TGI
GrupoEnergíaBogotá

Biodiversity Strategy 2.0

Management of Government and Environmental Affairs
Environmental Department
Biodiversity Protection and Monitoring Team

2024
Version 2.0
Executive Summary

INTRODUCTION

Transportadora de Gas Internacional TGI S.A. E.S.P. is a leading natural gas transportation company in Colombia, focused on operational efficiency, sustainability, innovation, and the development of new businesses to strengthen the country's competitiveness. TGI has understood that sustainability is the only possible path to respond to global challenges and achieve a forward-looking vision. We are committed to bringing natural gas as near and as far as needed, contributing to the decarbonization of the country, the benefits it brings to air quality, and its role in the energy transition.

Across **11,627.21 hectares of TGI's operational areas**, the Company's infrastructure has been identified as crossing **5 major biomes and 74 ecosystems**, recording around **4,605 species of flora and 309 species of fauna**. It also intersects with **6 Important Bird and Biodiversity Areas (IBAs)**, **1 regional natural park (Serranía de las Quinchas)**, as well as nationally important ecosystems such as the **Tropical Dry Forest (BsT)** and **páramo ecosystems**. For this reason, we consider biodiversity a fundamental strategic pillar for achieving the Company's sustainability objectives and complying with the reporting standards to which we adhere.
With the launch of the **Biodiversity Guardians initiative** and the **Biodiversity Strategy 1.0 – 2023**, we have advanced our overall objective of promoting the conservation, knowledge, and sustainable use of biodiversity in the areas of influence of TGI's construction, operation, and maintenance projects. Accordingly, this updated version of the Strategy seeks to strengthen commitments, targets, and indicators that will allow us to effectively manage biodiversity within the framework of the **Nature Strategy of Grupo Energía Bogotá (GEB)**, the commitments ratified at the **United Nations Biodiversity Conference 2024 (COP16) in Cali, Colombia**, and the mandatory and voluntary environmental compliance actions implemented by the Company.

By 2024, TGI has undertaken activities involving rehabilitation, maintenance of planted areas and relocations, live fences, and connectivity corridors over a total of **23.50 hectares**. In addition, through biodiversity-related initiatives implemented by the Company, **1,500 native trees were planted**, positively impacting a total of **2,705 people**, and supporting more than **5 biodiversity-related events** with the participation of over **450 people**. These actions demonstrate our commitment to the conservation and knowledge of biodiversity within the Company's operational area of influence.

1. STRATEGIC AND REGULATORY FRAMEWORK

Biodiversity is a fundamental issue both internationally and nationally, due to its impact on the health of the planet, the global economy, and human well-being. International cooperation is essential to address these challenges and to ensure the conservation and sustainable use of biodiversity for the benefit of present and future generations. Below is a summary of key biodiversity-related regulations at both national and international levels.

Table 1. Biodiversity-Related Regulations

SCOPE	REGULATION INFORCE	YEAR
International	Ramsar Convention on Wetlands	1971
	Earth Summit	1992
	United Nations Convention to Combat Desertification (UNCCD)	1994
	Sustainable Development Goals (SDGs)	2015
	Escazú Agreement	2021
	Kunming-Montreal Global Biodiversity Framework	2022
	United Nations Biodiversity Conference 2024 (COP16)	2024
National	Law 2 of 1959 – National Forest Reserve Zones	1959
	Law 2 of 1973 – Grants the Executive power to reorganize the mining and energy sector	1973
	Law 23 – Prevention and control of environmental pollution	1973
	Decree-Law 2811 – Natural Resources Code	1974
	Decree 1608 – Regulates the National Code of Renewable Natural Resources and Environmental Protection	1978
	Law 99 – Creates the Ministry of the Environment and organizes the National Environmental System (SINA)	1993
	Law 165 – Approves the Convention on Biological Diversity (Rio 1992)	1994
	Law 388 – Land-Use Planning (POT)	1997
	Law 629 – Approves the Kyoto Protocol of the UNFCCC	2000
	Decree 2372 – Ensures continuity of natural ecological and evolutionary processes to maintain biodiversity	2010
	Law 1844 – Approves the Paris Agreement	2017
	Resolution 253 – Adopts the Manual of Biodiversity Component Offsets	2018
	Law 1930 – Comprehensive Management of Páramos in Colombia	2018
	Law 1931 – Climate Change Management	2018
	Law 1970 – Approves the Kigali Amendment to the Montreal Protocol	2019
	Law 2294 – National Development Plan 2022–2026	2023

Source: (MADS, 2012), adapted by TGI S.A. E.S.P., 2024.

The main planning instruments (policies, plans, and programs) that have been developed in Colombia to guide the protection, management, and use of biodiversity at its different levels of organization, or that through their implementation contribute to conservation actions, are summarized in **Table 2**

Table 2. Main National Instruments for Biodiversity Management and Related Issues

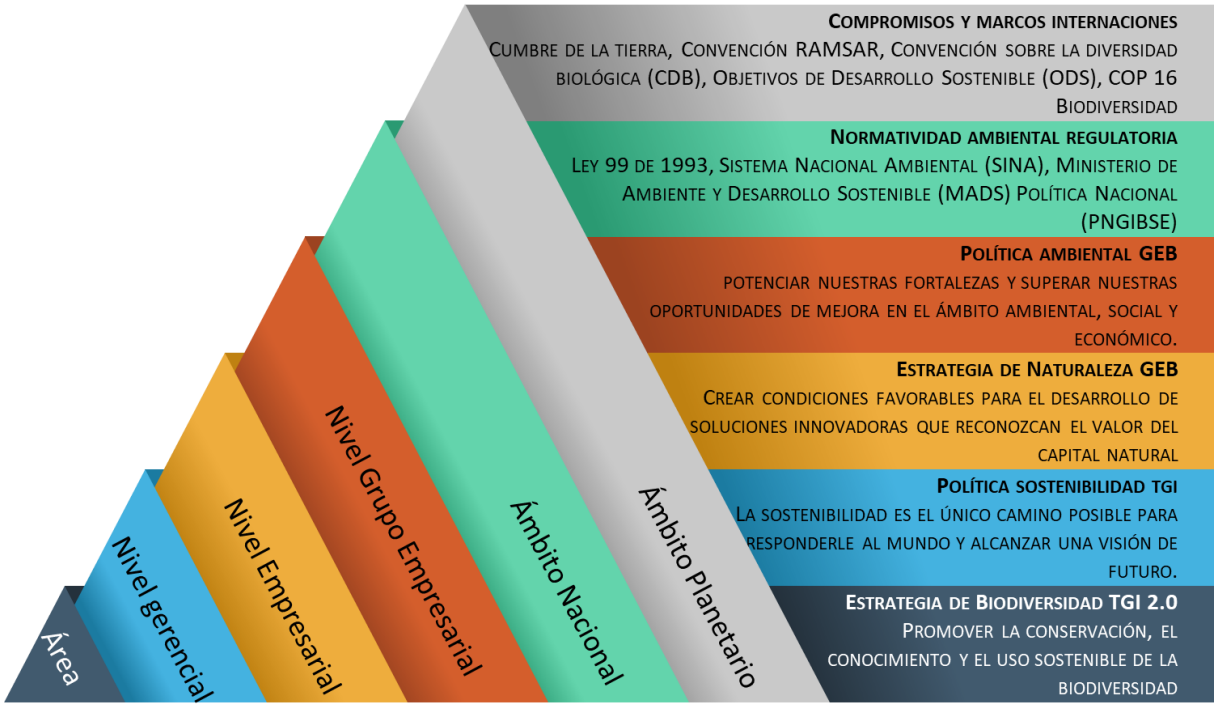
TYPE OF INSTRUMENT	LEVE LOF ORGANIZATION ADDRESSED	TITLE	YEAR
Technical Proposal	All levels	Biodiversity XXI Century: Technical Proposal for a National Biodiversity Action Plan	1998
Policy	All levels	National Biodiversity Policy	1996
Policy	Ecosystems	Forest Policy (CONPES Document 2834/10)	1996
Policy	Populations / Species	Policy for the Environmental Management of Wildlife in Colombia	1997
Policy	Ecosystems	National Environmental Policy for the Sustainable Development of Colombia's Oceanic, Coastal, and Insular Areas (CONPES Document 3164/02)	2001
Policy	Ecosystems	National Policy for Inland Wetlands of Colombia	2001
Policy	All levels	Urban Environmental Management Policy	2008
Policy	All levels	National Policy to Promote Research and Innovation (Colombia Builds and Sows the Future) (CONPES Document 3582/09)	2009
Policy	Ecosystems	National Policy for Integrated Water Resource Management	2009
Policy	All levels	CONPES 3680 – Guidelines for the Consolidation of the National System of Protected Areas (SINAP)	2010
Policy	Ecosystems	National Program for the Sustainable Use, Management and Conservation of Mangrove Ecosystems	2002
Policy	Ecosystems	Program for the Sustainable Management and Restoration of Colombia's High Mountain Ecosystems	2002
Policy	Populations / Species	Species Conservation Programs (*Tremarctos ornatus*, *Tapirus* genus, *Crocodylus intermedius*, marine and continental turtles, Andean Condor, sharks, rays, and chimaeras, Grey Titi Monkey)	2001, 2005, 2002, 2006, 2010
Program	Ecosystems	National Forest Development Plan	2000
Program	Ecosystems	National Plan for the Prevention and Control of Forest Fires and Restoration of Affected Areas.	2002
Program	Ecosystems	National Action Plan to Combat Desertification and Drought in Colombia	2004
Program	All levels	Regional Biodiversity Action Plans (Orinoco Basin, Southern Amazon, Valle del Cauca, Quindío, Nariño, Norte de Santander, Sucre)	2005
Program	Populations / Species	National Plan for Migratory Species	2009
Estrategia	Populations / Species	National Strategy for the Prevention and Control of Illegal Wildlife Trade	2002
Estrategia	All levels	General Guidelines for the Ex Situ Conservation of Wildlife in Zoos and Aquariums in Colombia (Action Plan 2004–2014)	2006
Estrategia	Populations / Species	National Strategy for the Prevention and Control of Illegal Trade of Sloths in Colombia	2008

TYPE OF INSTRUMENT	LEVE LOF ORGANIZATION ADDRESSED	TITLE	YEAR
Estrategia	Populations / Species	National Strategy for the Prevention, Control, Monitoring, and Surveillance of Forest Resources	2010
Plan	All levels	National Plan for Ecological Restoration, Rehabilitation, and Recovery of Disturbed Areas	2015

Source: (MADS, 2012), adapted by TGI S.A. E.S.P., 2024..

In general, this Biodiversity Strategy complements the strategic guidelines established at the international and national levels, as well as the environmental policy of **Grupo Energía Bogotá (GEB)** and the sustainability policy of **TGI**, as shown below.

Figure 1. Integration of the Biodiversity Strategy into the General Regulatory Framework



Source: TGI S.A. E.S.P., 2024

1.1. UNITED NATIONS BIODIVERSITY CONFERENCE 2024 (COP16)

The United Nations Biodiversity Conference 2024 (COP16), held in Cali, Colombia, brought together representatives from 196 countries to assess progress in implementing the Kunming-Montreal Global Biodiversity Framework, adopted in 2022. This framework aims to halt and reverse biodiversity loss by 2030 through 23 established targets, emphasizing key strategies

for biodiversity protection and sustainable management, grounded in the restoration of degraded ecosystems and the protection of terrestrial and marine areas.

TGI S.A. E.S.P. has participated in forums organized by the National Business Association of Colombia (ANDI), which introduced the *Biodiversity + Business Roadmap to 2030*, a multisectoral strategy that provides guidelines, goals, and indicators for the business sector to manage, measure, and disclose its biodiversity-related impacts, dependencies, risks, and opportunities. This facilitates private sector contributions to national and international conservation targets.

In line with the above, TGI S.A. E.S.P. strengthens in this document its approach to monitoring flora and fauna in areas adjacent to operating gas pipelines, identifying existing species. These actions are aligned with biodiversity inventory strategies, enabling documentation of ecosystem composition and condition, as well as identification of changes in dynamic species.

1.2. POLICIES AND STRATEGIES WITHIN THE GEB BUSINESS GROUP

Currently, TGI S.A. E.S.P. has environmental programs and policies aimed at promoting strategies and guidelines under the framework of environmental sustainability, contributing to the design and implementation of the company's biodiversity strategies for the conservation of biological resources. The following policies and programs frame the Biodiversity Strategy 2.0 at the corporate level:

- Grupo Energía Bogotá (GEB) Sustainability Policy
- Grupo Energía Bogotá (GEB) Environmental Policy
- Grupo Energía Bogotá (GEB) Nature Strategy
- TGI S.A. E.S.P. Sustainability Policy

2. ENVIRONMENTAL COMPENSATION DIAGNOSIS 2024

Within Colombia's regulatory context, there are provisions requiring environmental compensation measures when project development entails environmental impacts. This regulation is set forth in Decree 1076 of 2015, which defines actions aimed at offsetting and compensating communities, regions, localities, and the natural environment for the negative impacts or effects generated by a project that cannot be avoided, mitigated, or corrected.

In this regard, compensation measures are considered the last instance within the mitigation hierarchy of impacts and must be assumed by those responsible under legal instruments issued by environmental authorities. These include: environmental licenses, permits for single forest use, exclusions from national and regional forest reserves, lifting of bans, and mandatory 1% investment.

Table 3. Consolidated Status of TGI Environmental Compensations 2024

Authority	Fulfield	In Progress	Pending	Total (Ha)
ANLA	286,78	7,7	868,21	1.162,69
CAR	173,43	10,2	423,86	607,49
MADS	0	5,6	16,1	21,70
1% Investment	0	0	72,8	72,80
Total (Ha)	**460,21**	**23,5**	**1.380,97**	**1.864,68**

Source: TGI S.A. E.S.P., 2024.

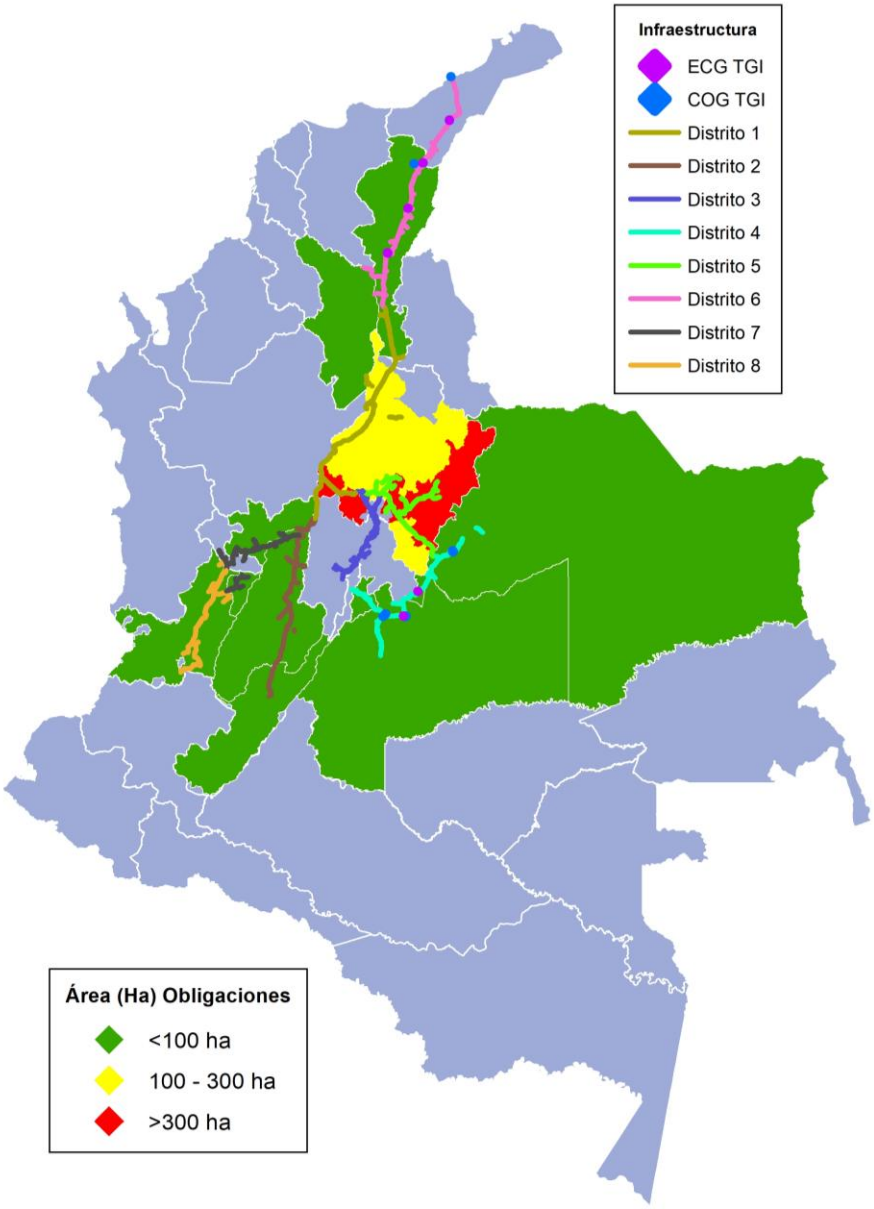
Fulfilled: Closed with a resolution of compliance issued by the environmental authority.

In Progress: Under implementation in the field and/or in monitoring/maintenance stage.

Pending: In management by the Environmental Department, including plan formulation, fieldwork, and land acquisition, among others.

As shown in **Figure 2**, the distribution of current obligations by file (pipeline) and jurisdiction will be implemented depending on the environmental authority imposing the obligation and the type.

Figure 2. Distribution of Pending Obligations by Jurisdiction and by Project Files



Source: TGI S.A. ESP, 2024.

2.1. FULFILLED OBLIGATIONS

With the objective of supporting the conservation and protection of strategic ecosystems, various activities have been carried out in compliance with initial environmental obligations or requests for changes in compensatory measures approved by the environmental authority. These actions maintain both economic and environmental consistency with the obligation initially imposed. **Table 4** presents the consolidated record of fulfilled obligations by area

(hectares) and by the regional environmental authority where the compensation was implemented.

Table 4. Fulfilled Environmental Obligations by Environmental Authority

Corporation	# of Obligations	Area (Ha)	Area (%)
Corpoboyacá	10	276,65	60,11%
CAS	1	10,13	2,20%
Corpochivor	4	163,23	35,47%
Corporinoquía	1	10,2	2,22%
Total	**16**	**460,21**	**100,00%**

Source: TGI S.A. E.S.P., 2024.

2.2. OBLIGACIONES EN EJECUCIÓN

Table 5 shows the distribution of environmental obligations currently in progress in 2024. Among the projects underway are the monitoring of more than **5,391 vascular epiphytes**, the connectivity corridors project at **El Tirol estate** involving the monitoring of **4,026 tree individuals**, and the rehabilitation of **5.6 hectares** under the **Paujil – Miraflores project**.

Table 5. Environmental Obligations in Progress 2024 by Environmental Authority

Corporation	# of Obligations	Area (Ha)	Area (%)
Corpoboyacá	1	5,6	23,83%
CAS	1	2,5	10,64%
Corpocesar	3	5,2	22,13%
CVC	1	10,2	43,40%
Total	**6**	**23,50**	100,00%

Source: TGI S.A. E.S.P., 2024.

2.3. PENDING OBLIGATIONS

As of today, there are **1,380.97 hectares pending compensation**, distributed across **41 municipalities**, **12 regional autonomous corporations**, and **6 types of compensation**, as shown in **Table 6** and **Figure 5**. Of the pending **1,380.97 hectares**, **49.32% (681.05 ha)** are located in the Central-Eastern region, while **37.41% (516.68 ha)** are related to obligations for land acquisition and/or reforestation.

Table 6. Pending Environmental Obligations by Environmental Authority

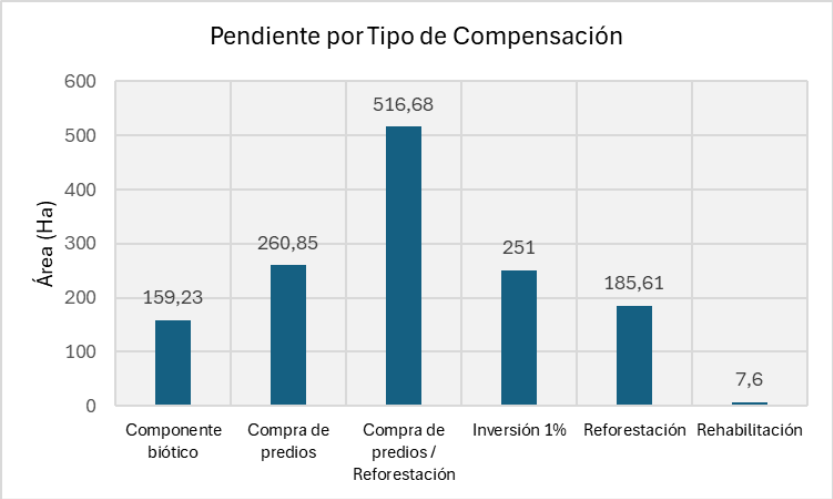
Corporation	# of Obligations	Area (Ha)	Area (%)
Corpoboyaca	12	698,44	50,58%
CAS	7	306,85	22,22%
Corpochivor	2	151	10,93%
Corporinoquía	3	112,87	8,17%
CVC	2	68,6	4,97%
Cormacarena	2	13,05	0,94%
CRQ	1	13,5	0,98%
Cortolima	4	10,46	0,76%
CAM	1	2,23	0,16%
Corpocesar	1	2	0,14%
CSB	1	1,9	0,14%

Corpocaldas	1	0,07	0,01%
Total	**37**	**1.380,97**	**100,00%**

Source: TGI S.A. E.S.P., 2024.

This represents the **baseline** for the development of the action plan for this updated Biodiversity Strategy, the biotic zoning of the operational area, and the definition of targets for fulfilling environmental obligations.

Figure 3. Environmental Obligations by Type of Compensation



Source: TGI S.A. E.S.P., 2024.

3. BIOTIC ZONING IN TGI'S OPERATIONAL AREA

According to the Ministry of Environment, strategic ecosystems are those that ensure the provision of essential environmental goods and services for sustainable human development. They are characterized by maintaining balanced processes in basic ecological functions such as climate regulation, water regulation, air, water and soil purification, and biodiversity conservation (Ministry of Environment and Sustainable Development, 2021).

In line with this, for the identification of strategic ecosystems associated with TGI S.A. E.S.P. infrastructure, an analysis was conducted by overlaying information layers of the most relevant national and regional strategic ecosystems. A buffer of 15 meters on each side of the axis of the gas pipelines operated by TGI S.A. E.S.P.—including the right-of-way—and compressor stations was defined in order to diagnose intersections with protected areas along the right-of-way. From this, potential impacts and effects on the strategic ecosystems present or surrounding the Company's infrastructure were identified, as detailed below.

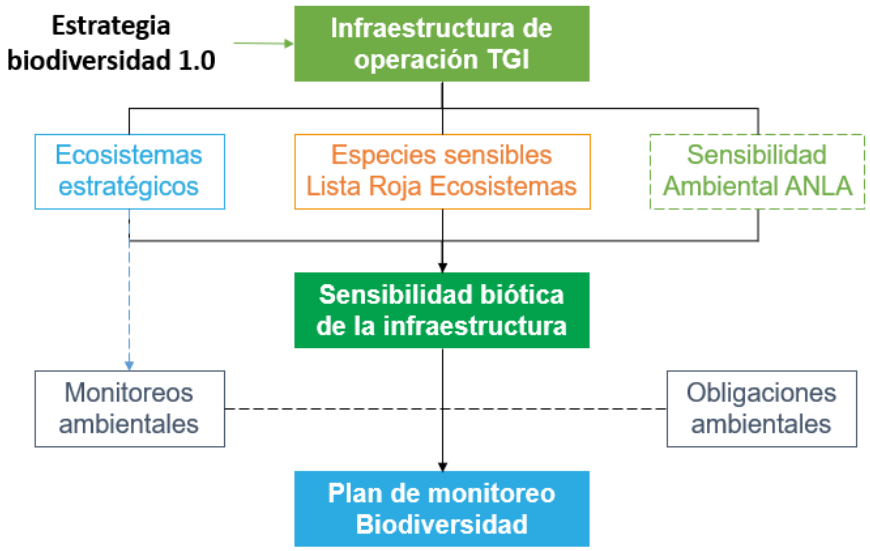
Table 7. Inputs for the Consolidation of the National Compensation Portfolio

Thematic Area	Variables	Scale	Source
Conservation and Environmental Protection Areas	Important Bird and Biodiversity Areas (IBAs)	1:100.000	IAvH, 2016
	Protected Areas – SINAP (RUNAP)	1:100.000	RUNAP, 2019
	Ramsar Wetlands	1:100.000	MADS, 2017
	Red List of Ecosystems	1:100.000	MADS, 2017
	National Restoration and Recovery Plan	1:100.000	MADS, 2015
	Registry of Ecosystems and Environmental Areas (REAA)	1:100.000	MADS, 2019
	CONPES 3680 Conservation Priorities	1:500.000	MADS, 2021
	New/Expanded National Natural Parks (PNN)	1:100.000	PNN, 2022
	Conservation Priorities	1:250.000	IAVH, 2008
	National Forest Reserve Zone – Law 2nd	1:500.000	MADS
	Forest Reserve Exclusions	1:500.000	MADS
	Restoration Priorities	1:100.000	IAvH, 2014
Special Regulation Areas	Community Councils	1.100.000	ANT, 2018
	Indigenous Reserves	1:100.000	ANT, 2019
	Peasant Reserve Zones	1:100.000	ANT, 2019
	Land Restitution Areas	1:100.000	URT, 2019
Strategic Ecosystems	Mangroves	1:100.000	IDEAM, 2022
	Delimited Páramos	1:25.000	IAvH, 2020
	Wetlands	1:100.000	IAvH, 2015
	Tropical Dry Forest (TDF)	1:100.000	IAvH

Source: TGI S.A. E.S.P., 2024.

In **Figure 4**, the methodology of biotic zoning applied to determine the biotic sensitivity of the Company's operational infrastructure is presented. This zoning establishes the degree of exposure of the Company's operations to key biodiversity sites, where efforts will be focused in the short and medium term for biodiversity monitoring and to prioritize compensation actions in these zones.

Figure 4. Biotic Zoning Methodology in Operational Infrastructure



Source: TGI S.A. E.S.P., 2024.

For each of the layers evaluated, **sensitivity categories** were assigned according to the criteria established in the document *Environmental Sensitivity for Projects, Works, and Activities under the Jurisdiction of the National Authority of Environmental Licenses (ANLA)* (see **Table 8**).

Table 8. Biotic Component Sensitivity

Category	Strategic Ecosystems*	Sensitive Species	ANLA Environmental Sensitivity
Very High	PNN, PNR, RFPN, RFPR, RN, SFF.SF.ANU. VP, Ramsar Wetlands	Critically Endangered (CR)	Regionalization – Very High
High	RNSC, Recreation Areas, IBA, AICOM, SICOM, KBA, Regulated Buffer Zones	Endangered (EN)	Regionalization – High
Moderate	Soil Conservation Districts, National Integrated Management Districts, Regional Integrated Management Districts	Vulnerable (VU)	Regionalization – Medium
Low	Without any type of protection or conservation requirement	Least Concern (LC)	Regionalization – Low
Very Low	Without any type of protection or conservation requirement	Not listed in threat categories	No Category

** **PNN** = National Natural Park, **PNR** = Regional Natural Park, **RFPN** = National Protective Forest Reserve, **RFPR** = Regional Protective Forest Reserve, **RN** = Natural Reserve, **SFF** = Flora and Fauna Sanctuary, **SF** = Flora Sanctuary, **ANU** = Unique Natural Area, **VP** = Parkway, **RNSC** = Civil Society Nature Reserve.*

Source: TGI S.A. E.S.P., 2024.

As part of the biotic zoning exercise, the proportion of obligations related to ongoing biotic monitoring for the files associated with TGI's gas pipeline network was identified. The aim was to establish synergies among the analyzed layers and information and ultimately determine priority monitoring areas within TGI's operational gas pipeline infrastructure. After applying the geographic geoprocessing methodology, **five levels of biotic sensitivity** associated with importance, exposure, and classification were defined.

Table 9. Biotic Zoning Results for the Operational Area

Category	Symbol	Area (Ha)	Area (Ha)
Muy alta		381,21	3,28%
Alta		805,96	6,93%
Media		5.334,53	45,88%
Baja		2.952,03	25,39%
Muy baja		2.153,48	18,52%
Total		11.627,21	100,00%

Source: TGI S.A. E.S.P., 2024..

In general, the identification of biodiversity exposure for TGI's operational infrastructure—associated with its **17 projects (15 environmental licenses plus 2 related to the Sabana and South Bolívar pipelines)**—shows that all projects include biodiversity impact assessments in their Environmental Impact Studies and Environmental Compliance Reports. Likewise, **13 of these sites intersect with key biodiversity areas**, all of which have biodiversity management

plans linked to the application of environmental management protocols focused on the sustainable management of the biotic component and biodiversity.

Table 10. Consolidated Biodiversity Exposure in TGI's Operational Infrastructure

VARIABLE	# OF FACILITIES	AREA (HA)
Total operational sites and areas	17	11.627,21
Biodiversity impact assessments	17	11.627,21
Operational sites intersecting with key biodiversity areas	13	1.187,17
Biodiversity management plans	13	1.187,17

Source: TGI S.A. E.S.P., 2024.

Based on the zoning exercise and the three intermediate criteria evaluated, priority areas for **biotic elements (fauna and flora)** in TGI's operational gas pipeline network were identified. Results show a concentration of prioritized areas across **three project files (LAM0069, LAM299, and LAM0054)**, which will be prioritized for monitoring targets, starting with **Very High Sensitivity** zones and gradually reaching **Medium Sensitivity** by Year 5, as shown in **Table 11**.

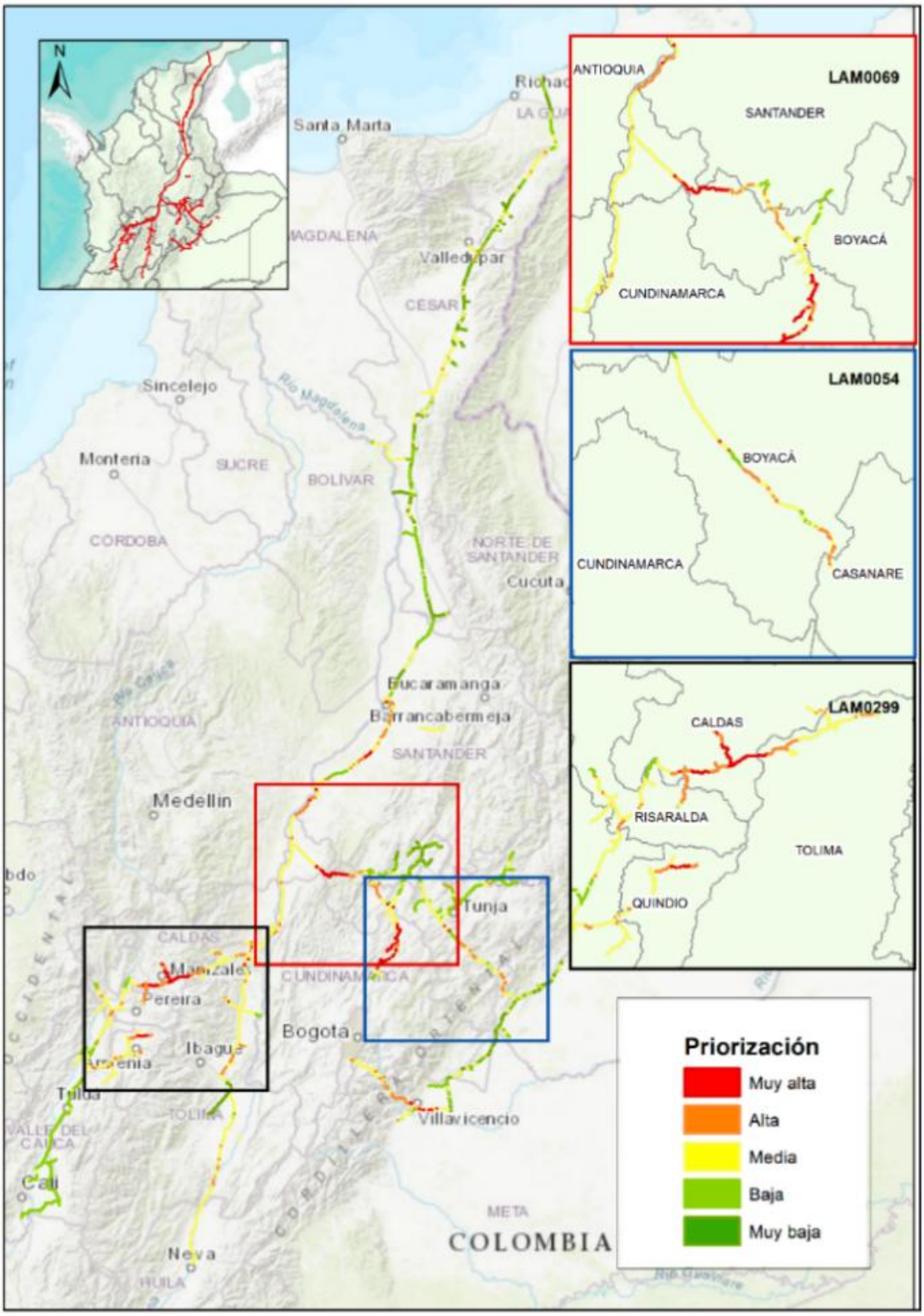
Table 11. Monitoring Targets for Key Biodiversity Areas in TGI's Operational Area

TARGET	DESCRIPTION	ZONING	AREA (HA)
Target Year 1 (2025)	8 monitoring points in Very High Sensitivity biotic zoning areas	Very High	381,21
Target Year 2 (2026)	8 monitoring points in High Sensitivity biotic zoning areas	High	805,96
Target Year 3 (2027)	8 monitoring points in High Sensitivity biotic zoning areas	High	
Target Year 4 (2028)	8 monitoring points in Medium Sensitivity biotic zoning areas	Medium	5.334,53
Target Year 5 (2029)	8 monitoring points in Medium Sensitivity biotic zoning areas	Medium	
Meta Año 6 2030	8 monitoring points in Medium Sensitivity biotic zoning areas	Medium	

Source: TGI S.A. E.S.P., 2024.

Additionally, a geographic dataset—part of the annexes of this Strategy—was developed to determine the **biotic zoning sensitivity** across all of the Company's operational infrastructure, as shown in **Figure 5**.

Figure 5. Biotic Zoning Sensitivity in TGI S.A. E.S.P. Operational Infrastructure



Source: TGI S.A. E.S.P., 2024.

4. BIODIVERSITY INITIATIVES DEVELOPED

Table 12 presents the consolidated results of initiatives developed by the Company in terms of biodiversity, taking into account those recorded in **Biodiversity Strategy 1.0 – 2023** and their update in **Biodiversity Strategy 2.0**, including those carried out in 2024.

Table 12. Consolidated Results of Biodiversity Initiatives

INICIATIVE	TYPE	2023*	2024
Voluntary Plantings		5,750 native trees – 6 locations	1,500 native trees – 5 locations
Environmental Monitoring		4 monitored sites; 2,391 flora species; 504 fauna species	3 monitored sites; 1,280 flora species; 335 fauna species
Community Environmental Training	Biodiversity Guardians group	0 biodiversity trainings	30 children and youth trained
	Environmental trainings		2,705 people reached; 143 trainings
	Support to focus groups		350 people benefited; 6 events supported

** Cumulative data for 2021, 2022, and 2023, included in Biodiversity Strategy 1.0 – 2023.*

Source: TGI S.A. E.S.P., 2024.

The following are the main results achieved in 2024:

4.1. VOLUNTARY PLANTINGS

In 2024, voluntary planting activities were carried out with different stakeholders across five (5) areas of influence of the Company's operations. As a voluntary initiative, a total of native individuals was planted as follows

4.1.1. La Jagua del Pilar (La Guajira)

In collaboration with the community, local leaders, the Municipality of La Jagua, CORPOGUAJIRA, TGI employees, Civil Defense, Volunteer Firefighters, and the National Army, a voluntary planting event was conducted with **100 native species individuals** in the El Plan Sector, an area under progressive restoration, aimed at contributing to ecosystem recovery.

Photo 2. Volunteering – El Plan Sector, La Jagua del Pilar Municipality (La Guajira)

Source: TGI S.A. E.S.P., 2024.

4.1.2. Albania (La Guajira)

A voluntary planting was conducted with the participation of soldiers from the *General Gustavo Matamoros D'Costa Armored Cavalry Group* and representatives of the Wayuu community, in Albania Municipality, La Guajira Department. The event was held under the slogan: *"With the strength of the General Gustavo Matamoros D'Costa Group and the commitment of TGI's Biodiversity Guardians, we plant life and hope to protect our land and secure its future."*

Photo 3. Volunteering – General Gustavo Matamoros D'Costa Armored Cavalry Group – Wayuu Community

Source: TGI S.A. E.S.P., 2024.

4.1.3. Puente Nacional (Santander)

In September 2024, a planting activity was carried out in the Robles village of Puente Nacional Municipality, Santander. The event included **30 volunteers** from the local community, municipal

officials, and TGI employees. A total of **300 native species individuals** were planted in a water-resource priority zone.

Photo 4. Volunteering – Robles Village, Puente Nacional Municipality (Santander)

Source: TGI S.A. E.S.P., 2024.

4.1.4. Santana (Boyacá)

With the participation of **35 people**, including youth, residents of San Pedro village, and TGI employees, a planting day was carried out with **300 native forest individuals** in water-resource priority zones of Santana Municipality, Boyacá.

Photo 5. Volunteering – Santana Municipality (Boyacá)

Source: TGI S.A. E.S.P., 2024.

4.1.5. San José de Pare (Boyacá)

In Balsa village and Indigenous Reserve of San José de Pare Municipality, Boyacá, a voluntary planting was conducted with **35 volunteers**, planting **300 native forest individuals** to enrich a fragment of natural vegetation.

Photo 6. Volunteering – San José de Pare Municipality (Boyacá)

Source: TGI S.A. E.S.P., 2024.

4.2. COMMUNITY ENVIRONMENTAL TRAINING

In 2024, TGI supported various activities related to community environmental training for stakeholders in the operational areas of its gas pipelines. In total, **2,705 people were reached**. These training activities focused on the Biodiversity Guardians program, environmental training sessions, and support for biodiversity-related activities and focus groups.

4.2.1. Biodiversity Guardians Group

As a central component of **Biodiversity Strategy 1.0**, the *Biodiversity Guardians Program* was launched to connect individuals, environmental leaders, organizations, and institutions for biodiversity conservation and knowledge. The first phase of implementation, started in 2024, seeks to train over **120 children and youth** in biodiversity exposure zones within the Company's operational influence.

Photo 7. Biodiversity Guardians training – Las Quinchas village, Puerto Boyacá Municipality (Boyacá)

Source: TGI S.A. E.S.P., 2024.

4.2.2. Environmental Trainings in the Area of Influence

As part of compliance with the updated Environmental Management Plans (PMA) for all operating licenses, around **143 training sessions** were carried out in 2024, positively impacting **2,705 people**.

Photo 8. Environmental trainings as part of PMA compliance measures

Source: TGI S.A. E.S.P., 2024.

4.2.3. Support for Biodiversity-Related Focus Groups

In 2024, TGI supported multiple initiatives led by environmental organizations and groups within the Company's area of influence, such as the **Miraflores and Zetaquira Bird Festival 2024**, the **Páez Boyacá Snake Route**, **Environmental Weeks in Puente Nacional and San José de Pare**, environmental youth groups in Sotaquirá, and collaborations with the *General Gustavo Matamoros D'Costa Armored Cavalry Group*. These events had a positive impact on biodiversity awareness and environmental education of local residents and visitors, reaching **more than 350 participants**, including children, youth, and adults.

Photo 9. Sponsorship and support of the Miraflores and Zetaquira Bird Festival Boyacá

Source: TGI S.A. E.S.P., 2024.

Photo 10. Support for the "Snake Route" activity – Páez (Boyacá)

Source: TGI S.A. E.S.P., 2024.

Photo 11. Training on Biodiversity and Ecosystem Services

Source: TGI S.A. E.S.P., 2024.

Photo 12. Environmental Week – Puente Nacional

Source: TGI S.A. E.S.P., 2024.

4.3. ENVIRONMENTAL MONITORING 2024

As part of flora and fauna monitoring activities near operational gas pipelines—particularly in areas of high biodiversity importance—TGI contracted the company **CONSGA** to carry out monitoring in June and July 2024. Based on joint analysis, **three monitoring zones** were established, as presented below in **Table 13**:

Table 13. Consolidated Results of Monitoring Conducted in 2024

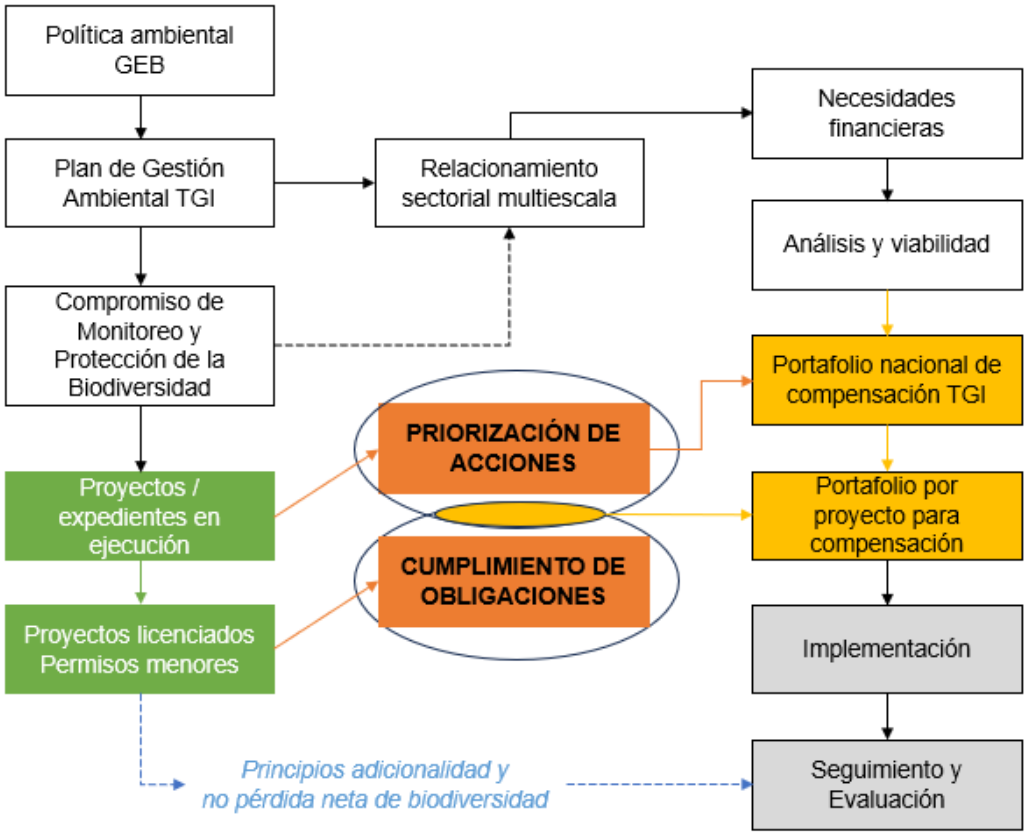
Sampling Zone	Flora	Fauna
1. Miraflores (Boyacá) – Porvenir La Belleza Gas Pipeline	405 individuals; 70 species; 68 genera; 36 families; 1 threatened species	71 species; 54 birds; 12 mammals; 4 amphibians; 1 reptile; 4 threatened species
2. Otanche (Boyacá) – La Belleza–Vasconia Gas Pipeline	390 individuals; 120 species; 96 genera; 45 families; 6 threatened species	127 species; 97 birds; 12 mammals; 10 amphibians; 8 reptiles; 11 threatened species
3. Alvarado (Tolima) – Gas Pipeline	485 individuals; 60 species; 52 genera; 29 families; 1 threatened species	137 species; 102 birds; 19 mammals; 6 amphibians; 10 reptiles; 13 threatened species

Source: TGI S.A. E.S.P., 2024.

5. PORTFOLIO OF ACTIONS AND AREAS ASSOCIATED WITH BIODIVERSITY CONSERVATION

Figure 6 shows the methodological diagram for portfolio development applicable to TGI. These portfolios do not necessarily need to follow a sequential order, since progress can be made in parallel at different scales.

Figure 6. Methodological Pathway for Building TGI's Compensation Portfolio



Source: TGI S.A. E.S.P., 2024.

The *Manual of Biotic Component Compensations* establishes that compensation must preferably be carried out in ecosystems equivalent to those affected, in locations representing the best opportunities for effective conservation. These include priority areas in the conservation portfolios generated by MADS, regional environmental authorities, and National Natural Parks of Colombia, where biodiversity viability is ensured by area, condition, and landscape context.

Currently, the conceptual bases for implementing compensation are dissimilar and difficult to integrate. While some are defined in terms of affected areas, others are based on the number of impacted trees or project value. As a result, outcomes often diverge from the desired goal of biodiversity conservation. **Table 14** presents the different types of actions framed for compliance with compensation obligations.

The establishment of any compensation mechanism must be formalized between the holder of the compensation plan and the responsible party or administrator of the selected mechanism. These agreements must clearly define the terms and conditions under which the actions will be implemented, through the signing of a civil contract.

Table 14. Portfolio of Compensation Actions Applicable in Colombia

Group	Subgroup	Action
Actions	Conservation	**Preservation**: Fragments of natural or semi-natural ecosystems, where fencing activities may be undertaken to prevent cattle and unauthorized persons from entering. If necessary, species enrichment can be carried out according to site conditions. This action is proposed for gallery forest cover
	Restoration approaches	**Ecological Restoration:** Restoring the degraded ecosystem to a condition similar to the pre-disturbance ecosystem in terms of composition, structure, and function. The resulting ecosystem must be self-sustaining and ensure the conservation of species and their goods and services.
		Rehabilitation: Transitioning a degraded system to one that may or may not resemble the pre-disturbance ecosystem. It must be self-sustaining, preserve some species, and provide certain ecosystem services, without necessarily recovering the original composition
		Recovery: Restoration of specific ecosystem services of social interest. Generally, the resulting systems are not self-sustaining and do not resemble the pre-disturbance ecosystem.
	Sustainable use	Complementary actions to ecosystem preservation and restoration. They may include projects focused on biodiversity use and management, generating alternative livelihoods for local communities, as long as they are developed as part of the restoration process.
Modes	Conservation agreements	Civil contract including incentives for conservation, use restrictions on ecosystems, as well as penalties and other private law provisions between the obligated party and the landholder.
	Ecological easements	Formal agreements between license holders and landowners, whereby use of part or all of a property (*servient tenement*) is restricted in favor of a natural or legal person, for conservation and resource protection.
	Payments for Environmental Services (PES)	Monetary or in-kind incentives recognized by beneficiaries of ecosystem services to landowners and lawful possessors for preservation and restoration actions in strategic ecosystems.
	Leasing	Contract by which the landowner agrees to limit harmful activities to biodiversity on part or all of a property, while the compensation plan user pays a set price (adapted from Ocampo-Peñuela, 2010).
	Usufruct	Real right allowing enjoyment of a property while maintaining its form and substance, to be returned to the owner. Agreements may be for a set period or the life of the usufructuary (up to 30 years if a legal entity). In conservation usufruct, the landowner grants the compensation plan user the right to enjoy part or all of the property to preserve and restore ecosystems therein (adapted from Ocampo-Peñuela, 2010).
	Land acquisition	Project holder purchases areas to implement compensation in ecosystems of strategic conservation interest, including areas within SINAP
Mechanisms	Compensations through operators	**Trust fund:** establishment of trusts to manage resources and disbursements through an operator (e.g., NGOs, community organizations, universities).
		Environmental funds: agreements with public or private funds or earmarked financial schemes (e.g., banks) to guarantee design, implementation, and monitoring of the compensation plan, per legally established mechanisms
		Habitat banks: designated areas where preservation, restoration, rehabilitation, recovery, or sustainable use activities for biodiversity conservation may be implemented.
		Peace Forests: sustainable territorial management model integrating biodiversity conservation with productive projects benefiting organized communities, serving as living monuments of peace and historical memory of conflict resolution and peacebuilding.
Forms	Individual	Compensation plan designed to offset the impacts of a single project, work, or activity
	Grouped	Compensations articulated with other investments (e.g., mandatory 1% investment or voluntary investments) to offset impacts from multiple projects in the same geographic area. Areas must be clearly identified per project, differentiated in the geodatabase for licensed projects and visually marked in the field..

Source: Adapted from MADS (2018) by TGI S.A. E.S.P., 2024.

5.1. National Portfolio of Priority Areas for Compensation and 1% TGI S.A. E.S.P.

The portfolio of priority areas for compensation serves as the baseline, integrating the current status of ecosystems and hydrographic units within the sub-basins intersecting TGI's project areas of influence. This portfolio incorporates zoning guidelines and both regional and national conservation strategies, providing guidance on the most suitable areas to implement compensations and voluntary actions for integrated land management and biodiversity preservation.

Through spatial geoprocessing, the intersection of the study area (1 km around TGI's infrastructure) with different types of conservation and environmental protection areas was determined, to identify and analyze potential implementation of compensation actions. Tables 15 and 16 show the availability of areas near TGI's infrastructure and by project..

Table 15. General Availability of Areas in the Study Area by Type of Infrastructure

Type*	IBA	TDF	CONPES	LAW2DA	PÁRAMO	REAA	RUNAP	Total
DDV	7.478,24	5.575,14	26.230,71	265,70	3.146,00	38.918,12	13.955,05	95.568,96
COG	102,92	148,14	470,01			214,50		935,57
ECG			117,07			83,57		200,64
Total	7.581,16	5.723,28	26.817,79	265,70	3.146,00	39.216,19	13.955,05	96.705,18

* * ***DDV:*** *Gas pipeline right-of-way.* ***COG:*** *Gas operations centers.* ***ECG:*** *Gas compressor stations.*

Source: TGI S.A. E.S.P., 2024.

Table 16. Portfolio of Potential Compensation Areas Near TGI's Infrastructure

Type*	Name	IBA	TDF	CONPES	LAW2DA	PÁRAMO	REAA	RUNAP	Total
ROW	Ariari			756,25			50,80		**807,05**
	Ballena - Barrancabermeja	303,94	2.779,31	6.321,33			5.737,71	3.100,31	**18.242,60**
	Boyacá - Santander			422,73		1.060,08	1.488,93	654,16	**3.625,91**
	Centro Oriente	2.475,13	642,76	8.934,42	105,49	180,64	12.087,37	5.898,62	**30.324,43**
	Cusiana - Apiay - Usme		1.303,49	6.337,31		154,44	431,76	149,88	**8.376,87**
	El Porvenir - La Belleza		269,64	483,37		292,14	2.878,19	593,12	**4.516,46**
	La Sabana	2.139,81					1.809,27	223,07	**4.172,15**
	Mariquita - Cali	305,68	579,95	1.919,41	156,52	1.458,70	12.387,04	1.103,09	**17.910,38**
	Morichal - Yopal							122,82	**122,82**
	Sur de Bolívar	2.253,68		1.055,90	3,70		2.047,05	2.109,97	**7.470,30**
GOC	Apiay			211,00					**211,00**
	Ballena	102,92		98,90					**201,81**
	Bodega Honda			69,96					**69,96**
	Buga						4,63		**4,63**
	Cogua						41,77		**41,77**
	Cusiana		148,14						**148,14**
	Gualanday						36,27		**36,27**
	Manizales						22,70		**22,70**
	Sebastopol						25,69		**25,69**
	Termocoa			21,22					**21,22**
	Usme						83,43		**83,43**
	Vasconia HUB			68,93					**68,93**
GCS	LA SABANA						5,92		**5,92**
	Padua						3,83		**3,83**

	Paratebueno			98,65					**98,65**
	Pompeya (Villavicencio)			1,77					**1,77**
	San Alberto			12,46			73,83		**86,29**
	Vasconia			4,19					**4,19**
Total		**7.581,16**	**5.723,28**	**26.817,79**	**265,70**	**3.146,00**	**39.216,19**	**13.955,05**	**96.705,18**

* ***DDV:*** *Gas pipeline right-of-way.* ***COG:*** *Gas operations centers.* ***ECG:*** *Gas compressor stations.*

Source: TGI S.A. E.S.P., 2024.

5.2. INNOVATIVE MECHANISMS

This section compiles **non-conventional actions** related to biodiversity conservation, including the identification of conservation initiatives, connectivity corridors, nature tourism, and sustainable use of biodiversity. These mechanisms complement and strengthen the objectives and strategies of TGI's Biodiversity Strategy.

Table 17. Innovative Mechanisms Applicable to Biodiversity Commitments

Type	Description
Biological Corridors	Corredor del Jaguar: The implementation of this corridor enables species dispersal across unprotected areas while maintaining human productivity, ensuring that jaguars can find adequate habitats with sufficient prey, without being persecuted. However, the initiative will only be viable in areas where best agro-livestock and mining-energy practices are implemented within well-zoned landscape mosaics. TGI's infrastructure intersects with the Jaguar Corridor project in the northern–Caribbean region, covering an intersection area of 999.35 ha.
Ecotourism	Recognized as an essential factor for social development in regions and communities, tourism sustainability represents an opportunity for TGI to integrate compensation actions with a **nature tourism focus**, linked to conservation and ecological restoration projects. Implementation would be carried out in coordination with Regional Autonomous Corporations that authorize such actions.
Beekeeping	TGI has previously developed projects focused on sustainable biodiversity management through environmental compensation, such as the project: *"Beekeeping as a Conservation and Productive Conversion Strategy in the Lengupá Province"*, in partnership with **Corpoboyacá** and the **Más Bosques Corporation**. Beekeeping ensures continuity of natural processes through pollination of wild and cultivated plants, supporting the provision of ecosystem services. This alternative is considered viable for compensation obligations in strategic ecosystems, particularly where intensive land uses transition to nature-based sustainable practices.
Protocols for the Use and Management of NWFPs	Under **Decree 690 of 2021** (which amends Decree 1076 of 2015 of the Environment and Sustainable Development sector), the sustainable management of wild flora and non-wood forest products (NWFPs) is regulated. The development of *"Protocols for the Sustainable Management of Wild Flora and Non-Wood Forest Products"* can be formally recognized as compliance objectives for complementary compensation obligations with a sustainable-use approach
Species Conservation Protocols	Species and ecosystem conservation action plans are essential tools in biodiversity management. These plans establish conservation priorities, define guidelines and targets for critical actions, and provide mechanisms for progress monitoring and adaptive management. An action plan serves as a *roadmap* to guide efforts and organize management for effective results.
Carbon Accounting	TGI designed a tool using national and international methods and parameters to estimate above-ground carbon content. Recommended allometric equations were selected based on statistical analyses comparing the precision of different biomass estimation equations available in scientific literature, and adapted for natural forests in Colombia (IDEAM, 2010).

Source: TGI S.A. E.S.P., 2024

6. CONCEPTUAL FRAMEWORK OF TGI BIODIVERSITY STRATEGY

The following section presents the updated **conceptual and management framework** of **Biodiversity Strategy 2.0**, which integrates vision, objectives, strategic pillars, and enablers.

Figure 7. Conceptual and Strategic Framework – TGI Biodiversity Strategy 2.0

Source: TGI S.A. E.S.P., 2024.

To achieve this objective, a methodological pathway was developed (**Figure 22**), integrating inputs, identifications, and analyses presented in this document. The framework distinguishes between conceptual phases and strategic guidelines, associated with:

1. Diagnosis
2. Formulation
3. Implementation
4. Monitoring
5. Disclosure

For each phase, specific objectives were defined (see **Table 18**), which serve as enablers for compliance with TGI's Environmental Management Plan, GEB's Nature Strategy, and other national/international standards and agreements

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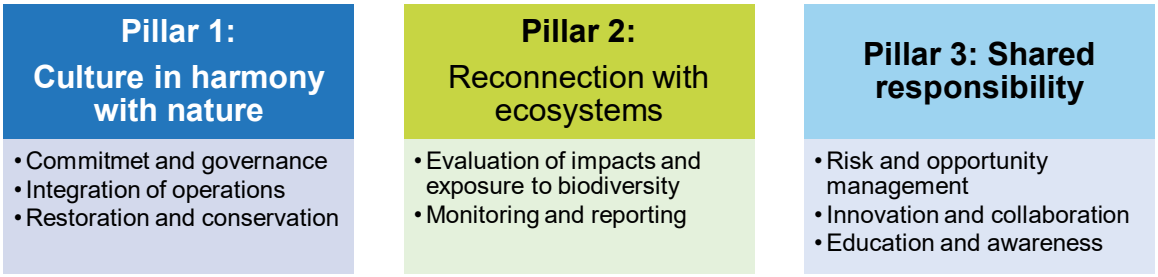
Table 18. General and Specific Objectives of the Biodiversity Strategy

General Objective: Promote the conservation, knowledge, and sustainable use of biodiversity in areas of influence related to the construction, operation, and maintenance of TGI projects			
Phase	**ID**	**Specific Objective**	**Strategic Pillar**
1	I	Update, identify, and prioritize strategic ecosystems, conservation initiatives, and regulatory compensation obligations in areas of influence for the construction, operation, and maintenance of TGI projects	Reconnection with ecosystems
2	II	Apply the **precautionary principle** in all phases and project development processes, guided by the mitigation hierarchy (avoid, minimize, restore, compensate), to ensure **No Net Loss of Biodiversity**, while generating a **Positive Net Impact** and additionality on biodiversity	Reconnection with ecosystems
2	III	Develop and update Company compensation protocols with a sustainable biodiversity and ecosystem services management approach	Shared responsibility
3	VI	Implement reforestation, restoration, and sustainable use of natural resources as part of compliance with management/control instruments and environmental permits for TGI's construction, operation, and maintenance, as well as voluntary initiatives formulated and implemented by the Company	Culture in harmony with nature
3	VII	Identify and adopt **Nature-based Solutions (NbS)** to preserve, protect, restore, and sustainably manage ecosystems, contributing to climate change mitigation, biodiversity protection, and community well-being in areas of influence	Culture in harmony with nature
3	VIII	Coordinate multisectoral cooperation for the implementation of mandatory and voluntary actions aimed at enhancing environmental assets in TGI's project areas of influence	Culture in harmony with nature
4	IV	Establish procedures and monitoring indicators to ensure sustainable biodiversity management across all TGI activities	Culture in harmony with nature
4	V	Achieve **net-zero deforestation** across all projects and assets throughout their lifecycle, adopting conservation and sustainable use criteria for biological diversity in forest management	Shared responsibility
5	IX	Ensure systematization, spatialization, and dissemination of biodiversity management data, actively involving both internal and external stakeholders	Shared responsibility
Todas	X	Establish training systems for employees and managers focused on biodiversity management.	Shared responsibility

Source: TGI S.A. E.S.P., 2024.

A corporate biodiversity strategy must be structured around fundamental pillars these ensure the integration of biodiversity into operations, risk management, and long-term value creation. Below are the key pillars:

Figure 8. Enablers Identified by Strategic Pillar of the Biodiversity Strategy



Source: TGI S.A. E.S.P., 2024.

TGI S.A. E.S.P. is committed to monitoring and implementing actions to protect biodiversity and its ecosystem services. To achieve this, the Company contributes to nature management through the handling of biodiversity-related risks, focusing activities on each of the objectives set out in this Biodiversity Strategy. As shown in **Table 19**, these activities represent the lines of action that enable fulfillment of both the specific objectives and the general biodiversity objective.

Table 19. Proposed Activities for Meeting Objectives

Phase	ID	Objective	Activity
1	I	Update, identify, and prioritize strategic ecosystems, conservation initiatives, and regulatory compensation obligations in areas of influence of TGI construction, operation, and maintenance projects	- Ongoing updates of legal matrices, compensation obligations, and protected area declarations. - Comprehensive analysis of vegetation cover dynamics in strategic ecosystems.
2	II	Apply the **precautionary principle** in all phases and project development processes, guided by the mitigation hierarchy (avoid, minimize, restore, compensate), to ensure **No Net Loss of Biodiversity**, while generating a **Positive Net Impact** and additionality	- Application of environmental management and zoning plans at all project stages. - Ensure the additionality of compensation actions and compliance with biodiversity no-net-loss principles, following biotic component compensation guidelines.
2	III	Develop and update Company compensation protocols with a sustainable management approach for biodiversity and ecosystem services	- Design and implement compensation protocols by type of obligation and biodiversity/ecosystem services impacted
3	VI	Implement reforestation, restoration, and sustainable use of natural resources as part of compliance with environmental management/control instruments and permits for TGI's infrastructure projects, as well as voluntary initiatives	- Execute mandatory/voluntary reforestation, restoration, and/or sustainable use actions. - Develop compensation plans focused on: ‣ **Forest Compensation Measures (FCM)** for changes/loss of vegetation cover. ‣ **Closed Season Lifting Measures (MRLV)**. ‣ **Biodiversity Loss Compensation Manual (MCLB)**. ‣ Investment plans of not less than 1%

Phase	ID	Objective	Activity
3	VII	Identify and adopt **Nature-based Solutions (NbS)** to preserve, conserve, protect, restore, and sustainably manage ecosystems, contributing to climate change mitigation, biodiversity protection, and community well-being	- Design and implement biodiversity plans for conservation-target and priority species. - Develop and execute community environmental education programs that support biodiversity conservation.
3	VIII	Coordinate multisectoral cooperation for implementing mandatory and voluntary actions to enhance environmental assets in TGI's project areas of influence	- Design and implement a multisectoral coordination plan linked to the creation of the Biodiversity Guardians group
4	IV	Establish procedures and monitoring indicators to ensure sustainable biodiversity management across all TGI activities	- Carry out biodiversity monitoring in TGI project areas of influence. - Design indicators to track progress toward the objectives of this strategy.
4	V	Achieve **net-zero deforestation** across all projects and operating assets throughout their lifecycle, adopting conservation and sustainable use criteria for biological diversity in forest management	- Implement **net-zero deforestation protocols** in TGI projects. - Update and calibrate the carbon calculator with primary forest inventory data from executed compensation actions (mandatory/voluntary).
5	IX	Ensure systematization, spatialization, and dissemination of biodiversity data, actively involving both internal and external stakeholders	- Design and implement a communications plan for biodiversity-related actions. - Conduct periodic systematization of biodiversity data on the SIB Colombia platform
Todas	X	Establish training systems for employees and managers focused on biodiversity management.	- High standards of governance around nature. - Strong employee commitment to nature protection. -Stakeholder awareness-raising. - Support for local development.

Source: TGI S.A. E.S.P., 2024.

7. NET ZERO DEFORESTATION COMMITMENT

Net zero deforestation commitments are objectives ratified by TGI S.A. ESP through the update of the Biodiversity Strategy 2.0, aimed at eliminating or offsetting forest loss in its operational, construction, and maintenance activities. This means that the company commits to ensuring its operations do not result in an overall reduction of forest cover. “Net zero deforestation” implies that any direct or indirect deforestation occurring in the supply chain must be offset or reversed through strategies such as reforestation of deforested areas, protection of forested land, or the purchase of plots supporting conservation projects. These commitments not only aim to protect biodiversity but also reduce risks associated with climate change and the loss of essential natural resources.

To ratify this commitment, TGI has reviewed and provided guidelines to improve its supply chain and complementary practices in pipeline construction, maintenance, and operations. Specific actions include:

1. **Transparency and traceability:** Track the origin of products and raw materials to ensure they do not come from deforested areas.
2. **Collaboration with suppliers:** Work with suppliers to implement sustainable production practices.
3. **Investment in restoration and conservation:** Offset deforestation through reforestation and conservation projects.
4. **Measurement and reporting:** Monitor forest use, compensation balances, and communicate results clearly and periodically.

The Colombia TFA Alliance, in its document *Zero Deforestation in Colombia: ABC of Zero Deforestation Supply Chains*, identifies key challenges for achieving sustainable supply chains. These were prioritized in Biodiversity Strategy 1.0 and are now addressed through indicators and annual targets within TGI, as presented in Table 20.

Table 20. Prioritized Challenges to Achieve Net Zero Deforestation at TGI S.A. ESP

CHALLENGE	ACTION	INDICATOR	TARGET	FRECUENCY	TYPE
Infrastructure, integration, and information systems	Infrastructure for capturing, processing, and integrating information within the organization and across the supply chain.	IDC = (Number of harvested individuals / Number of inventoried individuals)* 100	< 100%	Annual	Internal
		ICE = (Number of compensated individuals / Number of harvested individuals)*100	> 100%	Annual	Internal

CHALLENGE	ACTION	INDICATOR	TARGET	FRECUENCY	TYPE
Engagement with supply chain actors	Refers to relationships with suppliers and partners, which may present complexity due to lack of formal contracts, limited visibility, or weak coordination, hindering planning.	(% of inductions including Net Zero Deforestation commitment / Total inductions with contractors) * 100	100%	Annual	External
Limited monitoring and follow-up capacity	Refers to periodic review of mechanisms within TGI's environmental management system to evaluate adequacy and effectiveness, improving compliance.	(% of AEIA matrix activities reviewed for forest impact / Total AEIA matrix activities) * 100	100%	Annual	Internal

Source: Adapted from TFA Colombia (2021) by TGI S.A. ESP, 2024.

8. TNFD AND NATURE-BASED SOLUTIONS (NbS)

The Taskforce on Nature-related Financial Disclosures (TNFD) helps companies and financial institutions identify, manage, and disclose nature-related risks. Adopting TNFD not only mitigates risks but also positions the company as a leader in sustainability, aligning with global regulations and biodiversity strategies.

Similar to TCFD (focused on climate), TNFD provides a framework for organizations to understand and manage their impacts and dependencies on nature. Since the launch of Biodiversity Strategy 1.0 in 2023, TGI has advanced the adoption of TNFD through the following phases:

Table 21. TNFD Reporting Framework Implementation Phases for TGI S.A. ESP

PHASE	DESCRIPTION	LINK
1. Understand TNFD Framework	**Review official TNFD guidelines; principles:** alignment, relevance, applicability. **Objective:** transparency on risks related to biodiversity, ecosystems, and ecosystem services.	Biodiversity Strategy 1.0 – 2023
2Assess Nature-related Risks & Dependencies	Identify dependencies and impacts on ecosystems, supply chains, and resource use; map physical, regulatory, and reputational risks	
3. Implement LEAP Methodology	**Locate – Evaluate – Assess – Prepare.** Locate interactions with nature, evaluate dependencies/impacts, assess risks/opportunities	Biodiversity Strategy 2.0 – 2024
4. Integrate Nature Risk Management	Incorporate nature risks into corporate strategy, engage leadership, finance, and operations.	Biodiversity Strategy 3.0 – 2025
5. Report under TNFD	Follow TNFD pillars: Governance, Strategy, Risk Management, Metrics & Targets. Transparent, consistent reporting.	
6. Engage with TNFD Development	Join TNFD community, pilot internal applications.	Biodiversity Strategy 4.0 – 2026
7. Collaborate with Stakeholders	Partner with NGOs, regulators, businesses; conduct training and awareness on nature-related risk management.	

Source: Adapted from TFA Colombia (2021) by TGI S.A. ESP, 2024.

In compliance with the TNFD framework action plan, this update of the Biodiversity Strategy 2.0 – 2024 develops **Phase 3: Implementation of the LEAP methodology** as follows:

8.1.1. L: Locate – Identify the interface with nature

As part of product 4.14, an exercise was carried out to identify strategic ecosystems within the area of influence of TGI S.A. ESP pipelines and associated infrastructure during the operational phase. This represents an initial approach to addressing sub-phase L4, which seeks to determine which TGI activities intersect with sensitive sites.

As shown in Section 3 (Biotic Zoning in TGI's Operational Area), there is overlap with 10 out of 15 TGI pipeline lines, among which the Centro Oriente line (LAM0069) stands out with 761.64 ha, followed by Ballena – Barrancabermeja (LAM34) with 502.42 ha and Mariquita – Cali (LAM0299) with 296.34 ha.

Within the TGI network, the most recurrent and significant overlaps are with RUNAP areas (467.08 ha) and KBA areas (405.75 ha). These results provide the first inputs for this phase, highlighting the areas with the highest exposure to biodiversity impacts.

8.1.2. E: Evaluate – Assess dependencies and impacts

According to the analysis under Phase E (Evaluate) of the LEAP methodology, three (3) key dependencies on environmental assets that provide essential ecosystem goods and services for TGI's pipeline operations were identified:

Climate regulation: At the regional scale, climate is influenced by ocean currents and winds. At the local and micro level, vegetation can affect temperature, humidity, and wind speed; in the long term, it contributes to the sequestration and transformation of carbon dioxide into soils and plant biomass (UNEP, 2024).

1. Flood and storm protection: Provided by the sheltering, buffering, and attenuation effects of both natural and planted vegetation (UNEP, 2024).

2. Soil stabilization and erosion control: In sloped areas, vegetation acts as a natural anchor, stabilizing the ground and preventing landslides. Plant roots bind the soil, while ground cover protects the surface against erosion and runoff (UNEP, 2024).

In parallel, the company also defined negative impacts on nature that interact with these dependencies and may affect the availability of ecosystem goods and services.

Table 22. Dependencies and impacts associated with the operation phase of pipelines

Environmental Asset	Dependency	Impacts	Materiality
Atmosphere / Habitats / Soils and Sediments / Flora and Fauna / Water	Climate regulation	- Alteration in the quality of surface water resources. - Generation of offensive odors. - Alteration of aquatic fauna and hydrobiont communities. - Alteration of terrestrial flora communities. - Alteration of terrestrial fauna communities. - Generation and/or escalation of social conflicts. - Emission of greenhouse gases (GHG) from operational activities..	Medium
Habitats	Flood and storm protection	- Alteration of flora communities. - Generation and/or escalation of social conflicts.	Medium
Habitats / Soil geomorphology / Soils and sediments	Soil stabilization and erosion control	- Alteration of geotechnical conditions. - Hydro-geomorphological alteration of river dynamics and/or sediment regime. - Alteration of flora communities. - Alteration of soil quality. - Alteration of landforms. - Generation and/or escalation of social conflicts.	High

Source: Adapted from *Encore Nature, WWF* and TGI S.A. ESP baseline information.

8.1.3. A: Assessment: Risks and Opportunities

The identification of physical risks associated with the operation of TGI's pipelines was directly linked to the dependencies and impacts obtained in Phase E (Evaluate). Based on this analysis, three key risks were identified:

- **Alteration of climate regulation capacity**
- **Alteration or reduction of natural capital's protective capacity against extreme climate events**
- **Alteration in mass stabilization and erosion control**

These risks are associated with potential damage to pipeline transport operations caused by the degradation of nature and the loss of ecosystem services.

Risks related to the alteration of climate regulation capacity and the reduced protection of natural capital against extreme weather events may generate significant operational disruptions due to meteorological phenomena. These events are mainly linked to **climate change**, a global challenge manifested in rising temperatures, unexpected climate variations, and alterations in

rainfall patterns. Although such phenomena have occurred naturally for thousands of years due to volcanic eruptions, solar cycle variations, and changes in the Earth's orbit, it has been scientifically proven that **human activities also contribute significantly** to these climate alterations (Instituto Distrital de Gestión de Riesgos y Cambio Climático, 2023).

9. IMPLEMENTATION OF THE REGIONAL ESCAZÚ AGREEMENT

TGI's proposed actions focus on **two main blocks**:

1. **Creation of enabling conditions** (also considered initial cross-cutting actions), which prepare stakeholders and their relationship context with the stated purpose (in this case, biotic monitoring).
2. **Targeted actions** structured around three main elements:
    - **Participatory monitoring** of flora and fauna conditions.
    - Implementation of **"information repositories."**
    - Development of an **"Environmental Compliance Balance,"** a mechanism that institutionalizes an annual space on the corporate agenda of all stakeholders, where results from the implementation of regulatory and voluntary environmental standards are presented.

Figure 9. Guiding Principles for the Implementation of the Escazú Agreement

Source: ECLAC, 2021.

Based on the guiding principles for the implementation of the agreement, TGI S.A. ESP proposes three action pathways to ensure compliance and materialization of said agreement. In 2024, the Environmental School was launched as a first articulating step in this

implementation process. For the update of the present Biodiversity Strategy 2.0 – 2024, the focus will be on the following areas:

Table 23. Participatory Monitoring of Natural Resources

CATEGORY	SUB-CATEGORY	OPPORTUNITIES AND PROPOSED ACTIONS
Participatory Monitoring	Actions for access to information	1. Development of training activities and support for compliance with environmental obligations related to flora and fauna monitoring. 2. Development of methodological tools (as described earlier) for data collection and processing, especially prioritized threatened species. 3. Dissemination of management carried out with stakeholders, along with digital repositories of the project and field socialization campaigns. This connects with the information repository detailed further below. 4. Feedback and reporting of information submitted to environmental authorities.
	Actions for participation	5.Communities and stakeholders from TGI project areas participate in activities related to flora and fauna monitoring obligations. 6. Participatory monitoring of the use and exploitation of natural resources. Groups of citizens (youth, neighbors, leaders, or social organizations) strengthen their capacities to understand biodiversity dynamics, use monitoring tools, and participate in training sessions to disseminate data use. 7. These voluntary processes may generate alerts or complementary reference information for monitoring development and for contrasting results from previously generated Environmental Compliance Reports (ECRs).
	Expected scope of actions	8. Communities and stakeholders from project areas participate in monitoring activities and provide recommendations to TGI. 9. Communities and stakeholders have capacities to understand and generate information about current environmental obligations.
Information Repository		1. The repository should host information related to each project/branch/area regarding management and control instruments guiding its environmental management, voluntary actions, and biodiversity/monitoring data. 2. It should provide information on participatory monitoring carried out by stakeholders, TGI, and other actors, in line with the methodological elements described above. 3. Serve as a repository for agreements, progress, and other outputs from each engagement process. 4. Provide ongoing information on topics of interest identified with stakeholders. 5. A digital version may be hosted on a website, with a physical version allowing access to the digital platform..
Environmental Compliance Balance	Actions for access to information	1. Communities become familiar with the company's environmental management and compliance with obligations. 2. Socialization meetings with local actors of each TGI area/project regarding environmental management reported to competent authorities in the ECR. 3. Spaces for feedback with stakeholders from the area of influence and community level about management performance and recommendations for improvement. *These do not necessarily have to be in-person meetings; digital, audiovisual, community radio/TV, thematic videos, or other complementary strategies can be used, enabling feedback channels and providing timely responses.*
	Actions for participation	5. Communication materials and active channels to inform about environmental management carried out. 6. Clear reference materials with defined purposes to socialize key project aspects.

CATEGORY	SUB-CATEGORY	OPPORTUNITIES AND PROPOSED ACTIONS
		Publication in the project's digital repository and through field visits and socialization campaigns.
	Expected scope of actions	8.Environmental management report presented to municipal-level stakeholders. Communities with capacities to understand and generate information about current environmental obligations. Informed participation regarding the company's environmental management during the reporting period.

Source: TGI S.A. ESP, 2024..

10. INDICATOR FRAMEWORK

Indicators are a central axis for decision-making and effective adaptive management. They can evaluate the progress and success of policies and serve as an "early warning system" for detecting emerging issues. They can also be used to raise awareness around a problem and put responses into context. Through all these functions, indicators provide an important interface between policy and biodiversity-related science, helping to simplify this complex issue (Biodiversity Indicators Partnership).

In Table 34, the proposed indicators are established, which can be used as a guide for monitoring the actions outlined in each of the strategies by the actors involved. Indicators highlighted in red correspond to those that can be initiated for short-term monitoring, indicators in orange are proposed for medium-term follow-up, and those in green are intended for long-term evaluation, given the components addressed and their complexity.

In Annex 4, an Excel file is provided with the proposed indicators linked to the monitoring of the actions outlined in this document.

Table 24. Monitoring Indicators and Targets of the Biodiversity Strategy

PHASE	ID	OBJECTIVE	INDICATOR	TARGET	FRECUENCY
1	I	Update, identify, and prioritize strategic ecosystems, conservation initiatives, and regulatory compensation obligations in the area of influence of TGI's construction, operation, and maintenance projects	Number of strategic ecosystems prioritized (selected for mandatory and/or voluntary compensation activities)	≥ 1 strategic ecosystem prioritized	Annual
2	II	Apply the precautionary principle in all phases and project development processes, taking as reference the mitigation hierarchy: avoid, minimize, restore, and offset,	Number of operational sites applying the mitigation hierarchy	30 sites verified	Annual

PHASE	ID	OBJECTIVE	INDICATOR	TARGET	FRECUENCY
		in order to ensure No Net Loss of Biodiversity, as well as generate a Net Positive Impact and additionality on biodiversity			
2	III	Formulate and update the company's compensation protocols with a focus on sustainable biodiversity and ecosystem services management	Number of updated compensation protocols	≥1 protocol formulated per type of measure	Semiannual
3	VI	Carry out reforestation, restoration, and sustainable use of natural resources as part of compliance with obligations associated with management and control instruments and environmental permits required for TGI's construction, operation, and maintenance, as well as voluntary initiatives implemented by the company	Hectares conserved, restored, and/or sustainably used through voluntary/mandatory actions	423,86 ha CARs 16,1 ha MADS 868,21 ha ANLA 1.308,17 ha Total	Multiannual
			Number of compensation plans approved / Number of compensation plans submitted	100% approved plans	Annual
3	VII	Identify and adopt Nature-based Solutions (NbS) to preserve, conserve, protect, restore, and sustainably manage ecosystems, thereby contributing to climate change mitigation, biodiversity protection, and community well-being in the areas of influence	Number of biodiversity plans developed for species under conservation and/or of interest	≥1 biodiversity plan developed	Annual
			Number of community environmental education plans implemented	≥1 environmental education plan implemented	Annual
3	VIII	Coordinate multisectoral cooperation for the implementation of mandatory and voluntary actions aimed at increasing environmental assets in the area of influence of TGI's construction, operation, and maintenance projects	Number of multisectoral agreements on biodiversity	≥1 agreement generated	Semiannual
4	IV	Establish procedures and monitoring indicators that ensure sustainable biodiversity management across all TGI activities	Number of biodiversity monitoring activities carried out in TGI project areas	≥1 monitoring carried out	Annual
4	V	Achieve net-zero deforestation in all projects and assets in operation throughout their life cycle, adopting biodiversity conservation and sustainable use criteria in forest management	IDC = (Number of harvested individuals / Number of inventoried individuals)* 100	< 100%	Annual
			ICE = (Number of compensated individuals / Number of harvested individuals) *100	> 100%	Annual

PHASE	ID	OBJECTIVE	INDICATOR	TARGET	FRECUENCY
5	IX	Ensure the systematization, spatialization, and disclosure of biodiversity management data, actively involving internal and external stakeholders	Number of biodiversity information materials produced	≥1 biodiversity communication material	Semiannual
			Number of reports submitted to SIB Colombia (Biodiversity Information System) / Number of monitoring activities carried out	100% of monitoring activities reported	Semiannual
All	X	Establish training systems for employees and executives focused on biodiversity management	Number of trainings conducted for employees / Number of trainings planned	100% of trainings executed	Annual

Source: TGI S.A. ESP, 2024.

11. WORK PLAN

Based on the progress made throughout this document and in alignment with the processes planned for development, it is important to highlight that, although a biodiversity strategy aimed at the conservation and preservation of resources and their ecosystem services has been established, the implementation has been structured in phases that allow controlled execution.

In this document, the first two phases have been addressed, while the following three stages are scheduled for future execution.

Therefore, it is necessary to present a work plan that outlines the phases designed for the implementation of the Biodiversity Strategy, providing a clearer focus on the next stage to be executed, as set out in Table 25 and Annex 5. Work Plan and Activities.

Table 1. Summary of the Proposed Work Plan for the Development of the Biodiversity Strategy

PHASE	ID	ACTIVITY	ANNUAL COMPLIANCE 2025											
			1	2	3	4	5	6	7	8	9	10	11	12
1	I	Update, identify, and prioritize strategic ecosystems, conservation initiatives, and regulatory compensation obligations in the area of influence of TGI's construction, operation, and maintenance projects												
2	II	Apply the precautionary principle in all phases and project development processes, based on the mitigation hierarchy measures: avoid, minimize, restore, and compensate, to ensure **No Net Loss of Biodiversity** and generate **Net Positive Impact and additionality**												
2	III	Develop and update corporate compensation protocols with a focus on sustainable management of biodiversity and ecosystem services												
3	VI	Carry out reforestation, restoration, and sustainable use of natural resources in compliance with obligations linked to management/control instruments and environmental permits required for the construction, operation, and maintenance of TGI infrastructure, as well as voluntary initiatives formulated and implemented by the company												
3	VII	Coordinate multi-sector cooperation for the implementation of mandatory and voluntary actions aimed at increasing environmental assets in the area of influence of TGI's construction, operation, and maintenance projects												
3	VIII	Gestionar de manera coordinada la cooperación multisectorial para la implementación de acciones obligatorias y voluntarias encaminadas al aumento del patrimonio ambiental en el área de influencia de construcción, operación y mantenimiento												
4	IV	Establish procedures and monitoring indicators to ensure sustainable biodiversity management in all activities implemented by TGI												

PHASE	ID	ACTIVITY	ANNUAL COMPLIANCE 2025											
			1	2	3	4	5	6	7	8	9	10	11	12
4	V	Achieve **Net Zero Deforestation** in all projects and assets under operation throughout their lifecycle, adopting biodiversity conservation and sustainable use criteria in forest management												
5	IX	Ensure the **systematization, spatialization, and disclosure** of biodiversity data, actively engaging external and internal stakeholders												
All	X	Establish training systems for employees and executives focused on biodiversity management.												

Source: TGI S.A. ESP, 2024.

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