

Recôncavo da Guanabara Value Chain Assessment

OPPORTUNITY MAPPING AND STRATEGIC ANALYSIS



1. Introduction

This report focuses on assessing the potential opportunities and challenges of the Guanabara Bay Agro-Eco-Tourism Trail (Caminho do Recôncavo da Guanabara) project, a key initiative designed to drive sustainable economic development in the Recôncavo da Guanabara region. As a manifestation of the bio-hub's role as a catalyst for regional development, the trail serves to integrate agricultural, eco-tourism, and community-driven solutions, creating a platform for biodiversity conservation, cultural heritage preservation, and regenerative economic practices.

The objective of this assessment is to identify and explore gaps and opportunities within the agro-ecotourism value chain to strengthen and scale up the trail as a central element of the bioregional economy. By engaging key stakeholders—ranging from farmers and producers to municipalities and tourism operators—this report highlights critical activities

and actors that can contribute to the effective functioning of the trail as a regional economic engine.

The report is divided into four main sections:

1. **Project Summary, Impact, and Key Learnings**

This section provides an overview of the project's development, impact, and key lessons learned to date. It covers the project's objectives, milestones achieved, and its role as a catalyst for a regenerative economy in the region.

2. **Agriculture Value Chain Assessment**

This section analyzes the agricultural landscape along the trail, identifying key actors, challenges, gaps, and opportunities. It evaluates the potential for integrating sustainable farming practices with agro-ecotourism to strengthen the bio-economy and enhance the livelihoods of local farmers.

3. **Eco-Tourism Value Chain Assessment**

This section focuses on the eco-tourism aspects of the project, assessing the challenges and opportunities in developing tourism along the trail. It examines the potential for growing visitor numbers, improving infrastructure, and fostering stronger partnerships between local communities and tourism operators.

4. **Conclusion and Recommendations**

This final section synthesizes the findings and provides actionable recommendations to address the identified gaps and opportunities. It outlines key strategies for enhancing the trail's impact, strengthening the value chains, and scaling the initiative to create a more cohesive and sustainable bio-hub.

2. Project Summary - Recôncavo da Guanabara Trail

Since 2022, SINAL has begun to expand its actions outside of its 200 hectares of property and co-create solutions with other local actors throughout its bioregion with its flagship project, the Guanabara Bay Trail (Caminho do Recôncavo da Guanabara in portuguese). The 110 km community-based agro-ecotourism trail has become its principal strategy for catalyzing a bioregional economy, starting by getting to know the needs and opportunities of the bioregion and building relationships with local communities, governments and key players.



Background & Context

The Caminho do Recôncavo da Guanabara (CRG) project was born from a shared vision between three key socio-environmental hubs in the region: Instituto Sinal do Vale, Reserva Ecovila El Nagual, and Reserva Ecológica de Guapiaçu (REGUA). Since 2015, these institutions, recognized as Advanced Biosphere Reserves of the Atlantic Forest by UNESCO, have worked together to promote forest regeneration, biodiversity conservation, and the strengthening of local communities around Guanabara Bay.

In 2022, the vision of creating a long-distance trail connecting the three bio-hubs was solidified, using ecotourism as a strategy to catalyze a regenerative economy. With support from the Fundação Grupo Boticário and technical consultancy from Pedra D'Água, specialists in community-based trail creation, the technical design for the first 50 km of the Caminho do Recôncavo da Guanabara was implemented between 2022 and early 2023.

This work included georeferencing and mapping local entrepreneurs, accommodations (campsites, inns), gastronomic points, natural attractions, and family farmers.

In 2023, the second half of the trail, covering an additional 60 km, was mapped, signposted, and officially launched in August. This phase was achieved with the active participation of all local stakeholders involved in the co-creation process.

By 2024, the focus shifted to improving trail infrastructure, including enhancing campsites and ecotourism attractions, and mobilizing local farmers to offer products directly to hikers, thus strengthening the regional economy. Simultaneously, communication efforts were intensified, including the production of videos and digital content that recount the CRG story and help revalue a region often stigmatized. Through Instagram as a dynamic platform, 10 reels, 17 posts, and 129 stories were created, reaching over 25,000 views and 7,000 accounts. These actions have repositioned the CRG as a vibrant, resilient destination, highlighting its natural, cultural, and entrepreneurial potential.

Project Implementation

Since the start of the project, this vision evolved into a 110 km ecotourism trail that connects three restoration hubs, spans five municipalities, and traverses 11 protected areas. The trail was designed, developed, and implemented to promote a regenerative economy, forest restoration, and well-being for vulnerable communities in the periphery of Rio de Janeiro. It has become a physical and symbolic pathway that connects visitors with the region's stunning natural beauty and rich history while creating opportunities for local communities. Now officially approved for Phase 1 of the Brazilian National Network for Trails—a rare accomplishment within two years—the trail is a significant milestone for the region, with approximately 1,500 people already visiting it.

Beyond its physical development, the project has catalyzed a movement of collaboration and entrepreneurship across the bioregion, engaging with local governments from all municipalities, hundreds of farmers, ecotourism entrepreneurs, landowners, and guides. It has activated an entrepreneurial ecosystem rooted in ecotourism and nature-based solutions, with points of sale identified along all nine sections of the trail and local products now being sold at several campsites and community hubs. Two agroforestry systems were implemented, including one at Terra Prometida, producing high-value crops like acerola for the Italian company ABOCA, linking local farmers to international markets, and creating the potential to scale across 1,000 hectares. Over 210 farmers and entrepreneurs have been trained in agroforestry, regenerative agriculture, and sustainable business practices, directly enhancing their capacity to integrate biodiversity conservation into their work. The trail has also brought attention to cultural heritage, such as the rediscovery of the Estrela Port, which has led to a new public policy to protect the site and create an archaeological park. Additionally, 8,500 native trees have been planted along the trail, with the last 1,500 to be planted in December 2024, contributing to biodiversity restoration and water retention in the local water basins in this critical buffer zone. The Guanabara Bay Trail now

serves as a platform for innovation and collaboration, aligning local actors, governments, and global partners to foster inclusive economic development, ecological restoration, and cultural preservation.



Results & Impact

The following are results organized by the project's three key objectives over the years. :

1. Community-based Tourism: To promote a community-based tourism trail that preserves and promotes historical and cultural heritage while favoring the resilience of the territory's ecosystem:

- Successfully mapped and constructed a 110 km trail, surpassing the initial 100 km target.
- Engaged over 150 local actors (guides, farmers, tourism entrepreneurs, and landowners) in the trail design and implementation process, ensuring widespread community involvement and support.
- Reached 7,000 potential visitors through communication channels, with 25,000 views of trail content
- 1500 people were directly involved in tourism and educational activities related to the trail (visitors to sites, participants in training sessions, members of the dialogues)

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- Discovered and promoted the historical significance of the Estrela Port, which is now attracting tourism and raising awareness of the area's cultural heritage.
 - Re-granted seed funding to 10 different local entrepreneurs associated with the trail

2. Agroecology: Develop and strengthen a market for agroecological products that contribute to forest restoration:

- Identified and activated at least one point of sale in each of the trail's nine sections, integrating local agroecological products into the trail's tourism economy.
- Empowered 210 farmers and food entrepreneurs through training in agroforestry, regenerative agriculture, and sustainable business practices.
- Established partnerships, such as with Italian B-Corp ABOCA, to develop sustainable supply chains for high-value crops like acerola and guaraná, creating new market opportunities.
- Implemented two agroforestry demonstration units as training sites and practical models for sustainable agricultural systems.

3. Biodiversity and Ecosystem Services: Contribute to the restoration and conservation of the landscape, biodiversity, and water sources of the region:

- Conducted floristic mapping to identify native and missing species essential for ecological recovery.
- Planted 8,500 trees along the first 40 km of the trail, with the remaining 1,500 trees scheduled for planting by December 2024.
- Finalized a list of 15 key species to attract fauna, supported by UFRJ biology students, and began wildlife monitoring with camera traps.
- Integrated biodiversity-enhancing species into reforestation and agroforestry projects, promoting forest enrichment and water retention.

Highlights

By the end of 2024, the Caminho do Recôncavo da Guanabara (CRG) was officially approved by the Brazilian National Long Distance Trail Network, managed by the Ministry of Environment. The submission document (Attachment B) outlines various key aspects of the trail's development, including the governance model, detailed maps, difficulty levels, signage information, thematic areas, and other essential criteria required for integration into the national public policy.



Challenges

Protected Area Restrictions:

A significant challenge was the presence of protected areas along certain sections of the trail, where strict conservation rules prohibited human passage. To address this, the team had to reroute one section out of a dense forest area to comply with conservation regulations. While the new route was less ideal for trekking, it presented an opportunity to develop a rural biking trail. This new section allows visitors to explore agro-ecotourism farms, further connecting the trail with local agriculture and offering a unique experience.

Private Property Access:

Initially, private property owners along the trail were hesitant to allow access. Overcoming this challenge required sustained dialogue and education on the benefits of ecotourism, such as increased visibility and income for local businesses. Through these conversations, trust was built, and all property owners eventually granted permission, providing signed letters of support to allow the trail to pass through their land.

Underdeveloped Tourism Infrastructure:

Many campsites and inns along the trail lacked the necessary infrastructure to attract a broad range of visitors. To address this, SINAL partnered with the Boticário Foundation and

SEBRAE, a government agency supporting small entrepreneurs, to provide financial and managerial support to local entrepreneurs. This collaboration secured funding for the improvement of infrastructure at three key locations, as well as for the Quilombo do Bongaba, to strengthen the trail's hospitality offerings.

Government Collaboration and Infrastructure Delays:

Collaboration with local and state governments posed challenges, particularly regarding essential infrastructure improvements like road repairs and irrigation systems. Bureaucratic delays, exacerbated by the October elections and governmental turnover, further slowed progress. Poor road conditions remained a barrier for farmers, hindering their ability to transport agroecological products to markets and ecotourism points, thus impacting their income. To address this, SINAL initiated discussions with the Instituto Rio Metr pole (IRM) to integrate these challenges into the PDUI (Plano de Desenvolvimento Urbano Integrado), the metropolitan development plan for the region. This framework will offer strategic solutions for improving roads and irrigation, aligning regional development priorities with the needs of farmers and entrepreneurs along the trail.

Testimonial:

Community-based tourism, one of the aspects of the bioeconomy that is growing in our region around the Guanabara Bay, also offers an opportunity for a historical redemption of the long-invisible Afro-descendant population. Quilombos can become a reference for culture and knowledge exchange on how to take care of our ecosystems. In our quilombo, we are a lineage of women who have been caring for this land. Telling this story makes us stronger.

-Val Quilombola, women leader for the Feital Quilombo in Mag , Riode Janeiro

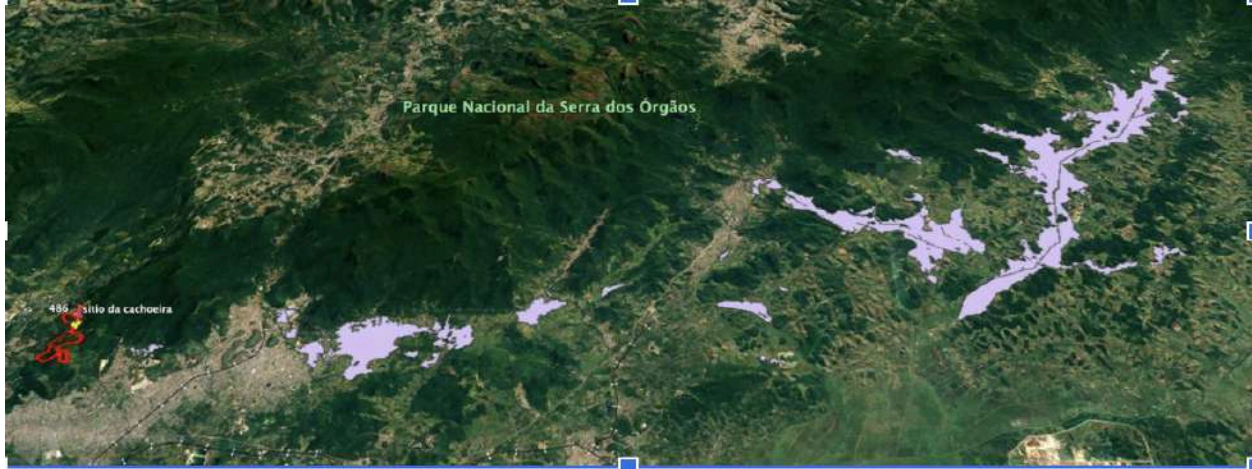


3. Value Chains Assessment

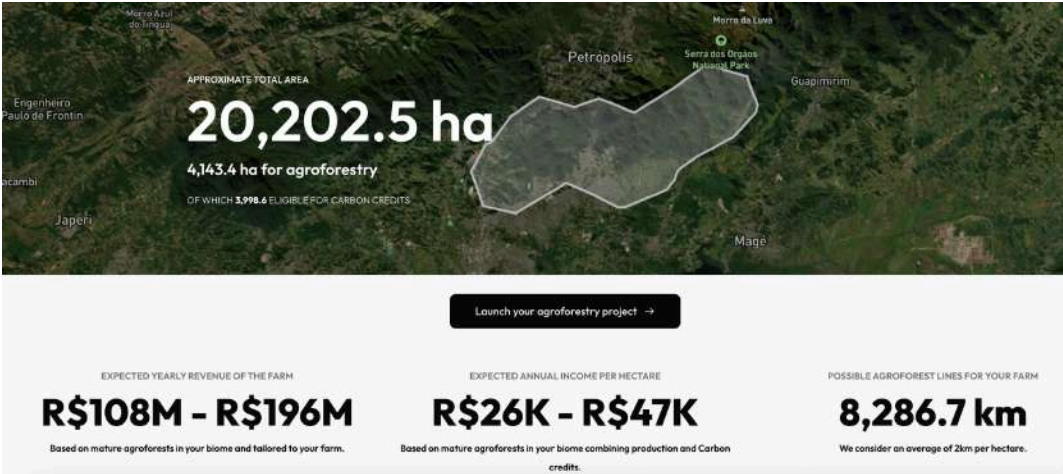
3.1 Agricultural Value Chain

Mapping and Identification of Agricultural Land

A diagnostic of the agricultural value chain along the Guanabara Bay Trail was conducted, aimed at evaluating the current agricultural landscape and identifying key opportunities for integration and improvement within the agroecological corridor. As part of this diagnostic, agrarian lands were first identified using data from the Instituto Estadual do Ambiente (INEA), which provides a detailed mapping of the land designated for agricultural use across the region.



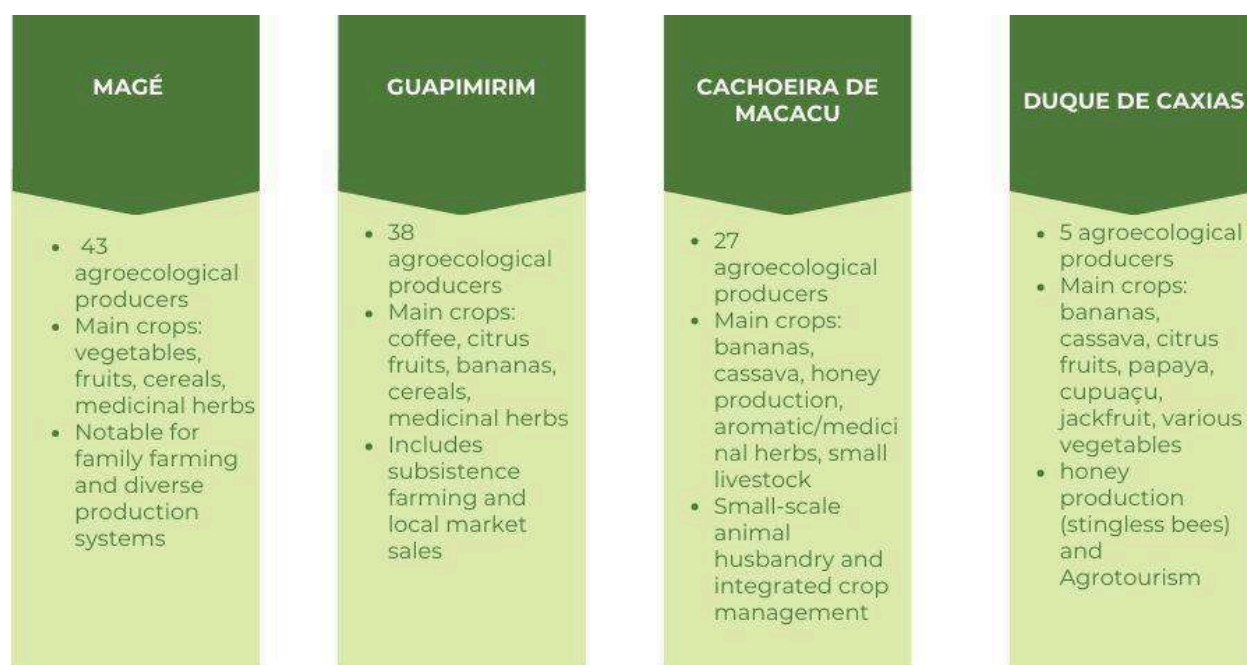
This dataset, complemented by analysis from Courage Land—a partner organization specializing in GIS technology to assess land availability for agroforestry—provided an initial framework using secondary data for evaluating the agricultural potential along the trail. Using GIS technology and market estimates, Courage Land identified areas best suited for agroforestry, highlighting the types of crops that can be cultivated and estimating their revenue potential.



In-field Diagnostic with Farmers

Following this, fieldwork was carried out to gain a deeper understanding of the agricultural landscape along the Guanabara Bay Trail. This fieldwork allowed for firsthand observation of the practical realities of agricultural production in the region. As a result, eight primary agricultural hubs were identified, forming the backbone of agricultural activity along the trail. These hubs share many similarities but also have distinctive characteristics, such as variations in landscape. Some areas are more suited to agroforestry due to their terrain, while others are flatter and more conducive to conventional agricultural practices. Additionally, some hubs are located closer to urban areas, while others are more directly connected to the trail, influencing access to markets and infrastructure.

Surveys were then conducted with representatives from each of these agricultural hubs. Each hub typically contained at least one local association or cooperative, which facilitated the survey process. The surveys collected both qualitative and quantitative data to assess farming practices, challenges, opportunities for agroecological development, and the overall state of the agricultural value chain in these areas. The insights from these surveys provide a detailed overview of the agricultural dynamics along the Guanabara Bay Trail, forming the basis for future interventions aimed at strengthening the agroecological network and improving economic resilience for local farmers.



Profiles of Agricultural Associations and Producers

Associations

Farmers were interviewed from seven agricultural associations along the trail, providing valuable insights into the local agricultural landscape. During the mapping process, an additional association, Sucavao, was identified, though an interview with its members was not possible at that time.

Associação	Ano de Fundação	Membros (Mulheres %)	Área (ha)	Renda Média (Salários Mínimos)	Principais Produtos	SAF (%)	Posse de Terra (%)	CAF (%)	CAR (%)	Sistema de Cultivo
Associação Agropecuária dos Produtores da Taquara (Duque de Caxias)	1995	35 (33%)	270	1 a 5	Banana, cupuaçu, abacate, mel	70	85	50	60	Agroecológico
ATRPP (Duque de Caxias)	2009	32 (8%)	192	1 a 5	Mandioca, banana, hortaliças	50	90	100	75	Convencional Orgânico
APOCAM (Cachoeiras de Macacu)	1999	13 (40%)	54	1 a 5	Pupunha, cacau, madeira	80	75	20	70	Agroflorestal
AFOJO (Guapimirim)	1998	43 (70%)	400	1 a 5	Café, cacau, banana, madeira	90	90	60	85	Agroecológico
Associação dos Pequenos Produtores de Santa Rosa (Magé)	1989	112 (50%)	560	1 a 5	Cacau, café, cupuaçu, pupunha, tubérculos	85	95	70	90	Agroflorestal Agroecológico
Instituto Bio (Cachoeiras de Macacu)	2014	74 (80%)	222	1 a 5	Banana, hortaliças, tubérculos, madeira	70	85	40	65	Agroflorestal Orgânico
Associação de Produtores do Vecchi (Cachoeiras de Macacu)	1997	136 (55%)	450	1 a 5	Pupunha, banana, goiaba, madeira	85	90	90	85	Agroflorestal

Tabela 1: Perfis das Associações.

Producers Profile (examples)

Dona Juju

The Cozinha Colher de Pau Project, founded 8 years ago by Juliana de Medeiros Diniz, known as Dona Juju, at Sítio Santa Bárbara in Magé-RJ, is a prominent reference in agroecology. At 73 years old, she leads the certified organic production, selling at local markets and supplying food to schools. The site also hosts workshops on sustainable practices and is supported by various organizations. Dona Juju is a member of the Rio de Janeiro Agroecology Articulation (AARJ) and the Coopagé cooperative for small producers. Dona Juju is very articulated, yet faces serious challenges in terms of



infrastructure, regular income, and consistent access to markets. She is highly interested in agro-tourism and already often hosts small groups in her home.



Josué Soares de Matos

Josué Soares de Matos runs Raíz Orgânica at the Terra Prometida Settlement, focusing on organic and regenerative farming. He is one of the leaders of the Landless Settlement Movement (movimento sem terra) and has been working the land for 40 years. His major challenge is access to markets and technical capacity with consistency. His daughter supports the administrative aspects of his farming business. Most products are sold at a low price at the CEASA, the largest fruit and vegetables market in Rio de Janeiro.

Identified Opportunities

Necessary Inputs & Seedling Acquisition:

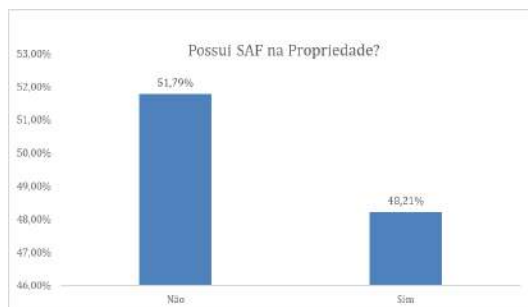
The region faces a shortage of quality seedlings, substrates, organic fertilizers, bio-chemicals, irrigation systems, and agricultural equipment. These gaps directly affect the productivity and sustainability of the agricultural operations. Often farmers receive seeds from government programs that promote agriculture. Low germination rates of seeds hinder efficiency. By shifting to seedlings, success rates improve, and harvest times are reduced.

Infrastructure Challenges:

The region's poor infrastructure, including inadequate roads and a lack of local processing centers, presents significant barriers to the development of sustainable agricultural systems and market access. The absence of reliable roads impedes the transportation of agricultural products, often leading to product losses, delays, and quality degradation, which undermine competitiveness in both regional and global markets. Furthermore, the lack of proper storage and processing facilities limits the ability of farmers to add value to their products, hindering efforts to diversify production and develop high-value agroecological products.

Agroforestry Systems (SAF):

48.21% of farmers already implement agroforestry systems, which are important for environmental regeneration and crop diversification. Expanding SAF adoption could significantly improve resilience and productivity, benefiting the broader agroecological corridor. According to Courage Land's assessment, there are 20,000 hectares available for agroforestry systems in Duque de Caxias and Magé and 8,286.7 km of agroforestry lines.



Graph: Percentage of producers who have agroforestry on their properties.

Land Regularization:

96.43% of farmers are still in the process of regularizing their land. Without formal land titles, farmers are excluded from key ecological restoration projects and carbon credit schemes, which offer financial incentives for sustainable practices such as reforestation and agroforestry. The uncertainty around land tenure also discourages long-term investments in regenerative agriculture, agroecology, and other sustainable practices, preventing farmers from participating in valuable bioeconomy supply chains. Furthermore, lack of regularization restricts access to government support programs, credit, and technical assistance, limiting farmers' potential for growth and the adoption of sustainable technologies

Technical Training and Support:

85% of farmers report a need for ongoing training in agroecological practices, agroforestry systems, and bio-chemicals. While many participate in short-term training sessions, they lack continuous access to extension services, such as technicians and agronomists, who can provide the hands-on support necessary to implement and maintain sustainable farming systems. This gap in long-term technical assistance hinders their ability to fully integrate agroecology and agroforestry practices, limiting their productivity and the long-term sustainability of their operation



Challenges and Needs

1. Limited Access to Resources and Technology

Many farmers face significant barriers in accessing financial resources and technological tools necessary for sustainable agroecological practices. The absence of investment capital and modern farming equipment limits their ability to enhance productivity, adopt regenerative techniques, and transition towards more resilient agricultural systems. Expanding access to financial incentives, credit lines, and innovation-driven solutions is crucial for strengthening the agroecological value chain.

2. Land Tenure and Regularization Issues

Land insecurity remains a critical challenge, with 96.43% of farmers still in the process of regularizing their land. Without formal land titles, farmers are excluded from essential support mechanisms, including ecological restoration initiatives, carbon credit programs, and government funding opportunities. This legal uncertainty discourages long-term investment in agroforestry and regenerative agriculture, ultimately stalling progress in bioeconomic development. Advocacy for streamlined land regularization policies and legal assistance for farmers is essential to unlocking these opportunities.

3. Inadequate Infrastructure and Logistics

Poor infrastructure, particularly unreliable roads and a lack of local processing facilities, severely constrains market access and supply chain efficiency. Inadequate transportation networks lead to product losses, increased costs, and delays in distribution, ultimately reducing competitiveness in both local and global markets. Additionally, the absence of proper storage and processing units prevents farmers from adding value to their produce, limiting diversification opportunities. Strategic investments in infrastructure

development—such as farm-to-market roads, cold storage, and processing hubs—are key to overcoming these bottlenecks.

4. Market Access Barriers

Farmers struggle to establish stable and profitable market connections due to logistical constraints, inconsistent demand, and the dominance of large-scale agribusiness in the supply chain. Limited access to organic certification and branding further restricts their ability to differentiate their products in competitive markets. Strengthening market linkages through cooperatives, digital platforms, and direct-to-consumer sales channels can help bridge these gaps. Additionally, policies that incentivize institutional procurement of agroecological products—such as school feeding programs and government contracts—can create more stable demand.

5. Weak Branding and Market Positioning

Despite the high quality and sustainability of their products, many farmers lack the branding and marketing strategies needed to attract premium buyers and differentiate themselves in the market. The absence of cohesive storytelling, product standardization, and effective digital presence limits their ability to reach eco-conscious consumers, retailers, and the tourism sector. Establishing a unified **Guanabara Bay Agro-Eco Brand**—with clear labeling, certification, and storytelling around regenerative practices—could elevate the visibility and perceived value of their products. Investing in marketing training, digital platforms, and strategic partnerships with ethical brands, restaurants, and tourism operators would further strengthen their market positioning.

6. Insufficient Technical Training and Extension Services

While 85% of farmers express interest in ongoing training, access to continuous technical assistance remains limited. Short-term workshops often fail to provide the hands-on guidance needed for effective implementation of agroforestry, organic farming, and bioeconomic innovations. Expanding long-term extension services, mentorship programs, and farmer-to-farmer knowledge exchange initiatives would significantly enhance capacity building. Additionally, integrating agroecology and regenerative agriculture into local educational institutions could provide a sustainable pipeline of technical expertise for the region.

4. Eco-Tourism Potential and Assessment

Tourism Potential in the Bioregion

The four municipalities that make up the Recôncavo da Guanabara bioregion—Guapimirim, Magé, Duque de Caxias, and Cachoeiras de Macacu—are also part of a larger region known as the Baixada Fluminense. Recently, this region has undergone a significant rebranding effort to highlight its abundant natural beauty and eco-tourism potential. The name "Baixada Fluminense" has been officially changed to "Baixada Verde" by the State of Rio de Janeiro's Tourism Secretariat. This rebranding aims to shed the area's historical stigma and

promote its impressive ecological assets, as recent studies revealed that 36.27% of the region's territory remains green, with 10.96% of this area located within the Baixada Verde municipalities. The initiative is designed to showcase the ecological richness and tourism potential of the region, as these natural spaces are home to protected parks, reserves, and ecological stations that provide an ideal setting for eco-tourism activities.

The Baixada Verde's new branding is part of a broader effort to position the region as a major eco-tourism destination. By focusing on its green spaces and proximity to the city of Rio de Janeiro, the region aims to attract both domestic and international visitors interested in nature-based travel. Local mayors have supported this initiative, acknowledging its potential to bring a positive shift in the area's image. The Secretary of Tourism for the State of Rio, Nilo Sergio Felix, emphasized that the new identity would reshape perceptions, associating the Baixada Verde with nature, ecotourism, and environmental sustainability, as opposed to its past reputation.

In addition to this rebranding, the Baixada Verde is home to numerous ecotourism opportunities, including the Tinguá Biological Reserve and the Nova Iguaçu Municipal Natural Park, which are rich in biodiversity and ideal for outdoor activities like hiking, waterfalls, and nature exploration. These natural attractions are complemented by other green spaces, such as the Caixa D'Água and Taquara Municipal Natural Parks in Duque de Caxias, and the São Bento Environmental Protection Area and Equitativa Biological Reserve, which offer unique opportunities for environmental education and research tourism.

Furthermore, the region offers tremendous potential for **community-based tourism**. With many areas still in their natural state and less developed than more urban parts of the state, there is an opportunity to foster small, local enterprises that provide sustainable tourism experiences. This includes farm stays, guided nature walks, and visits to local artisans, offering visitors a chance to engage with the region's culture while directly supporting its communities. These activities, carried out by small entrepreneurs in rural and forested areas, are key to preserving the local heritage and promoting eco-tourism in a way that benefits both visitors and the local population.

However, the success of this community-driven tourism model relies on continued investment in infrastructure and capacity-building for local businesses. Strengthening the tourism offering with proper training, sustainability practices, and support networks is essential for creating a more robust tourism economy that benefits the region as a whole.

Eco-Tourism Value Chain Assessment: Identification of Key Sections for Activation

The Caminho do Recôncavo Trail, a 110 km route, underwent a thorough evaluation to identify the sections with the greatest potential for activation in eco-tourism. The trail was divided into **nine sections**, each with its own unique characteristics, strengths, and opportunities for development. The assessment process involved an in-depth review of agricultural, cultural, and natural activities along the trail, as well as identifying key local actors, including farmers, producer organizations, local businesses, municipalities, and government entities.

Given the trail's large and diverse scope, it became clear that focusing on a **select few sections** would be most effective for immediate eco-tourism development. Field visits were conducted across all nine sections, engaging with local stakeholders such as guides, inn owners, agricultural producers, and municipal representatives to evaluate their readiness and interest in participating in eco-tourism. These visits enabled a more precise mapping of existing activities, highlighted areas with potential for functional integration, and helped identify which sections were best suited to provide a cohesive and sustainable eco-tourism experience.

Following these evaluations, **three sections** were selected for further development, based on factors such as eco-tourism potential, involvement of local stakeholders, and the variety of experiences each section could offer. Test runs were conducted on each itinerary, where a small group, led by a local guide, tested and documented challenges and opportunities. These test runs provided valuable insights, allowing the team to refine and design itineraries that would be both impactful and sustainable for the selected sections, ensuring that the development would benefit both the local communities and the tourism sector.



Itinerary #1: Raiz da Serra to Cachoeira Grande

Rural Agro Ecological Tourism Route

This 10-kilometer rural tourism route begins in Raiz da Serra, located at the foothill of the Serra dos Órgãos National Park, offering breathtaking views of the mountain range. The journey progresses through a rural hilly path, leading visitors through secondary forests before reaching the historic town of Pau Grande. Known as the birthplace of the legendary soccer player Mane Garrincha, Pau Grande is a picturesque town with cobblestone streets and a charming plaza, which makes for a great cultural stop. The area is also renowned for its biodiversity, particularly the golden lion tamarins, a rare species monitored by one of the trail's local partners, Cecilio, who often sight these monkeys in the area.



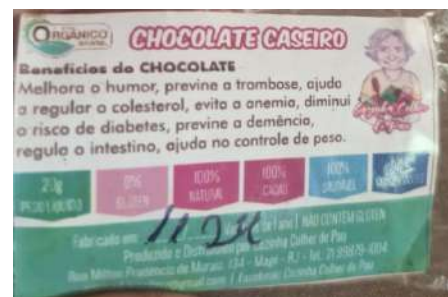
The path continues along a rural road called Cachoeirinha, offering visitors views of the agricultural lands in Magé. This section of the trail is ideal for biking due to its flat terrain and scenic vistas of the mountains. Along the way, visitors can stop by local agroecological farms such as Dona Juju's organic farm and Seu Jeremias' property, where they can experience authentic rural life, purchase local products like Dona Juju's chocolate and Seu Jeremias' cassava and melada, and enjoy a meal or snack made from fresh, local ingredients. Both properties are full of rich biodiversity, both native Atlantic Forest trees



The trail culminates at the stunning Cachoeira Grande waterfall (also known as Veu da Noiva), a dramatic 110-meter-high waterfall offering a serene natural escape. Along the 30-minute hike to the waterfall, visitors pass four small campsites, each offering varying levels of hospitality services. Some cater exclusively to campers, while others feature small A-frame cabins. The most developed campsite, Eco Camping, is managed by two women entrepreneurs who prioritize sustainable practices, ensuring that guests experience eco-friendly hospitality throughout their stay.

Opportunities:

- **Rural Agro-tourism:** The region offers significant opportunities for rural tourism, with several farmers already welcoming guests to their properties. This creates a pathway for sustainable agro-tourism development, where visitors can enjoy local products, engage with farming practices, and gain insights into agroecology. By bringing guests directly to the farmers' lands, there is potential to increase demand for their products, boosting their sales. For example, farmers like Dona Juju produce items such as her own brand of chocolate and dried banana sweets, which are ideal for hikers and cyclists. These products could be sold at multiple points along the trail, including other campsites. There is also potential for a “shared brand” of the Reconcavo.



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- **Biking Routes:** The flat terrain of the Cachoeirinha road offers significant potential for biking tourism. With beautiful mountain views and rural roads, this section could attract cycling enthusiasts and adventure tourists.
 - **Biodiversity Spotting:** The opportunity to spot golden lion tamarins and experience the area's biodiversity makes this route unique for nature enthusiasts.

Challenges:

- **Infrastructure Limitations:** While the farmers' properties offer stunning agricultural landscapes and views, the infrastructure is insufficient. The homes where farmers host guests often lack the necessary facilities to accommodate tourists comfortably. Improvements are essential to ensure a higher-quality experience for visitors, including creating welcoming spaces where guests can enjoy local products and the surrounding nature.
- **Economic Constraints:** Many of the farmers face financial limitations that hinder their ability to invest in infrastructure improvements. This lack of capital makes it challenging to enhance their properties for tourism. External support for basic infrastructure upgrades is crucial to make this section of the trail more viable as a tourism destination, ensuring that farmers can create a more appealing experience for visitors.
- **Hospitality Challenges:** Although the rural environment provides charm, the farmers lack experience in hosting tourists, which can impact the quality of the visitor experience, particularly for higher-end clientele. Offering a more polished hospitality service would require targeted training and resources to improve the quality of the stay, catering to a broader range of visitors.
- **Unfavorable Hiking Conditions and Re-routing Potential:** The rural road used by trekkers is not ideal, as it is exposed to the sun and frequented by passing cars. This limits its appeal for trekkers, especially during hot weather. While the original route passed through a more shaded forest area, it had to be altered due to regulations in the Serra dos Órgãos National Park. However, there is a possibility of rerouting through the forest in the future if changes to the park's management plan are approved, although this may take time.

Key Actors

- Homeowners association from Raiz da Serra
- Homeowners association Pau Grande
- Cecilio - Biodiversity monitor
- Secretary of Environment Magé
- Secretary of Tourism Magé
- Secretary of Agriculture Magé
- Association of Agroecology Magé
- Instituto Mirindiba - Youth Climate Activists
- Local property owners in initial section

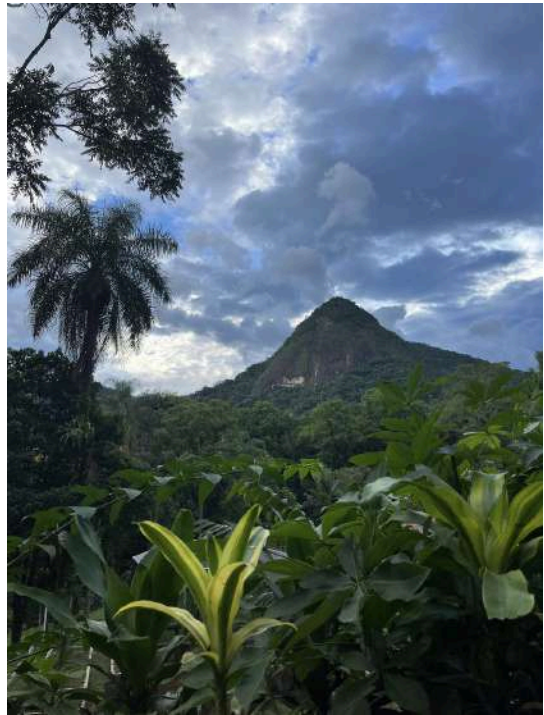
Itinerary #2: Santo Alexio

Mountain and Forest Exploration

Santo Alexio, located in the Magé region, is one of the most forested and mountainous districts in Rio de Janeiro, offering views of the Dedo de Deus rock formation and the Serra dos Órgãos National Park. Known for its natural beauty, the area is gradually becoming a tourism destination, particularly in the Andorinhas region, which is famous for its waterfalls. The district is situated in a quiet valley with a sparse population and small villages. The higher altitude and rugged terrain make it ideal for nature-based activities.

The itinerary starts in the historic center of Santo Alexio, where visitors can explore the local chapel and enjoy panoramic views of the surrounding area. From there, hikers will follow a rural road uphill into a dense, forested path. Along the way, visitors will pass several simple rural inns and restaurants, such as Pousada e Restaurante Recanto do Bosque and Quebra Galho Bar, both of which offer accommodations and food surrounded by nature. Recanto do Bosque has a camping area, a natural pool from a nearby waterfall, and a garden with organic produce, including cassava, kale, and tomatoes.

The hike continues past agricultural producers, including one specializing in mushrooms, before reaching the iconic Pau-d'Alho (*Galesia integrifolia*), a landmark tree that symbolizes the region's environmental history. The tree stands at the boundary between secondary and primary forests, illustrating the area's ecological transformation. After visiting Pau-d'Alho, hikers will proceed to Mirante Sapezão, a viewpoint with sweeping views of Guanabara Bay and the Serra dos Órgãos.





The trail then leads to Cachoeiras dos Monjolos and Pegada do Gigante waterfalls. While Monjolos is increasingly impacted by unsustainable tourism, Pegada do Gigante remains less affected due to its more remote location.

The day ends at El Nagual, a local hub promoting sustainable agricultural practices and regenerative cuisine. Run by Mariana and Eraldo, El Nagual offers visitors a chance to learn about permaculture, enjoy organic meals, and experience the ecovillage lifestyle.



Optional Extension (1-2 Days):

The journey can continue to Camping da Coruja, located nearby. This campsite, run by local guides Carlos and Jorge, is known for its birdwatching opportunities, with sightings of 150 different species. Visitors can hike up to Coruja Mirim Mountain for stunning views of the Serra dos Orgaos National Park, a challenging five-hour hike that offers a rewarding adventure for experienced climbers.



Opportunities:

- **Researcher and Student Tourism for Biodiversity:** With its rich biodiversity, Santo Aleixo offers significant opportunities for researcher and student tourism focused on conservation and ecology. The region is home to a diverse range of species, and locations like Camping da Coruja, known for its birdwatching and biodiversity monitoring, present a unique opportunity for researchers and students to study the area's ecosystems. This can be expanded into educational programs or field research initiatives that allow tourists to actively engage in biodiversity preservation efforts.
- **Educational Tourism and Sustainability:** El Nagual, as a biohub, provides a wealth of opportunities for educational tourism centered on sustainability. Visitors can experience hands-on learning in permaculture, bioconstruction, and regenerative culinary practices. El Nagual's focus on sustainable living and environmental education makes it an ideal location for experiential learning, where tourists can not only observe but also participate in sustainable practices. This unique educational offering could attract tourists, schools, and institutions interested in environmental sustainability.
- **Adventure Tourism and Hardcore Hiking:** For more adventurous travelers, the region offers ample opportunities for challenging hiking and trekking. The area around Santo Aleixo, particularly the trail to Coruja Mirim, presents rugged terrains that can cater to those seeking more extreme outdoor experiences. These trails

could be marketed as part of an adventure tourism package, targeting avid hikers and adventure enthusiasts looking for a more challenging and remote trekking experience.

- **Natural Beauty:** The stunning natural beauty of Santo Aleixo, from its breathtaking views of the Dedo de Deus rock formation to the tranquil waterfalls and the iconic Hollow Tree, makes it a prime location for nature tourism. Visitors are drawn to the serenity and pristine landscapes, making it an attractive destination for nature lovers, photographers, and those seeking peaceful retreats in the midst of the Atlantic Forest. These natural features not only enhance the region's appeal but also provide opportunities for eco-tourism experiences like guided nature walks and waterfall excursions.

Challenges:

- **Hospitality and Accommodation:** There is a lack of sufficient inns along the trail, with only one inn available, which, during a test visit, presented some cleanliness concerns. Additionally, camping sites, such as Camping da Coruja, have limited capacity and basic facilities, with only one bathroom available for guests. These limitations hinder the ability to provide a more comfortable and accommodating experience for visitors.
- **Program Development:** There is a need to develop robust programming, particularly if the trail is to have an educational focus. Guides must receive training to offer a comprehensive educational experience, covering not only the historical and cultural significance of Santo Aleixo and the Caminho do Recôncavo but also the region's rich biodiversity. The absence of this level of training currently restricts the depth of educational engagement that can be provided to tourists.

Key Actors

- El Nagual
- Parque Nacional de Serra dos Órgãos
- Secretary of Tourism Magé
- Secretary of Environment Magé
- Guides
- Camping da Coruja
- Quebra galho Restaurante & pousada
- Rural producers (mushroom farmer, etc.)
- Garytos tacos company

Itinerary #3: Vale da Estrela

Cultural and Historical Heritage

The Vale da Estrela itinerary is included in this assessment due to its significant historical, cultural, and ecological value, despite not being directly along the main Caminho do Recôncavo trail. The valley holds deep historical importance, being at the heart of the Recôncavo region, where the Caminho do Recôncavo originally received its name. It is home to vital historical landmarks such as the Caminho Real, the ruins of Vila da Estrela, and the Church of Nossa Senhora da Piedade. Furthermore, the region offers exceptional natural beauty, with a network of rivers and abundant vegetation, making it an essential area for inclusion in the broader eco-tourism strategy. Additionally, the presence of unique local actors, such as artisanal fishermen dedicated to mangrove restoration, Afro-Brazilian quilombos preserving cultural traditions, and the management of protected areas along the river, makes this area a compelling destination. Though slightly off the main trail, the Vale da Estrela can be connected to the primary Caminho do Recôncavo by bike in the future, enhancing its accessibility and integration into the broader eco-tourism network.



This itinerary offers a combination of foot, car, and boat travel, making it unique and diverse. The journey begins at Porto da Estrela, an important historical port located in the Vila da Estrela ruins. In the 19th century, the port played a central role in connecting the mining regions of Minas Gerais with Rio de Janeiro. It was a hub for the export of gold, goods, and enslaved people. The port was also crucial during the steamship era, helping modernize Brazil's transportation system. However, with the construction of railways, the port's importance waned, and the region saw significant economic decline.

After visiting the ruins of Porto da Estrela, the trip continues with a boat ride along the Rio Inhomirim, guided by local fishermen. The fishermen will explain their efforts to preserve

the river ecosystem, focusing on mangrove restoration. They work closely with environmental groups to replant mangroves, vital for maintaining the region's ecological balance.



The journey then heads to the Quilombo do Bongaba, a historic Afro-Brazilian community founded in 1696 by formerly enslaved families. Today, the Quilombo is a vibrant community that preserves African cultural traditions through arts, dance, education, and gastronomy. Visitors will learn about the community's rich history, their fight for survival, and the ongoing work to preserve Afro-Brazilian cultural heritage.



The final stop is at the Parque Barão de Mauá, a newly inaugurated park managed by the Magé Municipal Department of Environment. The park features impressive infrastructure,

including a viewpoint tower offering panoramic views of the Guanabara Bay. It also showcases a remarkable mangrove restoration project, where fishermen, working alongside environmental groups, have helped restore over 40 hectares of mangrove forest that were devastated by an oil spill in 2000. Guided tours of the park provide insight into the restoration efforts, and the local guides—many of whom are former fishermen—share their expertise and personal experiences.

This itinerary offers a fascinating blend of historical significance, cultural heritage, and ecological preservation, all set against the stunning natural beauty of the Vale da Estrela. Additionally, it can be connected to the main Caminho do Recôncavo trail by bike in the future, offering an exciting opportunity for sustainable tourism and exploration.



Challenges:

- **Pollution and River Quality:** The rivers within the Environmental Protection Area (APA), specifically the Rio Inhomirim and Rio Estrela, have been significantly altered over time. The rivers' natural flow has been reduced to narrow, linear channels, limiting their ability to treat water before it reaches the Guanabara Bay. The rivers are also contaminated with trash, and invasive plant species have proliferated along the banks, creating challenges for navigation. While the rivers remain relatively clean, there are visible signs of pollution that hinder their potential for tourism, particularly for activities such as boat rides. For the successful development of the Vale da Estrela as a tourism destination, it is essential to address the pollution in these rivers. This includes cleaning the waterways, removing invasive species, and restoring the water quality to make the rivers suitable for navigation and tourism.
- **Logistics:** The itinerary's combination of boat travel, car, and walking presents logistical challenges for tourists. Reaching Parque Barão de Mauá by boat, for example, is a long journey, complicated by the unpredictable nature of tides, which can restrict access depending on the time of day. Additionally, there is potential to develop a bike route between Porto da Estrela and Quilombo do Bongaba, but this would require significant infrastructure development to ensure accessibility and

safety for cyclists. Currently, the trip relies on boat and car transport, which limits the flexibility of movement along the route.

- **Environmental issues at Quilombo do Bongaba:** Like many other Quilombos in Brazil, Bongaba faces security and environmental threats, particularly regarding water and territorial safety. The Bongaba landfill has been a major concern due to years of improper waste management, leading to groundwater contamination in this water-rich area. Studies are needed to assess the full extent of this damage, and ongoing concerns surround the landfill's operation, as it fluctuates between being deactivated or accepting waste from other municipalities. This landfill impacts the Cayoba Canal, which runs directly to the Quilombo, carrying harmful bacteria that can affect the health and well-being of the community. These environmental concerns also pose a risk for tourists and need to be addressed for safe and sustainable visitation.
- **Hospitality limitations:** While the Quilombo do Bongaba hosts events and cultural activities, it is not yet set up for hospitality services, particularly for overnight stays. There is no full-time staff dedicated to managing accommodations or tourism services, which limits the potential for sustainable eco-tourism. The community's focus has been on cultural preservation and local empowerment, but to expand as a destination, investments in hospitality infrastructure and staffing are needed. Visitors may not experience the level of comfort and service expected from more developed eco-tourism destinations, requiring improvements in facilities, services, and trained personnel to accommodate longer stays.

Local Actors:



Panorâmico Cultural - Conservação Ambiental - Governo Local
Principais Contatos: Natália dos Santos, Diretora de Preservação Histórica; Carlos Lopes, Historiador; Cida Feres, Diretora do meio ambiente.



Coerção - Comunicação - Bio-Hub
Principais contatos: Thais Costa, (Diretora); Kátia Werneck, coordenadora do projeto; Luiza Pacheco, Ecologia e Turismo; Joice da Silva, comunicação.



Regeneração Cultural - Ecospiritualidade - Impacto Sociocultural
Principais Contatos: Paulo José das Neves, líder espiritual; Cidrey de Oliveira Inácio, historiadora e coordenadora do projeto.



Peixe Sustentável - Restauração de Manguezais - Guias Locais
Contatos: Priscilla, Rafael, Santos Pereira, presidente da associação.



Segurança Hídrica - Governo Estadual
Uma Secretária de Tercia Priscilla Cortez; Ana Jullia, Superintendente de Recursos Hídricos.



Corporate Partnership - Creating e conservando áreas
Key Contact: ?



PUC-Rio - Laboratório de Biogeografia e Ecologia Histórica
Principais contatos: Philippe Moreira, PhD



Guardiões do Mar
preservando a vida.



Educação Ambiental - Pesquisa Científica - Restauração de Manguezais

viva água
CURSOS DE **WATER RESTAURATION**
em português e inglês

O Movimento Vive Água Belo de Quilombos (MVAQ) é formado pela Fundação Grupo Boticário, a fundação de sustentabilidade e o consórcio de natureza da maior empresa brasileira de cosméticos, Boticário. O MVAQ busca "conservar e restaurar ecossistemas naturais além de incentivar o empreendedorismo com impacto social e ambiental positivo". Por meio de parcerias com agentes de mudança locais como o Sinal do Vale, eles estão construindo uma rede de associações baseadas na natureza para a conservação e proteção da Delta de Quilombos. O MVAQ ajudou a apoiar as primeiras etapas do projeto Vale de Sinal, incluindo o mapeamento de pontos interessantes liderado pela Sinal em julho de 2014. Eles continuam sendo um parceiro-chave nas atividades de desenvolvimento.

4. Conclusion: addressing Gaps and Opportunities

Addressing these challenges requires a multi-stakeholder approach that integrates policy advocacy, infrastructure investment, and enhanced technical support for farmers. By fostering stronger partnerships between government agencies, producer organizations, research institutions, and the private sector, the Guanabara Bay Agro-Eco-Tourism Trail can become a model for resilient, community-driven bioeconomic development. Additionally, strengthening the region's branding and market positioning is crucial to unlocking new opportunities in agroecology, tourism, and premium sustainable markets.

The unique identity of the Recôncavo da Guanabara region provides an opportunity to establish it as a center for "Commerce with the Identity of Origin." This concept emphasizes the intrinsic connection between products, services, and their geographic origin, highlighting local identity, traditions, culture, and natural resources. It elevates products beyond commodities, imbuing them with authenticity, storytelling, and a strong sense of place.

By embracing "Commerce with the Identity of Origin," the region can ensure its products resonate with consumers seeking authenticity and sustainability. This approach fosters a place-based economy, where local businesses—such as sustainable agriculture or indigenous crafts—derive value not only from the quality of their products but also from their cultural and ecological significance.

Strengthening the bioregional alliance and emphasizing Recôncavo da Guanabara as the origin of its products will enhance their value. This strategy moves beyond creating mere commodities—it's about embedding the region's identity and essence into commerce. By doing so, trade generates not only economic value but also supports cultural preservation, environmental stewardship, and the well-being of local communities, shifting the focus from extraction to sustainable, holistic economic development.

The type of tourism we are promoting, Community-based tourism (CBT) is a model that prioritizes local communities as key stakeholders in the tourism industry, ensuring that economic benefits, cultural preservation, and environmental stewardship remain in their hands. Unlike mass tourism, which often leads to over-tourism and the depletion of local resources, CBT fosters authentic, place-based experiences where visitors engage directly with local traditions, nature, and livelihoods. This model empowers communities by creating jobs, supporting small businesses, and reinforcing cultural identity while encouraging meaningful interactions between hosts and visitors. It also tends to emphasize sustainable practices, such as eco-lodges, farm-to-table dining, and locally guided experiences, ensuring that tourism does not degrade the environment or erode local culture.

Regenerative travel takes the principles of CBT even further by aiming to leave destinations better than they were before. Instead of merely sustaining resources, regenerative travel actively restores ecosystems, revitalizes communities, and enhances local well-being. When paired with CBT, regenerative travel encourages visitors to participate in conservation efforts, contribute to local projects, and support regenerative agriculture or rewilding

initiatives. This approach transforms tourism from an extractive industry into a force for ecological and social healing, aligning with a broader shift toward an economy based on nature-based solutions. By integrating CBT with regenerative principles, tourism can become a catalyst for long-term resilience, ensuring that both people and the planet thrive.

Next steps to be implemented

- 1) **Infrastructure Improvements:** Develop hospitality spaces for agroecological farmers by constructing open air pavilion / gazebos spaces using natural materials like wood or other bioconstruction methods. These spaces will feature rustic tables and benches, allowing farmers to showcase their products and serve meals to hikers and bikers, creating a welcoming environment for visitors while promoting local, sustainable food.
- 2) **Improving Signage Across Each Section:** Install educational signage in each section of the trail to provide clear directions, highlight local attractions, and enhance visitors' understanding of the region's ecological and cultural importance. The signage will be designed to support self-guided tours, offering informative content that enriches the visitor experience while making navigation easier.
- 3) **Guide Training for Regenerative Tourism:** Implement a comprehensive guide training program to equip local guides with the skills and knowledge needed to offer regenerative tourism experiences focused on sustainability, ecosystem restoration, and community engagement.
- 4) **Curating and Promoting Local Products for Sale Along the Trail:** Select and market locally-produced items, like Dona Juju's organic chocolate or kombucha, with a shared branding strategy to promote local sustainable products along the trail.
- 5) **Creating a Communications Strategy for Each Itinerary:** Develop tailored communications strategies, including brochures and social media, for each section of the trail, targeting key audiences to increase awareness and attract visitors.
- 6) **Testing the Roteiros with Different Groups**
Conduct pilot tests of the trail's itineraries with various groups, such as families and adventure tourists, to gather feedback and refine the itineraries for diverse audiences.
- 7) **Adventure Running Race- Test in One Section**
Organize a test "corrida de aventura" (adventure race) in one section of the trail to introduce adventure tourism and assess logistics, safety, and engagement with adventure tourists.
- 8) **Developing and Implementing a "CRG Partners" Model with Standards**
Establish a partnership model for local businesses, setting standards for sustainability and community involvement, and fostering mutual promotion between the trail and its partners.