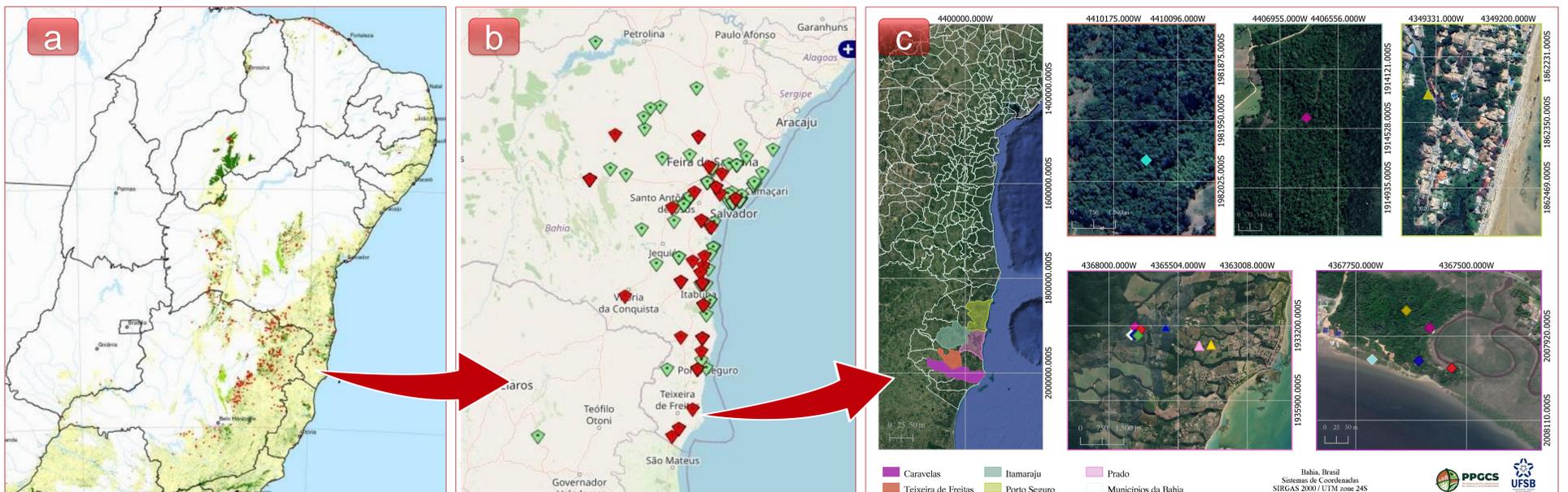


# Vanilla wild relatives naturally occurring in the Atlantic rainforest-central biodiversity corridor in southern Bahia - Brazil

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**Figure 1:** Study area. a - Brazilian Coast and Atlantic rainforest official area (in green-Source: SOS Mata Atlântica, 2015 <<https://www.sosma.org.br/noticias/fundacao-divulga-novos-dados-sobre-situacao-da-mata-atlantica/>>). b - mapping of naturally occurring *Vanilla* specimens in the extreme southern region of Bahia, Central Biodiversity corridor (red- exsiccates with inferred location (not geotagged); green- geotagged exsiccates. Source: Flora do Brasil, 2020 <<https://floradobrasil.jbrj.gov.br/reflora/herbarioVirtual/ConsultaPublicoHVUC/ConsultaPublicoHVUC.do>>). c - Mapping of *Vanilla* specimens geotagged in the study area.

## Results

Wild species of the genus *Vanilla* are mostly described in the literature as occurring in the north coast portion of the State of Bahia, with only a few records of occurrence without determination of the species in the extreme southern Bahia region also called “Hileia baiana” (**Figure 1b**).

Fifteen specimens of the genus *Vanilla* were found in five different environments, on the roadside, in the conserved forest, on sandbanks (restingas), and river side (**Figure 1c**).

Three of them, located in the forest at the indigenous village TIBÁ (Prado-BA), were blossoming and provided data for this study. The morphological and phenological characteristics were compatible with those described in the literature for the species *Vanilla chamissonis* Klotzsch [4] and *Vanilla phaeantha* Rchb.f. [5] (**Figure 2**).

## Introduction

The *Vanilla* Mill. is a famous genus from the Orchidaceae family, due to vanillin, an aromatic organic compound widely used in the industry. In Brazil, 20 of the 38 registered species are endemic, distributed in the Amazon, Caatinga, Cerrado, and Atlantic Rainforest biomes [1]. Southern Bahia lacks scientific information about *Vanilla*'s natural occurrence; however, small farmers have an interest in growing it. Environmental changes are leading to genetic erosion and extinction risk of cultivated species and wild relatives which demands efforts for studying and collecting genetic resources [2]. Considering the complex activity of growing vanilla for oil extraction, conserving the diversity guarantees the potential for resilient new species and cultivars to be grown [3].

## Methods

Aiming for the sustainable use of *Vanilla* germplasm in Southern Bahia, and its conservation, it was intended to identify the naturally occurring species in the study area, which covered four different provenances, including a conservation unit, the “Parque Nacional do Descobrimento” and neighboring communities. An expedition was carried out in the forest areas where encountered individuals geotagged, and plant material was collected. Fertile plants were monitored on habitat, morphology, phenology, and floral visitors for a period of 60 days, from the flower bud stage until the first flower senescence.

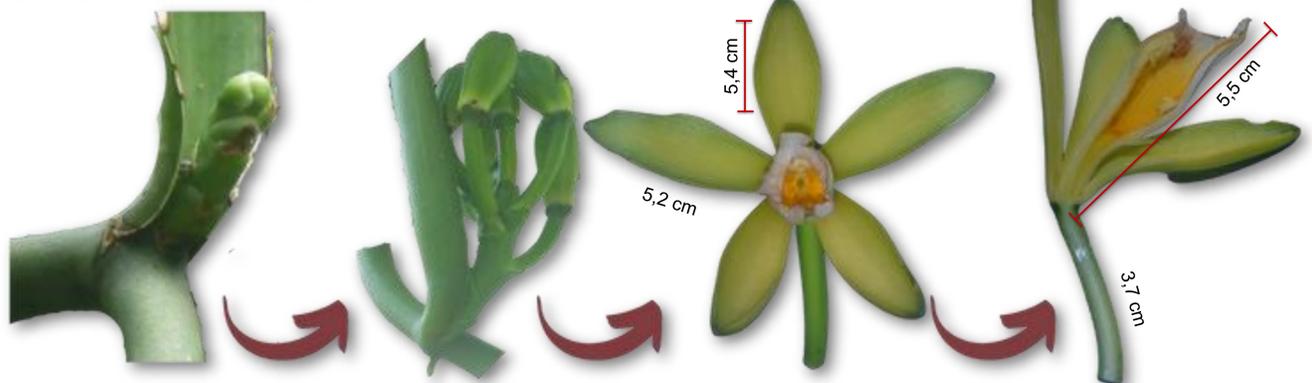
## Conclusion

The occurrence of wild *Vanilla* relatives in Southern Bahia was determined and registered. Genetic resources were successfully collected and relevant information on the species' phenological and morphological description in that environment was obtained.

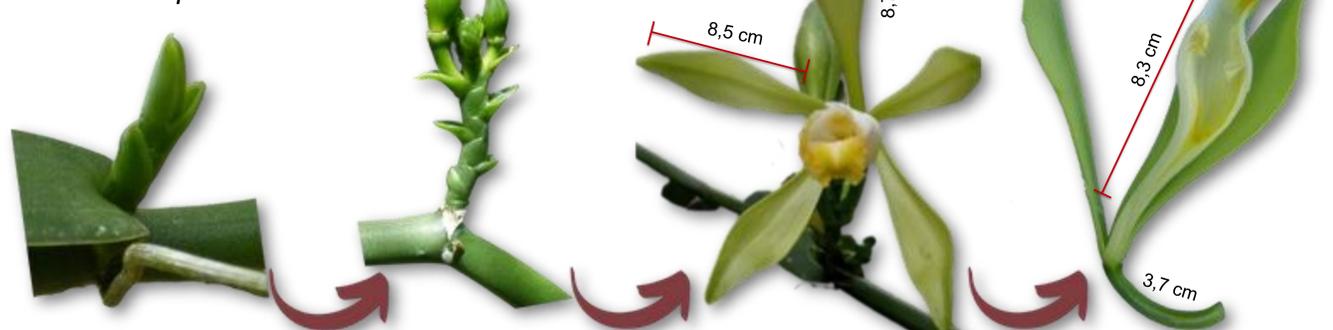
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a - *Vanilla chamissonis*



b - *Vanilla phaeantha*



**Figure 2:** Morphological and phenological characteristics of the identified species a - *Vanilla chamissonis*, from floral bud to blossom approx. 43 days, flower senescence after 6 days; b - *Vanilla phaeantha*, from floral bud to blossom approx. 34 days, flower senescence after 1 day.

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