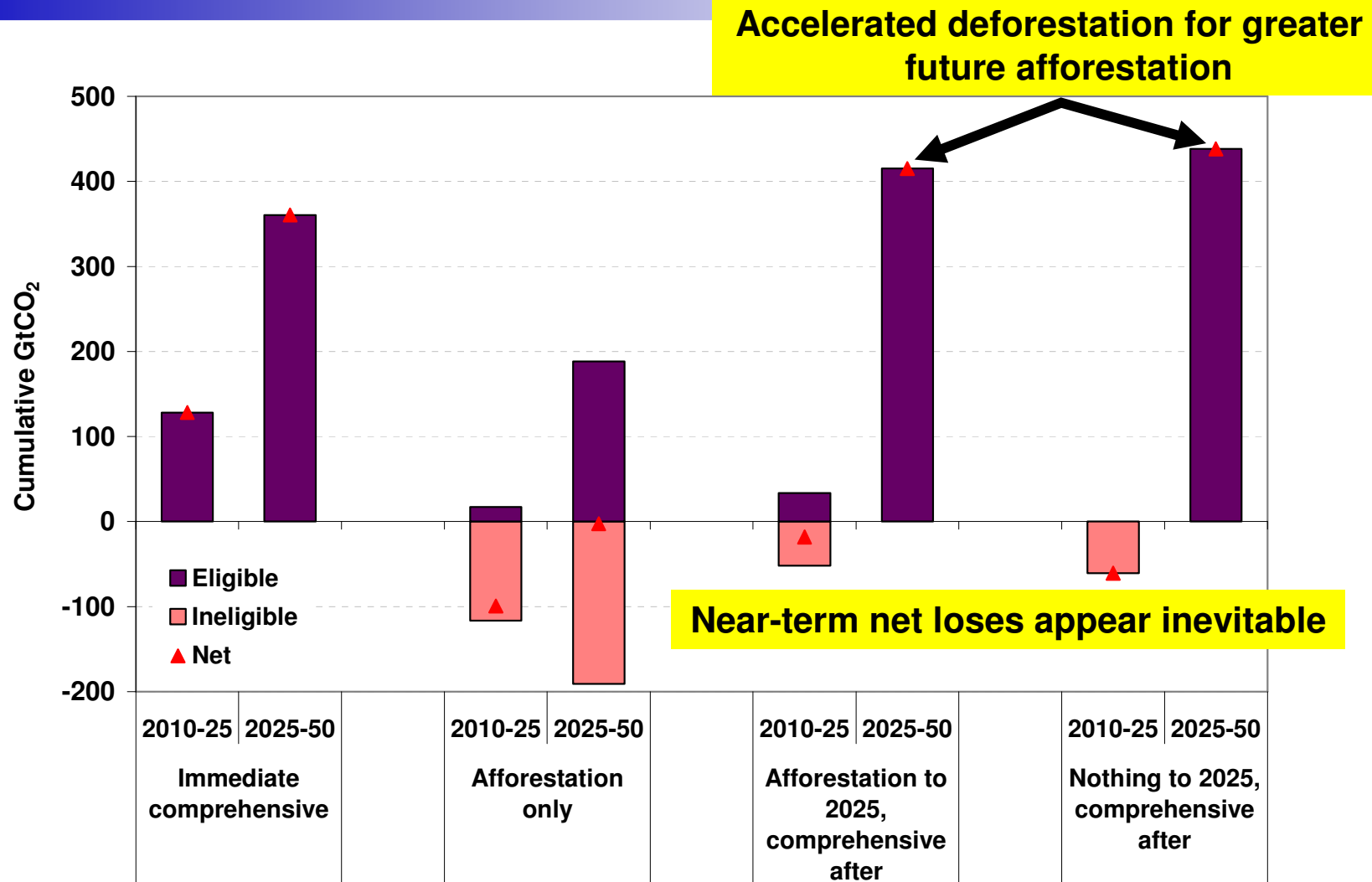
Delayed comprehensive policy 2 – No crediting to 2025, then comprehensive



Still net loss of sequestered carbon

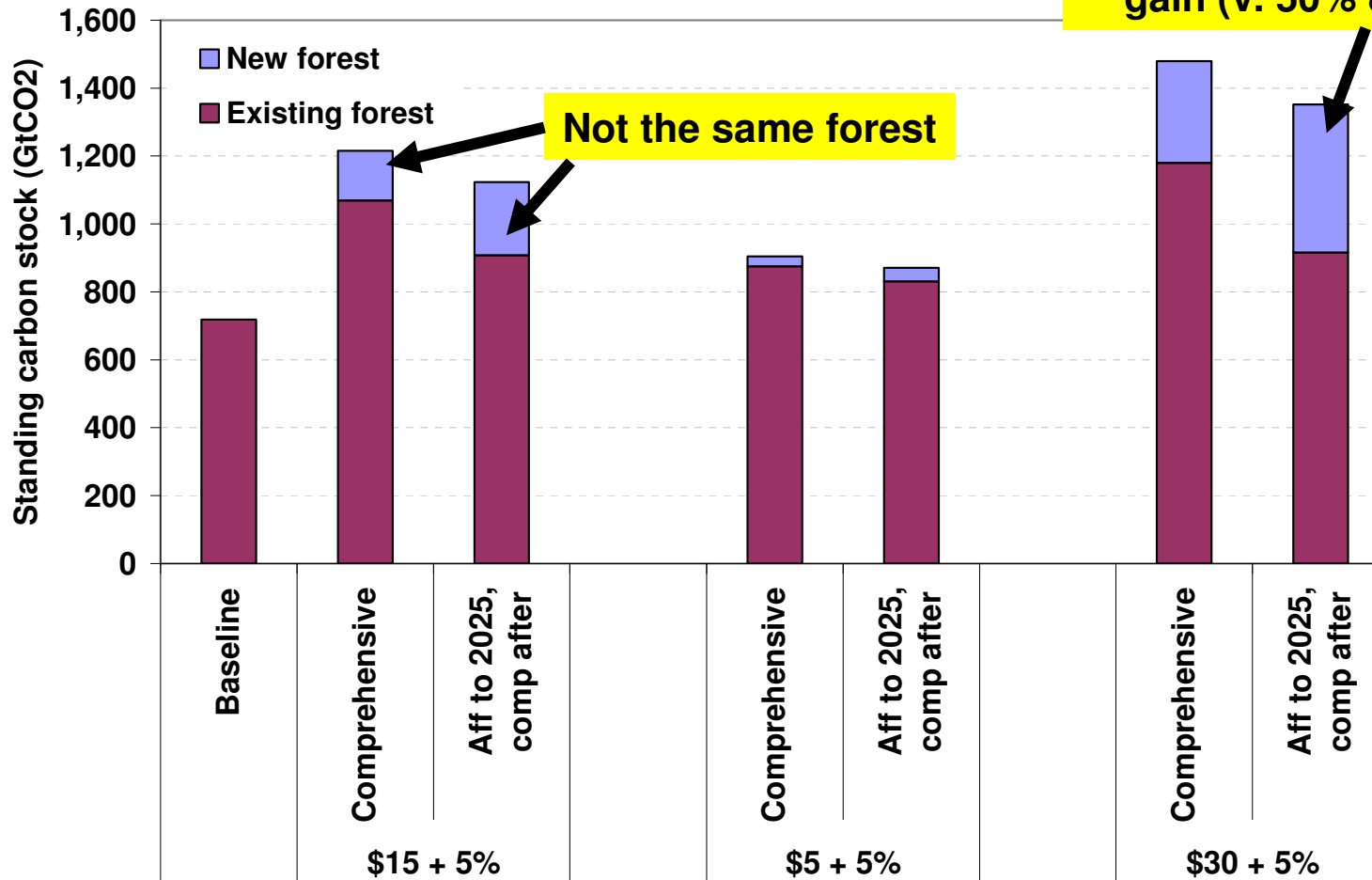


Nonetheless gigantic potential – coverage of existing forest carbon critical



Forest composition changes

e.g., South America in 2050



Summary remarks

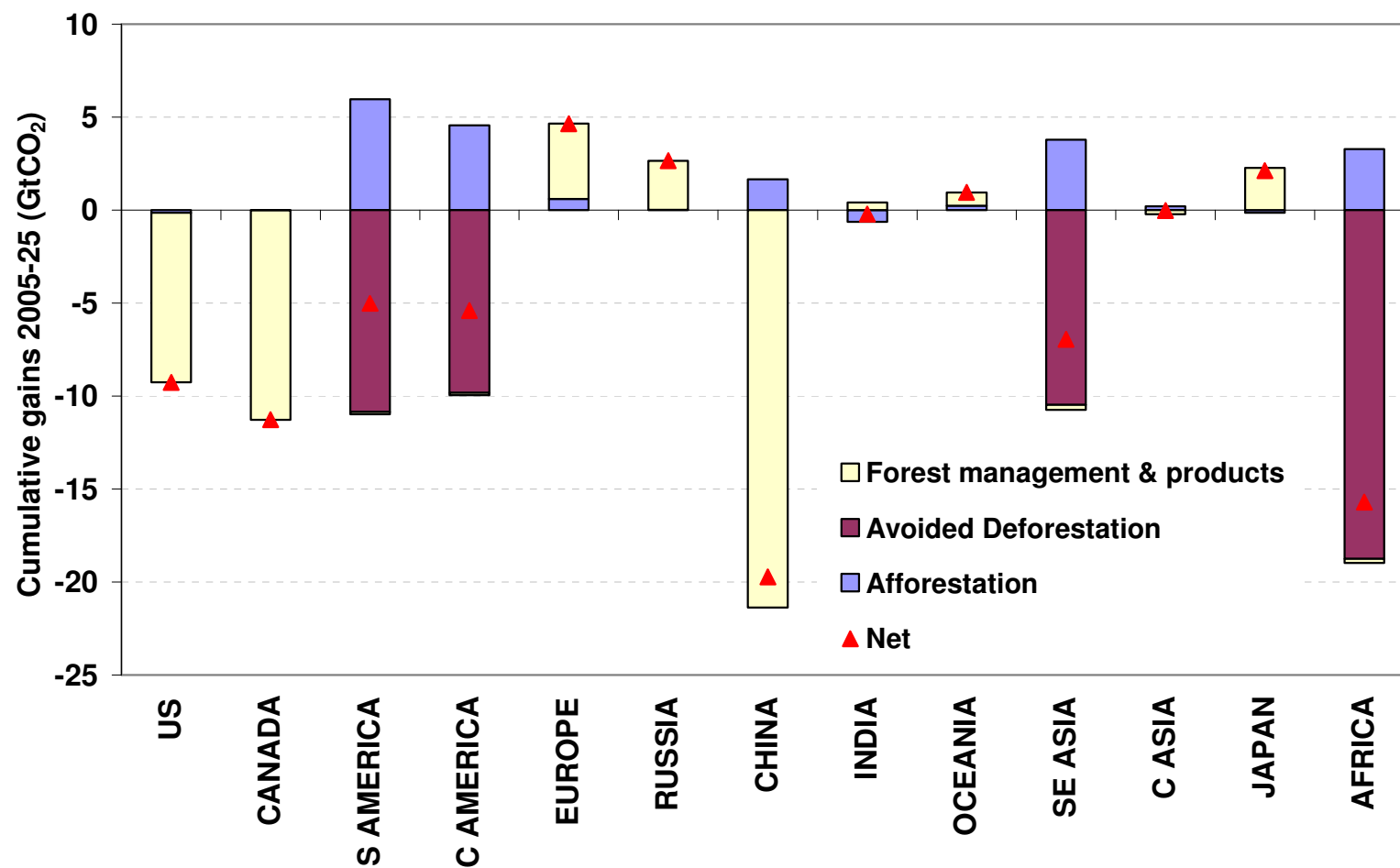
- Forestry (incl. REDD) mitigation potential **won't be available immediately and globally**
- **In the near-term,**
 - Less mitigation potential than estimated – possibly none
 - Near-term carbon losses seem inevitable – there are management options
- **Significant long-run potential** that could moderate overall compliance costs
- Coverage of **existing forest carbon** stocks appears essential
- Forest policy **transition** (and strong forestry interactions) will affect sequestration costs and availability, forest composition, and net climate benefits



Thank you!

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Nothing to 2025, comprehensive after



Accelerated deforestation for future afforestation

e.g., \$15 + 5%/yr

