



BIODIVERSITY:
MANAGEMENT AND
INDICATORS
DEXCO | 2023



INTRODUCTION

For Dexco, environments exist to be lived. That is why we recognize how important forests and other natural ecosystems are. As the main source of raw materials for our wooden flooring and panels factories, biodiversity is a material issue for our Wood business division. Therefore, we are committed to ensuring responsible forest management in our areas.

OBJECTIVE

This document compiles our main actions and results for biodiversity management and aims to consolidate our indicators and present the results of our impact on biodiversity.

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1 Biodiversity Impact Index

The wood used as raw material for our forest-based products is a renewable natural resource, sourced from forest plantations. The process of obtaining it, from seedling cultivation to wood transportation, may have potential impacts on natural ecosystems and, consequently, on biodiversity.

With the aim of balancing the environmental and economic aspects of our business, we are committed to seeking ways to prevent or minimize negative impacts and enhance those that are beneficial. In this regard, we manage our forest areas with a policy for zero-deforestation or conversion of natural ecosystem to other uses, and we do not use wood from unacceptable¹ sources to manufacture our products.

We strive to conserve biodiversity, environmental values, and ecosystem services. To that end, we assess the socio-environmental aspects and impacts of our forestry operations, employ the most suitable techniques in our activities, and we monitoring illegal activities in our management units.

Therefore, our aim is to operate in a way that does not cause a net loss of biodiversity in our areas. Below, we present the set of parameters that comprise our Biodiversity Impact Index (BII), an indicator that supports us in managing our impacts and demonstrates the results of our actions in this subject. (**Table 1**).

Table 1. Result of the 2022 Biodiversity Impact Index (BII).

Parameters	Unit	2022 Goal	2022 Result	Achievement	Weight	Weighted Result
Conversion of natural ecosystems to other uses	%	0.0%	0.0%	100.0%	30.0%	30.0%
Assessment of areas for the risk of significant impacts on biodiversity	%	97.0%	94.7%	97.6%	20.0%	19.5%
Areas exposed to the risk of significant impacts on biodiversity with management and monitoring plans	%	100.0%	100.0%	100.0%	10.0%	10.0%
Managed areas with certified management	%	97.0%	94.7%	97.6%	8.0%	7.8%
Fostered areas with certified management	%	50.0%	52.4%	100.0%	8.0%	8.0%
Conservation areas affected by forest fires	%	< 2%	0.1%	100.0%	8.0%	8.0%
Conservation areas in intermediate to advanced stages of regeneration	%	90.0%	89.0%	98.9%	8.0%	7.9%
Impact of forest management operations on water quality (WQI)	WQI variation	<20%	9.1%	100.0%	8.0%	8.0%
2022 Biodiversity Impact Index:						99.2%

¹ Wood from unacceptable sources: wood that has been illegally harvested or obtained in violation of traditional and/or civil rights, sourced from areas of high conservation value threatened by management activities or from deforestation of natural forests.

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1.1 Conversion of natural ecosystems into other uses

We have made a public commitment, through our [forest management corporate standard](#), to manage forest plantations without deforestation or conversion of natural ecosystems to other uses in our forest management or wood supply units.

To ensure the implementation of this commitment, annual monitoring is conducted to identify any conversion that occurred after 2020 in areas managed by the company. The goal is to maintain a 0% conversion rate after 2020 for both existing areas owned by Dexco and for any new areas that may be purchased.

To verify the occurrence of conversion, concepts of photointerpretation and digital processing of satellite images acquired through remote sensing orbital sensors are utilized. These images are treated using Geographic Information System (GIS) software. Year-to-year comparisons are conducted on all farms to assess any changes in land use that may indicate conversion. Analyses have been carried out between the years 2020 and 2021, as well as between the years 2021 and 2022. The results show that no conversion of natural ecosystems was identified in our forest management units.

1.2 Assessment of areas for the risk of significant impacts on biodiversity

We have made a [public commitment](#) to biodiversity conservation, as we understand that this is crucial to ensure our sustainable growth and to continue providing solutions for a better living.

The risk assessment of impacts on biodiversity is conducted in all areas under the scope of our responsible forestry certificate. Therefore, the assessment follows the guidelines of these standards, using the concept of High Conservation Value Areas. Our goal is to perform biodiversity risk assessments in 100% of our managed areas by 2025, and we have reached a milestone of 94.7% at the end of 2022.

The criteria to be used for the evaluation were defined by Dexco taking into consideration the following references:

- ProForest Guide, parts 1 and 2 (JENNINGS et al., 2003²);
- Good Practice Guidelines for High Conservation Value Assessments (STERWART et al., 2008³);
- Common Guidance for the Identification of High Conservation Values (BROWN, 2013⁴);
- Public conservation strategies of national and state government agencies.

2 JENNINGS, S.; NUSSBAUM, R.; JUDD, N.; EVANS, T. The High Conservation Value Forest Toolkit – parts 1 and 2. Oxford: ProForest, 2003. 104p.

3 STEWART, C.; GEORGE, P.; RAYDEN, T.; NUSSBAUM, R. • Good Practice Guidelines for High Conservation Value Assessments. Oxford: ProForest, 2008. 71p.

4 BROWN, E., DUDLEY, E., LINDHE, A., MUHTAMAN, D. R., STEWART, C., SYNNOTT, T. 2013 • Common Guidance for the Identification of High Conservation Values. HCV Resource network.

The definitions of each category are indicated in the table below.

CATEGORIES OF HIGH CONSERVATION VALUE AREAS	ACTIONS
<p>HCV 1 – Diversity of species. Concentrations of biological diversity, including endemic, rare, threatened, or endangered species that are significant at a global, regional, or national level.</p>	<p>Analysis of fauna and flora studies conducted in the areas (where available) through data collection from observations during on-site inspections, consultation of wildlife and plant life data from scientific studies conducted in the region, interviews with the local community, and government publications on biodiversity conservation in Brazil.</p>
<p>HCV 2 - Ecosystems and extensive ecosystem mosaics at the landscape level, significant at the global, regional, or national level, containing viable populations of the vast majority of species occurring naturally in natural patterns of distribution and abundance.</p>	<p>Evaluation through land use maps of the farms, personal observations during on-site inspections, and state-level maps of Biomes and Conservation Units from official websites.</p>
<p>HCV 3 - Ecosystems and habitats. Rare, threatened, or endangered ecosystems, habitats, or biodiversity refuges.</p>	<p>Land use maps of the farms and the map of priority areas for conservation published by the Ministry of Environment.</p>
<p>HCV 4 - Critical environmental services. Basic environmental services in critical situation, including protection of water sources and erosion control in vulnerable soils and slopes.</p>	<p>Data from public water supply intake points sourced from official websites of government institutions and mapping of the farm in terms of slope and land cover.</p>
<p>HCV 5 – Communities’ needs. Areas and resources essential to meet the basic needs of local communities, indigenous populations, or traditional populations (subsistence, food, water, health, etc.), identified in collaboration with these communities or populations.</p>	<p>Consultation with members of the local community and review of received demands history.</p>
<p>HCV 6 - Cultural values. Areas, resources, habitats, and landscapes of special cultural, archaeological, or historical significance at the global or national level, and/or of critical cultural, ecological, economic, or religious importance to the traditional culture of local communities, indigenous populations, or traditional populations, identified in collaboration with these communities or populations.</p>	<p>Consultation with members of the local community, review of received demands history, and consultation of the databases of the National Institute of Historic and Artistic Heritage (IPHAN, for its acronym in Portuguese).</p>

To determine whether there are any areas at risk of significant impacts on biodiversity on a particular farm, the criteria for the six categories of High Conservation Value (HCV) are assessed. The responses are based on primary or secondary data surveys, consultations of official websites, and interviews, while keeping evidence for each category.

Remote and in-person public consultations can be used as part of the assessment and for validation of the evaluation criteria, as well as the subsequent results. In-person consultations are conducted with communities established around the farm in question.

After analyzing and consolidating their inputs, the stakeholders who participated in the consultation may be contacted again to demonstrate how their comments have been incorporated (or not) into the assessment results. At this stage, the final report may also be disclosed to the stakeholders.

1.3 Areas exposed to the risk of significant impacts on biodiversity, and management and monitoring plans

According to the methodology previously described, we analyzed 100% of our certified areas to assess the risk to biodiversity (Number of the sites is 164). In 2020, the presence of an endemic amphibian species (*Bokermannohyla sazimai*) was identified on Nova Ponte Farm, in Minas Gerais, thus classifying the occurrence site as a High Conservation Value Area (HCV) for Category 1, spanning 32.50 hectares. According to our criteria, we consider that there is a risk of significant impacts on biodiversity on this area due to the existence of a population of a species with restricted distribution. Our management plan for this area is based on two pillars: monitoring and protection.

In locations that effectively display exceptional environmental values or critical importance, protective measures are implemented for the identified values. These measures may include forest surveillance patrols, fire prevention and firefighting efforts, lower driving speeds, control of invasive species, and monitoring related to the high conservation value identified at the site. Our main protection measures focus on fire prevention and control, compliance with operational procedures, and property surveillance. To monitor the maintenance and improvement of the high conservation value attribute, documents are prepared to facilitate information management, such as fire reports, assessments of area protection measures, water quality analyses, and reports from population monitoring research on the species.

To monitor the population of the endemic species, we use the methodology of recording vocalizations and capturing photographic evidence during two campaigns conducted within the species' reproductive period (November to May). Each campaign consists of three nights of sampling. Monitoring of the species, including two campaigns, is conducted every three years. However, depending on the results found in previous campaigns, this frequency may be adjusted.

For water monitoring, we carry out periodic sampling at a point near the species' recording locations and within the boundaries of the HCV area to analyze water quality using the Water Quality Index (WQI).

1.4 Managed and fostered areas with certified management

As part of our commitment to forest management certification and recognizing the strength and comprehensiveness of its principles and criteria, we monitor the implementation of these practices and commitments in our operations through the percentage of certified areas.

1.4.1 Managed areas

By the end of 2022, 94.7% of our managed areas in Brazil, spanning over 134,000 hectares, had responsible forestry certification. We have held forest management certification since 1995, being the first company in the southern hemisphere and the fifth in the world to achieve this recognition. To maintain this certification, we must employ the best forest management techniques, aiming to prevent, minimize, and mitigate the adverse impacts of our operations.

Certified enterprises need to identify the environmental aspects and impacts of their activities. We have an internal procedure that establishes the parameters for such

assessment, taking into account the situation (normal, abnormal, or emergency), type of impact (actual or potential), temporality (current, past, or planned), classification (beneficial or adverse), and degree of influence (under control or influential). The significance of impacts is determined based on criteria such as scale, severity, and frequency. All of our forestry operations are covered by this assessment.

The operations that have the potential to cause significant adverse social impacts on traditional communities in Brazil are those related to forest management activities. To avoid such impacts, we do not conduct forest management activities in locations recognized as World Heritage sites or in protected areas classified by the International Union for Conservation of Nature (IUCN) as categories I-IV. Additionally, we respect the legal rights and customs of local and traditional communities, as well as their land tenure rights.

To achieve this, we constantly monitor the managed area and conduct field visits, keeping direct contact with the community. We have programs focused on communication and integration with local communities, and we conduct studies to map and characterize the surrounding communities. In these efforts, special emphasis is given to identifying traditional communities, such as indigenous and *quilombola* communities.

There is currently no evidence of impacts on traditional communities, their territories, or livelihoods. Today, the nearest indigenous territory is approximately three kilometers away from a forest farm operation in Brazil, and there is no indication of any impacts from the management activities on the territory and the livelihoods of the population living there.

The information related to this assessment is part of our [Forest Management Plan](#). Maintaining a history of respect and good relationships with the communities surrounding our operations, there were no violations of indigenous peoples' rights at Dexco in 2022. Our guidelines for forest management and fostered areas are contained in the [Environmental Policy](#), the [Responsible Corporate Forest Management Standard](#), the [Commitment to the Biodiversity](#), Dexco Brasil's Forest Management Plan, and the [Forest Management Plan – Fostered Areas](#).

Our forests also contribute to the maintenance of ecosystem services, which are the benefits that forests provide for human well-being, such as water supply, natural pest control, recreational environments, and climate regulation. In this context, in 2022, our forests in Brazil were recognized according to international standards for their positive impact on the maintenance of ecosystem services, including:

- **Conservation of biodiversity**, contributing to the preservation of species diversity, including the maintenance of focal species and the preservation of their habitats;
- **Carbon sequestration and storage**, contributing to the maintenance of forest carbon stocks through forest plantations and conservation of native vegetation areas;
- **Recreational services**, contributing to the maintenance of recreational activities and tourism through the conservation and improvement of local conditions (e.g., Arvorar Space).

1.4.2 Fostered areas

To supply our Taquari unit, in Rio Grande do Sul, we use wood sourced from our managed forests and also maintain a forest fostering program, where local farmers can have our support for forest planting. In this program, we provide our partners with seedlings and technical guidance for proper forest establishment, and at the end of the cycle, we have the priority to purchase the wood. As of the end of 2022, we had partnered up with 224 producers through 626 fostering contracts.

Since 2019, we have encouraged and promoted responsible forestry certification for our fostered producers. We provide technical support to ensure compliance with certification standards and offer higher prices for certified wood. In 2020, the first group achieved certification recommendation, and by the end of 2022, 52.4% of our supported areas were already certified. With this incentive, we have increased engagement with suppliers to minimize the risks of deforestation and adverse impacts on people and biodiversity within our value chain.

1.5 Conservation areas affected by forest fires

At Dexco, we set procedures for the prevention and control of forest fires, which are emergencies characterized by the potential for significant environmental, social, and economic impacts.

At the entrances of our forest farms, we display information identifying Dexco, the farm's name, and the forestry unit's phone number for contact. The forest fire prevention and control plan is reviewed and shared with internal stakeholders (our own employees, third parties, and clients) and external stakeholders (environmental agencies, environmental police, fire departments, partner companies, neighboring properties, and others) upon request.

The plan encompasses the responsibilities and the structure used for fire prevention and firefighting. The Uberaba, Agudos, and Itapetininga units have 24-hour automatic fire detection systems consisting of towers with high-definition digital cameras, providing 360-degree visibility and high precision within a 15-kilometer radius. The cameras send information to monitoring centers, distinguishing between fire, smoke, and heat, triggering an alarm accordingly.

This resource has provided us with quick and accurate detection of fires in our planted forests and conservation areas, enabling our trained teams and ground resources, such as rapid response pickups and firefighting trucks, to respond timely.

Furthermore, in the months leading up to the most critical periods for forest fires, we conduct communication campaigns with neighboring communities at each unit. The primary goal is to disseminate communication channels through brochures and small gifts with our contact information, so that they can reach us as soon as they identify any fire incidents near Dexco's areas.

Whenever fires occur, our technical team prepares reports and action plans to identify the root cause and propose solutions. At this stage, the impacts on biodiversity are also

evaluated by quantifying the affected conservation area. The company's goal by 2025 is not to exceed 2% of the total area designated for conservation, and the result in 2022 was 0.1%.



Figure 1. Forest operations monitoring room.

1.6 Conservation areas in intermediate to advanced stages of regeneration

To identify the regeneration stage of native vegetation areas in our managed areas, we conduct analyses using photointerpretation and digital processing of satellite images. We consider image texture characteristics, tree density, color tones, and other factors, taking into account the typical characteristics of the biomes where the areas are located (Cerrado, Atlantic Forest, and Pampa).

The process classifies the areas into three categories: initial, and intermediate and advanced regeneration stages. Currently, the company has approximately 40,000 hectares of conservation areas in its managed areas, with 89% classified as being in intermediate to advanced stages. Our goal is to reach 90% in 2022, and 93% by 2025.

1.7 Impact of forest management operations on water quality (WQI)

The river basin or micro-basin acts as an integrating element, signaling changes occurring in the ecosystem, both as a result of management practices and the environmental context of the region. Based on this information, specific farms were selected where the contributing micro-basin is entirely located within its perimeter. This allows establishing fixed sampling spots through time, ensuring that the environmental indicators represent the forest management practices with minimal interference from adjacent areas.

Measurements are conducted using environmental indicators, which are defined by Prabhu (1998) as variables or components of the forest ecosystem that can be used to assess the quality and sustainability of a resource. The assessment utilizes the Water Quality Index (WQI), which was created in 1970 by the National Sanitation Foundation in the United States and evaluates nine parameters, including dissolved oxygen, thermotolerant coliforms, pH

level, biochemical oxygen demand (BOD_{5,20}), water temperature, total nitrogen, total phosphorus, turbidity, and total residue. The company's goal for 2022 is to maintain the annual variation of the WQI indicator (whether positive or negative) below 20% and sustain it 2025.

2 Actions to mitigate impacts on biodiversity

Based on the principles of the impact mitigation hierarchy, our management practices aim to avoid and reduce adverse impacts on biodiversity, as well as promote the regeneration and restoration of impacted environments. Below are some examples of actions carried out in our areas to achieve these objectives.

2.1 Avoidance

To avoid adverse impacts on biodiversity, we manage our forests in areas that have already been anthropized, without engaging in deforestation or conversion of natural ecosystems into other land uses. Additionally, in order to maximize the land use efficiency on the areas we already occupy and minimize the need for expanding into new areas for cultivation, we have been maintaining a robust genetic breeding program for decades. This program contributes to reducing pressure on natural resources by increasing the productivity of planted forests.

2.2 Reduction

To reduce the impact of forest management, we assess the environmental and social conditions of the areas where we operate. The relationship between these local factors (such as soil, climate, and topography) and our activities is taken into account when defining our strategies and operational procedures, aiming to minimize the impact on biodiversity.

In our daily operations, our employees are trained to operate in a way not to damage native vegetation conservation areas, as well as to water springs and streams. The roads within our farms have speed limits, reducing the risk of wildlife roadkill. We maintain a surveillance structure to prevent unauthorized activities.

In the event of impacts occurring during our operations, there is a impact closure report that allows for the definition and monitoring of necessary mitigation actions.

For environmental emergencies such as fires or chemical spills, we have procedures in place for their prevention and reduction of eventual impacts.

2.3 Regeneration

At Dexco, we assess the best way to operate based on the landscape dynamics of these areas, and when necessary, actions are taken to facilitate the regeneration of conservation areas and indirectly contribute to adjacent areas. The evaluation of natural areas connectivity considers two main factors: the size of the natural fragments and the distance between them.

Forest plantations themselves contribute to improve connectivity, as their longer cycle and forest structure provide greater permeability compared to annual crops. This means there is

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a higher intensity of organism flow, seed dispersal, and pollen transfer between fragments, especially for species typical of more preserved environments, which are more sensitive to natural forest fragmentation. The longer cycle of plantations not only provides shelter for animals, but also promotes the emergence of herbaceous and shrub plants in their understory, which are important food sources for various animal groups.

Associated with connectivity, biodiversity corridors play a crucial role in preventing the extinction of local species, maintaining and ensuring natural species movement and dispersal dynamics, and helping protect conservation areas. Permanent Preservation Areas that conserve sensitive areas are present in our managed areas, forming long and important ecological corridors nestled between forest plantations. These forest plantations, in turn, form forest mosaics, which are blocks with different ages and harvest times. The mosaic areas maintain the forest structure in the landscape and biological flows even during periods of intensive management.

2.4 Restoration

Restoration at Dexco aims to recover biological diversity and the natural processes involved in environmental balance. The areas involved in this restoration process are typically located in more fragile soils or adjacent to water springs and streams.

We monitor the natural regeneration processes of our conservation areas using satellite imagery, which allow us to assess their effectiveness. In cases where more detailed information is needed, we conduct field assessments, where we verify parameters such as the presence of wildlife or its traces, as well as the level of conservation and coverage of native vegetation on the ground, for example.

Based on the results of these assessments, we can continue monitoring the area or take measures to accelerate the restoration process, depending on the factors that may be hindering local regeneration. Between 2021 and 2022, we monitored over 8,500 hectares undergoing restoration.

3 Final considerations

Dexco asserts its commitment to responsible forest management through its [Environmental Policy](#), [Responsible Corporate Forest Management Standard](#), [Forest Management Plan](#), and [Commitment to the Biodiversity](#).

In order to ensure the implementation of our commitment to operate in a way that does not cause a net loss of biodiversity in our areas, we monitor the effectiveness of our actions through the Biodiversity Impact Index, with a result of 99.2% in 2022. **Our goal is to reach 99.8% by 2025, with incremental increases of 0.2 percentage points each year.**

We understand that this result demonstrates the effectiveness of our practices aimed at conserving not only biodiversity, but also environmental values and ecosystem services, contributing to the management of the issue and serving as a guide for our actions.