

TREES PERFORMANCE AND GROWTH RESPONSE OF AN ENDANGERED TIMBER SPECIES FROM THE CONGO BASIN

Why

- ✓ Reduced and decreasing distribution area
- ✓ High and increasing logging intensity
- ✓ Low natural regeneration
- ✓ Listed as endangered
- ✓ Insufficient scientific knowledge on the species performance
- ✓ Unknown long-term sustainability

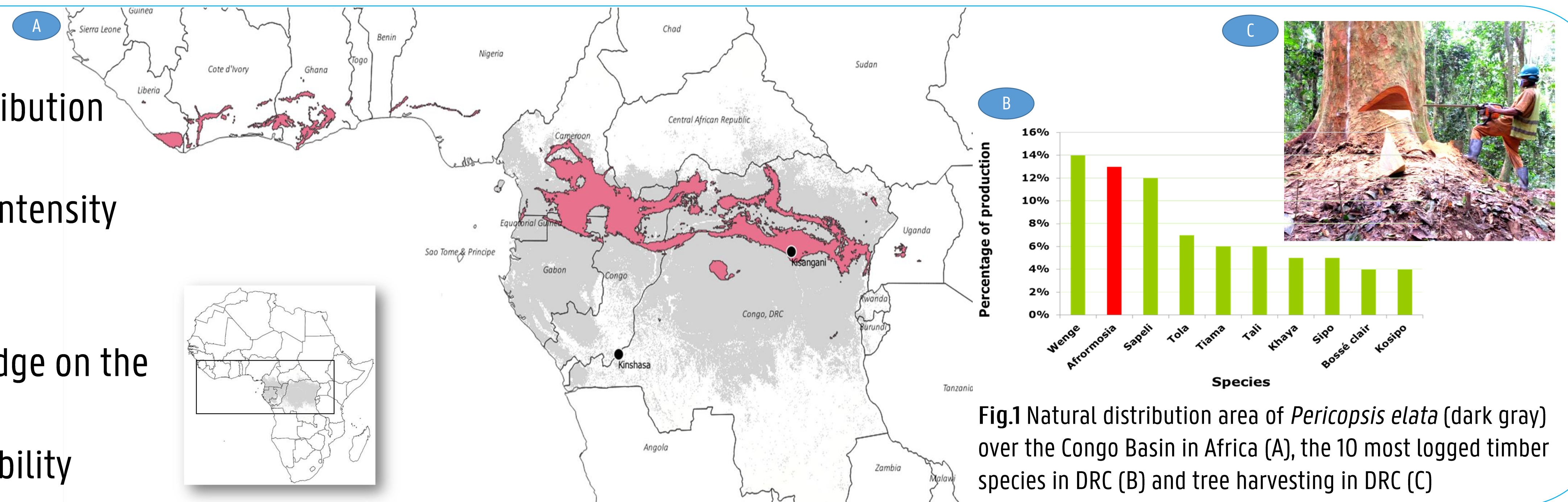


Fig.1 Natural distribution area of *Pericopsis elata* (dark gray) over the Congo Basin in Africa (A), the 10 most logged timber species in DRC (B) and tree harvesting in DRC (C)

How

1. Growth response on individual trees (WP1)
 - ✓ Repeated diameter measurements on 1829 trees from different sites in DRC and Cameroon
 - ✓ Growth ring measurements on stem discs from 147 trees selected from different sites in DRC and Cameroon
2. Foliar, reproductive and growth phenology (WP2)
 - ✓ Monthly monitoring of foliar (leaf shedding and new leaves) and reproductive (flower and fruits) phenology on 330 trees sampled in Yangambi in DRC
 - ✓ Daily monitoring of foliar phenology using Phenological cameras installed on 5 trees during 3 years + 12 month microcores collection on 10 trees
 - ✓ High resolution (15 minutes) stem size fluctuation using point dendrometers installed on 9 trees during 13 months
3. Hydraulic functioning and heartwood formation (WP3)
 - ✓ Complete tree sampling for foliar and wood traits measurements on 17 trees in Yangambi and for the heartwood and sapwood development on 160 trees from different sites in DRC
4. Population structure and dynamics (WP4)
 - ✓ Stem density and growth per size class recorded from different sites in DRC and Cameroon
 - ✓ Tree height-diameter, crown size and competition measured on 2288 trees

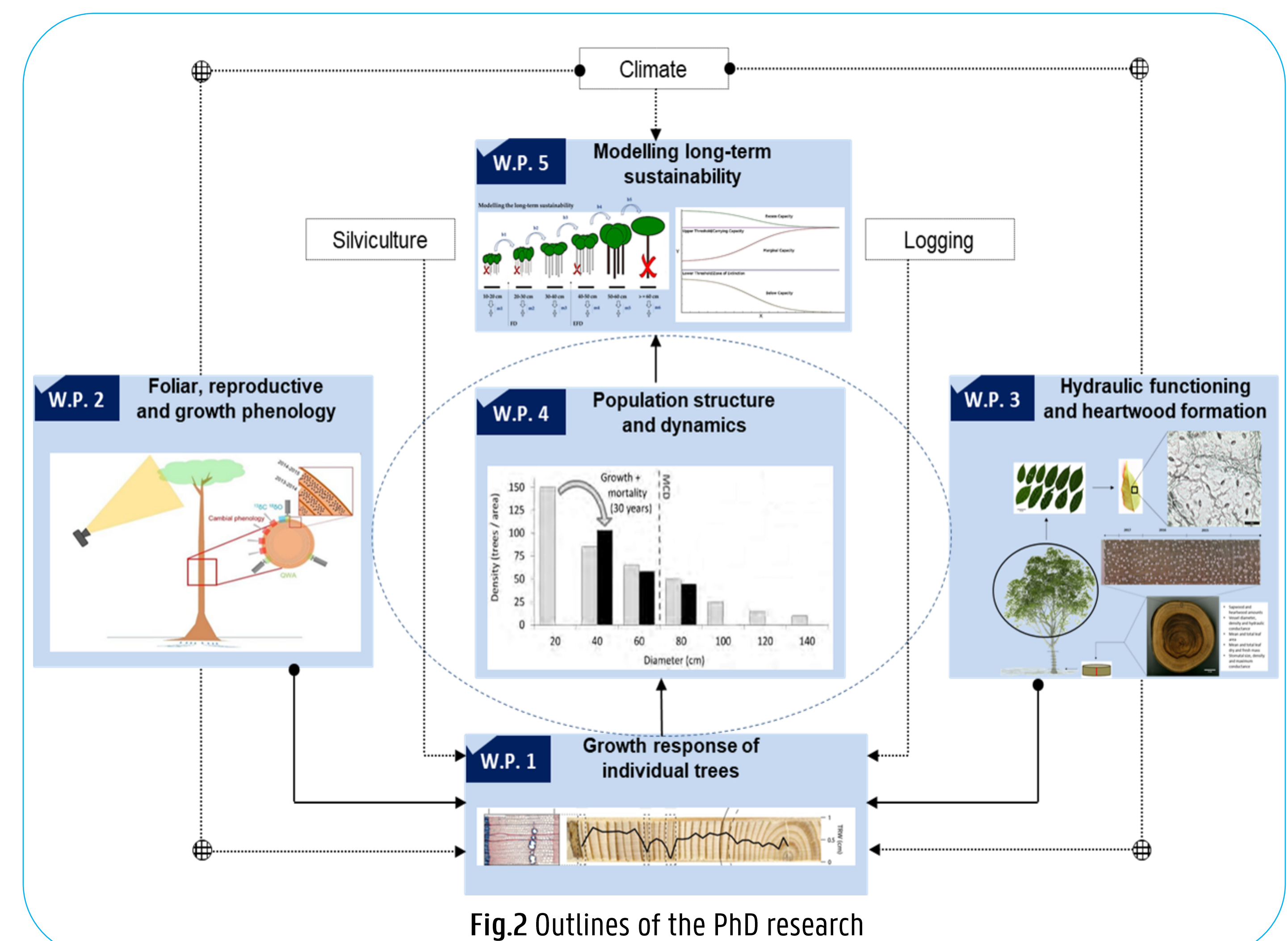


Fig.2 Outlines of the PhD research

Expected outcomes

- ✓ Estimate the current standing stock of the species (modelling the species distribution, population structure and standing volumes)
- ✓ Estimate the growth dynamics of the species populations and the species sensitivity to anthropogenic (e.g. logging) and natural (climate) disturbances or variability
- ✓ Evaluate the species long-term sustainability
- ✓ Suggest management options that better integrate the species vulnerability and guarantee its long-term sustainability

About me

I am a doctoral researcher specialized in tropical forestry and ecology with a key emphasize on trait-based ecology, dendrochronology and ecophysiology. I hold a BSc in Forestry from the University of Kinshasa and a MSc in Biodiversity and Sustainable Forest Management from the University of Kisangani, both in the Democratic Republic of the Congo.

My doctoral research is the result of a scientific cooperation between the Royal Museum for Central Africa (RMCA), the Convention on International Trade of Endangered Species (CITES) and UGent-Woodlab. The final goal of this cooperation is to deliver scientific knowledge to guide CITES in the enforcement of timber regulations concerning *Pericopsis elata*. In October 2019, I obtained a BOF doctoral grant from Ghent University.

I am passionate about forest and grew up in a forest region. I believe that science-based policies can effectively contribute to a more sustainable forest management. I am to make this policy-oriented science available.



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