

Forest Biotechnology - a Tool to Help Mitigating Deforestation and Forest Degradation

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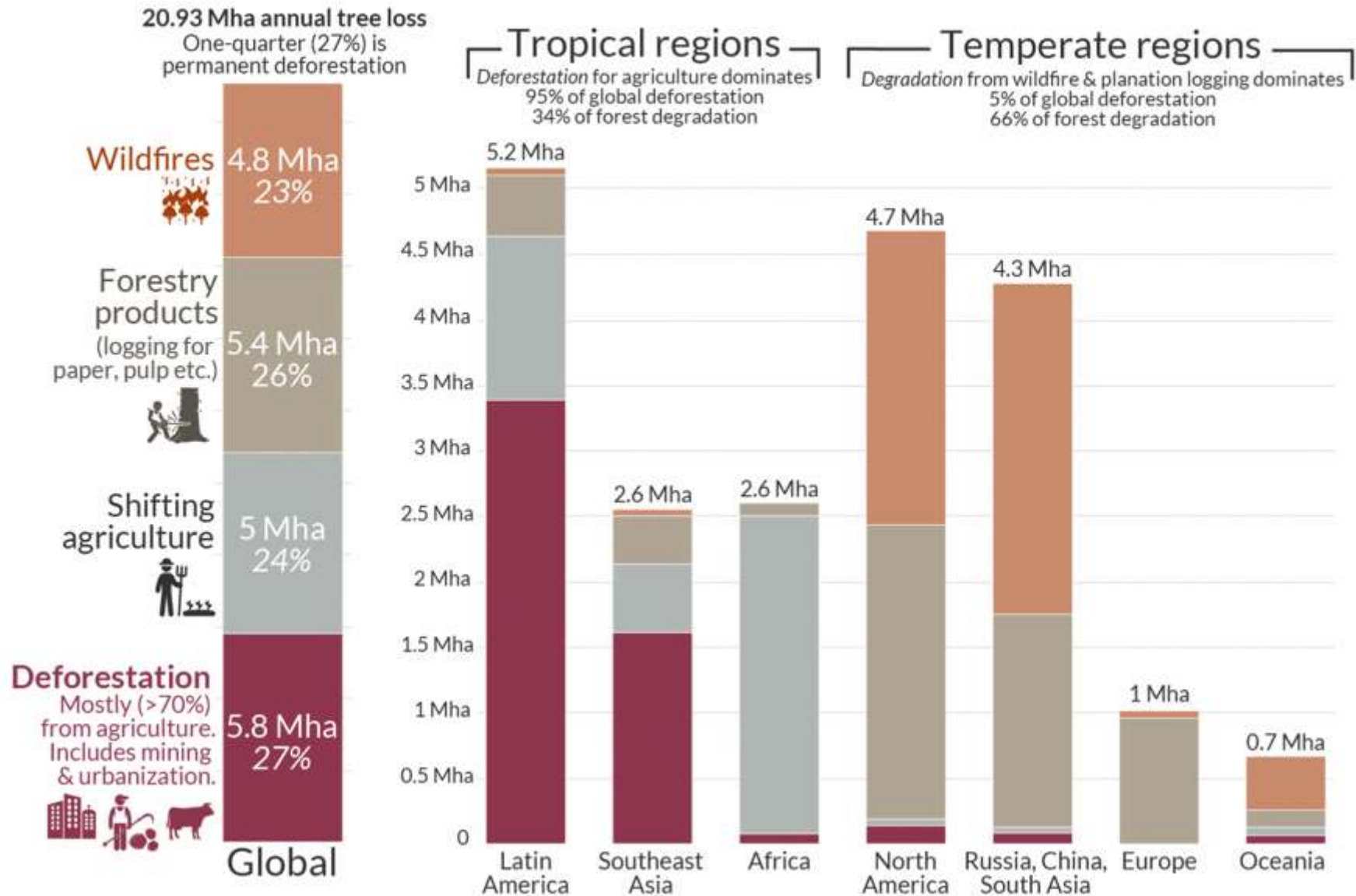
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Global forest loss: deforestation vs. forest degradation

Forest loss is defined as the combination of deforestation and forest degradation.

Deforestation involves the abrupt transition from land with trees to land without trees with no subsequent regrowth.

Forest degradation refers to thinning of the canopy and loss of carbon without a change in land use. Forest is expected to regrow.



Data source: Philip Curtis et al. (2018). Classifying drivers of global forest loss. *Science*.

Biotechnology

- Article 16 CBD: Access to and transfer of biotechnologies is essential to the objectives of the CBD.
- Biological processes are by their very nature circular.
- Modern biotechnology can overcome some of the limitations of conventional breeding and do so in a highly specific and targeted way
- Many different applications of biotechnology in forestry, e.g:
 - Vegetative reproduction methods
 - Molecular genetic markers
 - Transgenic Trees (LMO trees)

Diverse interest and efforts



Five year testing reported in 2023:
No adverse effect to the environment in Brasil since 2015



Transgenic poplar plantation in Huairou, Beijing, China



ISAAA AfriCenter



LMO plant presentation at Science & Technology Council October 29, 2007 with Prime Minister Fukuda (Watanabe left)



Since 2005, T-PIRC of University of Tsukuba continues field assessments of transgenic trees



Food and Agriculture Organization of the United Nations



Global Landscapes Forum

The common goals would be:

- Protect forest
- Mitigate deforestation
- Recover lost forest areas
- Promote communal forest & Satoyama
- Utilize forest sustainably for the local wellness
- Recognize agroforestry and plantation forest industry with equity for local communities and global resources demands



Forest Biotech orphaned by
some concern:

Open forum? Multidisciplinary
case trials?