P/REFERENCES OF DESIGN

DESIGN IN THE CONTEXT OF BIOECONOMY: AN EXPERIENCE IN THE AMAZON FOREST.

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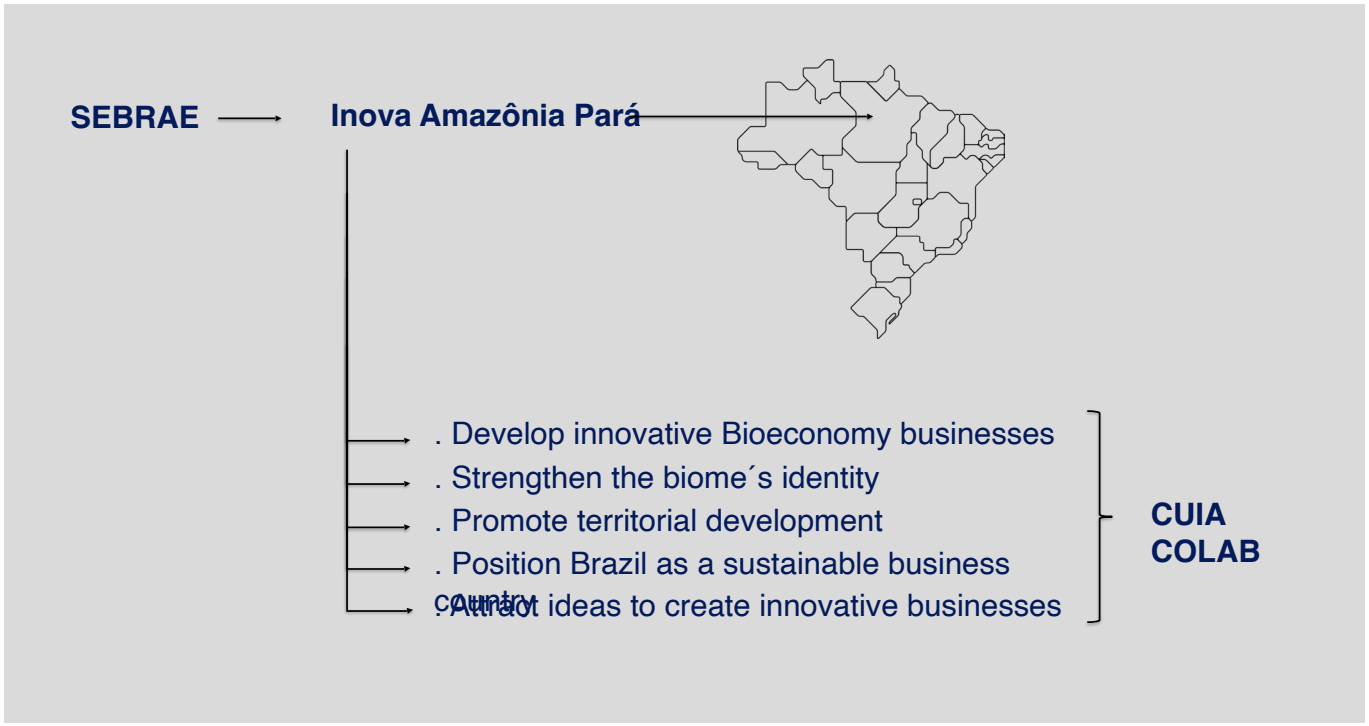
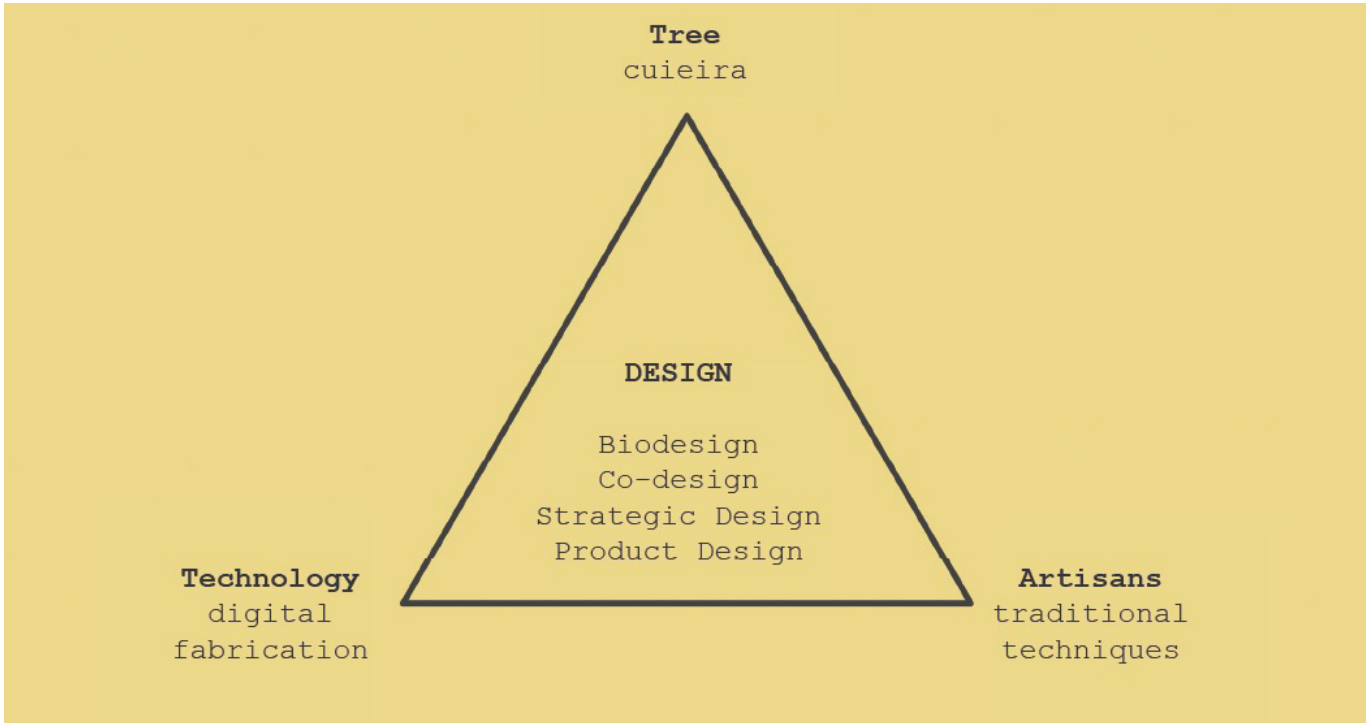
ABSTRACT | In 2021, SEBRAE, the Brazilian Service of Support to Small Entrepreneurs, initiated a call for projects entitled “Inova Amazônia Pará.” Situated in the northern region of Brazil within the context of the Amazon Forest, the primary objective of this call was to stimulate entrepreneurship and innovation through training for the development of products (commodities and/or services) or pioneering processes. The initiative’s goal was to facilitate the transformation of inventive concepts into sustainable enterprises, concurrently fortifying small-scale businesses that integrate novel technologies within sectors related to the bioeconomy. This study scrutinizes the Cuia Colab project (CCp), a design initiative selected as a startup under the abovementioned initiative. CCp centers around a regional item native to Pará: the cuias. They represent traditional artisanal objects crafted from an Amazonian tree, predominantly employed as bowls, vases, and containers. The fundamental objective of the Cuia Colab project was to integrate innovative practices into the cuias’ production process, leveraging their inherent qualities while preserving and promoting the cultural significance of these traditional Amazonian artifacts. It was a collaborative process between technology, artisanal communities, and trees facilitated through design.

Our research question is ‘How does the Cuia Colab project align with biodesign/bioeconomy intentions? Within this framework, Biodesign is a strategic collaborative approach that integrates living beings into developing alternative sustainable materials or products. Meanwhile, the Bioeconomy sustainably produces commodities and services in all economic sectors using biological resources, processes, and techniques. In CCp, we strengthened its Bioecology vision, prioritizing ecological processes, optimizing energy and nutrient utilization, and supporting biodiversity. Our methodological approach encompassed a literature review of these concepts to establish the theoretical/conceptual framework for the subsequent case study analyses. Then, the Cuia Colab process was described, delineating the intervention effects, particularly those that impacted the stakeholders (the artisan communities, the Amazon trees, and the forest – defined as a human and non-human interaction). We explored CCp activities and their correlation with the concepts already defined, providing a structure for critical reflections.

The Cuia Colab adopted a collaborative ethos with trees, viewing them as active agents that modified the initial design procedures. It also advocated forest vitality, fostering positive environmental and social impacts, departing from traditional industrial practices that mainly assert control over resources and prioritizing standardization. Therefore, it moved away from the maximized production pressure to corroborate with the forest’s economic viability. In conclusion, Cuia Colab exemplifies the imperative for reevaluating fundamental design principles and sustainability within the bioeconomic landscape. It can be seen as an example that illustrates the intricate balance between ecological preservation, socio-economic imperatives, and innovative design paradigms. In pursuing a bioeconomy enterprise imbued with ecological design principles, we suggest adopting bio-situated approaches prioritizing biodiversity over scalability. Additionally, it is imperative to demonstrate respect for and a deep understanding of the environment’s custodians and local knowledge systems. By prioritizing these considerations, designers can ensure their endeavors contribute to ecological sustainability while fostering harmonious relationships with local communities and ecosystems.


SEBRAE
Inova Amazônia Pará
. Develop innovative Bioeconomy businesses
. Strengthen the biome´s identity
. Promote territorial development
. Position Brazil as a sustainable business country
. Attract ideas to create innovative businesses
CUIA
COLAB


Tree
cuieira
DESIGN
Biodesign
Co-design
Strategic Design
Product Design
Technology
digital
fabrication
Artisans
traditional
techniques

How Does the Cuia Colab Project Align with Biodesign/Bioeconomy Intentions?

A strategic collaborative approach that integrates living beings into developing alternative sustainable materials or products.
(Myers, 2018)

A sustainable initiatives that establish, develop, and revitalize economic systems based on the sustainable utilization of renewable biological resources.
Bugge et al. (2019)

Research Methodology

1. Literature review on: _Brazilian Amazon Context
   _Biodesign and Bioeconomy
   _Human and non-human interactions
2. Cuia Colab project as a Case Study
3. Critical reflection, analyses and discussion
4. Conclusions

Artisan Silvane Maduro harvests a cuia in her backyard

Cuia Colab Project PIVOTAL QUESTIONS

_Is producing objects within a paradigm divergent from conventional norms feasible, as was coined by Ginsberg and Chieza's (2018) Biodesign expansive view or even the Bioecology vision by Bugge et al. (2019)?

_How will the project deliver tangible benefits for all stakeholders, including designers, artisans, trees, and clients, respecting Haraway's (2016) notion of 'companion species'?

_How can logistical challenges associated with an Amazonian product be handled ecologically?

_Should the Cuia Colab project persist solely as a business entity producing objects, as Silva et al. (2018) crave when addressing Amazon's potential for Bioeconomy?

_Are there alternative activities or pivots worth considering to embrace Watson's (2019) definition of design as a repository of sustainable practices responsive to environmental challenges?

CONCLUSIONS

. Situated Biodesign and Bioeconomy practices

. Biodiversity before scalability

. Social regeneration before economic growth

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