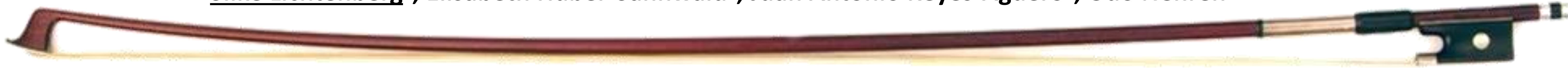


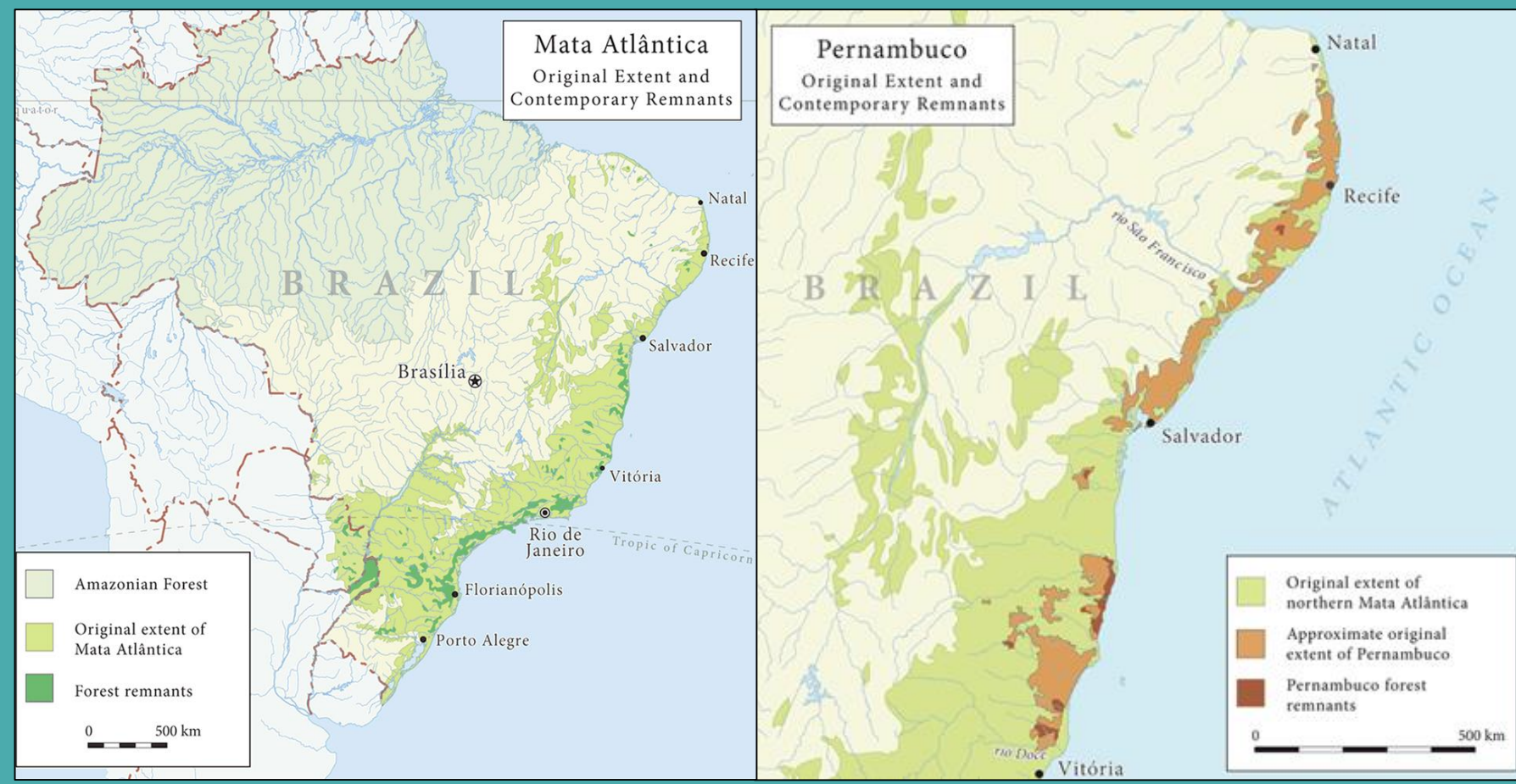
# The use of pau-brasil (*Paubrasilia echinata* Lam.) for making violin bows: A social-ecological system analysis linking environment and art

**Silke Lichtenberg<sup>1</sup>, Elisabeth Huber-Sannwald<sup>2</sup>, Juan Antonio Reyes-Agüero<sup>3</sup>, Udo Nehren<sup>1</sup>**



## Problem Statement

The wood of pau-brasil, *Paubrasilia echinata* Lam., is the worldwide used raw material to build high quality violin bows. Due to the historical and current overexploitation of pau-brasil in the Atlantic Forest of Brazil, this species is highly endangered. The dependence of traditional manufacturing of bows for stringed instruments on pau-brasil on one side and the fact of using a threatened species on the other side have resulted in a conflict characterized by a raw material scarcity, unequal access to the raw material and different legislative regulations on the local, regional and global scales.



Original and today's area of the Atlantic Forest (left) and of pau-brasil (right) (IPCI, 2015)



## The pau-brasil tree

## Objectives

**General:** Elaboration of a conceptual model of the complex SES of *P. echinata* – bow making, which allows or stimulates a sustainable use of *P. echinata* in the manufacture of bows for stringed instruments.

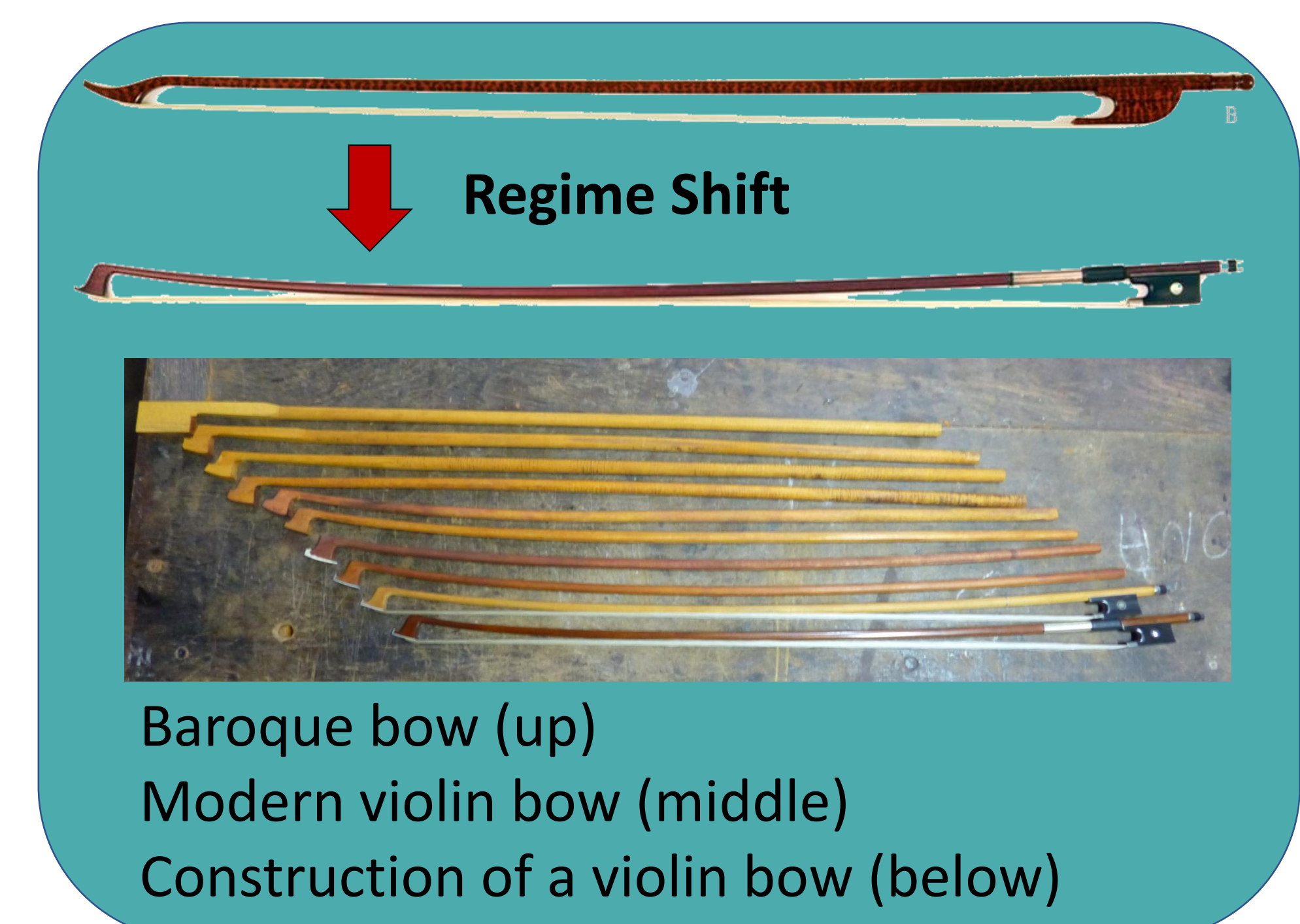
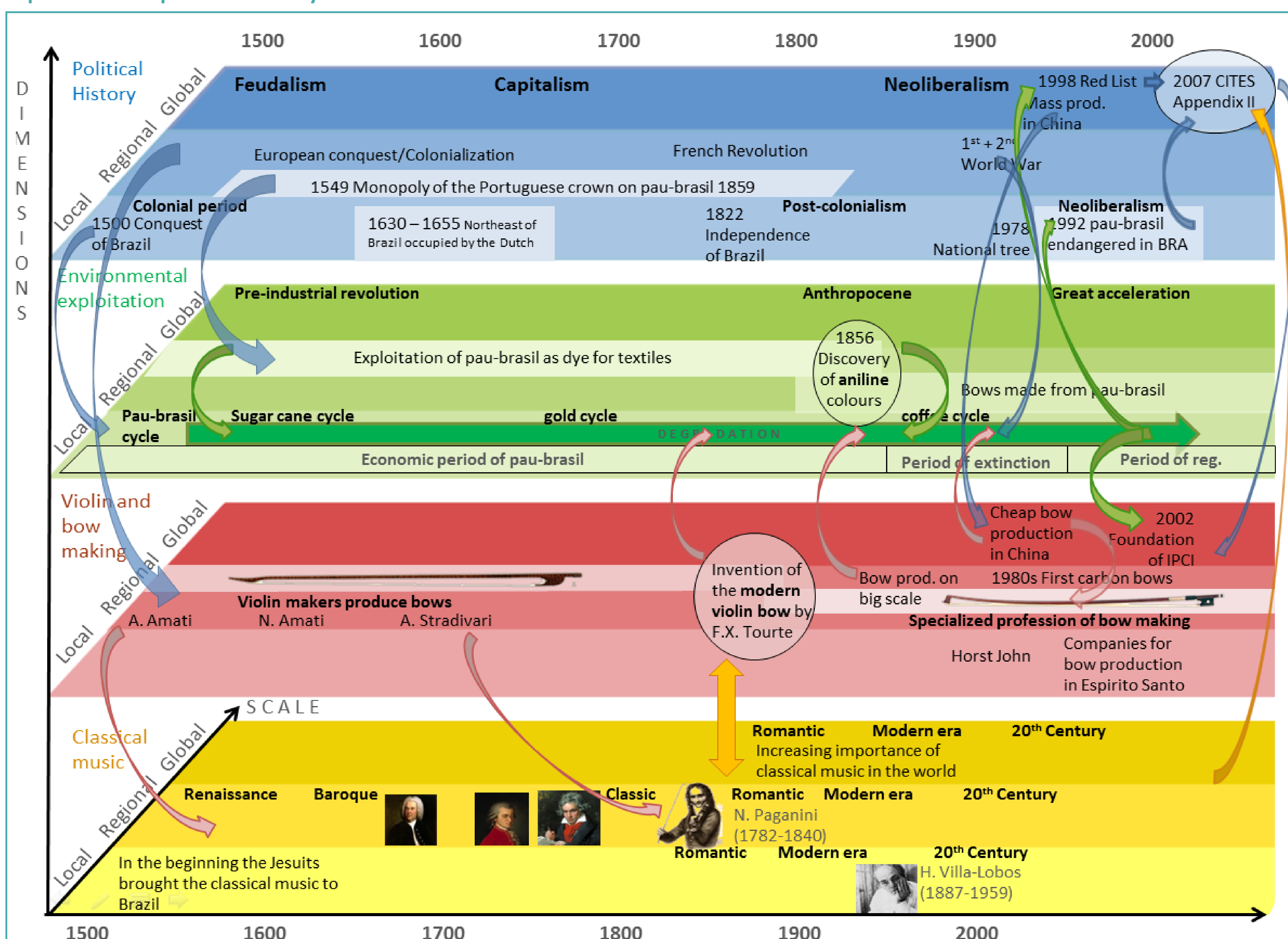
**Specific:** Analysis of the dynamic of the complex SES *P. echinata* – bow making in its historical and current context considering biophysical and socioeconomic drivers and processes on global, regional and local scales to understand how the ecological situation is connected to the use of *P. echinata* for making violin bows on the different scales.

## Methodology

A spatiotemporal analysis was realized considering politics and legislation, environmental degradation, bow making and classical music - within a social-ecological system's (SES) approach.

The information was obtained from a literature review, an online survey on the global scale, expert interviews and plantation measurements on the local scale in the Atlantic Forest. The focal system of the SES encompasses the Atlantic Forest (local scale) and Europe (regional scale).

## Spatiotemporal Analysis

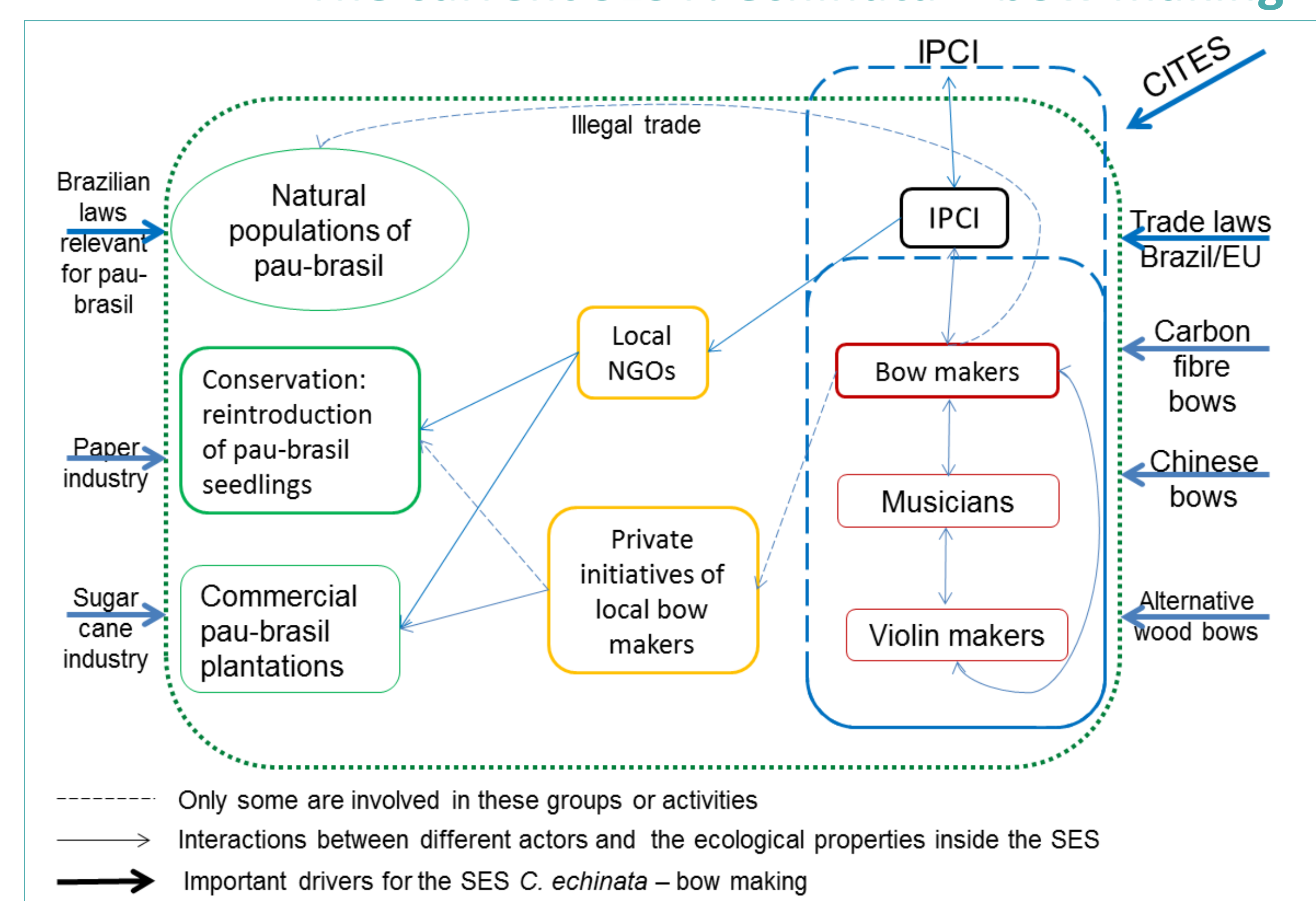


## Results and Recommendation

The current SES *P. echinata* – bow making is strongly connected to the historical developments and is the result of the effects of external drivers and internal interconnections and feedbacks in history.

A more sustainable and resilient SES *P. echinata* – bow making in future needs to consider and work with key drivers, interconnections and actors.

## The current SES *P. echinata* – bow making



## Conclusions

- The SES is a base for the elaboration of future interactions that can increase the resilience of the SES *P. echinata* – bow making to find ways to simultaneously protect and maintain the tradition of bow making and the species *P. echinate*
- The most affected stakeholders (bow makers and violin makers) are doing the biggest efforts to conserve and protect pau-brasil by planting it

<sup>1</sup>Cologne University of Applied Sciences (CUAS), Institute for Technology and Resources Management in the Tropics and Subtropics (ITT), Germany

<sup>2</sup>Institute for Scientific and Technological Research of San Luis Potosi (IPICYT), Mexico

<sup>3</sup>Autonomous University of San Luis Potosí (UASLP), Mexico

Contact: [silke.lichtenberg@gmail.com](mailto:silke.lichtenberg@gmail.com)



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