



The Forests Dialogue

ENGAGE! EXPLORE! CHANGE!

Ecosystem Restoration Field Dialogue, Brazil

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Co-Chairs' Summary Report

Dialogue Co-Chairs: Erica Munaro, Fernanda Rodrigues, Marcus Colchester,
Kerry Cesareo, Cécile Ndjebet, Maurem Alves

CONTENTS

I. Introduction	2
1.1 Initiative overview	2
1.2 Background on ecosystem restoration in Bahia, Brazil	2
1.3 Dialogue objectives	5
II. Dialogue summary	5
2.1 Field visit learnings and reflections	5
2.2 Key challenges across six themes	17
2.2.1 Implementation and enforcement of laws	17
2.2.2 Inclusion and engagement of diverse stakeholders	17
2.2.3 Fragmented efforts and poor information flow	18
2.2.4 Financial constraints	18
2.2.5 Restoration quality and monitoring	19
2.2.6 Valuation of the environment	20
2.3 Solutions to address key challenges	21
2.3.1 Implementation and enforcement of laws	21
2.3.3 Fragmented efforts and poor information flow.....	23
2.3.4 Financial constraints.....	23
2.3.5 Restoration quality and monitoring	24
2.3.6 Valuation of the environment	24
2.3.7 Next step for opportunities	25
III. Conclusion	25
3.1 Reflections on initiative fracture lines	25
3.2 Co-Chair reflections.....	27
Annex A: Full list of identified challenges (including votes)	32
Annex B: Participant list.....	34

TFD STEERING COMMITTEE 2026

Maurem Alves, TFD Co-Lead
Klabin – Brazil

Kerry Cesareo
WWF – United States

Marcus Colchester
Forest Peoples Programme –
United Kingdom

Patricia Da Silva Machado
Suzano – Brazil

Gary Dunning
The Forests Dialogue (TFD) –
United States

Yuuko Iizuka
Sumitomo Forestry – Japan

Chetan Kumar
International Union for
Conservation of Nature (IUCN) –
United States

Ruth Metzel
Conservation Internationale (CI) –
United States

Cécile Ndjebet
African Women's Network for
Community Management of
Forests (REFACOF) – Cameroon

Milagre Nuvunga, TFD Co-Lead
MICAIA Foundation – Mozambique

Agustín Rosello
Program Manager, Cerro Guido
Conservation Foundation – Chile

Fernanda Rodrigues
Brazilian Forest Dialogue
(Diálogo Florestal) – Brazil

Carolina Toapanta
BOMACO Foundation – Ecuador

Marthe Tollenaar
Climate Asset Management –
Netherlands

Peter Umunay
Global Environment Facility
(GEF) – United States

I. INTRODUCTION

1.1 Initiative overview

The Ecosystem Restoration (ER) dialogue in Bahia, Brazil was the second field dialogue in the context of The Forests Dialogue's (TFD) Ecosystem Restoration Initiative. The initiative seeks to understand the opportunities for the forest sector to contribute and drive ecosystem restoration worldwide. The Brazil field dialogue follows a first dialogue in Indonesia April 2024, a Scoping Dialogue in January 2023, and a Restoration Roundtable (RR) convened in October 2022. The RR, partnered with Food and Agriculture Organization of the United Nations (FAO) Advisory Committee on Sustainable Forest-based Industries (ACSF), convened to enhance forest-based industries' engagement in ecosystem restoration. An initiative Scoping Dialogue was convened following the RR to determine the focus of the initiative on the forest private sector and opportunities for the forest sector to contribute and drive restoration efforts worldwide. Dialogue participants identified six fracture lines which dialogue could help to address, detailed in the Scoping Dialogue Co-Chair's Summary. Following such fracture line identification, [Indonesia ER Dialogue 2024](#) uncovered five key challenge areas: Capacity and Knowledge, Biophysical, Financing, Social and Community, and Policy and Governance. Detailed exposition of Indonesia ER 2024 Dialogue shared further information on identified solutions and next steps for East Kalimantan, Indonesia and the broader global ER movement.

1.2 Background on ecosystem restoration in Bahia, Brazil

A dialogue background paper provides foundational information on ecosystem restoration at global, national, and regional scales. Excerpts to provide an overview of global restoration trends and ecosystem restoration in Bahia are summarized below and the full version is available [here](#).

Public funding alone is globally insufficient to close the estimated \$296 billion to \$296 billion dollars by 2030 restoration annual funding gap (including sustainable land management) to reach Rio targets, making the activation of private capital an absolute necessity.¹ The private forest-based sector bridges this structural divide through large-scale impact investments, long-term corporate climate commitments, and market-driven funding mechanisms. Beyond simply supplying liquidity, private entities offer highly specialized operational capabilities, including technical multi-species nursery planning, advanced seed network coordination, precision genetic selection, and the intensive, multi-year land management required to ensure high sapling survival rates. By integrating these ecological recovery efforts directly into commercial value chains, private forestry operations create permanent regional markets for restoration inputs, such as diverse native seedlings, and sustainable outputs (e.g. certified timber). This integration lowers transactional barriers and provides long-term institutional permanence to landscape-scale recovery efforts.

To transition away from simplistic, single-objective tree planting toward multi-functional, long-term landscape frameworks, developers in southern Bahia are co-creating diverse ecological interventions.

1 United Nations Environment Programme. (2024). *State of finance for nature: Restoration finance report—Growing the green: Why and how restoration finance needs to quadruple by 2030*. UNEP. <https://wedocs.unep.org/20.500.11822/46730> [unep.org], [eld-initiative.org]

A prominent strategy is multifunctional forest silviculture, which is an innovative approach designed to offset high initial capital expenditures by intercropping rapid-growth commercial exotics like eucalyptus with a wide variety of native tree species. Early harvest revenues from the commercial timber lines effectively offset 44% to 75% of the initial restoration implementation costs while simultaneously establishing the vital canopy shade needed to foster native understory regeneration.² Complementing this model is high-value native forestry, pioneered by commercial organizations such as Symbiosis, which frames native forest recovery as a profitable standalone land-use strategy. By investing heavily in the genetic improvement and large-scale propagation of threatened, high-value Brazilian hardwoods - such as *Cariniana legalis* (Jequitibá-rosa) and *Dalbergia nigra* (Jacarandá-da-bahia) - these entities construct a self-sustaining, scalable commercial alternative to the region's historical illegal logging.

Southern Bahia has become a critical testing ground for sophisticated private and public-private finance architectures designed to sustain diverse forest landscapes. Large-scale ecological developers increasingly secure capital through corporate carbon offset agreements and high-integrity carbon removal contracts with multinational technology firms; for instance, Re.green secured a landmark contract with Microsoft in which it commits to removing from the atmosphere 6,5 million tons of carbon equivalent, while Symbiosis scales its biodiverse plantings through Apple's Restore Fund.³ This private venture capital is heavily amplified by public development funds, notably through the National Bank of Economic and Social Development (BNDES) and its Climate Fund.⁴ BNDES has funneled \$77.6 million to Symbiosis to restore 1,500 hectares, alongside an additional \$186.7 million allocated to Re.green to establish 2,000 hectares of diverse native species across Bahia.⁵ Moving beyond carbon-centric metrics, developers are also pioneering the use of emerging asset classes, such as Verra's Nature Framework, which allows organizations to directly monetize independently verified net gains in localized habitat quality, species conservation, and overall ecological health.⁶

The scaling of regional environmental compliance and legal security is anchored by robust federal and state-level regulatory mechanisms. At the national level, the Federal Forest Code legally mandates that all rural landholdings preserve or restore fixed percentages of native vegetation, categorized as Permanent Preservation Areas (PPAs) and Legal Reserves (LRs).⁷ Adherence to these mandates is strictly audited through the Rural Environmental Registry (CAR) and formalized through state Environmental Regularization Programs (PRAs).⁸ In Bahia, State Decree 15,180/2014 operationalizes these federal mandates by

2 Brancalion, P. H. S., Amazonas, N. T., Chazdon, R. L., van Melis, J., Rodrigues, R. R., Silva, C. C., Sorrini, T. B., & Holl, K. D. (2020). *Exotic eucalypts: From demonized trees to allies of tropical forest restoration?* *Journal of Applied Ecology*, 57(1), 55–66. <https://doi.org/10.1111/1365-2664.13513>

3 Apple. (2024, March 13). *Apple's Restore Fund cultivates new roots in the Atlantic Forest*. Apple Newsroom.

4 re.green. (2025, July 17). *Nestlé and re.green partner to restore cocoa and coffee landscapes in Southern Bahia*.

5 Antonelli, A., Rueda, X., Calcagno, R., & Nantongo Kalunda, P. (2024). *How biodiversity credits could help to conserve and restore nature*. *Nature*, 634(8036), 1045–1049. <https://doi.org/10.1038/d41586-024-03475-2>

6 VERRA. (2024). *Nature Framework*. <https://verra.org/verra-launches-nature-framework/>

7 Brasil. (2012). *Lei nº 12.651, de 25 de maio de 2012*. <http://www.planalto.gov.br>

8 Brock, R. C., Arnell, A., Simonson, W., Soterroni, A. C., Mosnier, A., Ramos, F., ... & Kapos, V. (2021). *Implementing Brazil's Forest Code: A vital contribution to securing forests and conserving biodiversity*. *Biodiversity and Conservation*,

integrating them into the State Forestry Register of Rural Properties (CEFIR), establishing an administrative prerequisite for securing local environmental licensing and corporate regulatory stability.⁹ Mandatory compliance baselines are increasingly reinforced by market-based legislative incentives, such as Federal Law 14,119/2021, which formalizes the National Policy on Payment for Environmental Services (PES) to financially reward landowners for active forest recovery. In a similar vein, Law 15,042/2024 establishes the regulated Brazilian Greenhouse Gas Emissions Trading System.¹⁰

Sustainable, long-term restoration cannot function as a purely technical or corporate exercise; it must actively embed social legitimacy and equity into contested local landscapes. The Arboretum Program showcases successful corporate-community integration through its Hiléia Seed Network, an initiative that connects more than 40 traditional seed collectors across seven rural communities with local nursery networks, providing sustainable livelihood diversification by supplying seeds for over 500 native tree species.¹¹ Concurrently, initiatives focused on landscape connectivity—such as the Maturembá project¹² and the ecological corridors promoted by the Institute for Ecological Research (IPÊ)—identify ecological corridors connecting public parks, Indigenous territories, and private properties, actively involving Indigenous communities and landowners in the implementation of these areas. Furthermore, the Arboretum Program has driven integrated forest restoration efforts in southern Bahia, strengthening both ecological connectivity and local socio-biodiversity.

Social equity is further institutionalized through a strong gender and vulnerability lens in corporate operations; forward-looking actors deliberately structure field and nursery roles to promote female leadership and employment, utilize specialized volunteer initiatives like the “Forest Forces” network to identify and alleviate socio-economic workplace stressors, and actively deploy structured youth apprenticeship programs within highly vulnerable local populations.

However, ecosystem restoration faces acute regional and operational challenges. Although carbon-focused restoration projects can serve as an economic and financial engine, transforming environmental initiatives into viable businesses by covering implementation, auditing, and long-term maintenance costs, there is an ongoing strategic risk that narrow corporate “carbon-only” accounting metrics will inadvertently eclipse broader ecological necessities like structural biodiversity and local land rights. Operationally, high-disturbance post-plantation sites are heavily vulnerable to aggressive infestations of non-native brachiaria grasses and multi-meter invasive ferns, which quickly choke out young seedlings; mitigating this requires constant, labor-intensive maintenance that frequently drives per-hectare implementation costs well past reasonable investment limits. In the case of commercial native forest

30(6), 1621–1635. <https://doi.org/10.1007/s10531-021-02159-x>

9 Bahia. (2014). *Decreto Estadual nº 15.180, de 2 de junho de 2014*

10 Brasil. (2021). *Lei nº 14.119, de 13 de janeiro de 2021*. Brasil. (2024). *Lei nº 15.042, de 11 de dezembro de 2024*.

11 Arboretum. (2025). Programa Arboretum. <https://www.programaarboretum.eco.br/>

12 Arboretum. (2025). <https://www.programaarboretum.eco.br/noticia/florestas-integradas-fortalecem-a-restauracao-florestal-ea-sociobiodiversidade-no-extremo-sul-da-bahia>

plantation efforts such as Symbiosis, these field difficulties are compounded by severe administrative and bureaucratic bottlenecks within state registries, as well as an absence of standardized tracking routines within federal agencies, which complicates commercial harvesting because cutting and transporting native timber from deliberately planted restoration plots is historically unprecedented. Structural inequities in land tenure and institutional capacity mean that small and medium-scale rural producers often face strict compliance deadlines but lack the capital, technical expertise, or formalized land titles required to access national green finance facilities, risking further socio-economic marginalization.

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1.3 Dialogue objectives

The Ecosystem Restoration Brazilian field dialogue, hosted by Bahia Forest Forum (BFF) and Brazilian Forest Dialogue (BFD) in collaboration with TFD, was held May 4-7, 2026. The dialogue was organized around the following goals:

- ➔ Clarify ecosystem restoration needs and engage a broader range of stakeholders in Bahia.
- ➔ Understand how the private sector can better support forest restoration and increase engagement.
- ➔ Explore collaboration opportunities to co-create successful ecosystem restoration approaches.
- ➔ Explore successful cases of partnerships between companies and communities, political support and clearer policies, new financing models, recognition of traditional rights and greater inclusion of Indigenous Peoples and women.
- ➔ Examining the key success factors and challenges within the local context.

II. DIALOGUE SUMMARY

The dialogue convened a total of 52 participants including ten international participants from seven different countries (Ecuador, Japan, United Kingdom, United States, Indonesia, Panama, Cameroon) and nationals from different regions and covering a diverse range of ecosystems. Participants included individuals from academia, research institutions, forest private sector, local communities, Indigenous Peoples representatives, environmental Non-Governmental Organizations (NGOs), and human-rights focused NGO. Two days were spent in the field directly experiencing ER projects, hearing from project developers and partners regarding environmental challenges and opportunities on the ground. Following two days of field visits, participants engaged in one full day of dialogue including plenary sessions and small working groups.

2.1 Field visit learnings and reflections

Over two days, participants witnessed four distinct project sites throughout the Bahian Region and Atlantic Forest (AF). Sites were selected to uncover trends amongst motivations for ecosystem restoration, financing mechanisms, rights and responsibilities, challenges faced, enabling factors for success, all for the purpose of understanding what it might secure scaling up projects. Field visits feature the engagement of a range of actors in ecosystem restoration including local communities, Indigenous Peoples, small and medium scale enterprises, private-sector companies, government, academia, funders, and civil-society. In addition, sites span types of ecosystem restoration interventions, including but not limited to agroforestry techniques, assisted natural regeneration, mixed native species planting, and mixed exotic and native species planting.



Full group picture at ecological corridor at the Fábio Santos Settlement

SITE 1:

ECOLOGICAL RESTORATION AND AGROFORESTRY AS STRATEGIES FOR CONNECTING FOREST FRAGMENTS AT THE FÁBIO SANTOS SETTLEMENT (TUESDAY, DAY 1)

The project implemented in the Fábio Santos Settlement encompasses a total intervention area of 203 hectares. To date, more than 6,000 meters of fencing have been installed, and approximately 55,000 native tree seedlings have been planted. These efforts include the restoration of 27 hectares of degraded areas, the establishment of seven hectares of agroforestry systems (AFS), the enrichment of 96 hectares, and 73 hectares of assisted natural regeneration. As a result, the project contributes to the connection of 1,792 hectares of habitat fragments, enhancing landscape connectivity and conservation potential in the region.

The area visited is part of a set of initiatives contributing to Suzano's public goal of connecting 500,000 hectares of priority biodiversity areas through ecological corridors. In this territory, work carried out in partnership with the Fábio Santos Settlement seeks to restore and connect native vegetation fragments, creating more favorable conditions for wildlife movement and increasing ecosystem resilience. At the same time, the initiative supports the productive and environmental recovery of degraded areas, linking nature conservation with the strengthening of local communities. The lessons learned and results achieved in this landscape help demonstrate, in practice, how ecological connectivity can generate lasting benefits for biodiversity, the climate, and territorial development.

The property where the Fábio Santos Settlement is currently located has a history that is emblematic in terms of land tenure. Initially owned by a coffee producer, it was acquired by the former Aracruz Celulose and shortly thereafter occupied by families linked to the Landless Workers' Movement (MST). In 2011—following the creation of the State of Bahia's land conflict mediation board, led by the State Secretariat for Rural Development and involving social movements, INCRA, and forestry companies with lands occupied by these movements—a comprehensive mitigation agreement was established. This agreement entailed the voluntary allocation of properties by the companies for acquisition by INCRA. The farm visited was



Presentation by MST on ecological restoration and agroforestry as strategies for connecting forest fragments at the Fábio Santos Settlement



Presentation by iNovaland on ecological restoration and agroforestry as strategies for connecting forest fragments at the Fábio Santos Settlement

part of this agreement and is currently in the final stages of acquisition by INCRA through the standard compensation process¹³. Once the property is acquired, it falls to INCRA to finalize the process of transferring possession to each of the families selected as beneficiaries of the National Agrarian Reform Program (PNRA). The ecological corridor is being implemented with funding from KIRKBI and Suzano, with operational management provided by iNovaland Investment Limited / FASB.

As is the case with other landscape restoration initiatives, the project faces challenges related to land tenure regularization, local environmental conditions, and the implementation of actions at scale. These challenges have fostered the development of collaborative solutions among the partners involved, generating valuable insights for advancing ecological connectivity and restoration in other priority areas. However, MST's decision not to use agrochemicals has increased the costs of weed control associated with restoration activities.

The experience has yielded valuable insights into developing collaborative solutions for conservation and territorial development. Of particular note is the leading role played by families in agrarian reform settlements—especially women—who are central to community mobilization, restoration activities, and the development of sustainable production systems. Furthermore, the project demonstrates how dialogue and cooperation among diverse stakeholders can foster landscape connectivity and generate shared benefits for biodiversity, local communities, and territorial resilience.



Participants discuss ecological restoration and agroforestry as strategies for connecting forest fragments after visiting the Fábio Santos Settlement

¹³ Wendy Wolford, 2010, *This Land in Ours Now: Social Mobilization and the Meanings of Land in Brazil*, Duke University Press, Durham.



Restoration and conservation of native forest in the context of a eucalyptus plantation area by Suzano

SITE 2:

RESTORATION AND CONSERVATION OF NATIVE FOREST IN THE CONTEXT OF A EUCALYPTUS PLANTATION AREA BY SUZANO (TUESDAY, DAY 1)

The ecological restoration activities carried out by Suzano are based on the active recovery of degraded areas through the planting of native Atlantic Forest species and the application of various restoration techniques, including assisted natural regeneration. Interventions are determined through a micro-planning process conducted at the local level, which takes into account the specific characteristics and degree of degradation of each area. Based on this assessment, the most suitable strategies, techniques, and inputs are selected to foster vegetation recovery, enhance operational efficiency, and ensure the long-term sustainability of the restored areas. Implementing these initiatives also requires intensive management—particularly during the initial years—involving site preparation, control of competing vegetation, fertilization, monitoring, and ongoing maintenance, all of which are essential factors for successful restoration.

The areas covered by the program consist primarily of historically degraded lands that had been subjected to deforestation and intensive use for cattle ranching or other agricultural activities prior to their acquisition by the company. In this context, restoration efforts aim to recover ecosystem structure and functionality by promoting the re-establishment of forest

cover, protecting water resources, creating riparian vegetation buffers to conserve springs and watercourses, strengthening connectivity between forest fragments, and generating biodiversity benefits. Furthermore, these initiatives help meet the requirements of the Brazilian Forest Code and support Suzano's corporate commitments regarding sustainability, climate action, and biodiversity conservation.

Beyond environmental gains, the program generates positive social and economic impacts in the regions where it operates. Activities are executed by service providers contracted by Suzano that prioritize hiring local labor, thereby contributing to job creation and income generation. Across the states of Bahia and Espírito Santo, the program is estimated to benefit approximately 150 families through work opportunities linked to restoration activities. The initiative also strengthens the regional supply chain by sourcing native seedlings from Viveiro AMA: a strategic partner of Suzano responsible for producing around 1.5 million seedlings annually. The nursery employs local residents from southern Bahia and uses seeds collected from parent trees identified in the municipalities of Itamaraju and Prado, thereby contributing to the appreciation of local biodiversity, the conservation of regional genetic heritage, and the strengthening of the local economy.



Group visit to the restoration site by Priceless Planet Coalition at Pau Brasil National Park

SITE 3:

RESTORATION SITE BY PRICELESS PLANET COALITION AT PAU BRASIL NATIONAL PARK (WEDNESDAY, DAY 2)

The restoration activities focus on high-density planting of mixed native species across 6.5 hectares of land, beginning with 30 to 40 species based on nursery availability and ultimately targeting approximately 100 species capable of forming a 30-meter forest canopy over time. Planting is carried out using both 2 × 2 meter and 3 × 2 meter spacing grids and involves converting harvested eucalyptus plantations into native forest. Restoration also requires intensive removal of aggressive, non-native fern and brachiaria grass species to enable the establishment of native vegetation from the initial stages of restoration. These restoration activities are led by Grupo Ambiental Natureza Bela through the Priceless Planet Coalition, a project led by Conservation International with financial support from Mastercard within Pau Brasil National Park. Established in 1999 and expanded in 2010, the national park focuses on restoring previously degraded lands, including former farms, and has expanded to encompass nearly 20,000 hectares.

The project addresses landscapes that were historically converted for cattle ranching and other agricultural practices, which eliminated native vegetation and left behind invasive grass and fern

species that inhibit native tree regeneration. Its objectives are to shift management priorities from basic preservation toward large-scale ecological restoration, protect Brazil's iconic keystone species, the pau-brasil tree, establish effective buffer zones and agricultural conservation cycles, expand regional ecological corridors, and foster an inclusive regional economy centered on regenerative ecotourism through initiatives such as community trail networks, camping, and Brazil's first dedicated mountain bike park. The restoration effort is motivated by public-private conservation mandates implemented through Chico Mendes Institute for Biodiversity Conservation, the application of restoration methodologies developed by PACTO, corporate social responsibility (CSR) and green marketing commitments from international funders, and enforcement of the 2006 Atlantic Forest Law to prevent illegal land subdivision and logging. The project is carried out on private lands that are being incorporated into the national park through public-interest acquisitions.



Group conversation about restoration site by Priceless Planet Coalition at Pau Brasil National Park

Funding is provided through a diversified model that combines corporate philanthropy and international donations. The featured 6.5-hectare restoration site is financed by Conservation International using resources from the Priceless Planet Coalition. Earlier restoration efforts supporting the expansion of Pau Brasil National Park began in 2008 with financial support from BTG Pactual and technical partnerships with The Nature Conservancy. Seedlings are sourced through a network of five local nurseries, including the Santa Maria Settlement. The project continues to face several implementation challenges, including illegal logging in border areas, the absence of comprehensive tree inventories and traceability systems to protect forests from deforestation, targeted extraction of valuable timber species such as Paraju and Brazilian Redwood, and the high cost of restoration, which was approximately US\$6,000 per hectare for the Mastercard-funded project.

One of the project's most significant lessons has been the successful shift from viewing local communities as “clients” or “monitors” to recognizing them as active partners, researchers, and restoration practitioners. The initiative relies heavily on local youth, rural farmers, and neighborhood seed-collection networks to increase the genetic diversity of restoration plantings. It also demonstrates that while active tree planting can be scaled relatively efficiently, long-term maintenance remains the principal bottleneck to successful restoration. Finally, the experience presented during the visit suggests how historical carbon prices of US\$5–14 per ton were insufficient to cover restoration costs, whereas more recent prices of US\$50–60 per ton provide a much stronger economic foundation for financing large-scale ecological restoration.

SITE 4:**COMMERCIAL NATIVE SILVICULTURE AND HIGH-TECH RESTORATION BY SYMBIOSIS**
(WEDNESDAY, DAY 2)

Participants visit the site of commercial Native silviculture and high-tech restoration by Symbiosis

Symbiosis carries out large-scale silviculture activities using native species, investing in applied research on genetic improvement for timber production. The company establishes productive forests on degraded pastureland, reversing land degradation processes and developing a new forest-based economic model. Its operational model initially employed mixed-species plantings, with a ratio of up to 50% exotic species (e.g. African Mahogany) and 50% native species. Over the course of the project, this composition has shifted toward a predominance of native species; in some areas, native species now account for up to 90% of the total, reflecting their superior performance following the implementation and refinement of silvicultural techniques. The pilot project began on the degraded lands of the Symbiosis Farm, where the company utilized a set of 165 species to restore Permanent Preservation Areas (APPs), Legal Reserves (RLs), and sloped terrain. In areas suitable for commercial use, trials began with 56 timber species; currently, the 12 best-performing species have been selected for large-scale commercial plantations.

These intensive productive restoration initiatives aim to address the region's high level of eco-

system fragmentation, where only 8% of the original Atlantic Forest biome remains intact. In the project's operational areas, degradation stems primarily from a history of intensive land use for cattle ranching and coconut monocultures, which contributed to soil depletion. In response to this situation, Symbiosis has set a short-term goal of establishing 2,000 hectares of new plantations across the current and upcoming operational cycles. To this end, it relies on a nursery facility capable of producing up to 5 million seedlings annually. Regarding forestry production, the project is finalizing the setup of a sawmill with the capacity to process 600 cubic meters (m³) of sustainably managed native timber per month. From a long-term perspective, the company's strategy aims to strengthen climate resilience through the careful selection of mother trees possessing desirable traits: such as straight trunks for timber production, disease resistance, and a high capacity for continuous carbon sequestration over the cultivated species' approximately 100-year lifecycle.

The initiative's primary motivation is to demonstrate the economic viability of commercial forestry using native species, establishing it as a self-sustaining alternative to reliance on public funding and donations. Other drivers behind the project include meeting corporate carbon-neutrality targets through major international investments—such as the Apple Restore Fund—and expanding project certification within the voluntary carbon market, adhering to the rigorous standards of Verra and the Forest Stewardship Council® (FSC®). The project's revenue streams are structured around the sale of high-value-added native timber products (such as decking, flooring, ceiling paneling, and furniture components), carbon credits, wood chips from the sawmill (sold as industrial biomass), and native seedlings produced at the nursery. Symbiosis faces complex administrative challenges, including state-level environmental licensing processes characterized by stringent requirements and bureaucracy.

The initiative must also navigate new procedures involving federal registries and agencies—such as the Brazilian Institute of the Environment and Renewable Natural Resources (IBAMA)—given that the registration, monitoring, and authorization of commercial harvesting for planted native trees represent an unprecedented practice. From an operational standpoint, the project faces logistical challenges, particularly during the rainy season, when sandy access roads often become impassable for heavy transport vehicles. Furthermore, the region's high level of forest fragmentation imposes significant genetic limitations on tree populations; this requires teams to invest greater effort in prospecting and climbing to collect seeds from “mother trees” that meet specific criteria, such as health, straightness, and stem volume. Despite these challenges, Symbiosis employs an innovative approach by operating an integrated production chain — spanning from research and development to wood processing (“from lab to sawmill”) utilizing selected tree cloning, grafting, and artificial intelligence tools integrated with satellite mapping and soil analysis. In addition, its operations incorporate a strategy aimed at reducing social vulnerability through a Diversity, Equity, and Inclusion (DEI) model, made up of a workforce that is 57% wom-

en, 81% Black professionals, and specific learning programs for young people.



Group discussion at the site of a future sawmill connected to commercial Native silviculture and high-tech restoration by Symbiosis

2.2 Key challenges across six themes

Following two days of intensive site visits and subsequent working group deliberations, dialogue participants synthesized the localized and structural hurdles facing ecosystem restoration in southern Bahia and the larger Brazilian landscape into six core themes. While the region boasts exceptional biophysical capacity and mature multi-stakeholder coalitions, scaling up these fragmented successes requires navigating a complex matrix of regulatory, socio-economic, and technical obstacles. These identified themes represent the primary systemic “fracture lines” where current landscape restoration frameworks risk underperforming, highlighting critical areas where corporate strategies, community rights, and public policies must achieve deeper alignment.

2.2.1 Implementation and enforcement of laws

The transition of ambitious environmental legislation from theory to practice is severely hindered by administrative delays and fragmented legal enforcement, delaying scale-up efforts for many stakeholders. At the state level, rural landholders face intense, highly bureaucratic licensing processes and prolonged backlogs within environmental registries, such as the State Forestry Register of Rural Properties (CEFIR). These administrative bottlenecks undermine the predictability required for corporate commitments and compromise the strict compliance timelines imposed on small-scale landholders. Furthermore, regulatory frameworks often fail to curb illegal land parcels and speculative transactions that occur despite protective statutes like the 2006 Atlantic Forest Law, reducing efficacy of larger scale efforts.

Compounding these state-level delays is a critical regulatory void regarding the commercial harvesting of deliberately restored native forests. Federal tracking systems, such as those managed by IBAMA, lack standardized administrative routines for registering and authorizing the timber extraction of planted native hardwoods because such eco-commercial practices are historically unprecedented. This operational gap forces innovative companies to design compliance mechanisms from scratch, increasing regulatory risks and deterring broader private sector investment, particularly in the face of growing operations. Additionally, public preservation areas, exemplified by the border zones of Pau Brasil National Park, remain highly vulnerable to illegal logging and clandestine extractions of high-value timber like Paraju or Brazilian Redwood due to a lack of institutionalized tree inventories and localized law enforcement partnerships.

2.2.2 Inclusion and engagement of diverse stakeholders

Fostering genuine multi-stakeholder integration remains a persistent challenge in a landscape marked by historical land conflicts and deep socio-economic disparities. The landscape includes indigenous peoples, maroons (*Quilombola*), long term local residents (*Nativos*) and more recent migrants, with very different histories and claims on the land, many of whom lack formalized land rights, while most of the landscape is titled to large corporations and private landowners.¹⁴ The dialogue process between companies and communities has enabled significant progress (e.g. MST and Suzano); one example is the

14 Colleen M Scanlan Lyons, 2022, *Running After Paradise: Hope, Survival and Activism in Brazil's Atlantic Forest*, University of Arizona Press, Tucson

allocation of properties by companies for acquisition by INCRA, aimed at implementing the National Agrarian Reform Policy. While this advancement—stemming from the tripartite coordination established in the agreement to mitigate land conflicts among companies, public authorities (state and federal), and social movements—holds great potential to transform the situation on the ground, it also presents the challenge of managing the expectations of beneficiary families throughout the lengthy bureaucratic processes involved in implementing this type of public policy. A risk is that landless and marginalized populations are viewed as project ‘monitors’ or passive recipients rather than active partners in landscape restoration.

Furthermore, structural gaps persist in translating highly complex, contemporary concepts like carbon markets, voluntary crediting, and genetic modification into transparent, culturally accessible frameworks for traditional and indigenous communities, including women. True landscape connectivity often requires designing ecological corridors across private properties, community lands and adjacent Indigenous territories, yet establishing these pathways is frequently bottlenecked by initial resistance from private landowners and a lack of structured engagement with distant indigenous groups. While gender-inclusive models like the “Forest Forces” initiative demonstrate the value of identifying and rectifying socio-economic stressors of the local female workforce, embedding these insights systematically across the wider regional forest sector remains an unfulfilled objective.

2.2.3 Fragmented efforts and poor information flow

The regional restoration paradigm is heavily characterized by a distinct lack of centralized coordination, information flow, and standardized baseline data. Although pioneering commercial entities utilize advanced technologies, ranging from AI-integrated soil mapping to satellite tracking and elite tree cloning, this data remains tightly concentrated within individual corporate portfolios; simultaneously academic and non-profit consortiums have the infrastructure to host data but a lack of engagement and interaction with said collections. Even then, there are still data gaps in large portions of efforts for ecosystem restoration at all scales in the process. In addition, the absence of a shared, transparent regional inventory for native seed tracking and nursery certification creates localized supply bottlenecks, forcing developers to scramble to fulfill high demands for rare, hard-to-find native seedling species.

This informational fragmentation is mirrored in the field, where communication gaps between project developers, state environmental agencies, and neighboring private landowners undermine landscape-scale connectivity. For example, early attempts by Suzano to establish ecological corridors were severely hindered because an initial 500-meter-wide design proved logistically unmanageable to coordinate across disconnected private properties. As activities progressed and understanding of local dynamics deepened, the methodology was refined to adopt a more flexible approach tailored to the characteristics of each territory, prioritizing functional connectivity between native vegetation fragments and areas undergoing restoration. This learning can be enhanced by knowledge sharing platforms to disseminate lessons learned.

2.2.4 Financial constraints

Landscape-scale ecosystem restoration in southern Bahia is restricted by exceptionally high initial capital expenditures and a lack of accessible finance for non-corporate actors. For high-density mixed native plantings, such as the public-private project backed by Mastercard and Conservation International, implementation costs can significantly exceed budget due to the compounding expenses of specialized labor, life insurance, vehicles, long-term maintenance infrastructure and monitoring. For commercial native silviculture, the prolonged financial payback periods of slow-growing hardwoods mean that projects remain heavily reliant on elite corporate funds, such as Apple’s Restore Fund, or massive public debt allocations from BNDES to start up projects that can eventually profit at scale: thus, leaving a massive funding gap for independent, medium-scale initiatives to connect into this scaled framework.

This skewed financial architecture creates severe inequities for smallholders and agrarian reform settlements who lack the liquid capital needed to weather the multi-year establishment phases of biodiverse restoration. Unlike large corporate entities that can offset native forest expenditures by intercropping and harvesting commercial exotics like Eucalyptus, small-scale rural producers rarely possess the technical or financial buffers required to launch multi-species systems. Furthermore, while modern compliance pricing offers a more viable path to carbon market pricing, smallholders lack the formalized land titles and legal capacity required to access these international green finance facilities.



Ranking of challenges exercise during Dialogue Day

2.2.5 Restoration quality and monitoring

Securing long-term ecological quality is heavily threatened by intense biophysical headwinds and a corporate gravitation to simplistic metrics over complex biodiversity indicators. High-disturbance post-plantation and post-cattle landscapes are exceptionally vulnerable to aggressive infestations of non-native brachiaria grasses and multi-meter invasive ferns that rapidly form dense understory shadows. If maintenance is deferred, these aggressive pioneer invasives completely choke out young native seedlings, stalling natural regeneration and creating a permanent operational bottleneck that requires years of intensive clear-cutting and site clearing to rectify. Without the use of pesticides, this process of native re-establishment can be labor intensive and cost intensive, further detracting from the overall potential of restoration quality on a given site.

Additionally, establishing reliable monitoring frameworks across highly diverse plots remains technically challenging and resource intensive. While frameworks like the Atlantic Forest Restoration Pact (PACTO) protocol offer robust guidelines for ecological services by years six and seven, many projects suffer from a “carbon-only” fracture line, where narrow corporate accounting metrics prioritize rapid carbon sequestration curves over structural biodiversity, soil health, and watershed retention. This emphasis on rapid canopy closure often leads to over-reliance on a limited pool of easily sourced native species, masking underlying genetic risks. Because forest fragmentation reduces the genetic diversity of wild seed populations, field teams are forced to engage in non-ideal planting practices (e.g. hazardous, labor-intensive tree climbing to harvest resilient seeds or planting readily available non-native seeds) highlighting the difficulty of maintaining genetic integrity without standardized, region-wide monitoring systems.

In areas with steep slopes, it has been mentioned that the primary operational bottleneck is not necessarily the planting or seeding stage, but rather the preceding soil preparation. This is the stage that currently may account for the highest costs and mechanization limitations, precisely because these steep areas coincide with a significant portion of the Permanent Preservation Areas (APPs) that are most difficult to access. Restoration quality—and associated mortality rates—can be strongly linked to technical implementation decisions made without regard for site-specific soil characteristics; this can significantly increase post-planting maintenance costs, such as those for replanting and invasive species control. A failure to adapt restoration methods to the actual field conditions of each area (often due to the need to meet rigid requirements in public notices or contracts) can result in poor restoration quality, as it overlooks soil characteristics and lacks the flexibility to adjust protocols to local conditions.

2.2.6 Valuation of the environment

A fundamental barrier to scaling regional environmental recovery is the historical failure of local and global markets to properly value non-carbon ecosystem services. For decades, the multi-functional benefits of native forests have been treated as economic externalities. Without a formalized, reliable market architecture to financially compensate landowners for these localized ecological returns, native forest conservation struggles to compete against highly profitable, short-term land uses like intensive cattle ranching, pepper farming, or eucalyptus monocultures. While emerging asset classes, such

as Verra’s Nature Framework, attempt to address this gap by directly monetizing verified net gains in biodiversity and habitat condition, these voluntary credit systems remain minor and structurally underdeveloped compared to standard carbon markets.

This challenge is further compounded by a widespread lack of understanding, both at the corporate and policy levels, of the depth and complexity of business dependencies on natural capital. Many economic actors underestimate how their operations are fundamentally supported by ecosystem services such as water regulation, soil fertility, pollination, climate stability, and erosion control. These services, often provided by intact and diverse natural systems, form the invisible infrastructure underpinning agricultural productivity, supply chain stability, and long-term asset resilience. However, because these dependencies are diffuse, non-linear, and poorly quantified in financial terms, they are rarely incorporated into core business decision-making, risk assessments, or valuation models.

2.3 Solutions to address key challenges

Six narrowed challenges, explicated above, were taken into the next two sessions: solutions and opportunities. Each challenge, hosted by a Co-Chair and note-taker, collected six rounds of participant feedback on potential opportunities and solutions to address the challenges. All participants rotated to each challenge station, meaning each participant group built upon the last as they rotated through the groups. Some time in each rotation was also spent reviewing the previous groups’ responses. This system was created with the goal of creating a comprehensive and exhaustive list of all potential solutions, regardless of feasibility or importance. Below, outlines the grouped opportunity themes collated from the exhaustive lists of each session.



Group session of listing a comprehensive list of solutions based on identified challenges, led by Co Chair Erica Munaro

2.3.1 Implementation and enforcement of laws

Five pillars of opportunity surfaced during the discussion following the highest ranked identified challenge: 1) *enforcing land and environmental laws*, 2) *engaging large landowners*, 3) *resolving land title chaos*, 4) *streamlining bureaucracy and improving definitions*, and 5) *holding bad actors accountable*. Local government presence has the potential to provide strength and mobilization to pursue environmental crimes when committed. Political accountability at the municipal level, through task forces and other intervention methods, is an opportunity (and imperative) to the success of compliance initiatives. In addition, by emulating these structures multi-laterally (both incentives and penalties), non-compliance should reduce dramatically. Landowners that own large plots can play an important role in scaling-up ecosystem restoration. By educating bigger agricultural players on the systemic risks of non-compliance, emphasizing water insecurity, regulatory penalties, and long-term economic losses, these landowners will be more favorable to such compliance mechanisms, further working to support institutions to uphold such efforts. The current chaos in land titling is a major obstacle to scaling up restoration efforts but on the other hand resolving this chaos provides a real opportunity to speed up restoration efforts and benefit-sharing while securing livelihoods of local communities. Prioritizing and accelerating land regularization and territorial recognition for Indigenous Peoples (IPs), *quilombos*, *nativos*, and agrarian reform claimants through Instituto Nacional de Colonização e Reforma Agrária (INCRA), can provide a more secure basis for landscape restoration. Governmental structure writ large also complicates efforts to scale up restoration; clearing up restoration definitions and standards for projects through environmental registration systems such as *Cadastro Ambiental Rural* / Rural Environmental Registry (CAR), is an example of where simplification can work well to achieve the goals of ecosystem restoration. The definition of additionality also needs to be revisited, so legal compliance is rewarded, which is a more complicated but necessary change. At the crux of the governance challenge is how to hold bad actors accountable. One opportunity is increasing financial penalties, so paying fines is no longer cheaper than complying with the law. But it must also be met with proper enforcement, which could be strengthened by tying international market access to verified legal compliance, making downstream buyers demand transparency (with the enforcement stemming from the conditionality of access to money from Multilateral Development Banks (MDBs)). Among the opportunities, partnerships between organizations to support landscape-level environmental regularization, notable initiatives — beyond those visited — are important to be noted.



Group session of listing a comprehensive list of solutions based on identified challenges, led by Cécile Ndjebet.

2.3.2 Inclusion and engagement of diverse stakeholders

1) *Promoting community-led restorations*, 2) *empowering women and youth*, 3) *valuing local and ancestral knowledge*, 4) *ensuring fair wages*, and 5) *contextualizing communication*, emerged as key opportunities for inclusive engagement and community leadership. First, an opportunity lies in shifting leadership from external organizations to local communities (“not *our* objective, but *their* objective”) by investing in local leadership and technical training. Women and youth are also an untapped market, which requires dedicated funding mechanisms and grant access; successful public initiatives in the region like “My Tree, My Life” demonstrate the potential of this group. Local and ancestral knowledge is also a major opportunity to leverage, particularly Traditional Ecological Knowledge (TEK) foundations. Supporting local seed collectors, native nurseries, and seedling networks is a way to operationalize that knowledge integration. Ensuring fair wages guarantees restoration work continua exceptionalism without compromising community labor via exploitation; in fact, providing equal or better opportunities in comparison to regional rural activity pay can increase competition for the best talent in restoration. Encompassing it all, contextual communication is the foundation to a successful restoration story, particularly centering projects around local benefits for human well-being and livelihoods which is communicated through reputable community figureheads (religious leaders, public icons, etc.).

2.3.3 Fragmented efforts and poor information flow

Fragmented efforts and poor information flow drive disjointed and ineffective efforts in scaling restoration, however, 1) *consolidating international frameworks*, 2) *unifying national and local platforms*, 3) *improving scientific communication*, and 4) *expanding standardized training openly*, materialized as touchstones for opportunity for scaling restoration in the face of this challenging concern. Conference of the Parties (COP) fatigue compels smaller entities to disregard important standardization efforts. To combat such fatigue, merging overlapping international summits or utilizing unifying frameworks like Panama’s Nature Pledge can assist in streamlining global cooperation. In a similar vein, unifying national and local platforms via central communication hubs (e.g. PELA, Unity Dialogue Platforms) can reduce fragmented data silos across different NGOs and governmental entities. Scientific communication can also provide an avenue to translating important work into communicable and interweaveable results; by utilizing AI for research translation and accessibility, storytelling and mass media following may be unlocked. Training personnel tailored specifically to distinct regional contexts and restoration knowledge is also something of use. Programs like the Environmental Leadership Training Initiative (ELTI) and Brazilian Society of Ecological Restoration (SOBRE) provide this academic platform to disseminate formal education to standardize practices, matching the standardization of global protocols.

2.3.4 Financial constraints

Market incentives and financial mechanisms are what halt many corporations from leaping into ecosystem restoration headfirst. To change the narrative, 1) *overhauling banking policies*, 2) *diversifying economic incentives*, 3) *redirecting multilateral funding*, 4) *creating market platforms*, and 5) *promoting solidarity economics* are concrete opportunities noted in discussions to overcome this scaling hurdle. As a first

bridging effort, an opportunity lies in Educating development and commercial banks on the true risks, timelines, and benefits of restoration. After a wider understanding of restoration, pushing for flexible financial mechanisms that match the multi-year timelines of ecological growth rather than short-term financial cycles can be achieved. Restoration initiatives can also benefit from implementation of targeting tax breaks, tax exemptions, and government subsidies. Tapping into Payments for Ecosystem Services (PES) and credit markets to explicitly reward biodiversity and water benefits rather than focusing solely on carbon, could add an additional incentive to develop projects. MDBs play a key role as well, with the ability to bypass heavy bureaucratic layers and go directly to local project implementers. Due to the fragmentation of project design and implementation, a platform was suggested—termed a “Tinder for Restoration”—to seamlessly pair corporate buyers looking to fulfill decarbonization/compliance commitments with localized restoration projects. From the project side, cultivating regional cooperatives and collective branding (e.g., Gaya Education models) to give smallholders aggregated market power and shared accounting/management hubs can assist in making projects financially feasible.

2.3.5 Restoration quality and monitoring

Monitoring standards and restoration quality were also among the highest rated concerns during the dialogue; in the opportunity session five umbrella opportunities were named: *1) optimizing supply and demand planning, 2) standardizing metric transparently, 3) focusing on natural regeneration, 4) designing for multi-purpose landscapes, 5) innovate technical practices*. One pertinent opportunity noted was to Tie tight, advanced project planning to nursery capacity and seed harvesting timelines to prevent localized shortages of native plant materials. Utilizing established monitoring platforms (e.g., the FAO’s FERM, Brazil’s Observatory of Restoration, IBAMA’s RECOOPERAR, or the Atlantic Forest Pact) to host open-access, cross-boundary environmental data can also improve monitoring quality. Prioritizing Assisted Natural Regeneration (ANR/RNAD) over intensive tree planting where applicable, aligns efforts closely with the baseline dynamics of local reference ecosystems. Planning restoration projects to support diverse local economies by incorporating non-timber forest products (NTFPs) and mixed agroforestry models (using multiple native and medicinal species) can be an additional opportunity to create revenue and improve quality of restoration through cutting edge techniques. Adopting low-cost, efficient monitoring and implementation technologies (such as computer vision, multispectral sensing, and/or LiDAR for forest structure assessment or high-slope adaptive planting tools) to phase out clumsy, outdated logging and measurement software. Greater emphasis on activity planning can also improve restoration quality—including a preliminary assessment of site viability that combines geospatial data, predictive modeling, and shapefile analysis—prior to the decision to intervene.

2.3.6 Valuation of the environment

Cornerstones of potential progress for certification and valuation of the environment lie in three determined targets: *1) democratizing certification, 2) valuing native assets, 3) avoiding flat metric standardization*. Making land and product certifications highly accessible and affordable for smallholders by adopting flexible, community-verified frameworks like Participatory Guarantee Systems (PGS) can assist with

democratization of the complex certification process. Mapping and legally protecting the distinct chemical and medicinal taxonomy of native vegetation, via integrating these assets directly into regional public policies (e.g., official agricultural/fertilizer regulations) can offer better restoration outcomes during valuation. Resisting rigid, one-size-fits-all global baseline standards, as mentioned in previous sections, is critical. Synergistically, metrics should remain dynamic and locally calibrated to account for the unique social, economic, and ecological realities of individual territories, which is an opportunity to capitalize on scaling potential in Bahia.

2.3.7 Next step for opportunities

Dialogue on opportunities concluded at this point, meaning there was no feasibility consideration, no ranking of importance of solutions, nor any clarifying efforts to hone in on specific solution pathways. This section serves as a de facto master list of potential for participants in the dialogue to move forward with. Additionally, there was no discussion of operationalization of said efforts, nor any official agreements constructed between parties to conduct any of these solutions or efforts. Next steps for participants include moving forward on prioritizing and acting on the master list of solutions to create tangible long lasting change.

III. CONCLUSION

3.1 Reflections on initiative fracture lines

The role of economically driven reforestation in scaling production models

The dialogue demonstrated that economically driven reforestation and commercial restoration activities are indispensable to meeting global restoration goals and expectations. The integration of production forestry, as seen in the Symbiosis example, provided a deeply inspiring blueprint for how business can drive ecological recovery. However, critical questions remain regarding how to appropriately scale these models and adapt them broadly across the plantation sector. Despite these uncertainties, there is a palpable, authentic momentum behind these efforts. Harnessing commercial forestry, complete with its infrastructure for seedling production, timber harvesting, and sawmilling, offers a pragmatic mechanism to fund and sustain restoration at a scale that corporate philanthropy or marketing budgets simply cannot match. Agroforestry also can play an important role in scaling restoration, especially in the context of forest dependent groups, but since is a labor and cost extensive model, new ways of financing restoration could include the promotion of this model.

Navigating the realities of climate and carbon-focused financing

When evaluating the financial landscape, the challenges and opportunities of climate- and carbon-focused financing took center stage. The influence of Brazilian regulation stands as a powerful testament to how legal frameworks can enforce the inclusion of non-carbon ecological benefits, such as biodiversity and water security, within broader ecosystem restoration frameworks. Yet, the consensus during the dialogue was that carbon financing is merely one piece of the pie. The reality is stark: even if we optimize carbon markets

entirely, carbon alone is economically insufficient to justify large-scale restoration. To achieve financial feasibility, we must adopt an “all-on-board” approach that stacks multiple revenue streams, blending carbon credits with sustainable timber production, agroforestry, and state-backed incentives.

Balancing restoration with conservation and halting deforestation

A profound tension explored during the dialogue involves the potential pitfalls of incentivizing restoration at the expense of strict conservation and halting active deforestation or land conversion. In these economically vulnerable regions, pure conservation is incredibly difficult because it fails to derive immediate income. This reality completely divorces itself from the urgent need of local communities to generate revenue. In this context, restoration acts as the critical bridge that fills the gap, connecting social inclusion with ecological effort.

Furthermore, this economic linkage guarantees long-term adoption; while traditional conservation mandates preservation in perpetuity, any seasoned conservationist understands the structural pitfalls and enforcement failures of such rigid dictates. Emphasizing restoration does not necessarily detract from deforestation monitoring; rather, it empowers forestry companies to practice responsible stewardship on the land they already utilize for essential production purposes. To ensure these efforts coexist harmoniously, it was highlighted the importance to ensure that restoration activities cannot be used to offset for deforestation/loss of native forests.

Resolving the tension between top-down and bottom-up frameworks

Scaling restoration requires navigating a constant tension between top-down regulatory structures and bottom-up, community-driven approaches. Many of the recommendations explicitly recognized the need to simplify top-down structures into easily adoptable, non-conflicting mechanisms. Streamlining these frameworks allows local communities and land managers to easily discern and assume the specific parts of the framework that feel appropriate for their unique context. To achieve this, the overarching framework itself requires inherent flexibility to accommodate local environmental and social conditions.

Encouragingly, the dialogue highlighted local governance as a serious opportunity to root compliance and restoration efforts in community pride and peer accountability. Simultaneously, there is a clear role for top-down levers, such as pulling on MDBs to restructure the global financial landscape and de-risk restoration investments. Ultimately, the dialogue identified highly agreeable levers that strike a healthy balance, blending institutional financial muscle with flexible, localized execution to release this systemic tension.

Human centric targets and credible performance verification

Finally, the dialogue confronted the dual imperatives of meeting strict ecological restoration targets while simultaneously fulfilling the immediate, socio-economic needs of local people. This was explicated not just as a minor hurdle, but as an entire, foundational challenge of the movement, proving that human livelihoods must be designed into the ecological metrics from day one. In tandem with this social challenge, a significant

portion of our discourse was dedicated to the need for credible verification of performance. The fact that an entire section of the dialogue discussed data collection, monitoring protocols, and verification standards shows a profound, cross-sectoral agreement on the exact technical and structural barriers currently holding ecosystem restoration back from scaling in Bahia. Acknowledging these shared challenges is the first vital step toward building a unified, verifiable, and economically viable restoration economy.

3.2 Co-Chair reflections

To achieve restoration at the pace and scale necessary, the region must transition away from isolated interventions toward a comprehensive, landscape-level approach. This model cannot be driven solely by large-scale corporate actors; it must actively integrate small and medium enterprises (SMEs), NGOs, academia and Indigenous Peoples and local communities and ensure rightsholders have a genuine voice in planning. The urgency of this transition is underscored by an alarming environmental reality: any progress made on restoration will be undermined unless aggressive, parallel actions are taken to halt ongoing deforestation. Rescuing, restoring, and strategically linking the remaining fragments of this critical biome is an ecological imperative that requires deep structural alignment, legal certainty, and shared accountability across all sectors.

Institutions and compliance

A primary obstacle to scaling restoration projects is the slow pace of environmental compliance processes. State and municipal environmental agencies are severely constrained by a limited capacity to review applications, monitor compliance, and enforce existing environmental regulations. This bureaucratic drag stifles momentum and creates legal uncertainty for participants. This issue is compounded by a stark lack of effective economic incentives, such as structured Payments for Ecosystem Services (PES), tax incentives, and dedicated financing mechanisms. Lack of incentives significantly reduces landowners' willingness and financial ability to invest in restoring degraded areas.

Furthermore, there is a visible, systemic tension between the restoration sector and other land uses, such as cattle ranching and intensive agriculture. These conventional sectors often do not face or enforce the same rigorous standards for legal compliance to secure protected areas or legal reserves. This disparity creates an uneven economic playing field and generates friction that impedes the formation of cross-sectoral partnerships necessary for landscape-scale initiatives. To overcome these barriers, there must be a concerted effort to enhance the administrative and enforcement capacity of municipal and state governments. Public policy frameworks must be modernized to streamline compliance, standardize regulations, and provide the legal safeguards necessary to incentivize voluntary environmental regularization.

Corporate responsibility and cost

The restoration economy in southern Bahia is structurally vulnerable because of the weakness of foundational elements, primarily nurseries, seed collectors, and service providers. Such systems remain heavily dependent on short-term project funding. This reliance creates damaging economic cycles

where periods of abundant investment are followed by severe funding shortages. These fluctuations repeatedly disrupt field operations, weaken local supply chains, and lead to the permanent loss of skilled workers and specialized businesses. To break this cycle, long-term private sector commitments are essential. Continuous initiatives, such as Suzano's commitment to connect 500,000 hectares of forest fragments prioritized for biodiversity conservation by 2030, provide the multi-year market predictability required to stabilize the supply chain, reduce market volatility, and build a resilient restoration economy.

Beyond corporate responsibility, the dialogue highlighted a fundamental truth: the immense costs associated with global restoration targets cannot be met by corporate sustainability budgets, marketing allocations, or carbon credits alone. The field must integrate self-sustaining business models. An instructive case is Symbiosis, which demonstrates the viability of utilizing production forestry with native species as a core business driver, incorporating associated industries like seedling production and advanced sawmilling. However, despite field observations revealing Symbiosis models remain highly simplified compared to natural forests, and some of the chosen species are not native to Bahia compared with other production dedicated sites, it's considered a gain in ecological terms. In the areas that will be dedicated to preservation and conservation of native vegetation (legal reserves and set aside areas), the focus should remain in ecological authenticity, seeking to improve biodiversity where restoration is needed. Restoration mortality rates at a landscape level compared with different types techniques with research and technological improvement over the year are another critical factor of consideration, taking into account soil studies and analysis before the implementation; mortality rates are still very high, and solutions should be discussed at a landscape level considering but not limited to similar approaches in different locations.

Furthermore, a critical reflection emerged that for new business models to successfully align with a circular economy that actively supports life, they must embed clear ethical principles and ideals directly into their core corporate motivations. In contrast, while public land restoration (especially within conservation units) continues to attract private capital driven by carbon emission compensations and brand promotion, these mechanisms must be further refined and structurally adjusted to remain attractive, transparent, and scalable over the long term.

Social inclusion and rural conflict

Restoration cannot be measured solely in hectares; it is fundamentally about quality, human rights, and local livelihoods. True social inclusion requires addressing the deep-seated history of rural violence in Brazil. The gravity of this issue was highlighted during the dialogue week, when participants recalled the killing of two young Indigenous people in 2023 in a land conflict in the Barra Velha do Monte Pascoal Indigenous Territory – an example of the land disputes between Indigenous communities and local landowners in the region, unrelated to the forestry sector. Progress on the ground is inherently tied to addressing these continuing land conflicts through proactive, sustained engagement. Land tenure and tenurial security are absolute prerequisites for any bottom-up restoration option. Without secure land rights, indigenous peoples, traditional communities, and land reform beneficiaries cannot safely or effectively contribute to ecosystem management.

To build an equitable model, explicit attention must be paid to protecting women’s rights regarding land use and access. Furthermore, restoration initiatives must actively build upon indigenous cosmovisions and grant formal recognition to indigenous territories. Social safeguards must be strengthened alongside comprehensive monitoring of the social impacts and benefits generated by these projects. This includes enhancing the production systems of local peoples on their existing lands: improving the productivity of traditional crops like cacao, bananas, and coffee. This strategy of sustainable intensification generates vital local income while simultaneously lessening economic pressure on neighboring native forests.

Finally, income generation from Non-Timber Forest Products (NTFPs) requires greater investment, and Indigenous Peoples and Local Communities (IPLCs) must receive targeted capacity building regarding landscape dynamics, restoration methodologies, and the complexities of carbon markets.

Operational realities and partnerships

Field visits provided a sobering reminder that meaningful progress takes significant time. The successful ecological results visible on the ground today are the product of efforts initiated between 2010 and 2014. Building trusted partnerships and mitigating deep-rooted socio-ecological conflicts is a slow process; the underlying tensions do not simply disappear, but are rather managed and maintained at a level where stakeholders can constructively coexist.

This operational reality was clearly illustrated during discussions regarding Suzano’s Atlantic Forest Corridor Project, included within the goal of connecting 500,000 hectares. While Suzano’s response was viewed as comprehensive and open, discussions held during the field visit highlighted the importance of permanent dialogue and governance mechanisms to strengthen the participation of the various stakeholders involved in the initiative. In this context, the relevance of continuing to enhance spaces for listening and collaborative engagement with local communities throughout the implementation of the actions was perceived. Conceptually opposed to the large-scale industrial eucalyptus plantation model, the MST and similar civil society organizations may be concerned that environmental support provided by forestry corporations is structurally insufficient to counterbalance the negative impacts of their broader business model.

Operational flexibility is also essential when implementing these projects. The initial design of the ecological corridor was refined during implementation to better reflect the characteristics and opportunities of each intervention site, making actions more effective in terms of landscape connectivity and local stakeholder engagement. In this process, agroforestry systems and other income-generating alternatives played a key role by demonstrating that restoration can be reconciled with tangible benefits for those living and working in rural areas—particularly in settlements and rural communities.

Furthermore, bureaucratic obstacles remain a major bottleneck, particularly regarding the complex legal processes required for transferring land, a space where the Federal Government remains a slow but critically important actor. In terms of community execution, the MST noted that while they would not legally alter protected areas due to statutory regulations, and already maintain their own independent

tree-planting goals, the corridor project serves as a welcome mechanism to boost and accelerate their internal reforestation timelines. However, operational friction remains, notably concerning the use of chemical inputs; clear, viable alternatives must be developed for communities that firmly reject agrochemical applications following initial tree planting.

Technical lacunae

One significant technical challenge identified by participants is the pervasive lack of high-quality, centralized data, which consistently leads to poor, non-fact-based decision-making across the region. To rectify this, future restoration plans must establish clear, standardized milestones and rigorous implementation monitoring.

A major conceptual point of contention is the absence of clear, legally or scientifically defined thresholds for what constitutes a “concluded restoration.” There is currently no consensus around the Society for Ecological Restoration (SER) vision of a continuous “restoration continuum,” leaving practitioners without a unified end-goal.

To bridge the gap between field data and public awareness, the Restoration Observatory emphasized that managers of restoration initiatives must proactively report and share their data with the observatory to ensure their work is visible, verifiable, and recognized. Looking forward, the private sector must be integrated into these data systems by opening up the Restoration Observatory to corporate data sharing, thereby strengthening NGO-company coordination. Finally, stakeholders could agree to use the standardized regional monitoring protocol (that already exists from PACTO) to track long-term ecological outcomes including ideally all restoration projects in a given landscape, ensuring that scaling up is backed by empirical and science-based data rather than hasty, short-term metrics coming from a top-down, donor approach. Another relevant point concerns the various restoration techniques employed: while major donors and funding programs aimed at fostering restoration may focus their objectives and success metrics on the number of trees planted, other effective techniques used in Brazil—such as direct seeding—should not be overlooked.

Next steps observed by Co-Chairs

- ➔ **Institutional capacity and policy reform:** Present the consensus conclusions of the dialogue directly to the Ministry of the Environment and relevant government agencies to advocate for the streamlining of environmental compliance and the formal valuation of ecosystem services.
- ➔ **National-level engagement:** Share the Co-Chairs Summary with the Ministry of the Environment and Climate Change (MMA) in charge of the National Commission for the Recovery of Native Vegetation (CONAVEG): the body responsible for coordinating the implementation, monitoring, and evaluation of the National Policy for the Recovery of Native Vegetation (Proveg) and The National Plan for Native Vegetation Recovery (PLANAVEG). The objective is to promote the findings in the context of the already existing restoration collectives across different biomes, such as PACTO for Atlantic Forest, Aliança pela Restauração na Amazônia, Araticum for Cerrado, Rede Sul de Restauração Ecológica,

among others. Also, explore the willingness to convene a dedicated National Dialogue to deploy the solutions presented in a broader level in the context of the ecosystem restoration in Brazil.

- ➔ **Network mobilization and coordination:** Strengthen the mobilization between, and expansion of, existing biome-wide networks, such as PACTO (Atlantic Forest Restoration Pact) with the SOBRE (Brazilian Society of Ecological Restoration). Another next step includes stimulating the private sector to collaborate with the Restoration Observatory and other platforms, thereby increasing transparency of project and targets in the context of restoration.
- ➔ **Knowledge development:** Significantly build up local technical and operational training capacity, publish empirical field results, and conduct rigorous analyses to extract actionable lessons from past failed restoration efforts.
- ➔ **Social governance and safeguards:** Revise the existing social safeguards for ER in Brazil and promote de understanding on how it's been used for different stakeholder in the context of ER, as well as design/review protocols to monitor local social impacts, and actively incorporate women, youth, indigenous peoples, traditional knowledge, and diverse community representations into future forums, while respecting that certain civil society organizations (such as the MST) may choose to remain outside formal institutionalized frameworks.
- ➔ **Adaptive design:** Mandate that future corridor planning processes incorporate extensive local consultation and free, prior, and informed consent. Where consent is not granted, corridor routes must be flexibly adjusted to respect local autonomy. The increased risk of extreme climate events should be considered at all stages of an ER project.
- ➔ **Financial flows to implementers:** Strengthen and/or develop financial architectures to promote long-term monitoring efforts: aligned with strong social protocols and reduction of transaction cost to allow more resources to reach the local implementers. Advance the discussion on restoration success based on outcome indicators, rather than focusing strictly on the execution of intermediate activities.

ANNEX A: FULL LIST OF IDENTIFIED CHALLENGES (INCLUDING VOTES)

- 1. Implementation and enforcement of laws:** For ecosystem restoration mechanisms within the Bahian and Brazilian state enforcement system, including the longevity of effectiveness
➔ 21 votes
- 2. Inclusion, engagement of IPs (and local comm., women, youth, gender):** Inclusion and participation of diverse stakeholders in defining, managing, and producing outcomes, with equitable outcomes
➔ 18 votes
- 3. Fragmented efforts + poor information flow:** Lack of communication between parties and having diverging standards, outcomes, and projects that do not efficiently utilize resources and efforts
➔ 16 votes
- 4. Finance constraints:** How projects are funded, how projects are designed when funded based on the types and size of funding, and how projects last beyond funding
➔ 14 votes
- 5. Restoration quality (including monitoring):** How well Ecosystem Restoration projects succeed or meet effective standards of restoration, including how to continually track, report, and intervene with changes or developments in project sites
➔ 12 votes
- 6. Valuation of the environment:** How Ecosystem Restoration should be quantified/valued (or if it should) to meet effective goals and principles laid out by current local and global experts
➔ 10 votes
- 7. Sustainability of projects:** What is the lifetime of the project and how reasonably can it be assumed that project will not only last but do so in a restorative and nurturing manner
➔ 9 votes
- 8. Landscape vision and other biomes:** How does this work scale and move across different biomes
➔ 5 votes
- 9. Rural capacity and livelihoods:** The possible undue burden of caring for landscapes and not meeting the demands of local livelihoods
➔ 5 votes

10. Labor bottlenecks: Difficulty procuring labor, keeping labor, and getting representative labor

➔ 4 votes

11. Public policies: Shaping policies in municipal, regional, and country-wide to match principles and efforts of effective Ecosystem Restoration work

➔ 3 votes

12. Stopping deforestation / leakage: When an Ecosystem Restoration project is established, there is concern other parts of the forest will suffer with moving practices taking up those landscapes instead of the project sites

➔ 3 votes

13. Tenure security: Who owns, operates, and holds the rights for particular parcels under the system of Brazilian land tenure

➔ 2 votes

14. Methodology: How we are deciding to move through Ecosystem Restoration as a whole, what process is being utilized to conduct such efforts and identify the best management practices

➔ 1 votes

15. Landowners vs. visitors: What is the purpose of the Ecosystem Restoration and is there undue influence based on the type of land attraction it is garnering (e.g. is the land being used for)

➔ 0 votes

ANNEX B: PARTICIPANT LIST

Name	Organization
Maurem Alves	TFD / Klabin
João Augusti	Bracell
Gustavo Baesso	Preferred by Nature (PbN)
Guilherme Henrique Costa Baquião	Symbiosis
Rubens Benini	Pacto pela Restauração da Mata Atlântica / The Nature Conservancy (TNC)
Giovanna Bernardes	Rede de Sementes Vale do Ribeira
Barbara Bomfim	Rede Mulher Florestal / WWF
Bárbara Nascimento Flores Borum-Kren	Associação Popular Borum-Kren / UESC / Instituto Serrapilheira
Márcio Braga	iNovaland
Pedro Brancalion	Re.Green
Maria Eduarda Carvalho	Designer e Gestora de Projetos
Kerry Cesareo	WWF
Marcus Colchester	Forest Peoples Programme (FPP)
Maria Otávia Crepaldi	IPÊ
Ana Claudia Costa Destefani	Rede para Restauração da Caatinga (ReCaa)
Gary Dunning	The Forests Dialogue (TFD)
Victor Ferraz	Instituto Arapyauí
Isabela Filgueira Campos	TFD / Yale
Sérgio Augusto Marques Filho	Ibá - Comunicação
Canakya Galerita	International Forestry Students' Association (IFSA)
Tainah Godoy	Coalizão Brasil Clima, Florestas e Agricultura
Yuuko Iizuka	Sumitomo Forestry
José Junior	Grupo Ambiental Natureza Bela
Rodrigo Junqueira	Instituto Socioambiental (ISA)
Ana Paula Kanoppa	Ibá - Indústria Brasileira de Florestas
Elson Fernandes de Lima	Forest Stewardship Council (FSC) - Brasil
Colleen Mary Scanlan Lyons	Governors' Climate & Forests Task Force
Patrícia Machado	Suzano
Marcia Maria Marcial	Fórum Florestal da Bahia
Erica Munaro	Fórum Florestal da Bahia
Marcio Nappo	Bracell
André Nave	Re.Green

Name	Organization
Cecile Ndjebet	REFACOF - African Women's Network for Community Management of Forests
Laura Aluotto de Oliveira	International Forestry Students' Association (IFSA)
Mariana de Oliveira Gianiaki	Marimar
João Payayá	FINPAT - Federação Indígena Das Nações Pataxó E Tupinambá Do Extremo Sul Da Bahia
Daniel Piotto	Universidade Federal do Sul da Bahia
Ana Paula Pulito	CMPC
Miriam Prochnow	Apremavi
Pierre-Jean Quetant	Morfo
Fernanda Rodrigues	Diálogo Florestal
Ana Paula Moreira Rovedder	Rede Sul de Restauração Ecológica
Marco Aurélio Barbosa Santos	Veracel
Osmar Bernardo dos Santos	Associação de Produtores Rurais – Comunidade Ribeirão
Dimitrio Schievenin	Biomass
Dilson Sena	Instituto Ciclos de Sustentabilidade e Cidadania
Carolina Toapanta	Fundação BOMACO
Logan Torres	TFD / Yale
Gabriel Trivelino	Equitable Earth Coalition
Sandra Vásquez	Fundacion Pro Eco Azuero
Pedro Wongtschowski	Instituto Itaúsa
Vitor Lauro Zanelatto	Diálogo Florestal

