CANACOL ENERGY

TNFD Report

Introduction

As part of our ongoing commitment to sustainability and transparency, this TNFD report highlights Canacol Energy Ltd. (From now on, “Canacol” or “the Company”) efforts in identifying and managing environmental risks associated with five key operational sites: Esperanza, SSJN-7, VIM33, VIM5, and VMM45. Through our actions, we aim to protect and conserve the ecosystems that are essential to our operations and contribute positively to the natural environment.

This report has been prepared following the TNFD’s LEAP methodology, applied at the five operational sites mentioned above. With this approach, Canacol continues to strengthen its sustainability governance and advance toward a model that comprehensively manages risks and opportunities related to nature, aligning with global biodiversity commitments.

Results

Locate

The Locate phase has allowed us to identify nine key interfaces between Canacol's assets and nature, evaluating the ecological sensitivity of five operational sites: Esperanza, SSJN-7, VIM33, VIM5, and VMM45. Through detailed geospatial analysis, various environmental and biodiversity attributes were examined, highlighting the ecological relevance and sensitivity of these sites (Figure 1).

- **Ecoregions:** The five assets are primarily located in the "Magdalena-Urabá Moist Forests" and "Sinú Valley Dry Forests" ecoregions. These areas have moderate recovery potential, indicating that conservation actions are critical to restoring the ecosystem and ensuring biodiversity.
- **Hotspots:** Most assets, such as Esperanza, SSJN-7, VIM5, and VMM45, are situated within a biodiversity hotspot, the "Tumbes-Choco-Magdalena," a region of high conservation importance due to its significant biodiversity and the risks it faces from habitat loss. The southern portion of VIM33 is on the edge of this hotspot.
- **Mean Species Abundance (MSA):** The average MSA at Canacol's sites ranges from 0.21 to 0.22, indicating a decline in local species diversity due to habitat modification. However, ecological remnants still exist that play a crucial role in species conservation and ecosystem resilience.
- **Tree Cover and Water Bodies:** A fragmented distribution of tree cover and water bodies has been identified at the evaluated sites, with percentages ranging from 3.86% in Esperanza to 21.45% in VIM33. Additionally, the influence area of VIM-5 overlaps with the Mojana Riverine Complex, and VIM-33 overlaps with the Zapatosa Wetland Complex, the largest freshwater body in the country. These areas, classified as RAMSAR wetlands, are crucial for the country's water regulation. The observed ecological fragmentation in these assets poses significant risks to local biodiversity, underscoring the need to restore and conserve remaining natural areas.
- **Threatened Species:** In all evaluated sites, the potential presence of species categorized as vulnerable,

endangered, or critically endangered by the IUCN was identified. These findings emphasize the importance of implementing mitigation measures to protect threatened species and conserve their critical habitats, while also seeking opportunities to contribute to conservation programs for these species.

- **Protected Areas:** It was concluded that no influence area of the analyzed Canacol assets overlaps with Protected Areas.
- **Important Bird Areas (IBAs):** No influence area of the analyzed Canacol assets overlaps with IBAs.
- **Wetlands and/or RAMSAR Sites:** VMM-45 has a 100% coverage of wetlands and/or RAMSAR sites, classified as Very High. In contrast, SSJN-7 and VIM-5 were classified as Moderate, while Esperanza and VIM-33 were rated Low.
- **Water Vulnerability Index (WVI):** The WVI for the sites Esperanza, SSJN-7, VIM33, and VIM5 was categorized as Medium, whereas the VMM45 site has Low water vulnerability.

The Locate phase has revealed that Canacol's assets are situated in ecologically sensitive areas, such as RAMSAR wetlands that play a fundamental role in the country's water regulation, the Tropical Dry Forest, which is the strategic ecosystem with the least coverage in the country and is home to species like the White-headed Capuchin Monkey, and locations with high biodiversity richness that have been significantly transformed by human activities. Such sensitive areas require careful management to minimize environmental impacts and maximize conservation opportunities

Figure 1: Sensitivity rating by site

Site	Ecoregions	Hotspots	Tree Cover and Water Bodies	MSA	CR Species	EN Species	VU Species	Protected areas	IBAs	Wetlands and/or RAMSAR Sites	WVI	Total	Sensitivity classification
SSJN-7	2	1	1	3	5	4	4	1	1	2	3	27	1
VIM-33	2	2	2	3	1	2	2	1	1	3	3	22	2
Esperanza	2	1	1	3	2	2	2	1	1	2	3	20	3
VMM-45	2	1	2	3	2	1	1	1	1	3	2	19	4
VIM-5	2	1	2	3	1	1	1	1	1	5	3	21	5

Evaluate

Dependencies

It was found that the highest dependencies are on provisioning and regulatory services:

- **Water Regulation and Provision:** Canacol is highly dependent on ecosystem services related to water, as it is necessary during development and extraction activities. There are legal issues and sanctions associated with water use and pollution, as well as reputational and market concerns tied to water management. Additionally, from a social perspective, water is one of the most important resources for the survival of local communities and their livelihoods.
- **Soil Retention and Quality:** Canacol's operations depend on the soil's ability to retain moisture and control erosion. Therefore, there is a high dependency on these ecosystem services from financial, operational, and social standpoints**.**
- **Local and Global Climate Regulation:** Canacol has a significant dependency on both local and global climate regulation, as abrupt changes in climate patterns, such as excessive rainfall or drought, can negatively impact operations and infrastructure, leading to increased costs for the company.
- **Disaster Control:** Ecosystems provide the means to mitigate damage caused by floods, landslides, and other types of disasters. Thus, operations, infrastructure, and the well-being of workers and nearby communities depend on the provision of this ecosystem service.
- **Food Provision:** The nutrition of local workers relies on the availability of food in the area. A lack of local food can lead to operational costs, negative health impacts on workers, and issues associated with local communities.
- **Biological Control:** The absence of biological control can lead to epidemics and outbreaks of zoonotic diseases in the area. This negatively impacts workers and productivity, increasing costs and generating risks such as delays in product delivery.
- **Habitat Maintenance:** Biodiversity provides multiple functions within ecosystems, translating into services and goods from nature. The loss of biodiversity would mean the loss of other ecosystem services, negatively affecting Canacol's production. Given the changing market that increasingly focuses on biodiversity, the growing demands from the financial sector for commitment to biodiversity, stricter regulatory matters, and stronger social oversight, Canacol has a high dependency on habitat maintenance.

Canacol relies on ecosystem services, particularly in terms of provisioning and regulation. Effective management of these dependencies is crucial to ensure the operational, financial, and social sustainability of the company.

Impacts

Ten drivers of change were identified that represent the main impacts of Canacol's activities on ecosystems. These impacts are linked to the operational processes of exploration, development, and well closure, affecting various natural assets. The key impacts are:

- **Land Use Change:** Very High. This is the most significant impact for Canacol. Operations require large expanses of land, which affect natural habitats and limit the regeneration of native vegetation, leading to direct consequences for biodiversity and ecosystem services.
- **Climate Change:** Medium. Canacol's activities contribute to greenhouse gas emissions, which have a moderate impact both locally and globally, affecting the resilience of ecosystems.
- **Soil Pollution:** High. Operations pose risks of spills and leaks that can degrade soil quality, impacting biodiversity and the ecosystem's ability to provide essential services.
- **Water Pollution:** Medium. This impact is related to the potential contamination of water sources by chemicals, affecting both water quality and aquatic organisms.
- **Air Pollution (non-GHG gases):** Medium. Emissions of pollutants that are not greenhouse gases present a moderate impact, affecting both ecosystems and the health of local communities.
- **Use of Other Resources:** Medium. The exploitation of additional resources, such as non-renewable materials, has a medium impact, leading to overexploitation and affecting biodiversity.
- **Disturbances:** Medium. Disturbances associated with operations, such as noise and light pollution, affect local biodiversity and may alter species behavior.
- **Waste:** Medium. The generation of hazardous and non-hazardous waste has a medium impact on ecosystems, affecting soil, water, and biodiversity.
- **Water Use:** High. Canacol's reliance on water creates a significant impact on the availability of this resource, leading to competition with local communities and affecting the sustainability of aquatic ecosystems.
- **Invasive Species:** Low. Although the impact is relatively low, the introduction of invasive species through the importation of materials can affect local biodiversity and alter ecosystems.

The identified impacts underscore the importance of comprehensive management of nature-related risks. Canacol must pay special attention to impacts rated as "very high" and "high," such as land use change, soil pollution, and water use.

Assess

Risk

In the Assess phase of the TNFD's LEAP methodology, 18 key risks that could affect Canacol's operations were evaluated and validated by analyzing their probability of occurrence and the consequences they would generate (Figure 2). These risks were classified into the categories of physical, legal and compliance, market, reputational, and technological risks. Below is a summary of the prioritized risks along with their respective ratings.

Corporate Guidelines	Operational actions	Risk management	Partnerships
Biodiversity commitment	Hidraulic drilling	Risk management matrix	SENA
Water management system	Flexible pipeline	Increase in reused water	Universities
"Amigos del Bosque" Program	DAK additive	Decarbonization goals	
Climate change Program	Soundproofing of equipment and acoustic barrier		
Double materiality analysis			

- **Protection and Restoration of Ecosystems:** Canacol has protected 55.5 hectares of Tropical Dry Forest through the Friends of the Tropical Dry Forest program, involving local communities in the conservation of these areas. In 2023, the company restored 44.5 hectares in the departments of Córdoba and Sucre, contributing to the preservation of valuable ecosystems. Alongside restoration efforts, 2,400 hours were dedicated to maintaining protected areas and 12,150 hours to active protection. The investment in compensation for the protection of these ecosystems in 2023 reached USD 75,784, reaffirming Canacol's commitment to regenerating degraded habitats and preserving biodiversity.
- **Monitoring and Conservation of Species:** Canacol conducts annual assessments of wildlife and flora in all operational areas to mitigate the impact of activities on biodiversity. In 2023, 237 protected wildlife species and 218 protected plant species were monitored. The total number of monitored species has consistently grown over the last three years, reflecting the company's focus on preserving endangered species. Regarding fauna, 19 plant species and 27 animal species at risk of extinction were identified, and measures were taken to prevent any further damage to their habitats. Canacol avoids intervention in protected areas classified under IUCN categories I to IV and in UNESCO World Heritage sites. The Zero Net Deforestation policy reinforces the commitment to avoid logging endangered species and to protect their habitats.
- **Water Resource Management:** In operations, 16% of the water used was recirculated, and surface water intake has been suspended since 2021, prioritizing the use of groundwater sources. Through the Water Source Protection Program, community projects have been developed for groundwater capture, utilizing renewable energy, water treatment, and the expansion of aqueducts, ensuring sustainable access to drinking water for communities.
- **Biological Control:** Canacol has protected 55.5 hectares of Tropical Dry Forest, ensuring the conservation of ecosystems that contribute to the biological control of pests and diseases. Annual monitoring of wildlife and flora helps mitigate the impact on biodiversity and maintain ecological balance in operational areas.
- **Climate Change Adaptation and Decarbonization:** The company is committed to reducing its greenhouse gas (GHG) emissions by 50% by 2035 and achieving carbon neutrality by 2050. In 2022, 100% of emissions were quantified, following the GHG Protocol, and climate risks were integrated into the Corporate Climate Change Management Plan, guided by the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).
- **Soil Retention and Land Quality:** Canacol restored 44.5 hectares in operational areas, using technologies such as absorbent polymers and Flexsteel piping to minimize land intervention and reduce environmental impact.

- **Water Quality:** The company recirculates 100% of industrial water in drilling operations, eliminating discharges. Participatory monitoring with local communities ensures water quality and guarantees efficient and transparent management of this vital resource.
- **Noise Mitigation:** Natural barriers and living fences have been implemented in operational areas, complying with environmental regulations and reducing noise levels to protect the quality of life for nearby communities.
- **Food Provision:** The "Green Initiatives" program has benefited 167 families through sustainable agriculture initiatives developed in collaboration with CORPOMOJANA and SENA. These programs promote food security and have strengthened relationships with rural communities.
- **Disaster and Fire Control:** The Risk Management Plan includes training for local brigades and the acquisition of specialized equipment for emergency response, as well as community education programs for fire prevention, ensuring an appropriate response to emergencies.
- **Technological Innovation for Sustainability:** Absorbent polymers have been implemented for managing drilling cuttings, along with Flexsteel piping, which has reduced land intervention and minimized the environmental impact of operations.
- **Commitment to Transparency and Governance:** As an Early Adopter of the TNFD (Taskforce on Nature-related Financial Disclosures), the company has adjusted its management practices to align with global trends related to nature. This commitment ensures that actions and disclosures meet international sustainability standards.
- **Strengthening Community Relations:** In 2023, 57 social projects were executed across 39 communities, benefiting over 14,916 people. These projects encompass community development, education, health, and well-being, strengthening the company's social license to operate. Additionally, Conservation Agreements with local families have been crucial for integrating communities into conservation and restoration efforts.
- **Double Materiality Analysis:** The company is conducting a double materiality analysis, prioritizing key issues related to integrated water resource management, ecosystems and biodiversity, and climate change mitigation and adaptation. This analysis will further align operations with the challenges and opportunities presented by these critical topics.

Recommendations

Adopting the Taskforce on Nature-related Financial Disclosures (TNFD) is a strategic decision to strengthen the management of nature-related risks. Below are key recommendations to effectively disclose results, optimize TNFD implementation, and leverage key opportunities such as COP16.

- **Create Discussion Spaces for Results:** Organize internal and external sessions to review the outcomes of the TNFD process. These forums should facilitate the validation of progress and the identification of areas for improvement through idea exchange with key stakeholders.
- **Promote TNFD Across Official Company Platforms:** Utilize the company's official channels, including the website and social media, to clearly and consistently communicate TNFD advancements. This action reinforces the company's commitment to sustainability.
- **Present Results at COP16 as an Early Adopter of TNFD:** Participation in COP16 offers an opportunity to showcase the company's leadership in adopting the TNFD. Presenting results will strengthen its position in the sustainability arena.
- **Incorporate GRI101 Indicators into the ESG Report:** Including indicators from the GRI101 guide in the next report enhances transparency and environmental risk management, aligning with international standards.
- **Scale TNFD Implementation at the Corporate Level:** Expanding TNFD efforts at the corporate level ensures a strategic approach that integrates prioritized operations with the company's global sustainability objectives.

Implementing these recommendations will enable the company to effectively manage its nature-related risks and opportunities while ensuring transparent disclosure of its progress. This will reinforce the commitment to transparency and facilitate the effective integration of the TNFD into corporate operations.

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