vedanta transforming for good | aluminium

Taskforce on Nature related Financial Disclosure Report

Aluminium and Power Division, Vedanta Limited | FY 2025

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Abbreviations

Abbreviation	Full Form
AQI	Air Quality Index
BALCO	Bharat Aluminium Company Limited
BMP	Biodiversity Management Plan
BRF	Biodiversity Risk Filter
BRSR	Business Responsibility and Sustainability Report
CEO	Chief Executive Officer
CFO	Chief Financial Officer
CHRO	Chief Human Resources Officer
COPS	Communities of Practice
CSR	Corporate Social Responsibility
CTE	Consent to Establish
CTO	Consent to Operate
DIRO	Dependencies, Impacts, Risks and Opportunities
DRF	Demarcated Reserved Forest
EC	Environmental Clearance
EHS	Environment, Health & Safety
EIA	Environmental Impact Assessments
ENCORE	Exploring Natural Capital Opportunities, Risks, and Exposure
ERM	Enterprise Risk Management
ESR	Ecosystem Services Review
ETP	Effluent Treatment Plant
EXCo	Executive Committee
FPIC	Free, Prior, and Informed Consent
GHG	Greenhouse Gas
GIS	Geographic Information System
GRI	Global Reporting Initiative
IBAT	Integrated Biodiversity Assessment Tool
ICMM	International Council on Mining and Metals
IFC	International Finance Corporation
INM	Integrated Nutrient Management
IPM	Integrated Pest Management
ISO	International Standard Industrial Classification
IUCN	International Union for Conservation of Nature
KBA	Key Biodiversity Area

TNFD Report for Vedanta Aluminium

Abbreviation	Full Form
kL	Kiloliter
Km/h	Kilometers per hour
KPI	Key Performance Indicators
LEAP	Locate, Evaluate, Assess, Prepare
ManCom	Management Committee
MECE	Mutually Exclusive and Collectively Exhaustive
MIP	Management in Place
MSCI	Morgan Stanley Capital International
MT	Metrics Tonnes
NBG	Net Biodiversity Gain
NbS	Nature-based Solutions
NNL	No-Net-Loss
NGO	Non-governmental Organization
NPI	Net-Positive-Impact
PA	Protected Area
PCCF	Principal Chief Conservator of Forests
PRF	Protected Reserved Forest
PVTG	Particularly Vulnerable Tribal Groups
R&D	Research & Development
SASB	Sustainability Accounting Standards Board
SBU	Strategic Business Units
S&P Global	Standard and Poor's Global
SRM	Sustainable Resource Management
STAR	Species Threat Abatement and Restoration
TCFD	Task Force on Climate-related Financial Disclosures
TNFD	Task Force on Nature-related Financial Disclosure
VSAP	Vedanta Sustainability Assurance Process
VSF	Vedanta Sustainability Framework
VGCB	Vizag General Cargo Berth
WCP	Wildlife Conservation Plan
WEP	World Economic Forum
WRI ESR	World Resource Institute Ecosystem Services Review
WWF	World Wide Fund
ZLD	Zero Liquid Discharge

Message From **Chairman**

Anil Agarwal

Chairman
Vedanta Group

> With the unwavering support of our stakeholders, Vedanta Aluminium continues to set the standard, driving innovations in aluminium applications for a more sustainable and promising future.

At Vedanta Aluminium, we are profoundly committed to integrating sustainability into every facet of our operations and placing a profound emphasis on nurturing nature and biodiversity within our operational blueprint.

Our journey, driven by innovation and responsibility, has established us as a global leader in aluminium production. Our strategic operations in Andhra Pradesh, Chhattisgarh and Odisha are not only crucial to India's aluminium sector but also align with our mission to protect and enhance environmental ecosystems.

I'm delighted to introduce our inaugural TNFD Report, a landmark publication underscoring our pledge to transparent and responsible nature stewardship. This report reflects our strategic approach to addressing nature-related risks and embracing opportunities that not only support our growth but safeguard the planet's biodiversity.

Our commitment to integrating TNFD principles enables us to deploy nature-based solutions, enhance resource utilization, and promote circular production systems. Key initiatives such as Site Level Biodiversity Management Plan, habitat improvement, highlight our dedication to preserving biodiversity and supporting environmental resilience.

With a firm resolve, we are working towards Vedanta Aluminium's target of achieving NNL of biodiversity by 2050. Our actions are strategically aligned with international frameworks like the Paris Agreement and Global Biodiversity Framework, ensuring that our progress contributes positively to global environmental goals and preserves the natural heritage.

As we navigate this transformative pathway, maintaining strong collaboration with our stakeholders is crucial. We invite all our stakeholders—investors, partners, regulators, and communities—to engage with this report, hold us to higher standards, and collaborate with us in building a sustainable and inclusive future resilient to nature's challenges.

With the unwavering support of our stakeholders, Vedanta Aluminium continues to set the standard, driving innovations in aluminium applications for a more sustainable and promising future.

Message From **CEO**

Rajiv Kumar

Chief Executive Officer
Vedanta Aluminium

> Vedanta Aluminium's commitment is unwavering as we strive to foster a sustainable future, leveraging informed and strategic decision-making that preserves nature for generations to come.

The intricate connection between nature and global industry is irrefutable, with ecosystems forming the backbone of economic stability and growth. Recognizing this critical interdependence, Vedanta Aluminium prioritizes biodiversity as a cornerstone of environmental equilibrium and resource security for future generations.

Our commitment is proudly showcased in our inaugural TNFD Report, where we outline our endeavors to integrate nature-positive solutions throughout our operations. By weaving environmental considerations into our strategic framework, we aim to facilitate a transition to circular production systems and adopt innovative, nature-based approaches that contribute substantially to ecological preservation and climate action.

Recognizing the severity of global risks such as biodiversity loss, ecosystem collapse, and resource scarcity, we are working towards managing biodiversity at site-level in Andhra Pradesh, Chhattisgarh and Odisha. This year, we are expanding these efforts to encompass all remaining sites, ensuring a holistic approach to ecological conservation.

Our report is strengthened by adopting a multifaceted framework, aligning our nature-related risk assessments with global standards such as GRI, SASB, and IFRS S2. We strategically employ TNFD's LEAP approach, enabling us to systematically locate, evaluate, assess, and prepare for nature-related impacts, enhancing our resource efficiency and resilience.
Vedanta Aluminium's pledges to achieve NNL of biodiversity by 2050 or earlier and set a milestone as the first Indian metal and mining Company.
Vedanta Aluminium's commitment is unwavering as we strive to foster a sustainable future, leveraging informed and strategic decision-making that preserves nature for generations to come.

This report is our commitment to nature. I sincerely invite you to witness the efforts of Vedanta Aluminium. Let us move forward together and protect this beautiful Earth.

TNFD Report for Vedanta Aluminium

Message From COO

Sunil Gupta

Chief Operating Officer
Vedanta Alumnium

> Together, we continue to set benchmarks for responsible operations that protect our planet's vital ecosystems while contributing to India's industrial progress.

The TNFD, established in 2021, marks a crucial step forward in integrating nature into business and financial decision-making. As emphasized in the TNFD framework, the science is unequivocal — nature is deteriorating at an unprecedented pace, and biodiversity loss is reaching critical levels globally. This calls for urgent and concerted efforts from all sectors to halt and reverse further degradation.

Vedanta Aluminium is a key player in India's aluminium sector, operating complex mining and processing facilities across Odisha, Chhattisgarh and Andhra Pradesh. Our operations interact closely with diverse ecosystems, making it imperative for us to identify, assess, and address nature-related risks and opportunities with rigor and transparency. We recognize that nature dependency and impact are integral to our business, and addressing these factors is central to building resilience and long-term value.

For years, Vedanta Aluminium has been committed to biodiversity conservation and environmental stewardship, working closely with local communities and experts to protect flora, fauna, and important habitats. We are developing and embedding a robust transition plan designed to align our business model and value chains with nature-positive principles. Our approach integrates climate, nature, and social considerations holistically to ensure sustainable operational growth.

Collaboration remains key to our success. We are actively engaging with partners, suppliers, and communities to promote innovation and deploy effective solutions that minimize our ecological footprint and enhance biodiversity outcomes. This integrated approach supports our ambition to achieve NNL of biodiversity and Net Zero Carbon by 2050.

It is a moment of pride for me to present Vedanta Aluminium's inaugural TNFD Report, which highlights our efforts to manage nature-related risks and seize opportunities responsibly. I invite our partners, communities, and stakeholders to journey with us as we deepen our nature-positive commitments and drive transformative change for a sustainable future.

Together, we will continue to set benchmarks for responsible operations that protect our planet's vital ecosystems while contributing to India's industrial progress.

About the **Report**

Vedanta Aluminium (hereafter referred to as 'the Aluminium Sector') is the Aluminium and Power division of Vedanta Limited (hereafter referred to as 'the Company'). This TNFD Report outlines a comprehensive framework for identifying, assessing, and managing nature-related DIRO, demonstrating Vedanta Aluminium's dedication to environmental stewardship. The report aligns with the TNFD's recommendations, ensuring seamless integration of disclosures throughout all aspects of the organization's operations, including smelters, mines, power plants, ports, and refinery units.

To effectively address these sustainability challenges, Vedanta employs a group-level materiality approach. This approach prioritizes sustainability issues that impact both the business and its stakeholders. The Report specifically covers direct operations at 5 sites which include aluminium smelters located in Korba (Chhattisgarh), and Jharsuguda (Odisha), alumina refinery situated in Lanjigarh (Odisha), the captive power plants at each of these sites, Jamkhani Coal Mine (Odisha) and VGCB (Andhra Pradesh). With assessments extending to a 10-kilometer radius around each site. This strategic focus reinforces Vedanta's intent to enhance resource efficiency and resilience across its value chain, with plans to expand the emphasis to the upstream value chain in future assessments.

Governance

Vedanta Limited's governance framework ensures accountability for nature-related risks, aligning with TNFD recommendations. The Board ESG Committee leads efforts to integrate sustainability into the Vedanta Sustainability Framework, with specialized committees within the Board to oversee the sustainability & biodiversity-related requirements and meeting quarterly to ensure alignment with targets.

Strategy

To address the disclosures under the strategy pillar Vedanta Aluminium utilizes the TNFD's recommended Locate, Evaluate, Prepare and Assess framework. Tools such as ENCORE and WWF's Biodiversity Risk Filter aid in screening dependencies and impacts across operations. Further, the World Resource Institute Ecosystem Services Review to assess site level dependencies and impacts on ecosystem services

Risk and Impact Management

Vedanta Aluminum uses a structured approach to identify, assess and manage nature-related dependencies, impacts, risks, and opportunities. Site-specific BMPs are developed to identify and manage nature-related risks at business operations. These plans enable effective monitoring, reporting, knowledge sharing, and clarity on roles and responsibilities, allowing Vedanta Aluminium to implement targeted environmental stewardship initiatives. Vedanta Aluminium adopts a Mitigation Hierarchy as part of its group Biodiversity Policy, with a commitment to achieving NNL of biodiversity.

Metrics and Targets

Vedanta Aluminium ensures transparency and accountability in tracking its sustainability progress. The Company aims to achieve NNL of biodiversity across all operations by 2050 and become water positive by 2030, aligning with the Nature Positive Initiative's goals to halt and reverse nature loss. Vedanta Aluminium is aligned with this vision and intend to support the Company.

Introduction

Aluminium holds a pivotal place as the 'metal of the future,' offering immense strategic value crucial for national security, socio-economic growth, and sustainable development globally. Celebrated for its unique properties, such as high strength-to-weight ratio, corrosion resistance, light weight, excellent formability, and limitless recyclability, aluminium is poised to lead the charge in promoting sustainable industrial practices. Vedanta Aluminium, as one of the world's premier aluminium producers and India's largest, embraces this potential by leveraging advanced technologies and industry expertise to serve a vast customer base across nearly 60 countries, producing over half of India's aluminium at 2.42 million tonnes in FY25.

Vedanta Aluminium's operations are anchored by its world-class assets, including aluminium smelters located in Korba (Chhattisgarh), and Jharsuguda (Odisha), alumina refinery situated in Lanjigarh (Odisha), the captive power plants at each of these sites, Jamkhani Coal Mine (Odisha) and VGCB (Andhra Pradesh). Through transformative projects and innovations, Vedanta Aluminium is committed to fostering emerging applications in critical sectors like aerospace, aviation, defence, transportation, and evolving sectors such as electric vehicles and renewable energy. These efforts contribute to Vedanta Aluminium's mission to spur advancements in aluminium applications for a greener, more sustainable future.

In alignment with its sustainability ethos, Vedanta Aluminium actively addresses nature-related risks and opportunities. By integrating the TNFD principles into its operational strategy, Vedanta Aluminium seeks to enhance resource efficiency, transition to circular production systems, and adopt nature-based solutions. This approach ensures a comprehensive assessment of the environmental impacts of its operations, promoting resilience within its value chain and contributing to broader socio-economic advancements in the regions it operates.

The key initiatives taken by Vedanta Aluminium are provided below:

Initiative I — Site-Level Biodiversity Management Plan and Initiatives for Habitat Improvement

Vedanta Aluminium understands that biodiversity loss & ecosystem collapse, and shortage of natural resources are among the top 10 ranked Global risks by severity (WEP, FY25). The proper management of such resources is the top priority of Vedanta Aluminium. The business unit is updating BMPs for 3 of its business operations namely- Korba (Chhattisgarh), Jharsuguda (Odisha), Lanjigarh (Odisha). Additionally, Vedanta Aluminium has initiated preparing a BMPs for its remaining 2 sites, namely- Jamkhani Coal Mine (Odisha), VGCB (Andhra Pradesh). The BMP serves as a detailed document, guiding efforts to conserve biodiversity and addressing habitat loss throughout the operational lifespan. The BMP outlines comprehensive strategies to assess, manage, and offset impacts on biodiversity, ensuring that Vedanta's operations harmonize with ecological preservation and contribute positively to habitat conservation. The key components of site-level BMPs are –

Habitat Improvement Initiatives

- **Jharsuguda:** Vedanta Aluminium at the Jharsuguda facility has launched habitat development initiatives aimed at enhancing ecological quality and sustainability. At the Katikela Ash Pond site, efforts are underway to employ mixed planting patterns with appropriate spacing to improve soil health and promote successful vegetative growth. This initiative includes necessary amendments to ensure the ecological sustainability of the area. To further support ecological integrity, native species have been selected for plantation, designed to act as natural barriers against dust and wind while serving as visual screens.
- **BALCO:** The site has carried out afforestation on 150 hectares of reclaimed ash dykes, transforming these landscapes into thriving ecosystems.
- **Jamkhani Coal Mine:** The facility has established a Miyawaki forest using a selection of native species. This approach aims to create a dense, rapidly growing forest that enhances biodiversity and restores the local ecosystem.

Additionally, Vedanta Aluminium is committed to rehabilitating mined-out areas in. By planting over 50,372 trees in Jamkhani, Vedanta Aluminium supports the restoration of natural habitats and contributes to carbon sequestration.

Wildlife Conservation Plan (WCP) for Vedanta Aluminium, Jharsuguda

The site is in vicinity of 6 Reserved Forests/ PRF/DRF which houses many flora and fauna and hence WCP was prepared for 10 years. The anticipated threat to wildlife is wildlife depredation, habitat degradation, shortage of water, degradation of bamboo forests etc.

In view of these, mitigation measures like, improvement of habitat, fire protection, excavation of water hole, anti-depredation squad etc. were proposed. Mitigation measures and management plans were proposed for both Project area and buffer area.

Some of the mitigation measures provided include raising avenue plantation, installing signages, construction of bird-bath and maintenance of GIS cell in PCCF (WL) office. The conservation plan also included description of flora and fauna found in Zone of influence.

Initiative 2 Road Map to Become Water Positive

Vedanta Aluminum is deeply committed to responsible water management, given its operations in resource-intensive sectors. Central to its strategy is the drive to become water positive by 2030, underscoring the Company's dedication to sustainable and efficient water use. This approach prioritizes safeguarding water resources for communities by optimizing water usage, enhancing recycling capabilities, and achieving ZLD in its facilities. To advance towards this goal, Vedanta Aluminum has already undertaken significant initiatives.

In the FY 24-25, Vedanta Aluminium achieved a remarkable milestone by recycling an impressive 16.79 million m^3 litres of water across its operations. Each site has conducted thorough water screening assessments to pinpoint regions with crucial water significance and sensitive aquatic ecosystems. By constructing substantial on-site reservoirs, Vedanta Aluminium effectively stores and processes water, to ensure annual savings.

These comprehensive efforts towards water neutrality have resulted in substantial progress, with total water recycling achievements at BALCO 5.20 m^3, Jharsuguda 7.95 m^3 and Lanjigarh 3.64 m^3. Through these initiatives, Vedanta Aluminium not only strives towards the Company's water positivity aim by 2030 but also reinforces its commitment to sustainable water resource management and community well-being.

The Jharsuguda facility has implemented 77 water-related CSR projects from 2018 to 2024 outside its plant's premises, focusing on improving water conservation, groundwater recharge, and sustainable water management. These projects were executed across various villages in Jharsuguda, Kolabira, Laikera, and Kirmira blocks of Odisha. These 77 water-related CSR project include rejuvenation of 71 community ponds, construction of 5 farm ponds and 1 percolation tank carrying a total water credit potential of 196,735 m3

Employing IoT-based technology for real-time water quality monitoring at Jharsuguda exemplifies Vedanta Aluminium's innovative approach. Additionally, Vedanta Aluminium is committed to employee training on water management practices and implements rainwater harvesting to augment groundwater. Community-focused efforts include the Sangam Project in Lanjigarh, which integrates watershed and livelihood initiatives, providing irrigation to over 3,500 acres and benefiting more than 22,000 people.

The "Mor Jal Mor Maati" initiative aims to enhance sustainable livelihoods through integrated water management and the optimal use of existing resources. It focuses on improving water management and irrigation to support multi-cropping and climate-resilient agricultural practices, which are vital for environmental sustainability and biodiversity conservation.

Vedanta Aluminum is working with the Directorate of Soil and Water Conservation, Government of Odisha, to develop more than 36 farm ponds to augment irrigation and water availability for livestock in Lanjigarh. Lanjigarh, being a dry and rainfed area, requires perennial water storage structures to support agriculture and livestock production. Through this initiative, we are working to ensure reliable water sources for the farmers.

At BALCO, increased use of RO water and the commissioning of a clarifier and filtration system enable the reuse of 200 m^3/hr of water. Furthermore, the arrest of fire water line leakage and the effective utilization of treated effluent from power plants showcase Vedanta's commitment to water conservation.

Other initiatives driving these achievements include improving return condensate to 93% and utilizing cooling water in vacuum pumps at Lanjigarh, introducing a stormwater utilization system, and enhancing utility cooling tower efficiency and blowdown reduction at Jharsuguda and Lanjigarh.

Initiative 3 Initiatives to Improve Nature and Biodiversity in Surrounding Environment

Vedanta Aluminum is committed to fostering community development through its comprehensive CSR initiatives, addressing both human and animal welfare in economically disadvantaged regions.

Based on the data provided, here is a list of initiatives related to sustainability and nature-related risk management:

Jeevika Samridhhi

An agriculture-based sustainable livelihood project at Jharsuguda, Odisha, focusing on effective land and water management to help small and marginal farmers improve farming practices and increase returns.

Vedanta Skills Training Programme

Initiative aimed at providing employable skills to economically backward youth in Kalahandi and Rayagada, Odisha, fostering better employment opportunities and entrepreneurship avenues.

Animal Welfare Initiatives

Enhancing well-being and reducing mortality rates among livestock through vaccination camps and healthcare support in Lanjigarh, Kalahandi.

Orchard Development

Collaboration with the Government of Odisha to develop fruit orchards in Lanjigarh, promoting improved horticulture practices and creating employment opportunities.

Backyard Poultry Farming

Partnership with Odisha's PVTG Empowerment and Livelihood Improvement Programme to introduce poultry farming in Lanjigarh, enhancing household income.

Broiler & Layer Farming

Development of poultry farming units in collaboration with the District Veterinary Department to boost local production and income.

Vegetable Cultivation

Improving agricultural practices in Lanjigarh to enhance nutrition and income for around 300 families.

Bio-Floc Farming

Introduction of innovative aquaculture technology in Lanjigarh to boost fish production through high-density artificial tanks.

Ek Ped Maa Ke Naam

Plantation of 100,000 native saplings. By utilizing native plants, the initiative ensures better adaptation to the local environment and contributes to the development of a sustainable habitat for wildlife and improved ecological balance.

Farm Ponds Development

Partnership with the Directorate of Soil and Water Conservation to augment irrigation in Lanjigarh through farm ponds.

Pisciculture Units

Establishment of pisciculture units in collaboration with the District Fisheries Department to meet local fish demand and promote aquaculture.

TNFD General Requirements

This Report sheds light on the TNFD's recommended ISSB's IFRS-S1 general requirements. The details of the general requirements are provided below:

TNFD General Requirements

- The Application of Materiality
- The Time Horizons
- The Engagement of Indigenous Peoples, Local Communities and Affected Issues
- The Scope of Disclosures
- The Location of Nature-related Issues
- Integration with other Sustainability-related Disclosures

Vedanta Aluminium's Approach to Materiality

Vedanta Aluminium follows the materiality approach defined at the group level. The materiality approach is aimed at identifying and prioritizing sustainability issues that significantly affect its business operations and stakeholders. The approach to materiality is described below:

1. Identifying Key Material Topics
2. Stakeholder Consultations and Impact Assessment
3. Assessing Risks and Opportunities
4. Prioritizing Impact and Importance/ Dependencies
5. Preparing the Materiality Matrix
6. Finalizing & Validating the Materiality Matrix

Step 1: Identifying Key Material Topics

The approach starts by identifying industry-specific material topics based on recommendations from standards like SASB, MSCI, S&P Global, and ICMM, forming a baseline for relevance assessment. A peer review refines these topics by considering issues important to similar companies. The MECE framework ensures a comprehensive, organized list of 26 topics, focusing on the most pertinent issues.

Step 2: Stakeholder Consultations and Impact Assessment

Vedanta engaged 1,933 stakeholders through interviews, focus groups, and surveys to prioritize topics. This engagement enriches the materiality process by integrating diverse perspectives on environmental and social impacts.

Step 3: Assessing Risks and Opportunities

Each topic is analyzed for its impact on Vedanta's "Transforming for Good" strategy and assessed against the Enterprise Risk Management matrix. This provides a risk-based perspective crucial for developing mitigation strategies.

Step 4: Prioritizing Impact and Importance/ Dependencies

A scoring method assesses the severity and likelihood of each issue, categorizing them into high, medium, and low priorities. This approach balances financial significance with stakeholder impacts, offering a nuanced understanding of issues across business, environment, economy, and society. Focusing on both financial and non-financial impacts ensures a comprehensive evaluation strategy, facilitating informed decision-making.

Step 5: Preparing the Materiality Matrix

A materiality matrix is created to visually map stakeholder responses based on business impact and strategic prioritization. This tool identifies high-priority issues, guiding strategic management.

Step 6: Finalizing & Validating the Materiality Matrix

The validation phase includes a detailed review by the corporate ESG team and oversight from the ESG Management Committee, with additional validation by a third-party agency to ensure reliability.

Scope of Disclosure

In this TNFD Report, Vedanta Aluminium has included 5 sites which include aluminium smelters located in Korba (Chhattisgarh), and Jharsuguda (Odisha), alumina refinery situated in Lanjigarh (Odisha), the captive power plants at each of these sites, Jamkhani Coal Mine (Odisha) and VGCB (Andhra Pradesh). The scope of disclosure for these sites covers the leased area of each site and extends to a 10-kilometer radius surrounding the business operations.

Direct Operations Fully Covered

1. BALCO, Korba, Chhattisgarh

Operations
Aluminium Smelter and Power Plant

Biogeographic Zone
Deccan Peninsula

Biome
Tropical & Subtropical Moist Broadleaf Forests

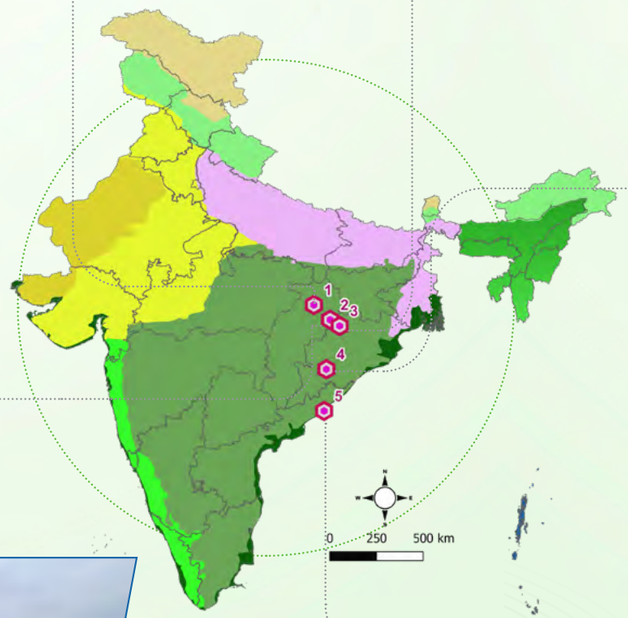
2. Jamkhani Coal Mine, Sundargarh, Odisha

Operations
Coal Mine

Biogeographic Zone
Deccan Peninsula

Biome
Tropical & Subtropical Moist Broadleaf Forests

Spatial Distribution of Vedanta Aluminium's Operations Over Biogeographic Zones



Legends

- State Boundary
- Trans-Himalaya
- Himalya
- Gangetic Plain
- North-East
- Desert
- Semi - Arid
- Deccan Plateau
- Western Ghat
- Coast
- Island

Looking ahead, Vedanta Aluminium is committed to expanding the scope to incorporate both upstream and downstream segments of value chain in future reports. Detailed information about the direct operations, including their locations and associated biomes, is provided in the table below, offering a clearer picture of our environmental interactions.

3. Jharsuguda, Odisha

Operations
Aluminium Smelter and Power Plant

Biome
Tropical & Subtropical Moist Broadleaf Forests

Biogeographic Zone
Deccan Peninsula

4. Lanjigarh, Kalahandi, Odisha

Operations
Aluminium Smelter and Power Plant

Biome
Tropical & Subtropical Moist Broadleaf Forests

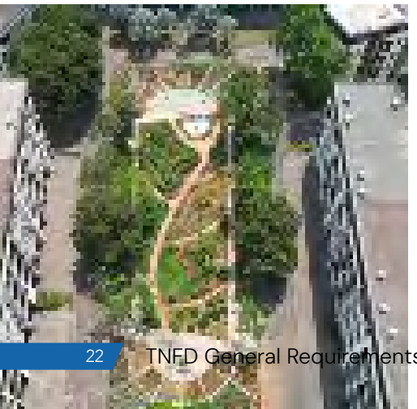
Biogeographic Zone
Deccan Peninsula

5. VGCB, Visakhapatnam, Andhra Pradesh

Operations
Port

Biome
Tropical & Subtropical Moist Broadleaf Forests

Biogeographic Zone
Coast



The Location of Nature-related Issues

Nature-related issues are determined by assessing the dependencies and impacts of business operations on ecosystems and their services. These issues are pinpointed within a 10-kilometer radius of the business operations, ensuring comprehensive coverage of potential effects on the surrounding environment. For freshwater concerns, the location of water withdrawal is also taken into account, recognizing its significance in prioritizing ecological preservation and sustainable resource management.

Integration with other Sustainability-related Disclosures

The TNFD Report incorporates a multifaceted approach by aligning its nature-related risk evaluation with global sustainability frameworks such as the GRI, the SASB, and the IFRS S2. This integration ensures robust and comprehensive disclosure of performance metrics, aligning with environmental stewardship goals. Data related to greenhouse gas emissions, water usage, biodiversity, waste management, and conservation efforts are meticulously reported following these frameworks. This alignment enables a streamlined assessment of nature-related impacts and encourages informed decision-making that supports sustainable growth.

Furthermore, by leveraging tools such as ENCORE, WWF BRF, and WRI Aqueduct 3.0, the report strengthens its assessment capabilities, providing insights into ecological dependencies and managing nature-related risks effectively. This strategic incorporation of diverse frameworks not only enhances transparency and accountability but also reinforces Vedanta Aluminium's commitment to aligning its practices with internationally recognized sustainability standards.

Time Horizons

This report outlines three-time horizons—short, medium, and long term for the planning, implementation, and reporting of nature-related issues. Vedanta Aluminium's strategy for managing these issues is guided by group-level Policies and Technical Standards, along with specific Guidance Note on Biodiversity Management at the site-level. In accordance with its Biodiversity Policy, Vedanta Aluminium is currently revising three site- specific BMPs and is in process of developing remaining two BMPs. These plans will clearly identify action strategies across short, medium, and long-term timelines for the conservation of biodiversity and ecosystem services. The time horizons below provide an initial approach, which will be refined once the BMPs are fully established.

Short Term

Initiatives that can be launched and completed in a span of up to five years fall under the "Short Term" category. These activities include-

a. Conducting biodiversity sensitivity screenings, developing site-specific BMPs, and devising execution strategies for these plans.
b. Annual action planning for biodiversity management for each site.
c. Green belt enhancement at each site.
d. Nursery upgradation if exists or create nurseries considering the recommended species in BMPs.

0-5 years

Medium Term

Projects that require extended planning and can be finalized within five to ten years are classified as "Medium Term." This includes activities like –

a. Planting trees on degraded lands and restoring ecological habitats.
b. Plan and stakeholder engagement for offsite Ecological Restoration and Biodiversity Enhancement.
c. Implementation of WCPs.
d. Supporting capacity building programs and research initiatives aimed at biodiversity conservation.

5-10 Years

Long Term

Efforts that demand longer planning periods and extend beyond ten years are labeled as "Long Term." These include -

a. Comprehensive ecosystem and habitat restoration initiatives.
b. Plan and stakeholder engagement for offsite Ecological Restoration and Biodiversity Enhancement.
c. NbS aiming for NNL and NBG.

10-15 Years

Engagement of Indigenous Peoples, Vulnerable Tribal Group, Local Communities and affected stakeholders

Vedanta Aluminum is dedicated to the inclusive engagement of Indigenous Peoples, Vulnerable Tribal Group, Local Communities, and other stakeholders in identifying and assessing nature-related issues. This process is conducted throughout the project lifecycle and is rooted in the principle of Free, Prior, and Informed Consent (FPIC). The approach ensures that all stakeholders can participate in decision-making processes through both formal and informal structures.

The engagement activities are guided by Vedanta's Technical Standard on Stakeholder Engagement, which emphasizes culturally appropriate and context-specific consultations. Special attention is given to vulnerable populations, ensuring their voices are represented in the consultation processes. The organization employs a structured stakeholder identification and analysis process, which involves close cooperation with community representatives and local leaders to guarantee inclusive representation and equitable access to resources.

Nature-related dependencies, impacts, risks, and opportunities are assessed collaboratively with stakeholders to foster inclusive solutions, effective monitoring, and evaluation. This engagement is consistent across all operations and is integral to Vedanta's sustainability goals, ensuring that socio-economic benefits are derived from its activities while maintaining the rights and natural resource access for Indigenous Peoples, Vulnerable Tribal Group and local communities.

By adopting international standards, including those of the IFC, Vedanta recognizes Indigenous Peoples and vulnerable Tribal groups as distinct social and cultural groups and includes them in its comprehensive stakeholder engagement strategy. Through sustained interaction and the establishment of fair grievance mechanisms, Vedanta strengthens its commitment to environmental stewardship and the socio-economic development of its communities.

Governance

The establishment of robust governance structures underscores Vedanta Limited's commitment to sustainability and responsible business practices. These structures are guided by the principles of the TNFD framework, which integrates nature-related risks and opportunities into central decision-making processes.

The Corporate Governance at Vedanta Limited's aims to align with stakeholder expectations by balancing financial success with social responsibility. By cultivating an environment of trust and integrity, Vedanta upholds a governance framework that meets regulatory compliance and prioritizes accountability, fairness, and transparency within its operations. Leadership at Vedanta is focused on leveraging top-tier research and development, facilitating sustainable growth, and responsibly managing resources to navigate the complexities of the dynamic business environment. As their sustainability efforts progress, governance frameworks are continuously evolving to reinforce Vedanta's role as responsible stewards in the aluminum sector.

Key principles steering Vedanta Limited's sustainability initiatives include the adoption of eco-friendly technologies, conducting environmental assessments, and maintaining transparent engagement with stakeholders.

These efforts are supported by a comprehensive set of policies, including the Biodiversity Policy, Energy & Climate Change Policy, CSR Policy, Environmental Policy, Human Rights Policy, and Water Management Policy.

The corporate governance process is provided in the figure below:

Figure 1: Corporate Governance Structure at Vedanta Limited's for Managing Nature-related Risks

Board Oversight

The Board plays a pivotal role in overseeing nature-related dependencies, impacts, risks, and opportunities, guided by the TNFD LEAP framework. The Board ESG Committee leads this effort, embedding sustainability into the VSF and driving the Group's ESG agenda. They ensure the VSAP is employed to assess ESG performance across all levels. The Board directs the use of emerging tools and technologies to map, evaluate and manage material issues. These evaluations guide the Board in formulating strategies for water efficiency, climate resilience, biodiversity conservation, and transitioning to low-carbon initiatives, thereby managing risks and leveraging opportunities effectively.

Board of Directors: The Board oversees the sustainability and biodiversity-related requirements through different committees responsible for governance related to nature-related dependencies, impacts, risks, and opportunities. They meet quarterly for alignment with the targets set.

ESG Board Committee: The Board's ESG Committee plays a vital role in steering the Company's sustainability efforts, with a specific focus on nature-related risks associated with water, carbon, and biodiversity. They evaluate the existing governance frameworks involved in managing these areas, recommending improvements to enhance the effectiveness of environmental oversight. The Committee advises the board on sustainable policy development and the management systems required to support it. They track the Company's sustainability performance using the VSF framework, which includes key nature-related policies and standards. Ensuring the effective implementation of governance, advocacy, and public relations plans related to ESG, climate change, and biodiversity is another core responsibility. The committee also develops initiatives to promote a sustainability culture organization wide. By analyzing emerging risks related to sustainability, nature, and climate, they guide management in creating strategies for risk avoidance and mitigation to achieve long-term resilience. Additionally, they counsel the Board on compliance with legal and international regulations concerning sustainability and nature-related governance.

Management Oversight

Vedanta Limited has developed an extensive management framework to effectively implement and oversee nature-related duties. Key roles are allocated to senior management positions that directly report to the Board ESG Committee, ensuring accountability is clearly defined. The Group CEO, along with the Group ExCo and the ESG ManCom, carries the highest managerial responsibility and accountability for nature-related policies, commitments, and targets.

Group CEO

The Group CEO plays a pivotal role in developing and directing strategies for water management, security, climate change mitigation, and biodiversity. They lead the creation of long-term goals focused on water management, GHG reduction, and biodiversity conservation. To achieve these objectives, the CEO implements high-investment projects dedicated to enhancing water security, decarbonization, and biodiversity management.

As Chair of the ESG Management Committee and ESG ExCo, the CEO ensures integration and accountability across the organization. Additionally, they mitigate risks associated with resource scarcity, climate impact, and biodiversity loss, and proactively embed sustainability and resilience within business practices to address nature-related challenges effectively.

Group ESG ExCO

The Group ESG ExCo serves as a high-level decision-making body, collaborating closely with the ESG ManCom. It provides guidance to the Board ESG Committee on all ESG and sustainability-related initiatives, ensuring alignment of sustainability efforts across different business units led by Business CEOs. The ExCo engages in discussions concerning KPIs such as water withdrawal, water discharge, GHG emissions, and renewable energy adoption. Additionally, it reports monthly on sustainability progress to the Executive Board, maintaining transparency and accountability in sustainability efforts

ESG Management Committee

The ESG Management Committee provides strategic direction and governance oversight for sustainability initiatives, ensuring the execution of Vedanta's long-term sustainability strategy with an emphasis on achieving Net Zero Carbon targets. Collaborating with the Group Head of EHS, the committee ensures that business operations align with sustainability commitments. It conducts fortnightly reviews to assess progress on ESG and nature-related objectives, reporting its findings to the Board ESG Committee for informed decision-making and continuous improvement.

Group Head HSE&S-Health, Safety, Environment & Sustainability

The Group ESG ExCo serves as a high-level decision-making body, collaborating closely with the ESG ManCom. It provides guidance to the Board ESG Committee on all ESG and sustainability-related initiatives, ensuring alignment of sustainability efforts across different business units led by Business CEOs. The ExCo engages in discussions concerning KPIs such as water withdrawal, water discharge, GHG emissions, and renewable energy adoption. Additionally, it reports monthly on sustainability progress to the Executive Board, maintaining transparency and accountability in sustainability efforts

Director-ESG Carbon Social Performance

The Director of ESG Carbon Social Performance briefs the Board ESG Committee on the status of the Group's decarbonization efforts and provides strategic advice on emerging climate risks and commitments to Net Zero Carbon. They lead the implementation of renewable energy solutions across Vedanta's operations and craft the Net-Zero roadmap, focusing on mid-term (2030) and long-term (2050) decarbonization goals. The Director manages ESG reporting and disclosure processes, including updates on initiatives like the TCFD, TNFD, and the preparation of the BRSR.

Nature-related Communities of Practice (CoP)

Water, Carbon, and Biodiversity Communities of Practice The Water, Carbon and Biodiversity Communities of Practice oversee the execution of policies, frameworks, and standards related to nature and sustainability. They ensure adherence to objectives in water management, biodiversity preservation, and climate resilience. These communities evaluate achievements against set targets and benchmarks to ensure progress in nature-related goals. They also promote the exchange of knowledge among business units and subsidiaries to incorporate nature-beneficial strategies into their operations.

Human Rights Policies and Engagement Activities

Indigenous Peoples and Vulnerable Tribal Groups

The Group ESG ExCo serves as a high-level decision-making body, collaborating closely with the ESG ManCom. It provides guidance to the Board ESG Committee on all ESG and sustainability-related initiatives, ensuring alignment of sustainability efforts across different business units led by Business CEOs. The ExCo engages in discussions concerning KPIs such as water withdrawal, water discharge, GHG emissions, and renewable energy adoption. Additionally, it reports monthly on sustainability progress to the Executive Board, maintaining transparency and accountability in sustainability efforts

Local Communities

Engagements with local communities are driven by Vedanta Aluminum's structured stakeholder engagement plan, which encompasses local community consultations. Vedanta Aluminium aims to increase social inclusivity through participatory needs assessment programs. These initiatives are guided by Vedanta's Human Rights policy and are supported by the VSAP audit, which evaluates human rights management at operational sites. Vedanta Aluminium aims to empower local communities by aligning its welfare campaigns with their needs and by employing collaborative approaches for resource allocation and implementation

Affected Stakeholders and Other Groups

Vedanta Aluminium recognizes the importance of engaging with affected stakeholders and other groups impacted by its operations. The Board and management work actively to ensure that human rights policies are adhered to, as evidenced by mandatory EIA and SIA prior to the commencement of operations. These assessments are updated as necessary to accommodate significant site expansions. For broader stakeholder interactions, Vedanta Aluminium employs a comprehensive stakeholder engagement strategy, ensuring regular impact assessments of CSR projects and public disclosure of findings to maintain transparency and accountability.

Through these engagement strategies, Vedanta Aluminium seeks to uphold human rights, promote social sustainability, and strengthen its relationships with Indigenous Peoples, Vulnerable Tribal Group, local communities, affected stakeholders, and other groups.

Strategy

Vedanta Aluminium is committed to understanding and addressing its operation's dependencies and impacts on nature. This commitment underpins its strategy to manage nature-related risks and capture opportunities, with a focus on climate action, biodiversity conservation, and water management.

To systematically address nature-related dependencies, impacts, risks and opportunities, Vedanta Aluminium has adopted the TNFD-recommended LEAP approach. Vedanta Aluminium has formulated a three-tier approach to identify, assess and manage nature-related issues.

Details on how Vedanta Aluminium's strategy aligns with the LEAP approach are available in Table 1, with a comprehensive overview illustrated in the accompanying figure.

Table 1: Vedanta Aluminium's Alignment with LEAP Approach

Locate **L** **STEP 1 The Interface with Nature**	Evaluate **E** **STEP 2 Evaluate Dependencies & Impacts**	Assess **A** **STEP 3 Assess Risks & Opportunities**	Prepare **P** **STEP 4 To Respond & Report**
L1. Span of the Business Model and Value-chain: Direct Operations: Five operational units are considered for disclosure. Upstream & Downstream Value Chain: Not considered in this report.	E1. Identification of Environmental Assets and Ecosystem Services: Ecosystem services mapping and review are conducted at each direct operational site to identify environmental assets and ecosystem services.	A1. Risk and Opportunity / Identification: The risks and opportunities corresponding to the impact and dependencies are identified for all the sites.	P1. Strategy and Resource Allocation: The risks and opportunity management strategy and resource allocations shall be included in the BMPs for each site.
L2. Dependency and Impact Screening: ENCORE Tool ratings are used for sector-level understanding, while WWF's BRF Tool is applied for site-level screening.	E2. Identification of Dependencies and Impacts (Business Sectors): Identification of dependency and impact of Vedanta Aluminium is done using the ENCORE tool and WWF BRF.	A2. Adjustment of Existing Risk Mitigation and Risk and Opportunity Management: Vedanta has an existing biodiversity risk assessment and management framework. Presently, these site-specific BMPs are being updated. Additionally, Vedanta Aluminium has adopted WRI's ESR tool for identifying site- level impact, dependency, risk and opportunities.	P2. Target Setting and Performance Management: Vedanta has adopted targets for 2025 and 2030 for 3 Nature Realms (Land, Water, and Atmosphere). Vedanta has adopted the TNFD core global disclosure indicators and metrics for reporting and monitoring their performance.
L3. Interface with Nature: The presence of biomes at all operational sites is mapped using the Ecoregion Apps tool.	E3. Dependency and Impact Analysis (size and scale): WRI's ESR tool for dependency and impact analysis for each site on the ecosystem service. Both sizes and scale of dependency and impact are identified, and ranking is done.	A3. Risk and Opportunity Measurement and Prioritization: The risk and opportunity identified by LEAP assessment are being integrated in the updated site-specific BMPs of all priority sites. The BMP shall have the prioritization of risks and corresponding actions.	P3. Reporting: Vedanta Aluminium has reported the assessment results as part of 'Strategy' and 'Metrics & Targets' sections of the TNFD Report.
L4. Interface with Sensitive Locations: Out of the five business operations, two are located near significant biodiversity areas. Vedanta Aluminium is updating BMPs of three operational sites and developing BMPs for remaining two operational sites.	E4. Impact Materiality Assessment: Vedanta Aluminium has considered the impacts on their operations, employees, and local communities as material impacts for identifying risk and opportunities.	A4. Risk and Opportunity Materiality Assessment: Vedanta Aluminium has considered all medium and high impact and dependency related risks as material risks and opportunities.	P4. Presentation: Vedanta Aluminium shall continue to present and disclose nature-related risks and opportunities using TNFD recommendation in upcoming years as well.

Nature-related Dependencies, Impacts of Vedanta Aluminium

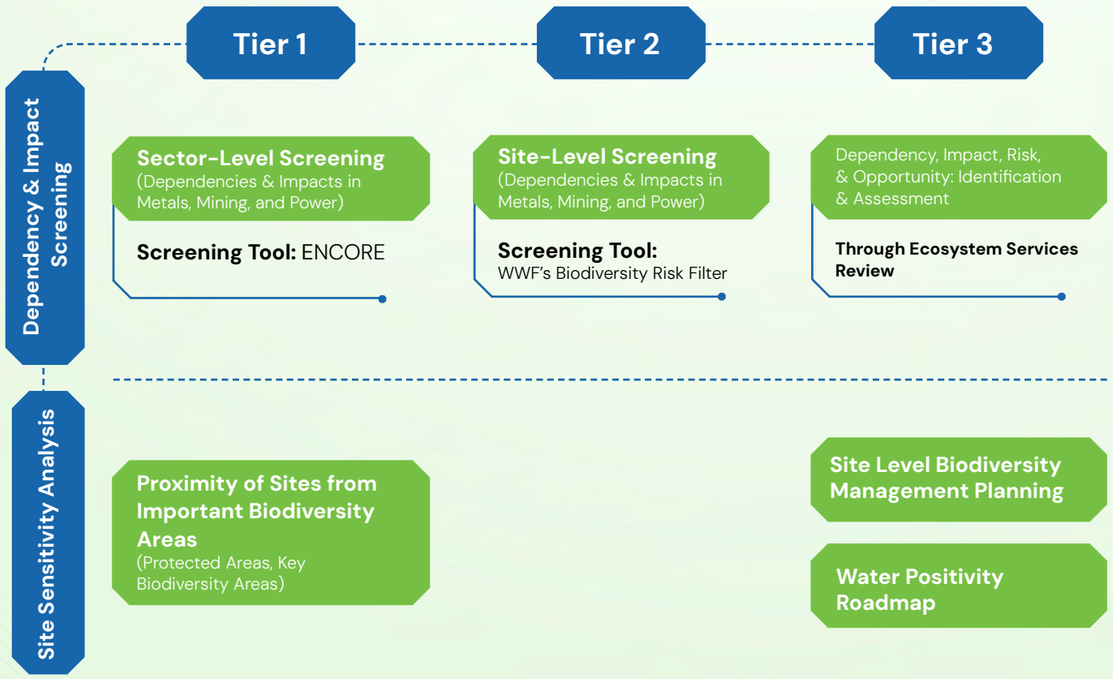
To evaluate nature-related dependencies and impacts, a three-tier systematic approach is implemented to gain a comprehensive understanding. The approach is detailed out below:

Tier 1 This initial step screens major activities within the metal and mining sector. It provides a comprehensive overview of sector level dependencies and impacts. This tier also includes site proximity assessments to evaluate environmental sensitivity.

Tier 2 In this phase, site-level dependencies and impacts are identified using secondary data and tools. This process helps prioritize key ecological and operational concerns.

Tier 3 The final step validates insights from Tier 2 through primary data collection, involving ESR. It also develops detailed BMPs and sets a roadmap towards achieving water positivity and improving beyond.

Figure 2: Vedanta Aluminium's Approach for Identifying and Managing Nature-related Issues



Tier 1 Overview of Dependencies and Impact at Sectoral Level

To have an understanding on metal and mining sector, how the sector as a whole depends on and are creating impact on ecosystem services, an ENCORE tool is deployed. The results give a sectoral level screening of dependencies and impacts. This assessment aligns with locate phase of LEAP approach. Results obtained are provided below:

- Smelter & Power Plant operation shows very high dependencies on water supply and high dependency on Water Flow Regulation ecosystem services while showing very high impact due to Emission of GHG, Emission of non-GHG air pollutants and Emission of toxic pollutants to water and soil.
- Coal Mining process shows very high dependencies on Water Purification Services and Rainfall Pattern Regulation Services and very high impact due to GHG emissions.
- Port facilities show very high dependencies on Visual Amenity Services & Recreation Related Services and shows high impact due to the Introduction of Invasive Species.
- Alumina Refinery & Power Plant shows high dependency on Rainfall Pattern Regulation Services and very high impact due to Emission of toxic pollutants to water and soil.

Table 2: Overview of Activity-wise Dependencies at Sectoral Level

Business Activities	Dependency Categories: Very High & High				
Smelter & Power Plant	Water Supply	Water Flow Regulation			
Alumina Refinery & Power Plant	Rainfall Pattern Regulation Services				
Coal Mine	Water Purification Services	Rainfall Pattern Regulation Services	Water Flow Regulation	Flood Mitigation Services	Global Climate Regulation Services
Port	Visual Amenity Services	Recreation Related Services	Storm Management Services	Flood Mitigation Services	

Very High: ■ High: ■

Table 3: Overview of Activity-wise Impacts

Business Activities	Impact Categories: Very High & High				
Smelter & Power Plant	Disturbance	Emission of non-GHG Air Pollutants	Emission of GHG	Emission of Toxic Pollutants to Water and Soil	Generation and Release of Solid Waste
Alumina Refinery & Power Plant	Disturbance	Emission of Toxic Pollutants to Water and Soil	Emission of GHG	Emission of non-GHG Air Pollutants	
Coal Mine	Disturbance	Area of Freshwater Use	Emission of GHG	Emission of non-GHG Air Pollutants	Emission of Toxic Pollutants to Water and Soil
Port	Disturbance	Introduction of Invasive Species	Emission of GHG	Emission of non-GHG Air Pollutants	

Very High: ■ High: ■

Tier 2 Site wise overview of Dependencies and Impacts

To gain an overview of site-level dependencies and impacts, the Explore and Assess modules of WWF's BRF tool were deployed. The results provide a high-level understanding of dependencies and impacts. To further deepen and validate the findings, additional assessments, such as an ESR, were conducted. The results from the BRF tool are presented in the table below, while the results of the additional primary-data assessments are provided in the section below under the Tier 3 approach.

Table 4: An Overview of Site Level Dependencies and Impact

Business Operations	Dependency					Impact			
	Water Availability	Air Condition	Wildfire Hazard	Extreme Heat	Media Scrutiny	Land, Freshwater & Sea use Change	Pollution	Indigenous Peoples, Local Communities, Land & Territories	Labour/ Human Rights
BALCO									
Jamkhani Coal Mine									
Jharsuguda									
Lanjigarh									
VGCB									

Very High: ■ High: ■

TIER 3 Assessment of Dependencies Impacts, Risks and Opportunities through Ecosystem Services Review Exercise

The secondary tools recommended by TNFD offer an overview of the dependencies and impacts associated with key activities and overall operations. The overview results, derived from tools are based on secondary data, aim to provide insights into dependencies and impacts at both sector and site levels. For a detailed analysis, based on primary data, WRI's ESR Tool is employed.

The ESR exercise identifies the provisioning, regulating, and cultural services crucial to supporting business activities. Additionally, the ESR offers insights into potential risks and opportunities linked to these dependencies and impacts. In this assessment, a total of 21 ecosystem services are evaluated for each business operation. The assessment results are categorized as High, Medium, or Low for both dependencies and impacts. For impacts, a plus (+) or minus (-) sign is used for High and Medium categories to indicate direction. A positive impact indicates that initiatives such as wetland rejuvenation, tree planting, and habitat development etc. are improving ecosystem service flows. A negative impact reflects a decline or deterioration in ecosystem services, where interventions are needed to restore or improve these flows.

The results from the ESR exercise also validate findings from the BRF Tool. Some ecosystems initially identified as high impact in the BRF are now shown as medium or low impact because business operations have already implemented initiatives to manage these issues.

Table 5: Summary of Business Operation with High/Medium Dependencies and Impacts

Business Operations	Indicators	Dependency	Impact
BALCO	Freshwater	H	M+
	Crops	L	H+
	Maintenance of air quality	H	H+
	Livestock	L	H+
	Aquaculture	L	H+
	Biomass fuel	M	H+
	Regional/local climate regulation	H	M+
	Regulation of water timing and flows	L	H+
	Erosion control	M	L
	Maintenance of soil quality	H	L
	Recreation and ecotourism	M	L
	Wild foods	M	L
	Pest Mitigation	L	H+
	Pollination	L	H+
	Educational and Inspirational Values	L	M+
	Habitat	L	M+

Business Operations	Indicators	Dependency	Impact
Jharsuguda	Freshwater	H	H–
	Crops	H	H+
	Maintenance of air quality	H	L
	Livestock	L	H+
	Aquaculture	L	H+
	Regional/local climate regulation	L	M+
	Regulation of water timing and flows	L	M–
	Water purification and waste treatment	L	M+
	Pollination	L	M+
	Recreation and ecotourism	L	M+
	Ethical and spiritual values	L	M+
Lanjigarh	Freshwater	M	M+
	Crops	L	H+
	Livestock	L	M+
	Capture fisheries	L	M+
	Aquaculture	L	M+
	Maintenance of air quality	L	M+
Jamkhani Coal Mine	Freshwater	H	M–
	Crops	L	M–
	Regulation of water timing and flows	L	M–
	Wild foods	L	M–
	Timber and other wood fibres	L	M–
VGCB Port	Freshwater	M	L
	Natural hazard mitigation	H	L

Dependency - L: Low M: Medium H: High
Impact - L: Low M+: Medium Positive M–: Medium Negative H+: High Positive H–: High Negative

Table 6: Summary of Risks to each Operational Site

Indicators	Dependency	Impact	Physical Risk	Transition Risk
Business Operations: BALCO				
Wild Food	M	L	The consumption of local fungi, while only favored by a limited segment of the community, including some BALCO contractual employees and their families, poses a minimal physical risk. them for dietary preferences. **Acute Risk:** Nil **Chronic Risk**: Nil	**Reputational Risk:** Any perceived negative impact of the facility's operations on local biodiversity habitats could affect community relations and reputation among stakeholders.
Maintenance of air quality	H	L	The facility operates under satisfactory air quality conditions, with all air quality parameters remaining within established limits. Compliance with EC and CTO further assures adherence to regulatory standards. Although current conditions indicate minimal physical risk, any external industrial activity or unexpected environmental factors could potentially alter air quality. Continuous monitoring and proactive environmental measures are essential to sustain air quality standards and minimize any potential risks arising from external influences. **Acute Risk:** Nill **Chronic Risk:** Nill	**Policy Risk:** Changes in air quality regulations or policies related to industrial emissions could impact the facility. Compliance with new regulations may require additional investments in air quality monitoring and control technologies.

Dependency - L: Low M: Medium H: High
Impact - L: Low M+: Medium Positive M–: Medium Negative H+: High Positive H–: High Negative

Indicators	Dependency	Impact	Physical Risk	Transition Risk
Business Operations: BALCO				
Biomass fuel	M	H+	The facility's reliance on non-local biomass, consisting primarily of agricultural waste like cow dung and plant stock, poses minimal direct physical risk due to the diversity and external sourcing. However, a small portion sourced locally could be subject to seasonal variations and regional agricultural conditions, potentially impacting supply stability. **Acute Risk:** Short-term disruptions in biomass supply, especially from local sources due to unexpected agricultural or weather conditions, are unlikely to severely impact operations given the predominant non-local sourcing. However, sudden availability changes during peak times could require rapid adjustments to supply logistics. **Chronic Risk**: In the long run, over-reliance on locally available biomass may pose risks. Diversifying procurement can help manage these risks.	**Policy Risk**: Nil **Reputational Risk:** Nil **Market Risk**: Variations in biomass availability throughout the year could lead to fluctuations in pricing or supply logistics, influencing operational costs and requiring adjustments to procurement strategies.

Dependency - L: Low, M: Medium, H: High,
Impact - L: Low, M+: Medium Positive, M-: Medium Negative, H+: High Positive, H-: High Negative

Indicators	Dependency	Impact	Physical Risk	Transition Risk
Business Operations: BALCO				
Freshwater	H	M+	The facility's substantial freshwater consumption relies entirely on surface water from the Darri Dam, situated within a 10 km radius. The availability of water is. Other industries located nearby are dependent on this water source could collectively impact supply during peak demand periods. **Acute Risk:** Nil **Chronic Risk:** Long-term risks include potential over-reliance on a single water source, especially if demand from other dependent industries continues to grow. Sustainable water management practices alongside infrastructural investments in rainwater harvesting are crucial to mitigate such chronic risks.	**Policy Risk:** Future changes in water allocation policies or environmental regulations could impact accessibility and distribution, necessitating compliance and potentially investing in additional water-conservation techniques. **Market Risk:** Increased competition for surface water among industries, or potential changes in pricing structures, might affect operational costs and water logistics over time. **Reputational Risk:** Ensuring visible commitments to sustainable water practices, especially given the shared reliance on Darri Dam water, is essential to maintain community support and stakeholder trust. Transparency in water usage and conservation activities can mitigate potential reputational challenges.

Dependency - L: Low, M: Medium, H: High,
Impact - L: Low, M+: Medium Positive, M-: Medium Negative, H+: High Positive, H-: High Negative

Indicators	Dependency	Impact	Physical Risk	Transition Risk
Business Operations: BALCO				
Maintenance of air quality	H	H+	Low AQI levels persist in the vicinity, thus minimizing physical risks to air quality maintenance. Local forests play a crucial role in absorbing pollutants and regulating environmental health. However, any deforestation or degradation of these natural carbon sinks could potentially alter local air quality, affecting both environmental and public health.	**Policy Risk:** Changes in air quality regulations or policies related to industrial emissions could impact the facility. Compliance with new regulations may require additional investments in air quality monitoring and control technologies.
Erosion control	M	L	The site effectively manages erosion control by actively maintaining ecosystem services in tailing dams through methods such as grass turfing on soil slopes. These measures help stabilize soil, prevent erosion, and promote sustainable land management. The consistent application of these techniques significantly mitigates environmental impacts, ensuring operational stability. **Acute Risk:**The acute risk associated with erosion is minimal due to the ongoing and effective erosion control practices actively implemented across the site, including the use of grass turfing. These measures ensure immediate stability and prevent sudden erosion events **Chronic Risk:** Nil	**Policy Risk:** There is a potential policy risk if new regulations are introduced that affect land use or erosion control practices. Compliance with such regulations could require additional investments or operational adjustments. **Reputational Risk**: Successful and visible erosion control measures can enhance the site's reputation for environmental stewardship. Conversely, any perceived inadequacy or failure in maintaining erosion control might affect stakeholder trust. Active communication and transparency regarding these efforts can mitigate reputational risks.

Dependency – L: Low, M: Medium, H: High,
Impact – L: Low, M+: Medium Positive, M–: Medium Negative, H+: High Positive, H–: High Negative

Indicators	Dependency	Impact	Physical Risk	Transition Risk
Business Operations: BALCO				
Maintenance of soil quality	H	L	The facility relies heavily on the biomatter produced by grasses and specific nitrogen-fixing plants like Karanj for maintaining soil quality in the thin soils of tailing dams. This biomass is crucial for generating mulch and humus, which help enhance soil fertility and structure. Any disruption in the growth or availability of these plants can impact the quality and sustainability of soil management practices, potentially affecting erosion control and soil stability. **Acute Risk:** Nil **Chronic Risk:** Over-reliance on specific plant species without diversification could result in decreased soil fertility if these species face prolonged environmental stress or degradation.	**Policy Risk:** Environmental or agricultural policy changes affecting the planting, management, or use of specific biomatter sources could pose challenges to maintaining soil quality. The facility might need to adopt new practices or comply with regulations to uphold soil health. **Reputational Risk:** Visibility of effective soil management can enhance the facility's reputation for environmental stewardship.
Business Operations: Jamkhani Coal Mine				
Freshwater	H	M–	The facility primarily relies on groundwater for drinking purposes, supplemented by seepage and rainwater for secondary uses. Although groundwater depth is reportedly less than 3 meters. The diversion of a tributary of Bendra Nallah, confined within the mining lease area, suggests physical risk resource alternative. **Acute Risk:** Nil **Chronic Risk**: Bendra Nallah flows through the mine lease boundary, any contamination could quickly threaten the water supply and health of the downstream communities that depend on it.	**Policy Risk**: Potential revisions in water quality regulations or environmental policies governing groundwater usage could impose new compliance requirements. The facility may need to adapt operational practices or invest in additional water treatment solutions in response. **Market Risk**: Nil **Reputational Risk:** Failure to exhibit comprehensive and proactive water management initiatives might impact public perception and community relations.

Dependency – L: Low, M: Medium, H: High,
Impact – L: Low, M+: Medium Positive, M–: Medium Negative, H+: High Positive, H–: High Negative

Indicators	Dependency	Impact	Physical Risk	Transition Risk
Business Operations: Jharsuguda				
Food crops	H	H+	The facility does not utilize crop as raw material in its business operations, However, crop produce is used within facility in canteen and by employees only. Food crops are procured from vendors within 10 Km range for canteen services and hence high dependency is seen. Recognizing its dependencies, Vedanta Aluminium is working closely with farmers under its initiatives such as INM, IPM, and SRM. These initiatives not only improve crop yields but also contribute to improvements in soil health. Considering this, the physical and transition risks are found to be nil.. **Acute Risk**: Nill **Chronic Risk**: Nil	**Policy Risk:** Nil **Market Risk**: Nil

Dependency – L: Low, M: Medium, H: High,
Impact – L: Low, M+: Medium Positive, M–: Medium Negative, H+: High Positive, H–: High Negative

Indicators	Dependency	Impact	Physical Risk	Transition Risk
Business Operations: Jharsuguda				
Freshwater	H	H–	The operations heavy reliance on surface water from the Hirakud reservoir for its substantial daily consumption of 172,000 liters presents a moderate physical risk. While current rejuvenation efforts of wetlands—77 completed in the last three years and 34 moreplanned in coming years. Thus acute risk is found as nil. **Acute Risk:** Nill **Chronic Risk:** In addition to serving Vedanta Aluminium's Jharsuguda operations, the Hirakud Reservoir supplies nearby industries and provides drinking and irrigation water to local communities. Reliance on a single water source may pose long-term operational risks.	**Policy Risk:** Potential changes in water management policies or environmental regulations could impact the facility's access to surface water resources. New rules aimed at conserving water or protecting ecosystems might necessitate investment in alternative water sources **Market Risk**: Increased water pricing or changes in service regulations by water authorities could raise operational costs. **Reputational Risk**: While the facility's engagement in wetland rejuvenation projects is beneficial, failure to maintain momentum or communicate these efforts might lead to negative perceptions regarding its water usage sustainability. Effective CSR engagement in water conservation is crucial to uphold stakeholder trust and community relations.

Dependency – L: Low, M: Medium, H: High,
Impact – L: Low, M+: Medium Positive, M–: Medium Negative, H+: High Positive, H–: High Negative

Indicators	Dependency	Impact	Physical Risk	Transition Risk
Business Operations: Lanjigarh				
Freshwater	M	M+	The facility withdraws water from the Tel River via a radial percolation well located 65 km away at Kesinga, with authorization for up to 61,531 m³ per day. This setup, including intermediate storage near Lanjigarh Road, provides a reliable water source, but physical risks remain if river flow alters or unforeseen disruptions occur at the radial well. Additionally, the facility's efforts in developing 36 water infrastructure projects, with a water storage potential of 70,407 m³. **Acute Risk:** Acute risks are minimal due to the strategic infrastructure in place for water extraction, and storage. However, sudden changes in river conditions or pumping logistics might require prompt reaction to sustain operations temporarily. **Chronic Risk**: Over time, consistent reliance on river water without alternative sources heightens the chronic risk of supply disruptions	**Policy Risk:** Regulatory changes concerning water withdrawal or regional water management policies could impact operational practices, necessitating adjustments to ensure compliance with government guidelines. **Market Risk:** Fluctuations in water access costs or infrastructure maintenance expenses might arise due to changing market conditions or inflationary pressures, affecting budget planning and operational costs. **Reputational Risk:** Successfully maintaining community pond renovations and water recharge initiatives bolsters the facility's commitment to sustainability. However, any perceived shortfall in managing withdrawal impacts can affect community relations and stakeholder trust. Transparent communication and engagement with regional conservation efforts can mitigate these risks.

Dependency - L: Low, M: Medium, H: High,
Impact - L: Low, M+: Medium Positive, M-: Medium Negative, H+: High Positive, H-: High Negative

Indicators	Dependency	Impact	Physical Risk	Transition Risk
Business Operations: VGCB				
Freshwater	M	L	The facility's freshwater consumption is relatively low, averaging 200 kL per month for daily activities such as washrooms and reverse osmosis systems. Substantial volumes (800,0-100,00 kL per month) are sourced externally for dust suppression and firefighting, with continuous supply from the Port Authority. Drainages in Vizag flow towards the port, facilitating collection. Wastewater generated internally is efficiently repurposed for greenbelt development. Physical risks are minimal given the steady supply and multiple contingency sources, including municipal water and tankers. However, reliance on external sources emphasizes the need for robust channel management and monitoring. **Acute Risk:** Immediate risks are negligible due to consistent supply channels and the availability of infrastructure for alternate water sources, ensuring smooth operations even in unforeseen disruptions. **Chronic Risk:** Long-term risks might include shifts in external water supply dynamics or municipal water access affecting reliability.	**Policy Risk:** Changes in local water regulations or usage policies affecting drainage collection or external wastewater supply could necessitate adaptations in operational practices to maintain compliance and sustainability. **Market Risk:** Nil **Reputational Risk:** Nil

Dependency - L: Low, M: Medium, H: High,
Impact - L: Low, M+: Medium Positive, M-: Medium Negative, H+: High Positive, H-: High Negative

Indicators	Dependency	Impact	Physical Risk	Transition Risk
Business Operations VGCB				
Natural Hazard Mitigation	H	L	The facility faces a risk from natural hazards, specifically cyclones, which necessitate operational shutdowns during landfall when wind velocities reach 80-120 km/h. With only 1-2 such incidents occurring in the past three years, the frequency is limited. However, the impact during these events could be significant due to suspended operations and potential damage to infrastructure. Mitigation measures such as anchoring ships and securing major equipment are effective strategies to minimize physical damage and ensure safety during these occurrences. **Acute Risk:** The immediate risk during cyclones is adequately mitigated through established protocols, such as anchoring ships and locking down equipment to prevent damage and enhance safety. These measures effectively reduce the potential impact of temporary operational halts. **Chronic Risk**: Over the long term, the facility faces minimal chronic risk due to the infrequent nature of cyclone events. Continued investment in robust infrastructure and mitigation strategies are essential to sustain resilience against potential increases in cyclone frequency or intensity due to climatic changes.	**Policy Risk:** Changes in regulatory requirements concerning safety or infrastructure resilience could mandate additional measures to ensure compliance during natural hazard events. The facility may need to adapt its existing protocols or invest in enhanced technologies. **Market Risk**: Economic factors, such as insurance premiums or investment in disaster readiness infrastructure, could influence operational costs. Strategic resource allocation can help mitigate financial implications.

Dependency - L: Low, M: Medium, H: High,
Impact - L: Low, M+: Medium Positive, M-: Medium Negative, H+: High Positive, H-: High Negative

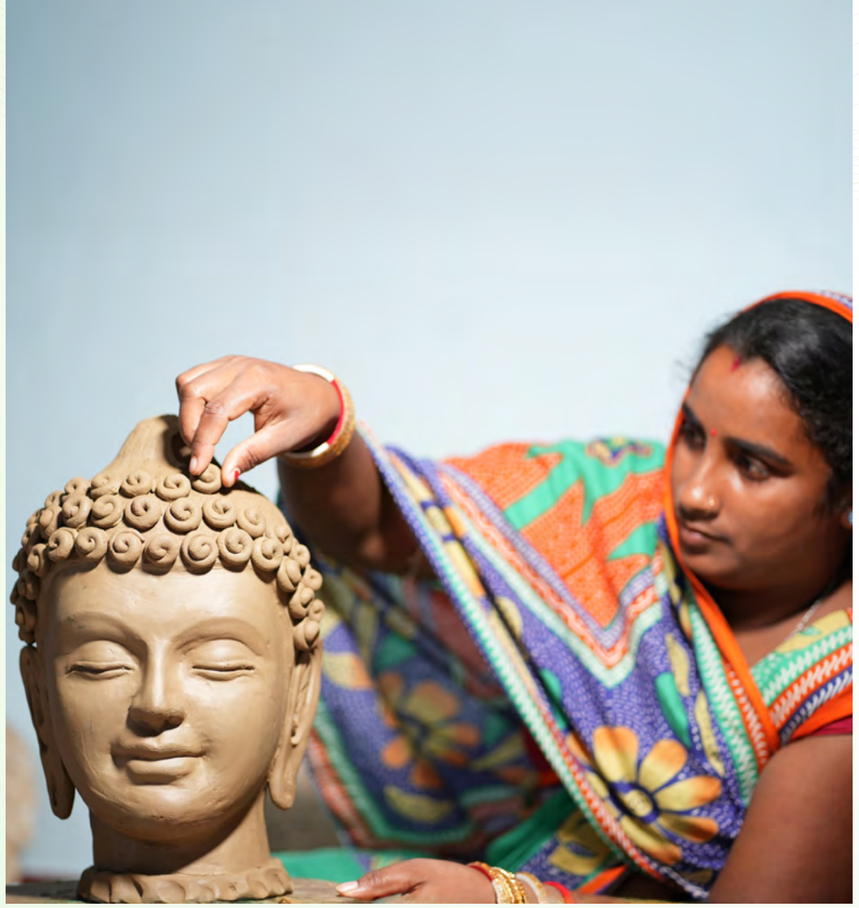


Table 7: Site-specific Opportunities for Sustainability Performance Based on the Ecosystem Services Review

Ecosystem Services	Opportunities – Sustainability Performance
Business Operations: BALCO	
Freshwater	Some of the initiatives like Reuse of treated water at BALCO using ETP is already operational. The treatment and recycling of wastewater is done from two major sources— coal dust mixed water and cooling tower blowdown water. This measure can be explored for scaling up. **Operational Efficiency** a) Water Usage Optimization: Implement advanced monitoring systems to track water usage and identify areas for efficiency improvements. b) Water Recycling and Reuse: Establish systems for recycling and reusing wastewater within operational processes. **Initiatives at Watershed Level** a) Water Bodies Development: Develop and rejuvenate dried water bodies and wetlands, introducing riparian species. b) Groundwater Recharge Initiatives: Support local communities to maintain existing dug wells and use dried wells for recharge. c) **Community Engagement:** Collaborate with local communities to create participatory water management practices.
Maintenance of Air Quality	Utilize real-time air quality monitoring systems to identify and address emission related issues, ensuring compliance and transparency, routine maintenance of Equipements, use of dust suppression system and minimize dust during raw material transport.
Maintenance of Soil Quality	Adopt techniques for managing industrial waste, ensuring safe disposal and recycling to prevent soil contamination from hazardous substances. Regularly assess soil quality around the plant to detect and address contamination early, preventing long-term degradation.
Business Operations: Jamkhani Coal Mine	
Freshwater	Mine facility has rejuvenated 7 ponds of average size-0.344 ha. further opportunities exist to enhance water rejuvenation by focusing on the restoration of wetlands and low-lying areas, which can significantly improve local biodiversity and water retention.

Ecosystem Services	Opportunities – Sustainability Performance
Business Operations: Jharsuguda	
Freshwater	**Operational Efficiency** a) Water Usage Optimization: Implement advanced monitoring systems to track water usage and identify areas for efficiency improvements. b) Water Recycling and Reuse: Establish systems for recycling and reusing wastewater within operational processes. **Initiatives at Watershed Level** a) Water Bodies Development: Develop and rejuvenate dried water bodies and wetlands, introducing riparian species. b) Groundwater Recharge Initiatives: Support local communities to maintain existing dug wells and use dried wells for recharge. c) Community Engagement: Collaborate with local communities to create participatory water management practices.
Business Operations: Lanjigarh	
Crops	a) Expand CSR Initiatives: Broaden corporate social responsibility efforts to include multiple panchayats, ensuring that marginal farmers receive targeted support and resources to improve their agricultural practices. b) Education and Training Programs: Develop and deliver educational workshops and training programs for farmers to improve their understanding of sustainable crop management techniques. These initiatives can increase crop yields and promote environmentally friendly practices. c) Community Support Networks: Establish farmer support networks to facilitate the sharing of knowledge, resources, and best practices. These networks can provide a platform for collaboration and community-driven agricultural innovation.
Maintenance of Air Quality	Utilize real-time air quality monitoring systems to identify and address emission related issues, ensuring compliance and transparency, routine maintenance of Equipment, use of dust suppression system and minimize dust during raw material transport.

Ecosystem Services	Opportunities – Sustainability Performance
Business Operations: Lanjigarh	
Freshwater	**Operational Efficiency** a) Water Usage Optimization: Implement advanced monitoring systems to track water usage and identify areas for efficiency improvements. b) Water Recycling and Reuse: Establish systems for recycling and reusing wastewater within operational processes. **Initiatives at Watershed Level** a) Water Bodies Development: Develop and rejuvenate dried water bodies and wetlands, introducing riparian species. b) Groundwater Recharge Initiatives: Support local communities to maintain existing dug wells and use dried wells for recharge. c) Community Engagement: Collaborate with local communities to create participatory water management practices.
Business Operations: VGCB	
Natural Hazard Mitigation	Enhanced Early Warning Systems: Invest in advanced meteorological tools and systems for real-time monitoring and forecasting to improve preparedness and response times, ensuring timely implementation of mitigation protocols Strengthen existing infrastructure by using cyclone-resistant building materials and designs to withstand high wind speeds, thereby reducing potential damage.

Vedanta Limited's Business Model Resilience to Nature-related Issues

Vedanta Limited's Strategy is deeply rooted in the 'Transforming for Good' initiative. Vedanta aims to create value for its stakeholders, lead a purpose-driven transformation, and be future-ready by investing in a sustainable tomorrow. The three-pillared sustainability strategy focuses on **Transforming Communities, Transforming the Planet, and Transforming the Workplace.** These pillars will aid its efforts to uplift and empower the underprivileged, establish environmentally friendly mining standards, expand the green product portfolio, and create a safe, inclusive, merit-based, and nurturing workplace. Vedanta Group intends to achieve these goals through its nine aims, which are closely aligned with Vedanta Aluminium's business activities.

Vedanta seeks to address stakeholders' material concerns, including climate change and decarbonization, water management, biodiversity, health and safety, diversity, inclusion and equal opportunity, supply chain sustainability, and community development by setting time-focused, pragmatic targets driven by well-defined sustainability key performance indicators. The seamless implementation of this approach is achieved through sound policies and frameworks aligned to globally accepted standards.

Table 8: Transforming Communities, Planet and Workplace

	Transforming Communities	Transforming the Planet	Transforming the Workplace
Aim	Integration in Decision-making Elevate community welfare as a core principle in business decisions.	Net Zero Carbon Achieve Net Zero Carbon by 2050 or sooner.	Workforce Health and Safety Prioritize the health and safety of our workforce.
Strategy	Engage local stakeholders to align business practices with community welfare and sustainable growth.	Invest in renewable energy technologies and reduce carbon emissions across all operations.	Implement robust health protocols and conduct regular safety training.
Aim	Skill Development Empower 2.5 million individuals with enhanced skill sets.	Water Positivity Attain Net Water Positivity by 2030.	Diversity and Inclusion Promote gender parity and inclusivity.
Strategy	Partner with educational institutions and NGOs to implement training programs that enhance employability and entrepreneurship.	Enhance water conservation techniques and recycling initiatives to replenish water resources.	Establish diversity-focused policies and create an inclusive workplace culture.
Aim	Social Welfare Uplift 100 million women and children through targeted interventions.	Innovative Green Practices Integrate sustainable practices into the business model.	Global Governance Standards Align with international corporate governance standards.
Strategy	Invest in social programs focusing on health, education, and economic empowerment for marginalized groups.	Foster innovation by funding R&D for green technologies and adopting sustainable practices.	Regularly review governance practices to ensure transparency and ethical decision-making.

Priority Locations

Vedanta Aluminium conducted a comprehensive biodiversity proximity and sensitivity analysis study which helps in analyzing locations of business operations or sites under consideration by measuring the distance between them and important biodiversity features in the area as its definition suggests, proximity analysis is one way of analyzing locations of features by measuring the distance between them and other features in the area.

The assessment utilized Google Earth Pro, GIS software, and the IBAT to determine the sensitivity of Vedanta Aluminium's direct operations to PAs and KBAs. It also accounted for the presence of species listed on the IUCN Red List of Threatened Species near any identified biodiversity sites. Specifically, each business operation was analyzed within a 10 km buffer zone to assess its potential impact on biodiversity-sensitive areas. The business unit has BMPs for 3 of its business operations in place, namely- Korba (Chhattisgarh), Jharsuguda (Odisha), Lanjigarh (Odisha)

Table 9: Sensitivity of Vedanta Aluminium Business Operations

Business Operations	Protected Areas	Key Biodiversity Areas	IUCN Red List Species*	Areas of Water Stress[1]
BALCO	0	0	14	Safe
Jamkhani Coal Mine	0	0	0	Safe
Jharsuguda	0	1	19	Semi-Critical
Lanjigarh	0	0	12	Safe
VGCB	1	0	0	Safe

* IUCN Red List species are being updated from ongoing biodiversity inventories; the BMP is being revised and may be further updated in the next reporting cycle.

[1] https://www.cgwb.gov.in/cgwbpnm/public/uploads/documents/17357182991031590738file.pdf

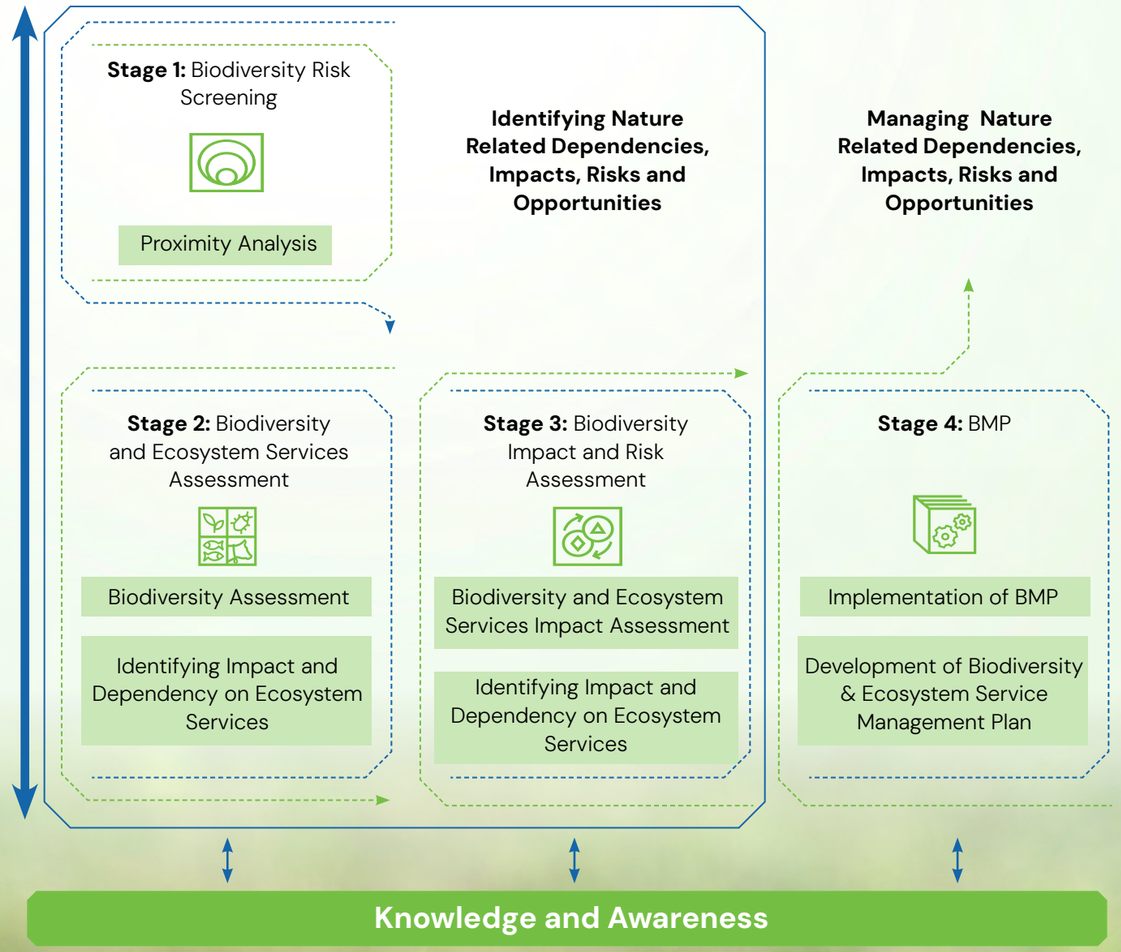
Risk and Impact Management

Managing biodiversity risks is a critical component for Vedanta Aluminum, given that ecosystem degradation and disturbance can significantly impact the natural resource, industry and raise concerns among various stakeholders. In accordance with the Vedanta Group Biodiversity Policy, this commitment spans the Vedanta Aluminium's entire spectrum of operations, including subsidiaries, joint ventures, managed sites, licenses, outsourcing partners, corporate offices, and research facilities. The policy is applicable not only to all employees of Vedanta Limited but also extends to contractor employees, business partners, suppliers, and all entities engaged in business activities with Vedanta.

Understanding the policy requirements Vedanta Aluminum has effectively integrated biodiversity risk and impact management into its broader risk management framework, adopting a holistic approach to identifying and addressing nature-related risks, impacts, dependencies, and opportunities in the areas surrounding their operations.

The key steps involved in Vedanta Aluminium's process for identifying and managing nature-related issues are provided in Figure 4 below.

Figure 3: Vedanta Aluminum's Process for Identifying and Managing Nature-related Dependencies, Impacts, Risk and Opportunities



Processes for Identifying, Assessing, and Prioritizing Nature-related Dependencies, Impacts, Risks, and Opportunities in its Direct Operations.

To effectively identify and address issues at operational sites, Vedanta Aluminum has site-specific BMPs. These dedicated plans are designed to tackle the unique nature-related impacts and risks associated with each site.

Stages involved in risk identification process and its management are provided in Figure 4 and detailed out in below sections.

Biodiversity Risk Screening

Vedanta Aluminum has employed IBAT for each site to map PAs and KBAs. This global database helps identify Critical Habitats by evaluating proximity to biodiversity sensitive areas. Vedanta Aluminium further categorizes sensitivity as Low, Medium, or High based on distance: Low for sites beyond 10 km away, Medium for 5.1 to 10 km, and High for those within 0 to 5 km of key habitats. Additionally, the Species Threat Abatement and Restoration (STAR) tool is used to pinpoint threatened species and prioritize biodiversity sensitive areas.

01

Biodiversity and Ecosystem Services Assessments

Following stage 1, detailed biodiversity and ecosystem services evaluations are conducted at prioritized sites. The biodiversity assessment develops qualitative and quantitative descriptions of local flora and fauna, analyzing trends and driving factors. The Ecosystem Service Assessment identifies key dependencies and impacts related to Vedanta Aluminium's operations, examining the status, trends, and drivers of these services. It also assesses associated risks, opportunities, and strategies to minimize risks and impacts while maximizing ecosystem service benefits.

02

Biodiversity Impact and Risk Identification

Biodiversity impacts are identified and evaluated based on the type and magnitude of industrial operations, focusing on nine key areas: forest and land resources, water resources, groundwater pollution, new structures (e.g., waste dumps), dust and noise pollution, vehicular effects on fauna, threatened and unique biodiversity, labor force impacts, and wildlife corridors. Insights from these assessments feed into a qualitative risk analysis of Vedanta Aluminium's operations. Using the TNFD framework, risks are categorized into physical risks (acute and chronic) and transition risks (policy, market, technology, reputational, and liability).

03

Development of BMP

Stage 4 focuses on determining the necessary level of biodiversity management, informed by previous risk assessments. Using the mitigation hierarchy, specific actions are identified for each impact, with the severity of impacts and associated biodiversity risks guiding the management level required for each site. A BMP is then crafted, prioritizing biodiversity protection, restoration, and enhancement, including key ecosystem components such as air, water, and soil.

04

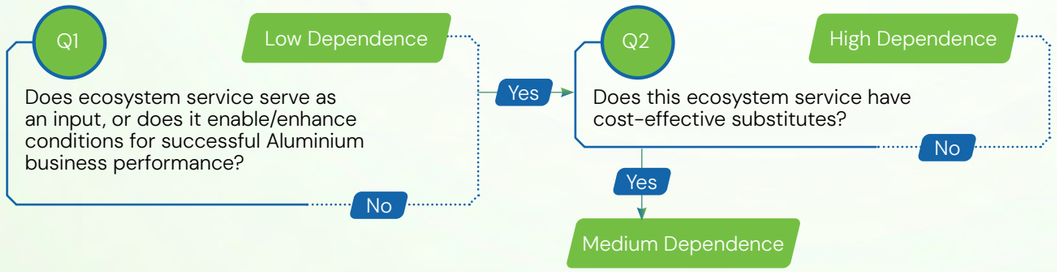
Nature-related Dependencies, Impact, Risk and Opportunity Assessment Process

The ESR under stage 2 of the Vedanta Aluminium's biodiversity risk assessment and management process is specifically focused on identifying Nature-related dependencies, impacts, risk and opportunities. Vedanta Aluminum recognizes the methodology developed by the WRI to carry out corporate ESR. WRI's ESR methodology provides a structured approach to evaluate the Vedanta Aluminium's dependence and impact on more than 21 ecosystem services. This evaluation helps in identifying which of these are priority ecosystem services—the ones most likely to be a source of risk or opportunity for the Aluminium business. The priority ecosystem services are the once which have medium/high dependency or medium/high impact from the Aluminium business.

Evaluating Vedanta Aluminium's dependence: Vedanta Aluminium's dependency on ecosystem services is calculated by answering the following two questions:

Q1. Does this ecosystem service serve as an input, or does it enable/enhance conditions for successful Aluminium business performance?

Q2. If the answer to question 1 is 'Yes', does this ecosystem service have a cost-effective substitute?

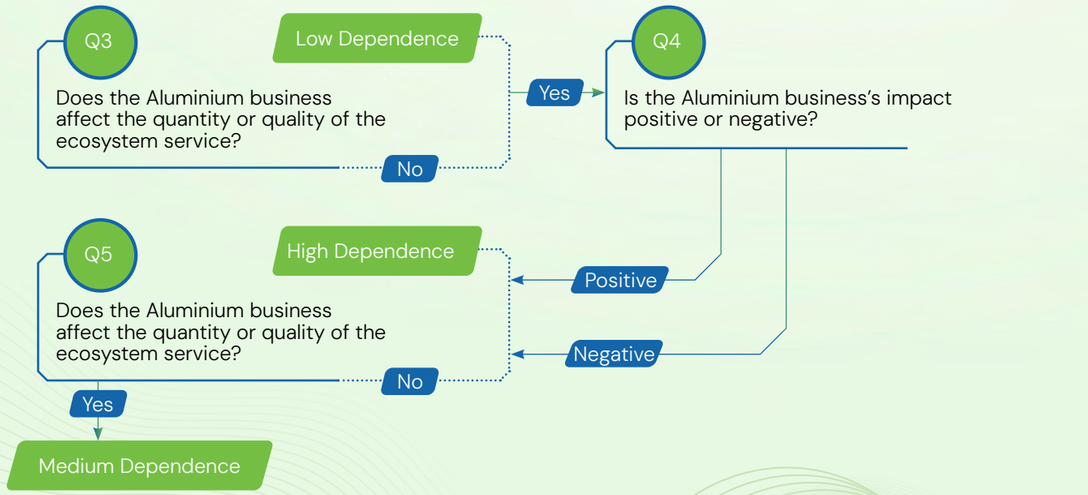


Evaluating Vedanta Aluminium's impact: The Aluminium business dependency on ecosystem services is calculated by answering following three questions:

Q3. Does the Aluminium business affect the quantity or quality of this ecosystem service?

Q4. If the answer is to question 3 is 'Yes', then is the Aluminium business's impact positive or negative?

Q5. If the answer to question 3 is 'Yes', then does the Aluminium business's impact limit or enhance the ability of others to benefit from the ecosystem services?



Identifying Business Unit's Nature-related Risks: The nature-related risks are evaluated based on the potential threats posed to Vedanta Aluminium that arise from its dependencies and impacts on nature. The risks are categorized into physical risks and transition risks. The description is provided below.

Table 10: Physical Risks and Transition Risk Assessment

Category		Description
Physical Risk	**Acute**	Occurrence of short-term, specific events that change the state of nature.
	Chronic Risks	Gradual changes to the state of nature. For example, pollution stemming from pesticide use or climate change.
Transition Risks	**Policy**	Changes in the policy context due to new (or enforcement of existing) policies to create positive impacts on nature or mitigate negative impacts on nature.
	Market	Changing dynamics in overall markets, including changes in consumer preferences, which arise from changing physical, regulatory, technological, and reputational conditions and stakeholder dynamics.
	Technology	Substitution of products or services with a reduced impact on nature and/or reduced dependency on nature.
	Reputational	Changes in perception concerning an organization's actual or perceived nature impacts, including at the local, economic, and societal level. This can result from direct company impacts, industry impacts and/ or impacts of activities upstream and/ or downstream in a value chain.
	Liability	Liability risks arise directly or indirectly from legal claims. As laws, regulations and case law related to an organisation's preparedness for nature action evolves, the incidence or probability of contingent liabilities arising from an organisation may increase.

Identifying Business Unit's Nature-related Opportunities: The nature-related opportunities are identified based on activities that Vedanta Aluminium can undertake to create positive outcomes for nature or mitigation of negative impacts on nature. The opportunities related to improving sustainability performance of the Aluminium business are identified. The description is provided below.

Table 11 : Nature-related Opportunities Assessment

Category		Description
	Sustainable use of natural resources	Substitution of natural resources by recycled regenerative, renewable and /or ethically responsibly sourced organic inputs
Sustainability performance	**Ecosystem protection, restoration, and regeneration**	Activities that support the protection, regeneration or restoration of habitats and ecosystems, including areas both within and outside the organization's direct control

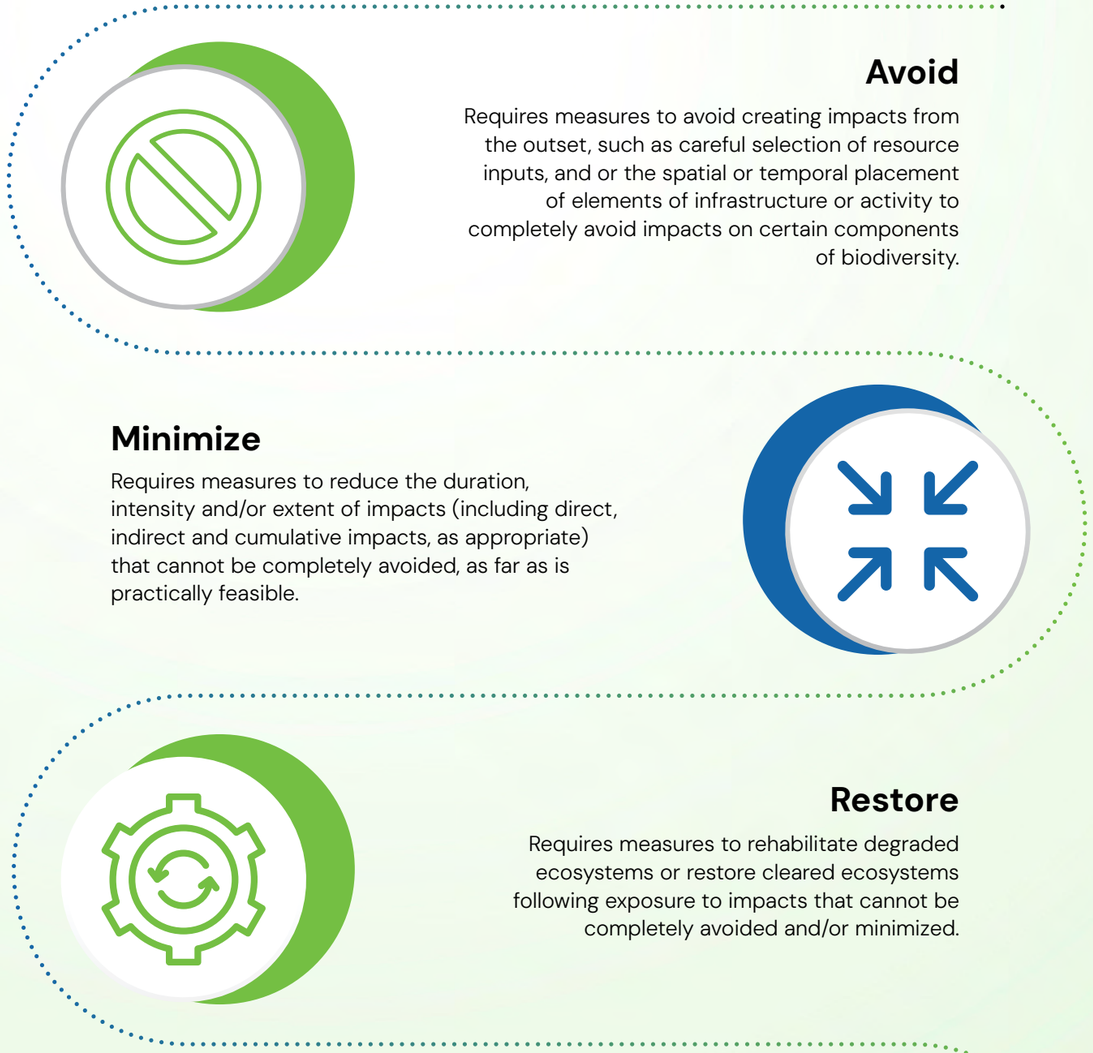
Processes for Identifying, Assessing and Prioritizing Nature-related Dependencies, Impacts, Risks and Opportunities in Upstream and Downstream Value Chain

Vedanta Group's Biodiversity Policy extends its principles and commitments to all suppliers, ensuring that the same rigorous process of identifying, assessing, and prioritizing nature-related dependencies, impacts, risks, and opportunities is applied throughout its supply chain. In future disclosures, Vedanta Aluminium plans to include detailed assessments of both its upstream and downstream value chains.

Processes for Managing Nature-related Dependencies, Impacts, Risks, and Opportunities

Vedanta Aluminum utilizes its BMP to manage and monitor identified risks while uncovering related opportunities. In line with the group's Biodiversity Policy, which is committed to achieving NNL of biodiversity, Vedanta Aluminium has adopted the mitigation hierarchy. This systematic approach begins with avoiding unacceptable biodiversity impacts and aims to minimize and reduce those that cannot be entirely avoided. It further involves restoring affected ecosystems and offsetting residual impacts to ensure biodiversity is either maintained or enhanced.

Figure 4: Vedanta Aluminum's Mitigation Hierarchy



Through this structured framework, Vedanta Aluminum systematically addresses nature-related challenges by implementing a comprehensive strategy for managing dependencies, impacts, risks, and opportunities associated with its operations.

The business unit proactively **avoids** deforestation and habitat destruction, focusing on internationally recognized areas such as World Heritage Sites, IUCN categories (I-VI) PAs, legally designated PAs, and KBAs. To **minimize** the environmental impact of its operations, Vedanta Aluminum emphasizes responsible water management within its resource-intensive sectors. Central to this strategy is the goal to become water positive by 2030, reflecting the Company's commitment to sustainable and efficient water practices. This approach focuses on safeguarding community water resources by optimizing usage, enhancing recycling capabilities, and striving for zero liquid discharge in its facilities.

In its **restoration** efforts, Vedanta Alumnium focuses on ecological sustainability through green belt development and afforestation, transforming 150 hectares of reclaimed ash dykes into vibrant ecosystems. At the Jharsuguda facility, mixed planting patterns enhance soil health and growth, while the Odisha township's "Avian Arena" provides resources for birds. A butterfly park has been developed to support butterfly conservation. An invasive species eradication program at Jharsuguda addresses ecological threats, reflecting Vedanta Aluminium's commitment to enriching local biodiversity. Vedanta Aluminium has also contributed to the restoration of over 77 water bodies across rural India, enhancing water resource sustainability in communities near its operational areas.

Vedanta Aluminum actively works to balance its environmental impact through habitat development and restoration initiatives. This includes partnering with stakeholders for wildlife conservation and habitat restoration. Vedanta Aluminium emphasizes collaboration and stakeholder engagement, actively involving the forest department in targeted management plans to support local flora and fauna. Committed to revitalizing biodiversity and ecosystems under the principles of NNL, Vedanta Aluminium aims to achieve NNL by 2050 or sooner, as guided by its business plan. Initiatives include expanding vegetative cover on barren and degraded lands, developing community lands with medicinal plants, and planting native species, all in consultation with local communities as part of the progressive closure plan.

The BMP crafted for each site is integral to Vedanta Aluminum's strategy for identifying, assessing, and prioritizing nature-related dependencies, impacts, risks, and opportunities. Following its development, the BMP also facilitates effective management of identified nature-related risks, allowing Vedanta Aluminium to implement targeted measures and initiatives for environmental stewardship.

Monitoring and Reporting

Vedanta Aluminum is committed to ensuring that all operations consistently monitor and report on biodiversity management progress. This involves implementing measures from the Biodiversity Commitment Register and evaluating performance through key biodiversity indicators.

Knowledge and Awareness

At Vedanta Aluminum effective risk management is anchored in elevating knowledge and awareness of biodiversity and ecosystem services among operational teams, corporate levels, and stakeholders. Educating employees, contractors, and supply chain partners on biodiversity issues is crucial for management success.

Roles and Responsibilities

Effective biodiversity management is dependent on clearly defined roles, influenced by site-specific biodiversity risks. The operational environmental manager is responsible for managing biodiversity risks, consulting external experts as needed, monitoring and reporting performance, updating Biodiversity Management Plans (BMP), and incorporating biodiversity into operational strategies like risk registers and engagement plans

Integration of Nature-related Risks into overall Risk Management

Nature-related risks at Vedanta Aluminum are integrated into the organization's risk management through a structured governance framework. The business unit leverages its ERM framework to effectively monitor and respond to these risks, integrating them into business processes and performance evaluations. The business unit's risk governance framework enhances the resilience of its operations by assessing both current and emerging risks, ensuring protection across the value chain. The Board of Directors, advised by the ESG Committee, oversees these risks, receiving updates and ensuring alignment with sustainability targets. Supporting committees assess risk exposure and mitigation strategies quarterly. The ESG Management Committee, alongside Nature-related CoP, to identify and manage risks, providing insights and updates to ensure a cohesive and strategic approach.

Nature-related Communities of Practice (3 CoPs)

The nature-related CoPs comprise three groups focused on Biodiversity, Water, and Carbon. These CoPs are led by community members across Business Units and Strategic Business Units (SBUs), driving agendas and implementation within their communities.

Figure 5: Vedanta Aluminum's Nature-related Communities of Practice

All CoPs contribute to risk identification, with the Biodiversity, Water, Waste, and Carbon groups reporting these to the ESG Board Committee via the ESG Management Committee. Mitigating actions are implemented by the Biodiversity, Waste, Water, and Carbon CoPs, ensuring ongoing management and response to identified risks

Metrics and Targets

Vedanta Aluminium has positioned itself as a leader in the quest for sustainable industrial operations. The business unit is dedicated to embedding sustainability at its core, with a particular focus on the key natural realms of Atmosphere, Freshwater, and Land. Through the establishment of ambitious sustainability targets, Vedanta Aluminium is committed to not only minimizing its ecological footprint but also enhancing the natural environments surrounding its activities. These aspirations guide Vedanta Aluminium's efforts across various domains, propelling initiatives that support climate change mitigation, decarbonization, water stewardship, and the circular economy, while simultaneously fostering biodiversity conservation. By setting these targets, Vedanta Aluminium aims to create a sustainable future, ensuring that progress and environmental stewardship go hand in hand.

Table 12: Sustainability Targets for Nature Realms

Nature Realms		
Atmosphere	**Freshwater**	**Land**
GOAL 2025		
Climate Change Endeavour to reduce Scope 1 and Scope 2 emissions GHG intensity (Aluminium Business) by 11% from 2021 baseline **Decarbonization** Increase the share of renewable energy by 7%		
GOAL 2030		
Climate Change Endeavour to reduce Scope 1 and Scope 2 emissions GHG intensity (Aluminium Business) by 28% from 2021 baseline. Endeavour to reduce Scope 3 emissions GHG intensity by 25% from 2022 baseline **Decarbonization** Increase the share of renewable energy by 30%. 2.5 GW of RE RTC in Vedanta Limited's operations by 2030.	**Water Stewardship** Net water positivity by 2030 without exceeding the FY21 water footprint	**Biodiversity Conservation** Update all BMPs by 2030 Restore habitat of 998.5 hectares
GOAL 2050		
Climate Change Achieve Net Zero Carbon by 2050. Achieve 100% Renewable Energy		**Biodiversity Conservation** Achieve a milestone as the first Indian metal and mining Company with validated Science Based Targets, with a goal of reaching NNL of biodiversity by 2050. Strive to achieve No Net deforestation in operating sites by 2050 against the baseline of 2020. **Circular Economy** Zero waste to landfill by 2050

Table 13: Vedanta Aluminum 's Disclosure Data against TNFD Core Global Disclosure Indicators and Metrics

Metric No.	Driver of nature change	Indicator	Metric	TNFD 2025	Connection to GBF Targets
C1.0	Climate change	GHG emissions	Refer to ISSB's IFRS-S2 Climate related Disclosures Standard	**Scope 1:** 41,696,581.82 tCO_2e **Scope 2:** 2,223,936.82 tCO_2e **Scope 3:** 8,717,465.69 tCO_2e	Target 7
	Land/ freshwater/ ocean-use change	Total spatial Footprint (km^2)	Total surface area controlled/ managed by the Company, where the Company has control (km^2)	Leased Area BALCO - 10.9991 Jharsuguda - 11.7397 Lanjigarh - 8.333 Jamkhani - 8.47 VGCB - 0.0728	(A.2 Extent of natural ecosystems), Target 2, Target 5, Target 11 (B.1 Services provided by ecosystems)
C1.1		Extent of land/ freshwater/ ocean-use change	Extent of land/ freshwater/ ocean ecosystem use change (km^2) by:		
			A. Type of ecosystem (When disclosing ecosystem types, refer to the IUCN Global Ecosystem Typology 2.0 https://portals.iucn.org/library/sites/library/files/documents/2020-037-En.pdf)	Terrestrial ecosystem	Target 1 (A.2 Extent of natural ecosystems), Target 2, Target 5, Target 11 (B.1 Services provided by ecosystems)
			B. Type of business activity.	Smelter/Refinery/Power Plant/Mine	
			Extent of land/ freshwater/ocean ecosystem conserved or restored (km^2), split into:		

Metric No.	Driver of nature change	Indicator	Metric	TNFD 2025	Connection to GBF Targets
C2.1	Pollution/ pollution removal	Wastewater discharged	Volume of water discharged (m^3), split into: A. Total B. Freshwater C. Other (Freshwater: (≤1,000 mg/L Total Dissolved Solids). Other: (>1,000 mg/L Total Dissolved Solids). Reference: GRI (FY18) GRI 303-4 Water discharge) D. Concentrations of key pollutants in the wastewater discharged, (by type of pollutant, referring to sector-specific guidance for types of pollutants)	ZLD	Target 7 (7.1 Index of coastal eutrophication potential), Target 11 (B.1 Services provided by ecosystems)
			Temperature of water discharged (where relevant)		
C2.2	Pollution/ pollution removal	Waste generation and disposal	Weight of hazardous and non-hazardous waste generated by type (tonnes), referring to sector-specific guidance for types of waste.		Target 7, Target 11 (B.1 Services provided by ecosystems)
			A. Hazardous Waste	387,958.61 MT	
			B. Non-Hazardous Waste	15,220,874.34 MT	
			Weight of hazardous and non-hazardous waste (tonnes) disposed of, split into:		
			A. Waste incinerated (with and without energy recovery).	113.46 MT	
			B. Waste sent to landfill;	22,724.31 MT	
			C. Other disposal methods	1.00 MT	

Metric No.	Driver of nature change	Indicator	Metric	TNFD 2025	Connection to GBF Targets
			Weight of hazardous and non-hazardous waste (tonnes) diverted from landfill, split into waste:		
			A. Recycled/Reused	14,599,794.29 MT	
			B. Other recovery operations	0	
C2.4	Pollution/ pollution removal	Non-GHG air pollutants	Non-GHG air pollutants (tonnes) by type:		Target 7, Target 11 (B.1 Services provided by ecosystems)
			A. Particulate matter (PM2.5 and/or PM10);	9,600.08 MT	
			B. Nitrogen oxides (NO_2, NO and NO_3);	87,811.00 MT	
			C. Volatile organic compounds (VOC or NMVOC);	2.58 MT	
			D. Sulphur oxides (SO_2, SO, SO_3, SO_X); and	304,115.08 MT	
			HAP	168.98 MT	
C3.0	Resource use/ replenishment	Water withdrawal and consumption from areas of water scarcity	Water withdrawal and consumption (m^3) from areas of water scarcity, including identification of water source:	39.38 Million m^3	Target 11 (B.1 Services provided by ecosystems)
			A. Surface Water	39.38 Million m^3	
			B. Ground Water	0	
			C. Rainwater	0	
			D. Mine Intersection/ Produced Water	0	
			E. Third Party Water (Water Supply including treated water)	0	
			Sea Water	0	
C3.1	Resource use/ replenishment	Quantity of high-risk Natural commodities sourced from land/ocean/ freshwater	Quantity of high-risk natural commodities (tonnes) sourced from land/ocean/ freshwater, split into types, including proportion of total natural commodities.	Coal and Alumina	Target 5 (5.1 Proportion of fish stocks within biologically sustainable levels), Target 9, Target 11 (B.1 Services provided by ecosystems)

Way **Forward**

Vedanta Aluminium remains committed to embedding biodiversity conservation within its operational framework and business processes. With the release of its inaugural TNFD Report, Vedanta Aluminium has begun transparent disclosure of nature-related dependencies, impacts, risks, and opportunities.

Looking ahead, Vedanta Aluminium is poised to enhance its nature conservation efforts by integrating risk management strategies into site-level operations. This will strengthen Vedanta Aluminium's focus on biodiversity and ecosystem conservation, demonstrating a robust commitment to sustainable practices. Key initiatives planned include:

A. **Operation Wise Biodiversity Management Plans:** Vedanta Aluminium is actively developing new and updating existing site-specific BMPs for all operational sites. These plans will provide detailed guidance for managing impacts and risks and for identifying opportunities to enhance biodiversity. They will also set out a NNL strategy based on the mitigation hierarchy (avoid, minimize, rehabilitate/restore, and offset). Finalized reports are expected by next year and will be disclosed in subsequent TNFD Reports.

B. **Water Positivity Roadmap:** Vedanta Aluminium is aligned with Vedanta Group's target to to become water-positive by 2030. An ongoing study is developing a roadmap for actions at both the operational and watershed levels. The study will help Vedanta Aluminium manage water-related dependencies and impacts, reduce physical and transition risks, and set out baselines, targets, and interventions. Progress and milestones from the study will be reported in subsequent TNFD-aligned disclosures. sustainable and efficient water use.

C. **Habitat Development Plan for Jharsuguda:** Vedanta Aluminium's Jharsuguda site has developed a site-specific habitat development plan. The plan focuses on improving the existing green belt area and developing rehabilitation sites using native floral species. Currently, the study has started, and the progress of this study is planned to be reported in the next TNFD Report.

D. **Scenario Analysis:** Vedanta Aluminium plans to conduct a scenario analysis of its key activities in the next TNFD Report.

Through these initiatives, Vedanta Aluminium aims to significantly accelerate efforts to protect, conserve, and enhance biodiversity and natural ecosystems in its business operations, contributing meaningfully to environmental sustainability.

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REGISTERED OFFICE: Vedanta Limited, 1st Floor, 'C' wing, Unit 103,
Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai – 400093
Maharashtra, India T +91 22 6643 4500 | F +91 22 6643 4530
CIN : L13209MH1965PLC291394
www.vedantalimited.com