

A CONSENSUS PAN-AMAZONIAN TIMBER SPECIES DATABASE: A CALL FOR HARMONIZATION AND CONSERVATION EFFORTS



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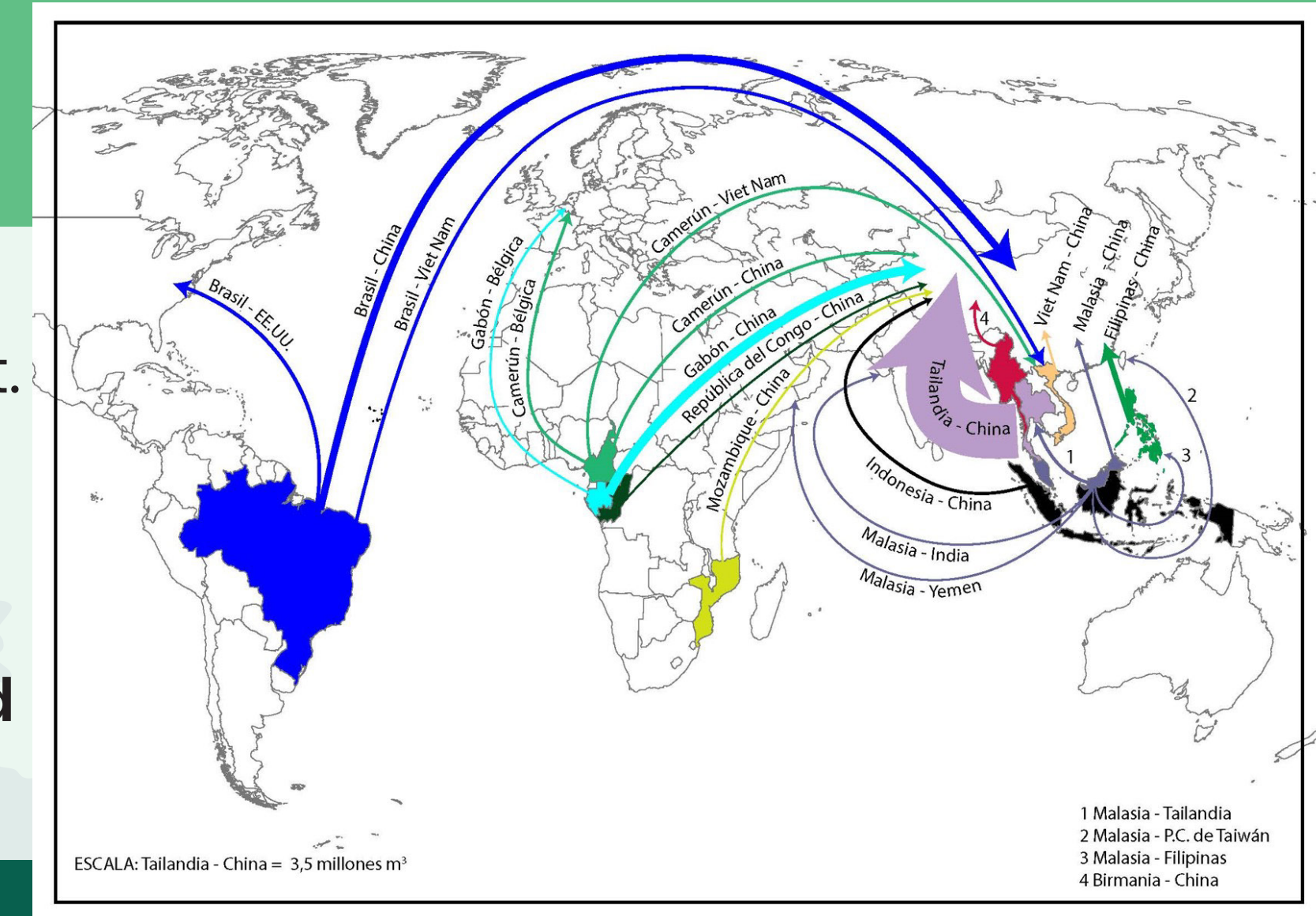
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1. WHY THIS RESEARCH?

- The Amazon biomass carbon sink has started to decline (Brienen et al., 2015).
- ITTO maintain a record of tropical wood used, but only for the international market.
- The nomenclature of tropical wood species used in the international market was updated in 2017. This nomenclature is articulated between ITTO, WHO and CITES.
- **We lack updated information and harmonized nomenclature of Amazon timber species, including for hundreds of species used regionally. Without a standard baseline it is difficult to evaluate the conservation status of species, the risk posed by the timber trade, and to develop effective policy responses.**

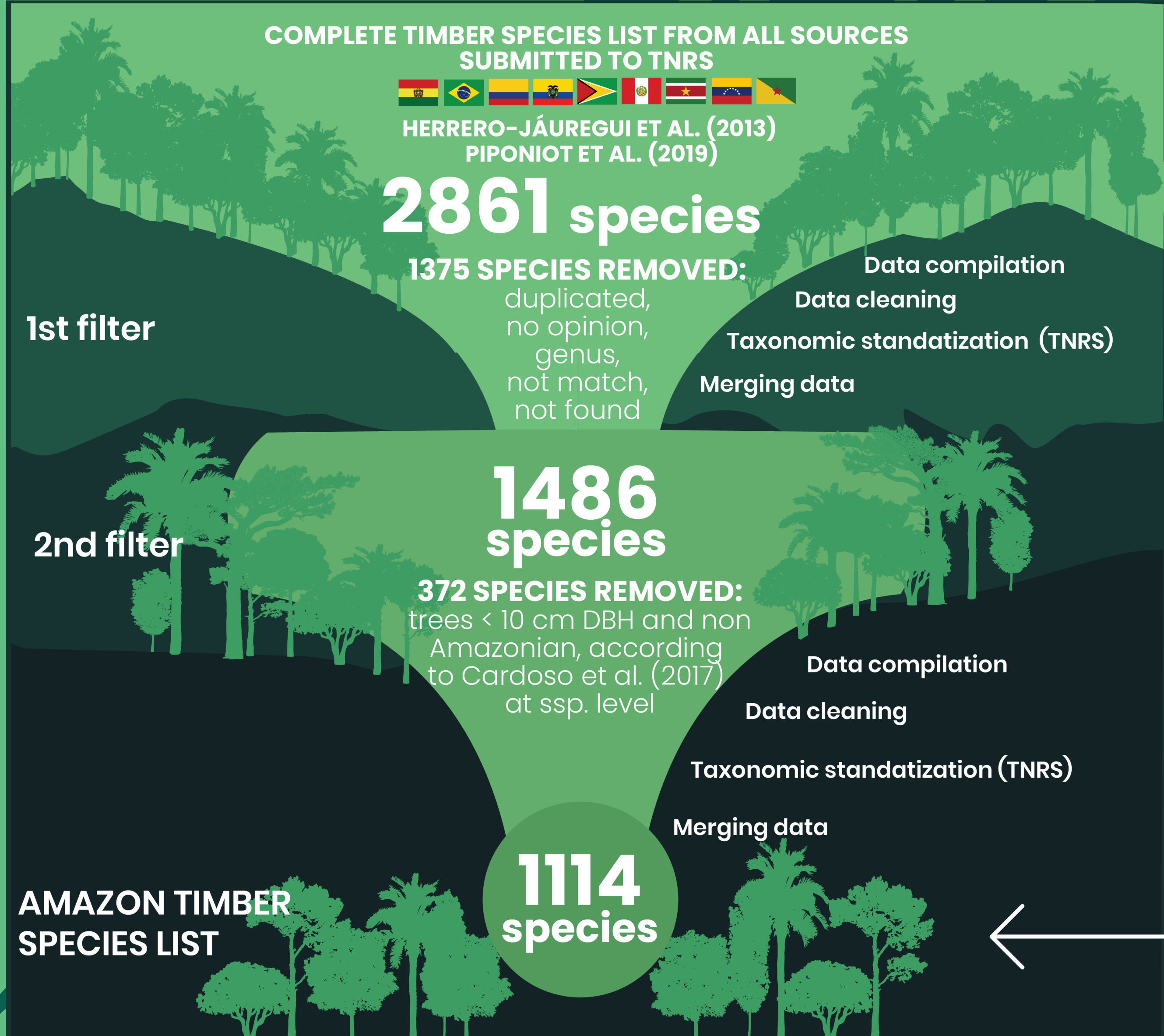


Main trade flows: Tropical sawn timber in 2019 and 2020 in millions of m³ (ITTO, 2020)

2. WHAT WAS THE OBJECTIVE?

To make available unpublished information about timber species from the nine Amazon countries in an integrated consensus database.

3. WHAT DID WE DO?



EXTRA-ECOLOGICAL DATA OVERLAP

Gomes et al. (2019)
ter Steege et al. (2013)
ter Steege et al. (2020)
The International Union for Conservation of Nature (2022)
The International Tropical Timber Organization (2014)
UNEP-WCMC (2021)

Data compilation
Data cleaning
Taxonomic standatization (TNRS)
Merging data

4. WHAT RESULTS DID WE FIND?

Amazon timber species are the 16.6% of the total Amazon tree species.

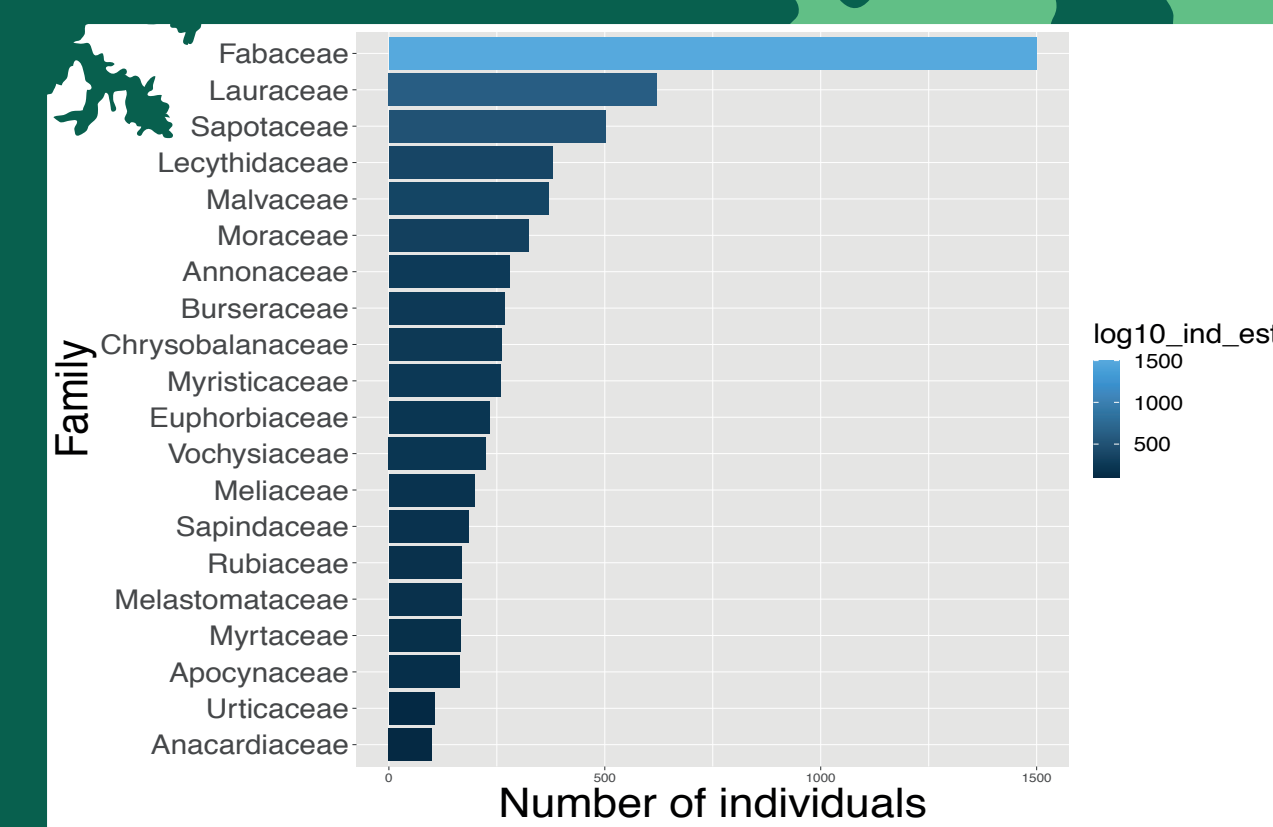


Figure 1. The 20 most abundant families (number of individuals log10) estimated for the Amazon region using data according to ter Steege et al., (2020).

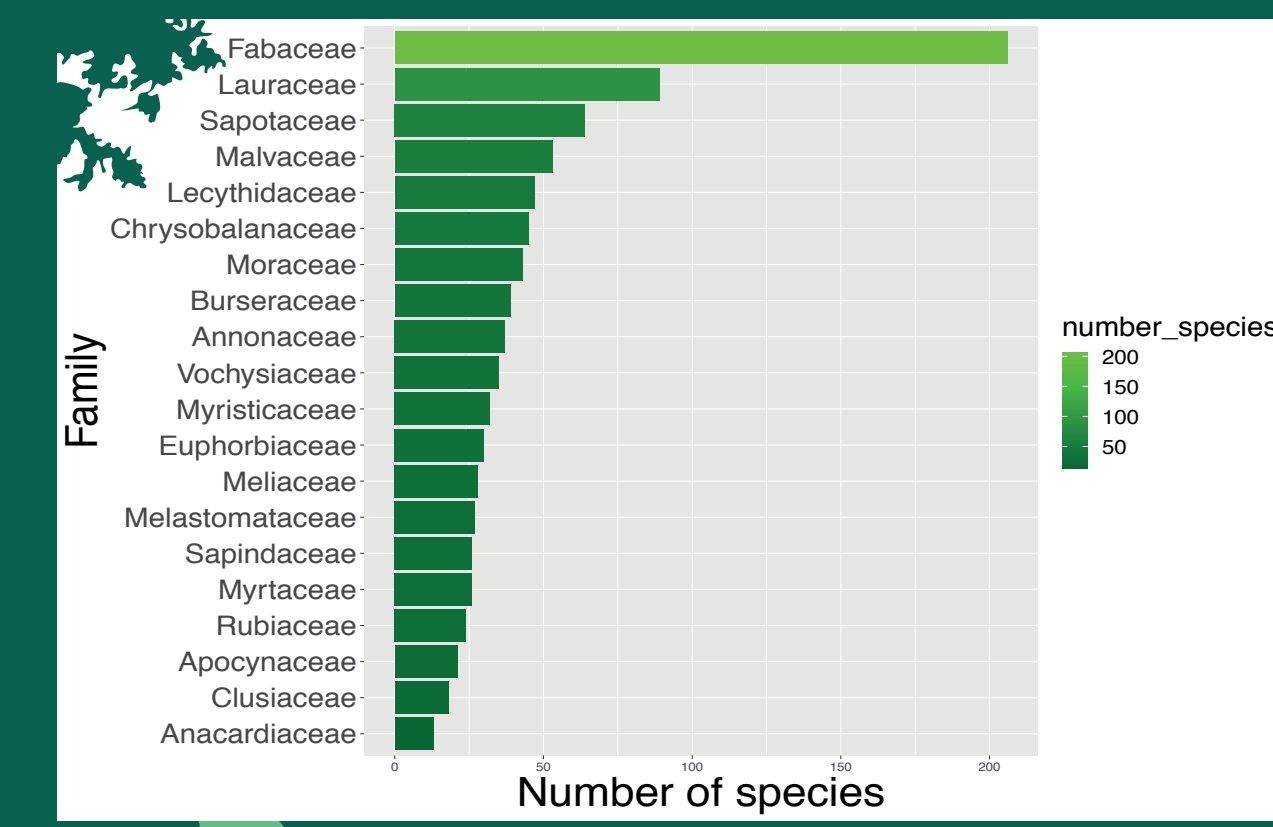


Figure 2. The 20 most species-rich families of timber tree species reported in the lowland Amazon rain forests.

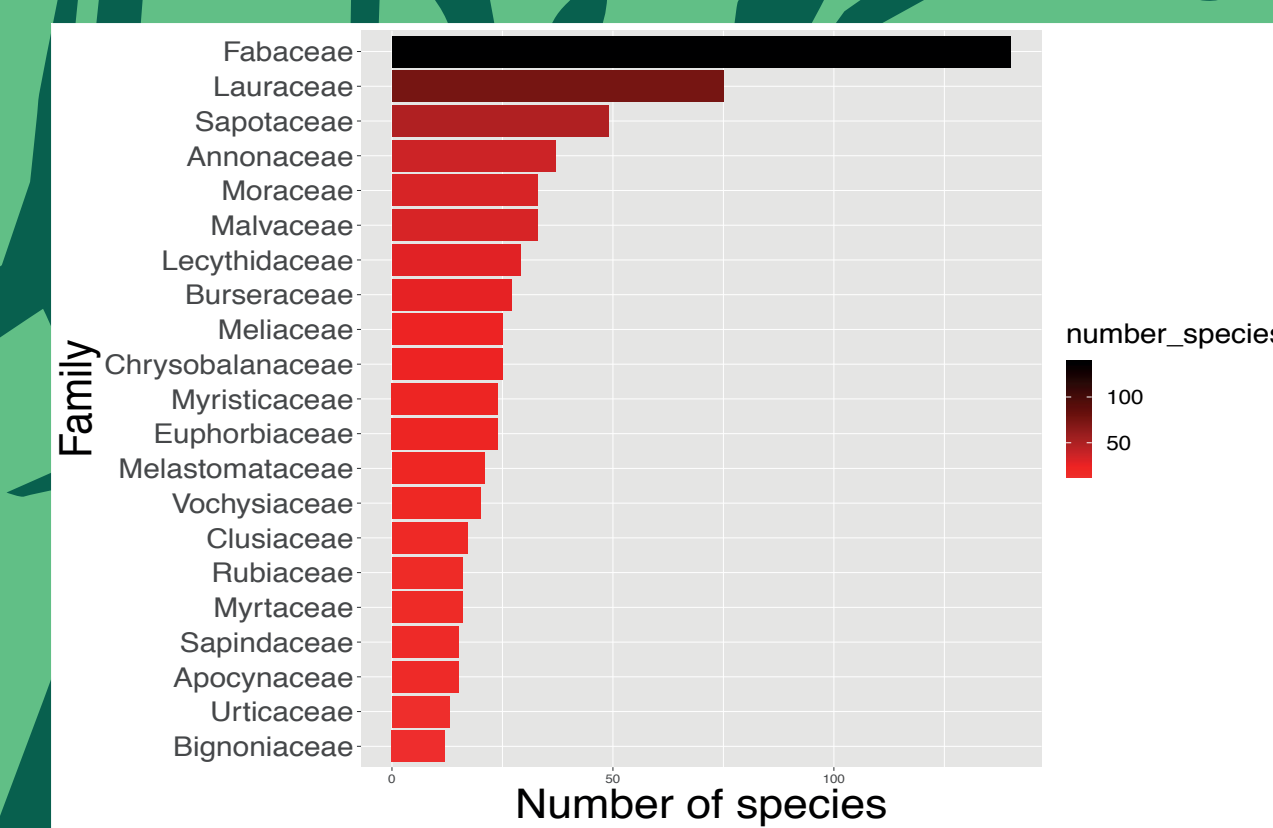


Figure 3. Number of timber species (≥10 spp.) and families according to the present study that are assessed by IUCN Red List Categories up to 2022.

- 72 families, 336 genera and 1114 accepted species. ≥ 10cm DBH among the 6727 spp proposed by Cardoso et al (2017).
- 147 hyperdominant species
- 161 timber species for international market according to ITTO (14.4 %)
- 953 timber species for national / local market (85.6 %)
- 5 species in CITES: Appendix II: *Cedrela odorata* (VU), *Dalbergia spruceana* (VU), *Swietenia macrophylla* (VU). Appendix III: *Cedrela angustifolia* (VU), *Cedrela fissilis* (VU).
- 800 species (65 families) assessed by IUCN (71.8%) among 1114 spp
- 314 species have not been evaluated by IUCN (28.2%).
- Climate change and deforestation seriously threaten the species richness and abundance of timber species.

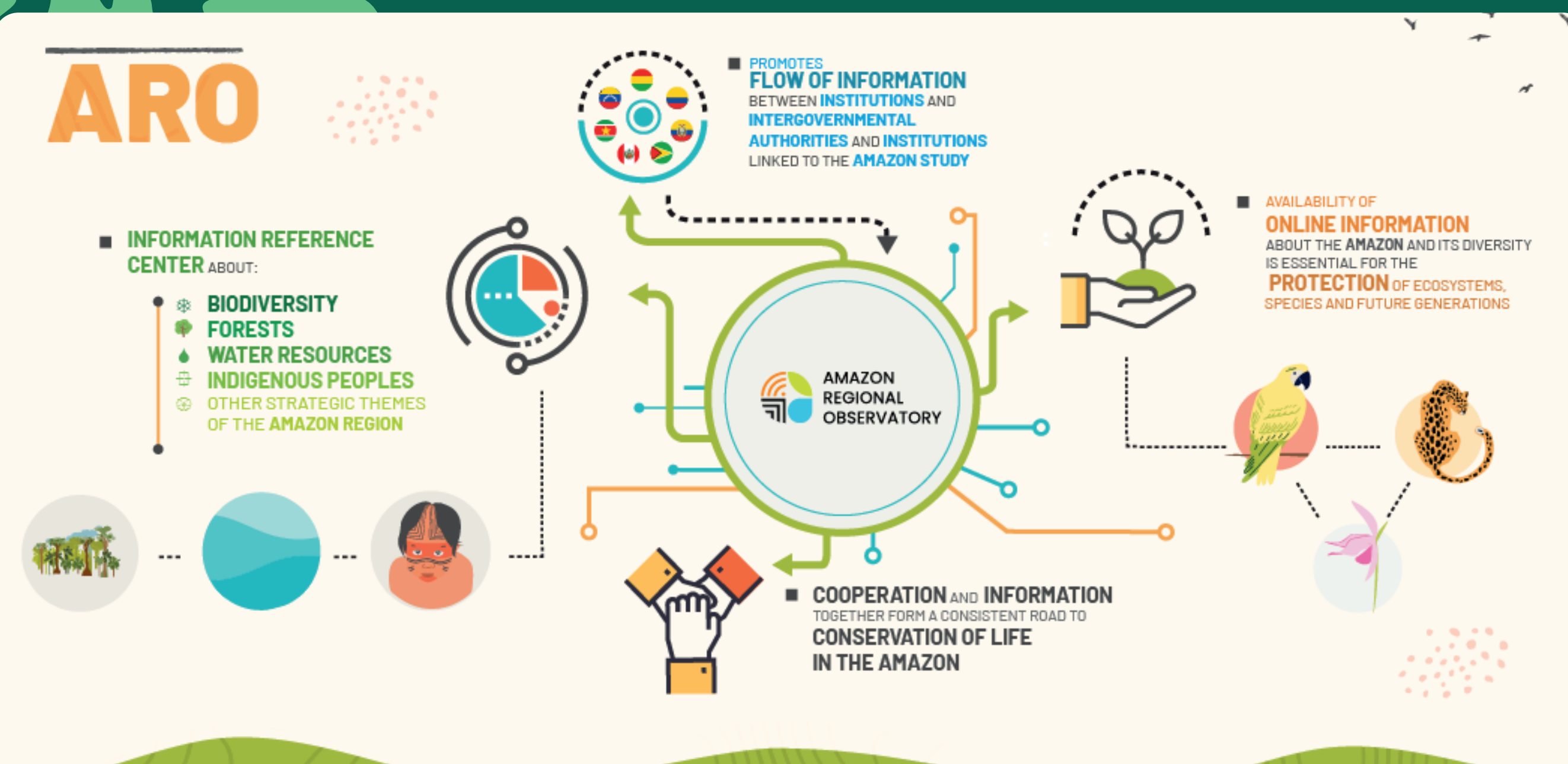
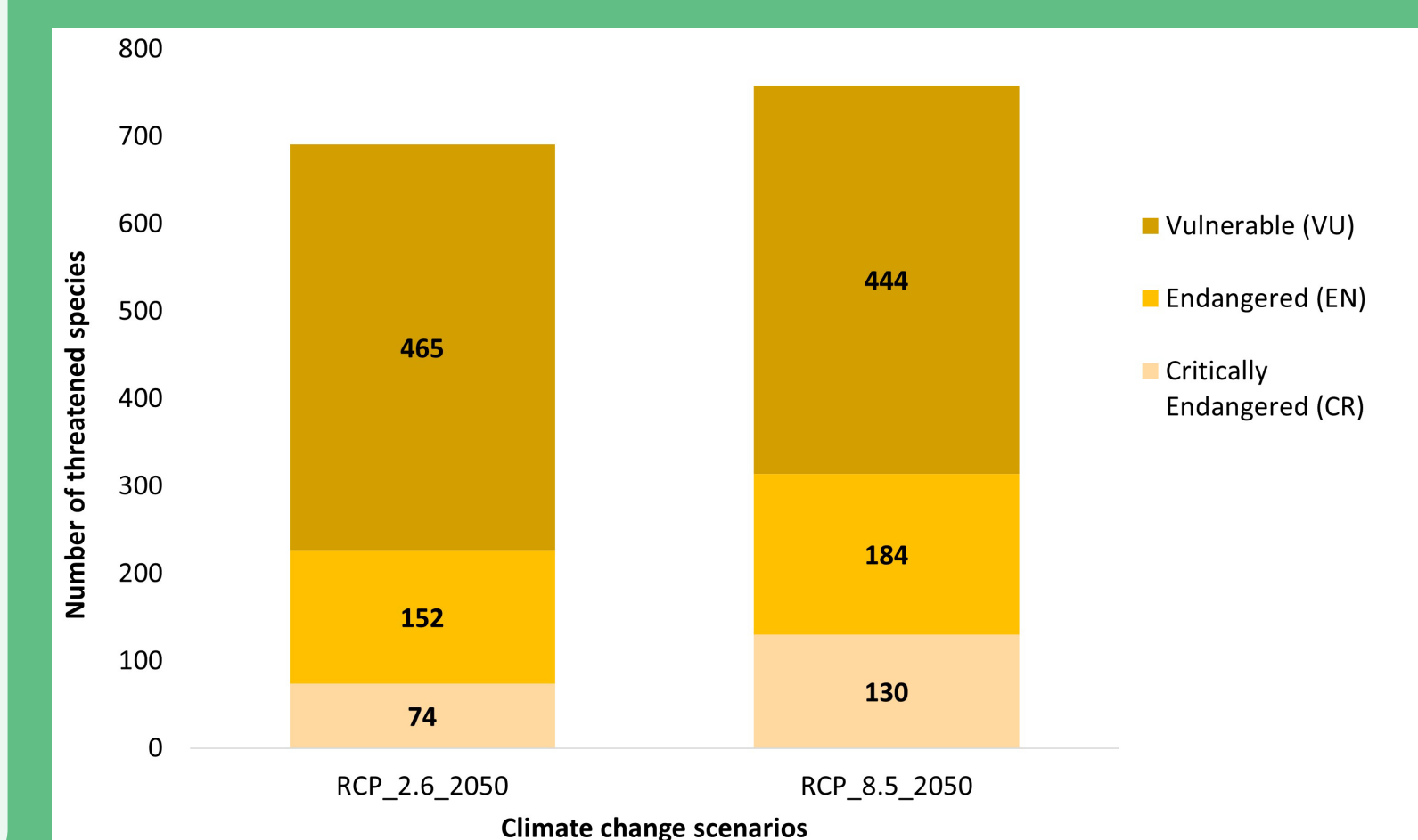
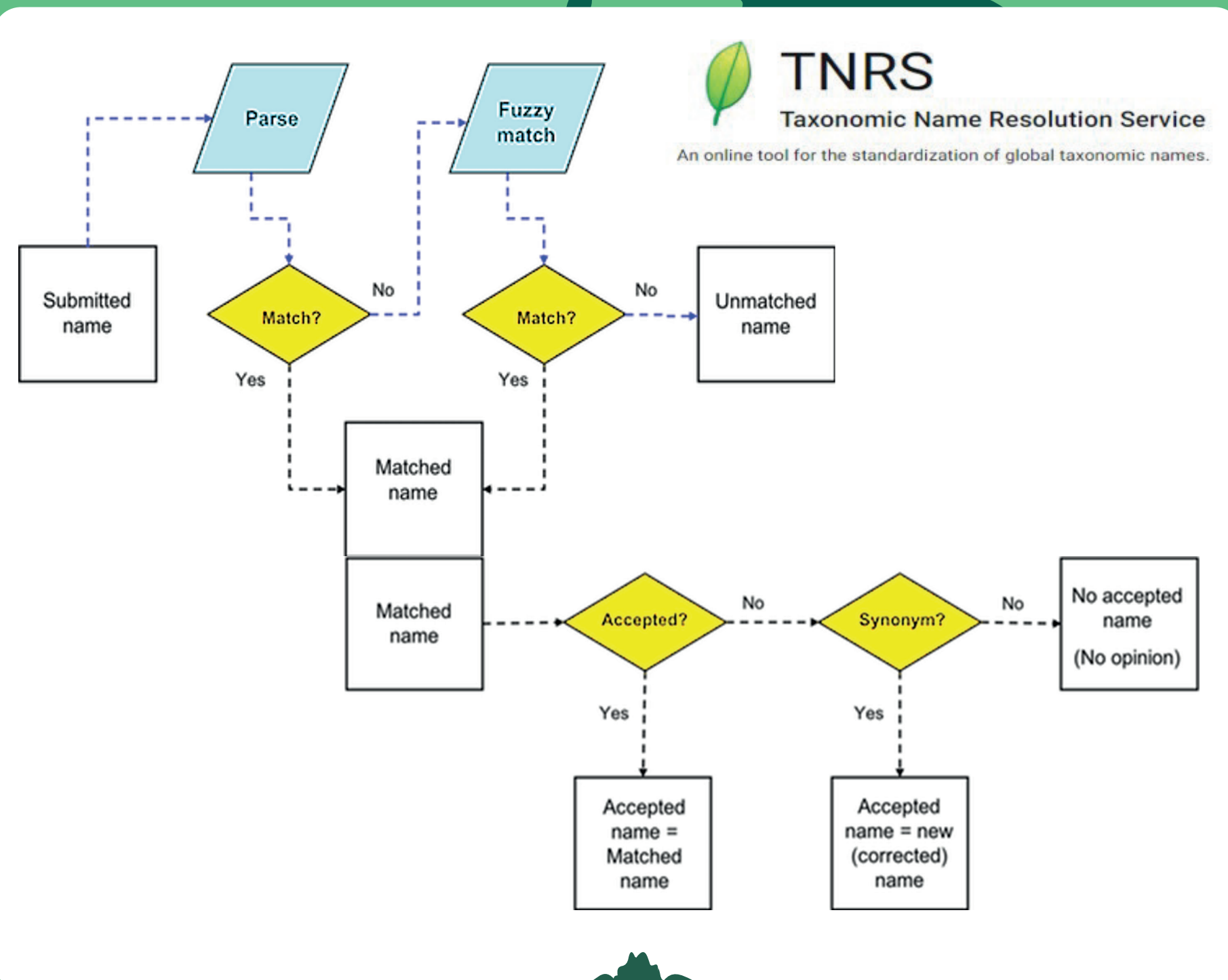


Table 1. Summary of this Amazon timber species list in each Red List Category up to 2022.

IUCN Red List category	Number of Amazon timber species	Percentage (%)
Least Concern	720	64.63
Not evaluated	314	28.19
Vulnerable	33	2.96
Endangered	11	0.99
Lower Risk/least concern	11	0.99
Data Deficient	10	0.90
Near Threatened	8	0.72
Lower Risk/near threatened	4	0.36
Lower Risk/conservation dependent	2	0.18
Critically Endangered	1	0.09
Total	1114	100.00

5. WHAT LESSONS DID WE LEARN?

- An updated and harmonized list (2022) of tropical timber species from countries and intergovernmental institutions could promote a better forest management and conservation efforts.
- Long term research and networks of tropical forest species could support the current intergovernmental initiatives and regulations.
- It is recommended that ITTO species that are in an IUCN threatened category are reviewed by the responsible institutions.
- The Amazon region is about to reach the tipping point (CO₂ > C) due to deforestation.



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ITTO