# Challenges for the conservation of the useful neotropical palm pindobaçu (*Attalea pindobassu* Bondar) in the face of climate change

Authors: **Isiara Silva Menezes[1];** Ana Paula Lima do Couto-Santos[2], Robert A. Voeks[3], Diogo Souza Bezerra Rocha[4]; Ligia Silveira Funch[1]

[1] Prog. Pós-graduação em Recursos Genéticos Vegetais, Universidade Estadual de Feira de Santana, Feira de Santana, BA, Brazil
[2] Departamento de Ciências Exatas e Naturais, Universidade Estadual do Sudoeste da Bahia, Itapetinga, BA, Brazil.
[3] Geography Department, California State University, Fullerton, CA, USA
[4] Instituto Internacional para Sustentabilidade, Rio de Janeiro, RJ, Brazil.

## Introduction

Pindobaçu *(Attalea pindobassu* Bondar) is a native palm of Brazil's Caatinga biome. The specie has significant socioeconomic relevance for traditional communities in the Chapada Diamantina, Northeast Brazil, who employ it for cosmetic, food, and handicraft purposes.

We investigated the suitability of habitats of pindobaçu using Ecological Niche Modelling under current and future climate scenarios, SSP2-4.5 (optimistic) and SSP5-8.5 (pessimistic), to evaluate the effectiveness of the current network of protected areas (PAs) in long-term conservation of the specie.
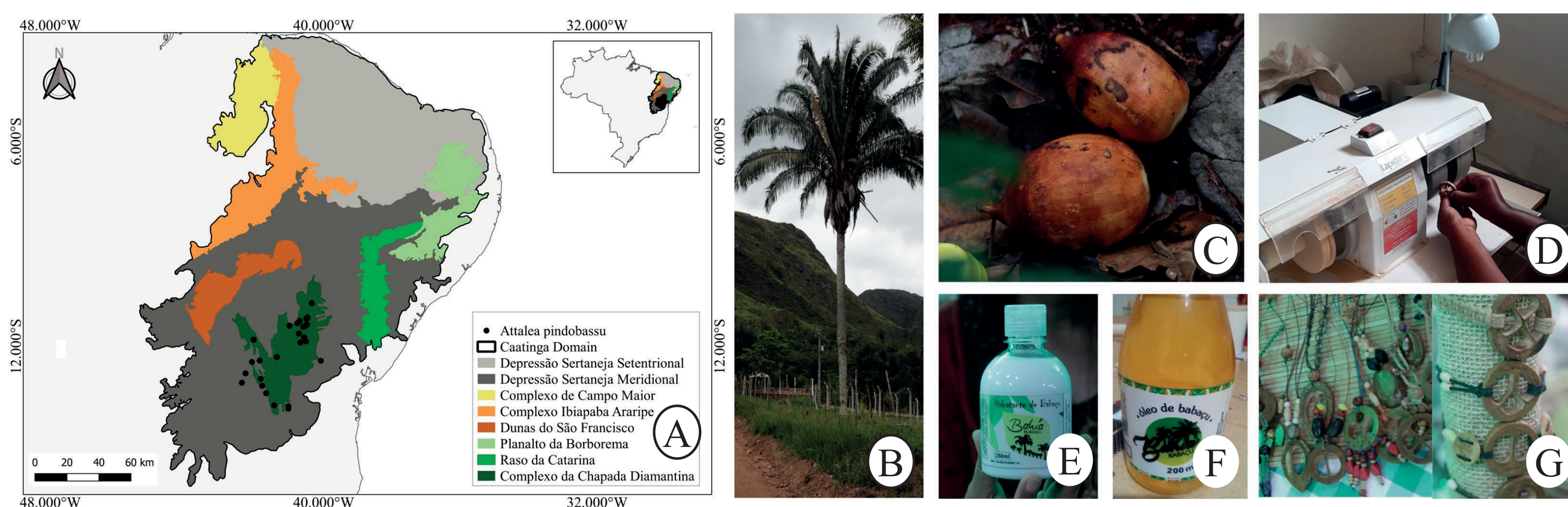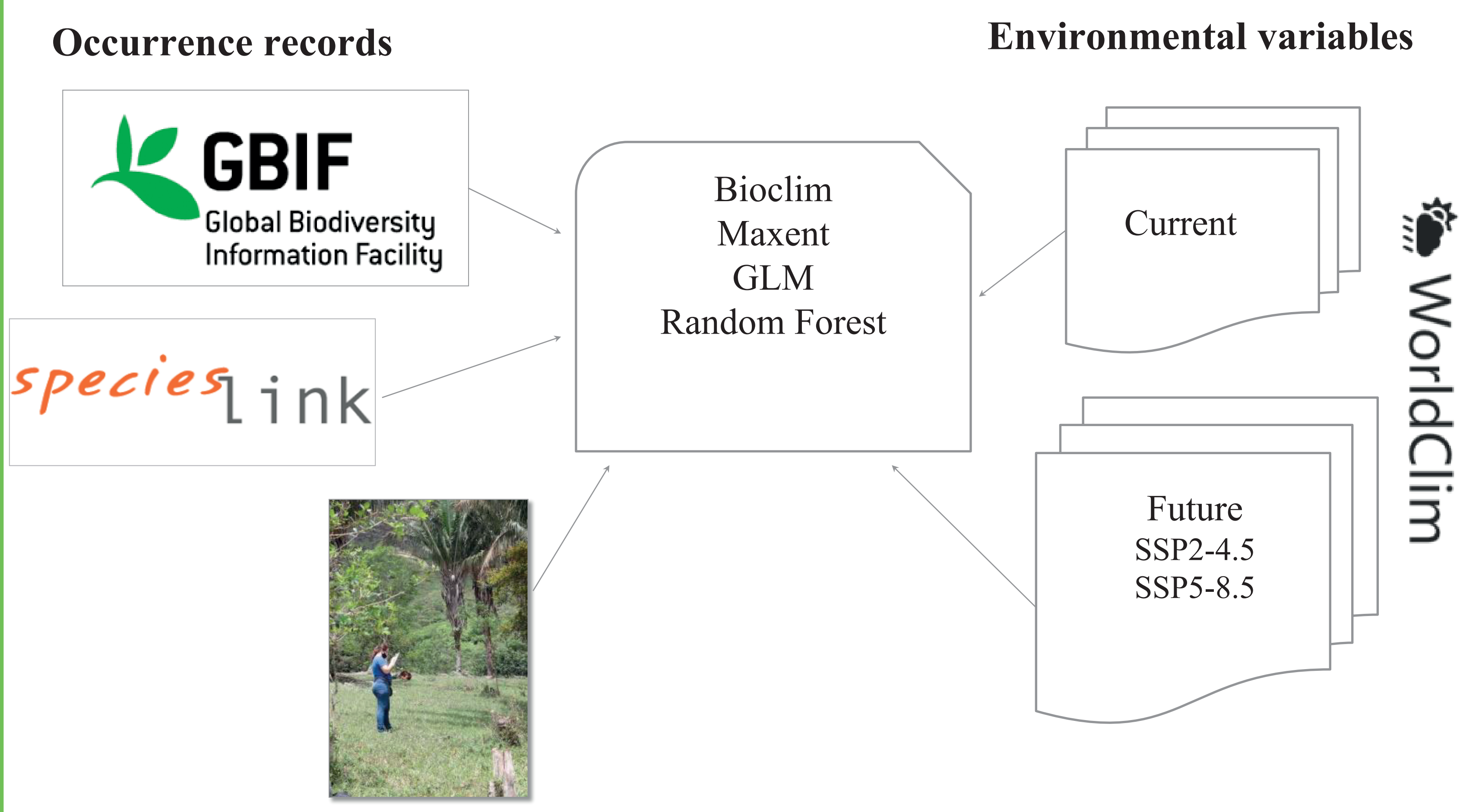


**Figure 1**: Distribution and habitat, as well as products made from the fruits of the Pindobaçu palm (*Attalea pindobassu*) by the community of Coxo de Dentro in the Chapada Diamantina mountains, Brazil. A. Occurrence record used in the study; B. Habitat; C. Fruits; D. Handicraft production; E. Cosmetic; F. Edible oil; G. Handicraft.

## Methods



## Results

Current climate suitability: 68,754 km² (8.04% of the Caatinga biome)

A low percentage of climate suitability areas were observed within the PAs, in the current scenario and in the future scenarios

SSP2-4.5
i)   2040 reduction of 23.94%;
ii)  2060 reduction of 50.7%;
iii) 2080 reduction of 64.73%;
iv)  2100 reduction of 75.21%.

SSP5-8.5
i)   2040 reduction of 37.27%;
ii)  2060 reduction of 60.46%;
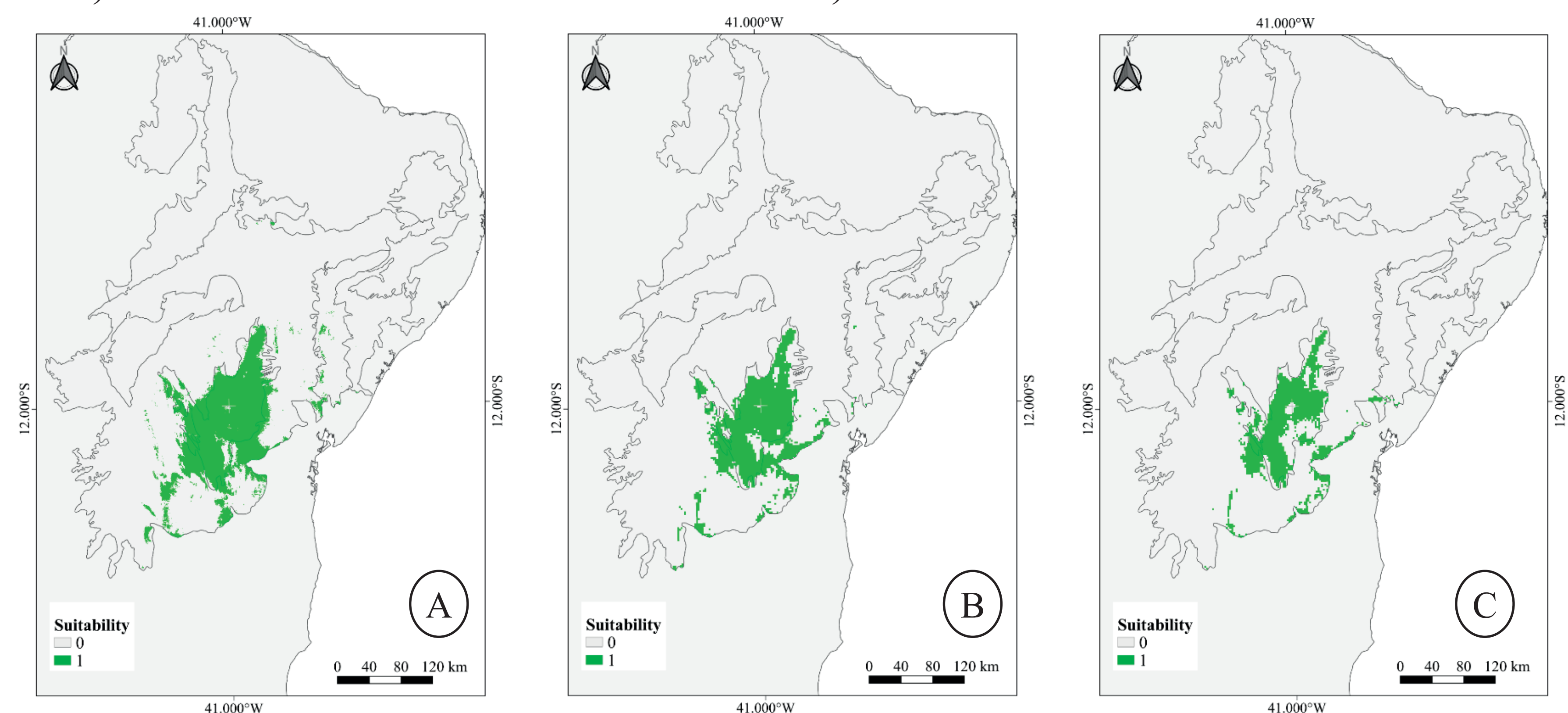iii) 2080 reduction 100%;
iv)  2100 reduction 100%.



**Figure 2**: A- Predictive model of the environmental suitability of *Attalea pindobassu* in the Caatinga (neotropical savanna) biome. B and C Projections for 2040. B- Optimistic scenario (SSP2-4.5). C- Pessimistic scenario (SSP2-8.5).

## Conclusions

The creation of germplasm banks for *ex situ* conservation, creation and expansion of PAs, and monitoring of natural populations is crucial to ensure the sustainability of this palm's resources for traditional communities into the future.

## Acknowledgements