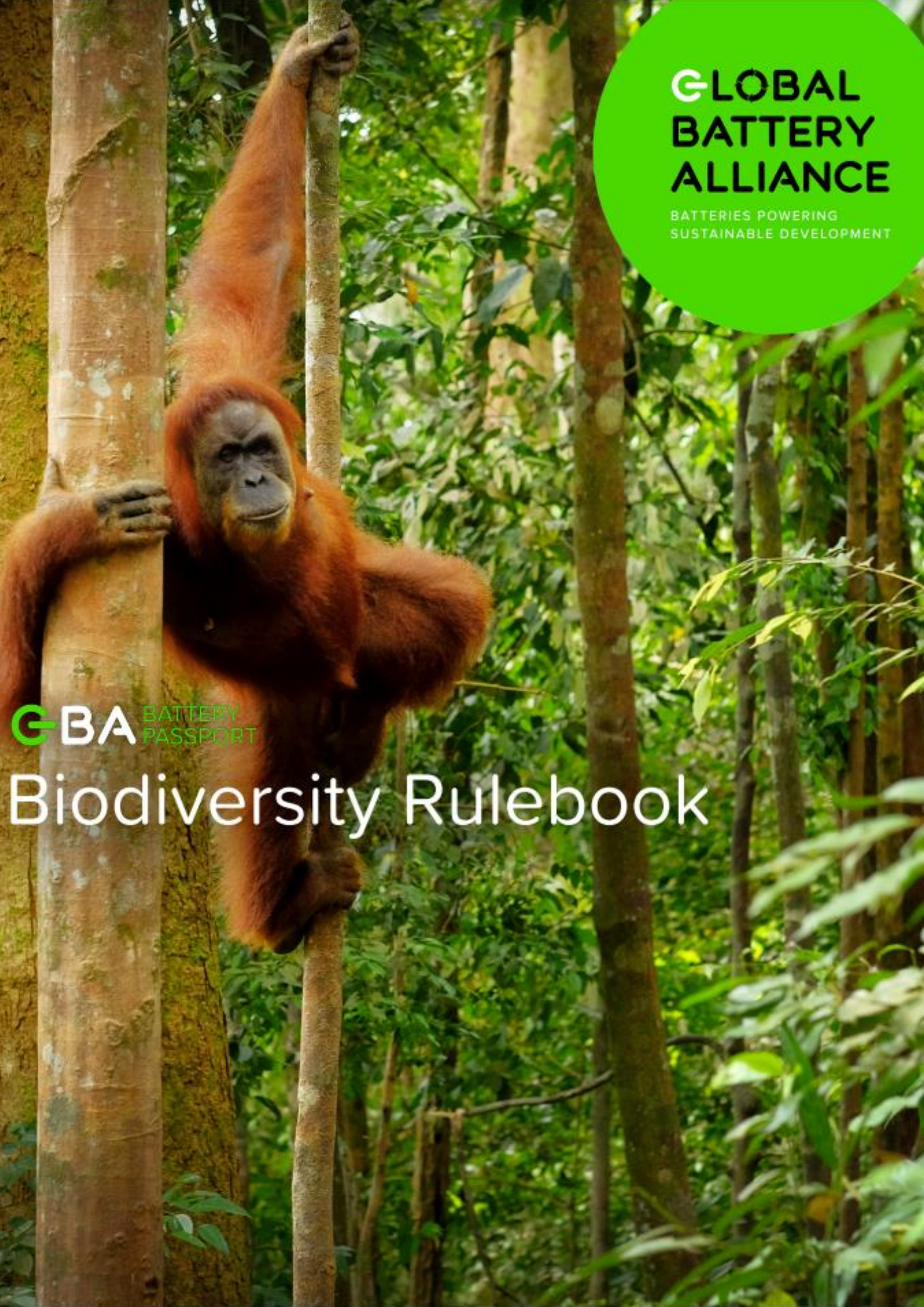

GLOBAL BATTERY ALLIANCE

BATTERIES POWERING SUSTAINABLE DEVELOPMENT

GBA BATTERY PASSPORT

Biodiversity Rulebook

ABOUT THIS INTERIM DRAFT FOR BATTERY PASSPORT PILOTS

The GBA battery passport rulebooks and corresponding data collection templates are interim versions released in June 2024 by the Global Battery Alliance. This version has been developed by the GBA's multistakeholder Environment, Social & Governance working groups for the purpose of Battery Passport piloting, whilst recognising that there remain selected substantive and editorial comments to be resolved together with feedback collected from the pilots. The Battery Passport pilots aim to test reporting against the performance indicators, as well as elements of data verification, aggregation and calculation of the GBA's ESG score for batteries. Following the piloting, the GBA will be hosting a structured public consultation phase on the indicator framework. Based on the feedback from the pilots and that gathered from thematic experts and other stakeholders, the rulebooks and data collection templates will be finalised and re-published in 2025.

Please find more information about the GBA's Battery Passport and the pilots here. If you would like to take part in the evolution of the GBA Battery Passport and future rulebooks across salient ESG issues, please join the GBA or contact us secretariat@globalbattery.org.

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GBA member organisations and external partners actively participated in the elaboration of the performance expectations in this rulebook.

1 Introduction

1.1 GBA overview

The Global Battery Alliance (GBA) is a public-private collaboration platform founded in 2017 at the World Economic Forum to help establish a sustainable battery value chain by 2030.

The GBA brings together over 160 leading international organizations, NGOs, industry actors, academic institutions, and multiple governments to align collectively in a pre-competitive approach and to drive systemic change along the entire value chain. Action Partnerships provide a collaborative platform for members to pool their expertise to achieve the shared goals of circularity, environmental protection, and sustainable development. Members of the Alliance collaborate to achieve the goals set out in the GBA 2030 Vision and agree to the GBA's Ten Guiding Principles. The GBA's multi-stakeholder governance structure aims to ensure inclusivity in decision-making and strategic focus.

1.2 The GBA vision

The GBA aims for batteries to be catalysts of sustainable development, striving for a circular battery value chain to meet the Paris Agreement goals, fostering a low-carbon economy to generate economic growth and employment, and upholding human rights in line with the UN Sustainable Development Goals.

The GBA's mission is to set trusted criteria and benchmarks for battery sustainability, mobilize collective action to improve the battery value chain's ESG footprint, and to communicate with one voice and strong media visibility to enhance the industry's public profile and accountability.

1.3 The GBA Battery Passport

Based on this foundation, the GBA envisions to accelerate the scaling of sustainable, responsible, and circular battery value chains by

- Establishing a global battery passport ecosystem, including harmonized sustainability performance expectations for batteries
- Making company efforts measurable, trusted and comparable
- Tracking and rewarding improvement actions across the value chain with a comprehensive ESG score for consumers

The GBA conceptualized the Battery Passport as a framework to increase transparency across the battery value chain. It establishes a digital twin of the physical battery that conveys information about all applicable sustainability and lifecycle requirements based on a comprehensive definition of a sustainable battery. In scope are EV batteries at initial stage; the Battery Passport is chemistry-agnostic and encompasses all major types of EV batteries present on the market.

The GBA's Battery Passport is unique as it is a key instrument is data-based, standardized, comparable, and auditable. Its ultimate goal is to provide end-users with a quality seal based on the battery's sustainability performance, according to reporting rules agreed upon by stakeholders from industry, academia, non-governmental organisations (NGOs) and government.

With the Battery Passport and the underlying rulebooks, the GBA aims to define a comprehensive set of sustainability indicators to create global and credible performance expectations with other relevant global players in the battery value chain. GBA multi-stakeholder working groups play an essential role in raising and validating the key sustainability performance expectations captured in the indicator framework.

The Battery Passport will both certify compliance with sustainability and societal expectations and clearly differentiate more valuable batteries in the market based on their sourcing impact and performance.

To implement the vision of the Battery Passport, the GBA collaborates with several key external stakeholders: standard setters, regulators/ policy makers, track & trace/ data verifying agencies, other initiatives with similar targets, corporate organisations, the financial community, non-corporate and public organisations, and end-users of vehicles/ batteries.

1.4 About the rulebooks

The objective of the rulebooks is to set globally harmonized rules that define which indicators and requirements are to be tracked within the battery passport which feeds into the sustainability score of the GBA Battery Passport. The rulebooks aim to provide a sound set of performance expectations for batteries and are intended to be applicable to all types of battery value chain members, regardless of where they operate or do business.

Development of the rulebook has taken place in the GBA's multistakeholder Working Groups, which were set up to define what stakeholders expect from sustainable performance and overseen by the Steering Committee which sets the high-level principles upon which the ESG issues of the GBA Battery Passport are to be developed. The rulebooks were created through a robust, intensive collaborative process based on drafts building on regulatory requirements and international standards. In online Working Group sessions, GBA members reviewed the content of this rulebook, debated key performance expectations, and agreed upon commonly acceptable positions. *Member organisations can choose not to agree on elements of the final rulebook in case consensus cannot be found. External stakeholders and groups representing affected people are consulted and their feedback on the requirements collected and included according to the working group's decision.*

2 Issue definition

The GBA and all member organizations maintain the belief that EV batteries, and consequently, the transformation of mobility design, can contribute to addressing the biodiversity crisis, granted that it is executed correctly. Achieving this requires that we first need to identify and proactively address the potential adverse effects that the buildout itself has on wildlife, habitats, and ecosystems. We are aware that our business activities have an impact on nature and entire ecosystems as well as individual habitats and the groups of species and organisms that exist within them. Therefore, we aim to consciously conduct our activities with the utmost effort to minimize our impact on nature.

2.1 Biodiversity loss

We acknowledge that there are numerous drivers of biodiversity loss, to which we are directly, or indirectly contacted due to business models. Therefore, our goal with this rulebook is to establish clear targets with specific, transparent, and recognised metrics based on international regulation and standards. We encourage our member organization to set individual targets fitting to the business model and ambition level under the condition of the Science Based Targets Network's (SBTN) and thrive to become adopters of the Taskforce on Nature-related Financial Disclosures (TNFD), contributing to the development of a standardised methodology for assessing corporate-level impacts on nature.

The members of the GBA agreed, that biological diversity means the variability among living organisms from all sources, including terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are a part[1]; this includes diversity within species, between species, and of ecosystems. Biodiversity, therefore, includes *inter alia* components of diversity from ecosystems and species. The composition of a battery has implications for a wide range of natural realms, spanning raw material extraction, processing, transportation, and recycling. The foremost objective is to minimize constraints on biodiversity and instead capitalize on its potential for people and planet.

In the context of biodiversity loss, several further aspects and areas are crucial to consider:

Species: Species are living organisms that can interbreed and produce fertile offspring under natural conditions, sharing a common gene pool and distinct characteristics, including plants, animals, fungi, algae, and genetic resources.[2]

Habitat: Habitat means the place or type of site where an organism or population naturally occurs. The cohabitation of species in their habitats forms an ecosystem.

Ecosystem: Ecosystem is defined as a dynamic complex of plant, animal and microorganism communities and the non-living environment, interacting as a functional unit.[3]

Loss of Biodiversity: Loss of biodiversity refers to the reduction of any aspect of biological diversity in a particular area. It can refer to many scales from misfunction of habitats to global extinctions from populations, resulting in decreased total diversity at the same scale.[4]

In dissecting an organization's engagement with biodiversity loss, we discern four pivotal dimensions: Physical risk, transitional risk, reputation risks, and nature-based opportunities. These aspects delve into the intricacies of how a company's operations impact the environment, highlighting potential hazards such as habitat destruction or species endangerment, while also illuminating avenues for sustainable innovation and positive societal impact. Embracing these dimensions fosters a holistic approach, aligning business strategies with the imperative of safeguarding biodiversity and harnessing its inherent potential for the greater good.

Physical risk: Operational disruption and rising costs due to reduced resource availability undermining markets and support structures.

Transitional risk: Incoming regulations and reporting frameworks will require new data, systems, processes, and responsibilities and increase stakeholder scrutiny.

Reputation risk: The costs arising from how stakeholders judge environmental impact from pollution, land use change, over-exploitation – changing demand for goods and services

Nature-based opportunities: New markets and brand differentiation as consumers, business customers and regulators demand sustainable products and services.

[1] Art. 2 Convention on Biological Diversity (CBD)
[2] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive)
[3] https://encorenature.org/en/assets/2
[4] https://www.ipbes.net/glossary-tag/biodiversity-loss

Mitigation Hierarchy

Whenever the guiding limit of the rulebook is reached the mitigation hierarchy should apply as highest principle for decision making and actions. This principle should be used during appropriate stages of project planning and execution on the own business area, but also in other spheres of influence from the own organization. The hierarchy of mitigation serves as a blueprint for addressing risks and potential consequences associated with biodiversity and ecosystem services[5]. It is applied during the planning and execution phases of development initiatives to offer a systematic and efficient strategy for safeguarding biodiversity, preserving vital ecosystem services, and managing natural resources sustainably. This tool aids in making informed decisions that strike a balance between conservation imperatives and development objectives. The mitigation hierarchy is defined as following[6]:

1. **Avoidance:** Avoidance, according to the CSBI, entails taking measures to prevent negative impacts on biodiversity before any actions or decisions are made. It is the primary and crucial step in the mitigation hierarchy, offering numerous benefits. The principle emphasizes early consideration during project planning to allow for adjustments to project site and infrastructure location while they are still feasible.

2. **Minimization:** The CSBI defines minimization as measures aimed at reducing the duration, intensity, significance, and/or extent of impacts that cannot be completely avoided, to the extent practically feasible. It emphasizes that risk and impact minimization are crucial in industrial environmental mitigation and management. When avoidance is not feasible and preferred alternatives are chosen, minimization becomes pertinent. These measures are tailored to the project's biodiversity and ecosystem services values, infrastructure, and activities, and can be implemented throughout the project lifecycle. Minimization and avoidance are closely intertwined, with categorization depending on specific circumstances and scale.

3. **Restoration:** In the mitigation hierarchy, restoration involves repairing degradation or damage to specific biodiversity features and ecosystem services affected by project impacts that couldn't be entirely avoided or minimized. Restoration begins post-impact, but early research, planning, and ongoing management are recommended. On-site works aim to re-establish priority aspects of ecosystem structure, function, or species composition. Restoration goals may target the pre-impact site baseline, a reference site within the impacted ecosystem, or an ecosystem with different characteristics from pre-impact conditions.

4. **Offsets:** The CSBI defines offsets as measurable conservation outcomes resulting from actions applied to unaffected areas, compensating for significant adverse impacts of a project that couldn't be avoided, minimized, or restored. Offset goals often target No Net Loss (NNL) or net gain, meeting regulatory or policy requirements. However, offsets may not always fully compensate for impacts or follow an NNL framework, reflecting social, political, and regulatory expectations. Conservation interventions for offsets usually occur in areas away from the project site where affected biodiversity and ecosystem services features are present.

[5] www.biodiversitya-z.org/content/biodiversity.pdf
[6] Cross Sector Biodiversity Initiative: A cross-sector guide for implementing the Mitigation Hierarchy

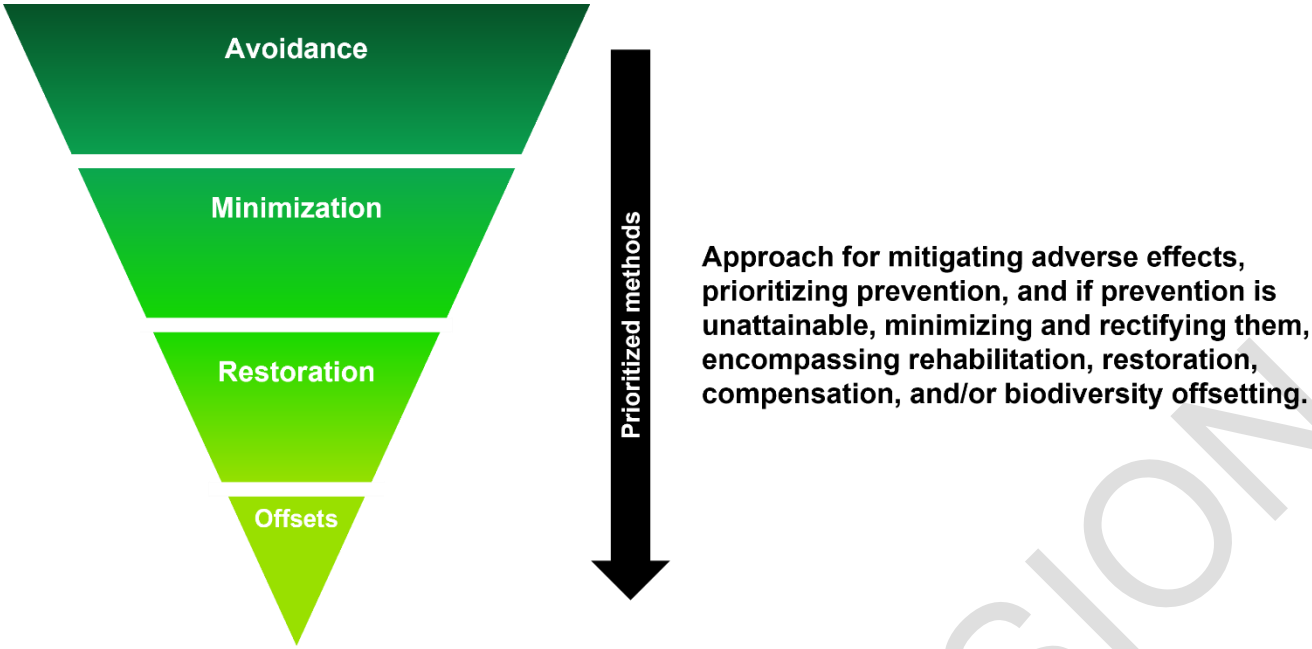

Figure 1: Biodiversity mitigation hierarchy

Precautionary Principle

In addition to the mitigation hierarchy the precautionary principle[7] is a fundamental concept in environmental law that emphasizes the need for preventive action in the face of potential harm to the environment or human health, even in the absence of scientific certainty. It is particularly relevant in the context of biodiversity and nature protection, as these areas are highly sensitive and require special attention to especially avoid irreversible damage.

In the case of the Global Battery Alliance, the precautionary principle should be applied to ensure that projects and initiatives undertaken by the alliance do not harm nature. This means that if there is uncertainty regarding the potential negative impacts on biodiversity or ecosystems, it is essential to err on the side of caution and refrain from proceeding until further scientific evidence or assessments are conducted. The application of the precautionary principle is in line with the Convention on Biological Diversity (CBD). The CBD recognizes the intrinsic value of biodiversity and the need to conserve it for present and future generations. It also emphasizes the importance of taking precautionary measures to prevent the loss of biodiversity.

Tools

It's crucial to recognize that there are supporting tools available for the practices and approaches mentioned above. These tools facilitate the application of avoidance, minimization, restoration, and offsets in environmental management strategies. While we'll delve into specific tools in later sections of the rulebook, it's worth noting a few examples.

In order to ascertain which adverse effects carry greater significance and pinpoint the operational sites where these impacts manifest, the organization can employ the following approaches:

- *Natural Capital Finance Alliance's ENCORE* (Exploring Natural Capital Opportunities, Risks and Exposure) with global data to assess impacts on species and ecosystems, such as *STAR* (Species Threat Abatement and Restoration Metric) or the Ecosystem Integrity Index.
- Guidance from the *Taskforce on Nature-related Financial Disclosures* (TNFD)
- Forthcoming guidance from the *Science Based Targets Network* (SBTN)
- Guidance from *WWF Risk Biodiversity Filter* of *the WWF Risk Filter Suite:* offering support for companies to better understand and manage impacts and risks related to biodiversity (the *Risk Filter Suite* also includes support for water risks)

To identify legally protected areas (designated either as components of the national protected areas system or to fulfil commitments made under regional or international conventions or agreements endorsed by the government), the

[7] Principle 15 of the Rio Declaration on Environment and Development, also: Cartagena protocol on biosafety to the convention on biological diversity (OJ L 201, 31.7.2002, pp. 50-65)

organization can consult the *World Database on Protected Areas*, included in the *Integrated Biodiversity Assessment Tool* (IBAT).

The organization has the option to provide supplementary details regarding species, including population size, which can be gauged by the count of mature individuals or breeding pairs. In cases where population size data is not accessible, reporting habitat size or population trends is advisable. Utilizing *international, regional, and national IUCN Red Lists* serves as a crucial method for assessing species extinction risk, categorizing them as critically endangered, endangered, vulnerable, near threatened, or least concerned.

2.2 Biodiversity loss risks in the battery value chain

The burgeoning demand for batteries across diverse sectors, especially for electric vehicle, underscores the pressing need to confront the looming threat of biodiversity loss within the battery value chain. This escalating demand places immense pressure on ecosystems, as key materials like lithium, cobalt, and nickel are sourced through processes that often encroach upon critical habitats and disrupt delicate ecological balances. As the world grapples with the imperative to transition towards cleaner energy solutions, it is paramount to acknowledge the profound impact of battery production, usage, and disposal on biodiversity. The extraction of raw materials for battery production frequently leads to habitat destruction, deforestation, and pollution, exacerbating the loss of biodiversity and threatening the survival of vulnerable species. Moreover, the disposal of batteries at the end of their lifecycle poses further risks, as improper handling can result in toxic substances leaching into soil and water, further degrading ecosystems and endangering wildlife. [OBJ]

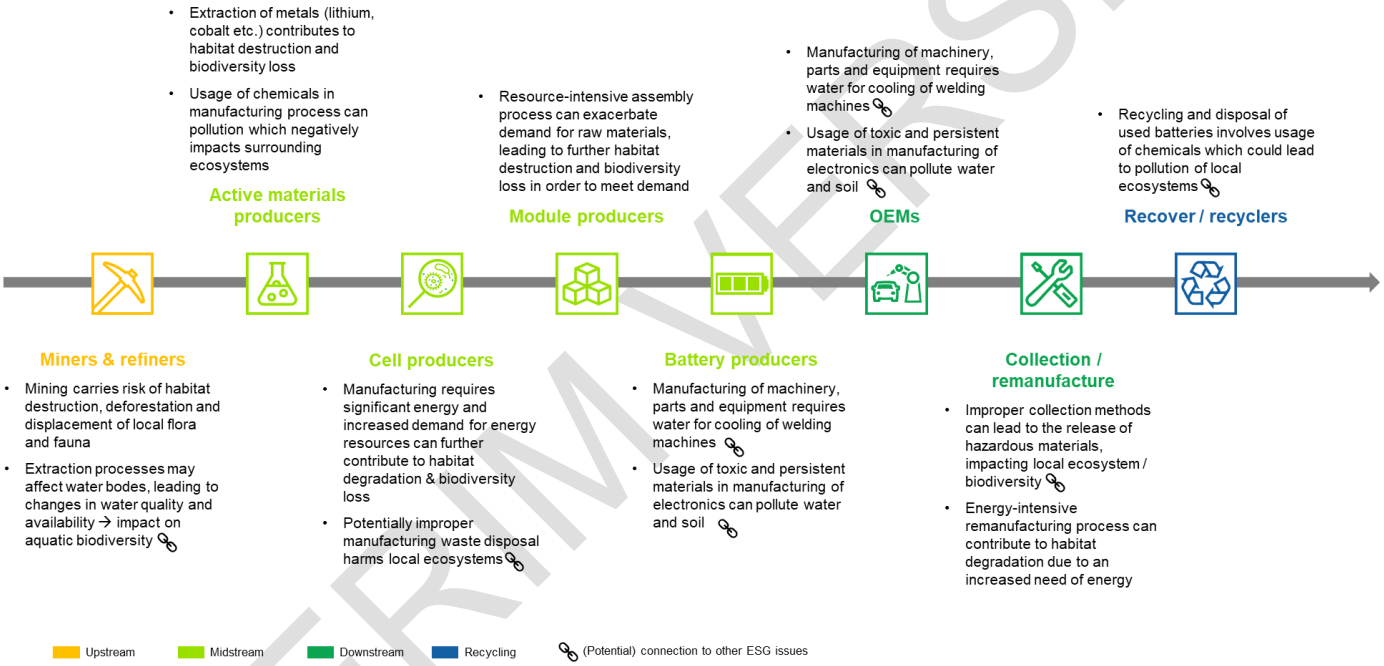

Figure 2: Biodiversity risks along the battery value chain

Upstream

The upstream supply chain, particularly involving miners and refiners, poses significant risks to biodiversity. Energy-intensive activities occur not only in the collection/manufacturing phase but also in mining. The extraction of minerals and ores often requires substantial energy inputs, contributing to greenhouse gas emissions and further exacerbating environmental impacts. Mining activities often entail habitat destruction and deforestation, leading to the displacement of local flora and fauna and the loss of natural habitats crucial for various species' survival. Additionally, extraction processes can contaminate water bodies with pollutants, altering water quality and availability, thus impacting aquatic biodiversity. This disruption to ecosystems and habitats can result in population declines, local extinctions, and overall reduction in biodiversity in affected areas. Therefore, the activities of miners and refiners in the upstream supply chain have far-reaching consequences for biodiversity, necessitating careful consideration and mitigation efforts to minimize their environmental footprint.

Midstream

In the midstream supply chain, spanning from active materials production to battery production, various stages present significant risks to biodiversity. *Active materials producers* play a pivotal role in the extraction of metals like lithium and cobalt, vital components for battery technology. However, this extraction process often involves disruptive practices such as mining, contributing to habitat destruction and biodiversity loss. Furthermore, the usage of chemicals in the

manufacturing process amplifies these risks by polluting surrounding ecosystems, impacting both terrestrial and aquatic biodiversity. *Cell producers*, responsible for assembling battery cells, face challenges related to energy consumption and waste management. Additionally, improper disposal of manufacturing waste, including toxic byproducts, further compounds these risks, posing threats to local ecosystems and wildlife populations. *Module producers*, involved in the assembly of battery modules, contribute to biodiversity loss through the resource-intensive nature of their operations. The assembly process requires significant quantities of raw materials, driving further habitat destruction and putting additional strain on ecosystems to meet production demands. Consequently, biodiversity hotspots and critical habitats are increasingly threatened by the escalating demand for battery modules. *Battery producers*, responsible for the final assembly of batteries, face challenges related to water usage and the disposal of hazardous materials. Manufacturing machinery, parts, and equipment require extensive water usage for cooling purposes, potentially exacerbating water stress in regions already facing scarcity issues. Moreover, the incorporation of toxic and persistent materials in electronics manufacturing poses a significant risk of water and soil pollution, further endangering biodiversity in affected areas. Overall, activities across the midstream supply chain collectively pose substantial risks to biodiversity through habitat destruction, pollution, energy consumption, and resource depletion. Efforts to mitigate these risks are essential, including implementing sustainable practices, investing in cleaner production technologies, and promoting circular economy principles to minimize the environmental impact on ecosystems and biodiversity.

Downstream

In the downstream supply chain, spanning from Original Equipment Manufacturers (OEMs) to collection/remanufacture processes, several factors pose significant risks to biodiversity. *OEMs* are integral to the manufacturing of machinery, parts, and equipment, but their operations necessitate extensive water usage for cooling purposes. Additionally, the incorporation of toxic and persistent materials in electronics manufacturing increases the risk of water and soil pollution, thereby endangering local ecosystems and biodiversity. *During the collection and remanufacturing stages*, improper collection methods can result in the release of hazardous materials, further impacting local ecosystems and biodiversity. Furthermore, the energy-intensive nature of the remanufacturing process contributes to habitat degradation, as the increased demand for energy exacerbates pressure on natural resources and ecosystems. Collectively, these downstream supply chain activities pose significant risks to biodiversity through pollution, habitat degradation, and energy consumption. Mitigation efforts are crucial to minimize these risks and protect ecosystems and biodiversity, including implementing sustainable collection methods, adopting cleaner production technologies, and promoting energy-efficient practices throughout the supply chain.

Recycling

In the recycling supply chain, particularly in the recover/recycler stage, there are significant risks to biodiversity. *Recover/recyclers* play a crucial role in the recycling and disposal of used batteries. However, this process involves the usage of chemicals that can potentially lead to the pollution of local ecosystems. Improper handling or disposal of these chemicals can result in contamination of soil, water, and air, posing serious threats to biodiversity in the surrounding areas. Overall, the recycling supply chain presents risks of biodiversity loss through pollution from chemical usage. It's essential to implement proper waste management practices and environmental regulations to minimize these risks and safeguard ecosystems and biodiversity.

2.3 Biodiversity, cross-cutting due diligence indicators and other ESG issues

The 25 ESG issues addressed by the GBA do not stand on their own. They are interlinked and somehow related under the E, S, G, pillars of the respective framework (Environmental, Social, Governance). While the individual issues can be defined for themselves, they may build on each other, may exacerbate, or improve each other. Issues under the same pillar are usually closer intertwined than with ones from other pillars. Nevertheless, issues from E may also be connected to S, G, or other E issues, and vice versa.

In examining the intricate relationship between biodiversity loss and various ESG issues within the battery value chain for electric vehicles, our focus will lie on those aspects where the correlation is especially high. This targeted exploration will provide a nuanced understanding of how biodiversity loss not only addresses environmental concerns but also makes substantial contributions to social and governance dimensions, thereby fostering sustainable and responsible practices within the electric vehicle industry.

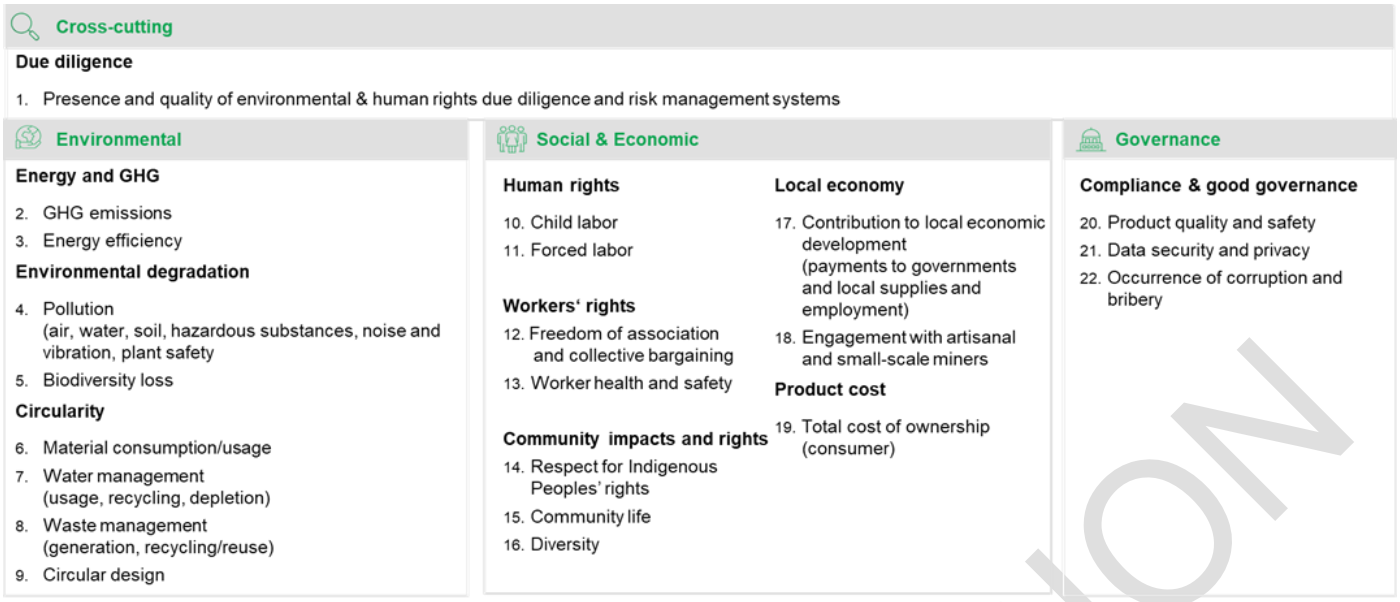

Figure 3: Overview of GBA ESG issue list (as of June 2024)

Pollution[8]

Biodiversity loss is significantly exacerbated by pollution, as it directly impacts ecosystems and species health. Pollutants, such as chemicals, plastics, and oil spills, can contaminate habitats, disrupt food chains, and harm organisms. For example, water pollution from industrial runoff or agricultural chemicals can lead to the destruction of aquatic habitats, resulting in the loss of biodiversity. Additionally, air pollution can negatively affect plant life, which serves as a foundation for many ecosystems.

GHG emissions[9]

Greenhouse gas (GHG) emissions contribute to climate change, which poses a severe threat to biodiversity. Climate change alters temperature and precipitation patterns, disrupts habitats, and increases the frequency and intensity of extreme weather events. These changes can lead to habitat loss, shifts in species distributions, and increased vulnerability to diseases and invasive species, ultimately accelerating biodiversity loss.

Water management[10]

Effective water management is crucial for preserving biodiversity, as freshwater ecosystems support a wide range of species. Poor water management practices, such as over-extraction, pollution, and habitat destruction, can degrade aquatic habitats and threaten species survival. Biodiversity loss in freshwater ecosystems can have cascading effects on terrestrial ecosystems and human communities dependent on these resources.

Waste management[11]

Inadequate waste management contributes to biodiversity loss through habitat degradation and pollution. Improper disposal of waste, including plastics, chemicals, and hazardous materials, can contaminate ecosystems, harm wildlife, and disrupt ecological processes. Landfills and waste incineration facilities can also lead to habitat loss and fragmentation, further exacerbating biodiversity decline.

Contribution to local economic development[12]

While economic development is often dependent on ecosystem services and an intact nature, the introduction of sustainable practices can help mitigate negative impacts in the long-term development. Unsustainable land use practices, such as deforestation, urbanization, and intensive agriculture, can degrade habitats and fragment ecosystems, leading to biodiversity loss. However, incorporating conservation measures, such as protected areas, sustainable agriculture, and eco-tourism, can support local economies while conserving biodiversity.

[8] WWF - Pollution and Biodiversity
[9] IPCC - Climate Change and Land Report
[10] IUCN - Freshwater Biodiversity
[11] UNEP - Waste Management and Biodiversity
[12] CBD - Sustainable Development Goals

Land use conversion[13]

Land use conversion, such as deforestation, urban expansion, and agricultural expansion, is a significant driver of biodiversity loss. Converting natural habitats into human-dominated landscapes can fragment ecosystems, reduce habitat availability, and increase the vulnerability of species to extinction. Additionally, land use change can alter ecosystem functions and services, further threatening biodiversity and human well-being.

[13] IPBES - Global Assessment Report on Biodiversity and Ecosystem Services

3 Biodiversity loss indicators

Defining a comprehensive longlist of indicators for biodiversity loss involves a multifaceted approach that draws from regulatory mapping, widely accepted standards, and insights from subject matter experts in Environmental, Social, and Governance (ESG) matters. The following steps delineate the methodology applied:

1. Analysis of regulatory mapping ("Compliance baseline")

The initial step in constructing our longlist involves a meticulous analysis of indicators identified during the regulatory mapping process. This "Compliance baseline" serves as a foundational layer, emphasizing mandatory (future) indicators that emerge from relevant regulations. This thorough examination ensures that our longlist aligns with existing and anticipated regulatory requirements, establishing a robust compliance foundation for biodiversity loss principles.

2. Analysis of standards

To enrich our longlist, an expansive review of standards is conducted, encompassing widely used and globally accepted reporting standards, standards associated with global value chains, European-specific financial reporting standards, and overarching global guiding principles and standards. This comprehensive analysis ensures the inclusion of indicators that extend beyond regulatory mandates, incorporating globally recognized benchmarks and best practices in biodiversity.

3. Gathering ESG indicators via subject matter experts

The expertise of subject matter experts in Environmental, Social, and Governance (ESG) matters is leveraged to gather a nuanced set of indicators. Through collaborative efforts with these experts, we identify and integrate ESG indicators that are pertinent to biodiversity. This step ensures a holistic perspective, encompassing not only regulatory and standards-based requirements but also insights from practitioners deeply knowledgeable about the environmental, social, and governance dimensions of biodiversity loss.

3.1 Indicator framework and selection

In the down selection process of indicators for our framework, the guiding principle of "Identify it, improve it, prevent it" was adopted to establish a robust foundation in alignment with the objectives of the Global Business Alliance (GBA). This framework serves as a strategic lens through which indicators are assessed for their relevance to biodiversity loss principles. Building upon the "Identify it, improve it, prevent it" foundation, additional selection criteria were systematically applied to distil a core set, resulting in a concise shortlist of indicators. These criteria are designed to ensure that the selected indicators not only align with the GBA objectives but also capture essential aspects of biodiversity, fostering a holistic and impactful measurement framework.

Recognizing the dynamic nature of biodiversity considerations and the evolving landscape of standards, the down selection process undergoes iterative refinement. Regular reviews and updates are integral to the methodology, ensuring that the shortlist remains current and responsive to the latest regulatory developments, standards revisions, and emerging insights from Environmental, Social, and Governance (ESG) subject matter experts.

This iterative refinement process not only ensures that the indicator shortlist remains relevant and effective but also enables agility in adapting to the evolving nuances of biodiversity loss principles. By staying updated with the latest developments and insights, we guarantee that our chosen indicators continue to align with both GBA objectives and the dynamic landscape of biodiversity loss standards, thus keeping us at the forefront of progress.

3.1.1 Indicator selection rationale

In the process of formulating our biodiversity loss rulebook, a meticulous approach has been undertaken to ensure the selection of relevant indicators aligns seamlessly with our objectives. The criteria for choosing indicators encompass a judicious blend of mandatory and optional elements, drawing from various regulations, standards, and expertise. The 4 indicators identified are following a pyramidal approach, starting with general topics and becoming more specific. The TNFD LEAP approach was an inspiration for shortlisting the indicators to the number of four in order to make them universal applicable to the whole battery supply chain.

Mandatory indicators

Mandatory indicators mandated by selected regulations form the foundational components of our biodiversity loss rulebook. These indicators were consistently chosen and, wherever feasible or meaningful, aggregated to maintain a balanced representation. The objective here is to establish a baseline that captures the minimum requirements set forth by regulatory bodies.

Optional indicators from other regulations

Optional indicators, sourced from diverse regulations, were included in our selection process unless they lacked specificity for biodiversity or primarily addressed aspects more pertinent to future rulebooks or the overarching cross-cutting topics. The aim is to ensure that the chosen indicators contribute meaningfully to biodiversity loss principles and enhance the comprehensiveness of our rulebook.

Essential elements of biodiversity loss

In the broader context of biodiversity, indicators from regulations that delineate essential aspects were prioritized. These selections were based on two key considerations:

a) Framework contribution: Indicators that contribute significantly to the overall framework of biodiversity loss.

b) Alignment with guiding principles: Indicators that align with one or more guiding principles established within the scope of our work. This dual criterion ensures that the chosen indicators not only fit the framework but also resonate with the core principles guiding our biodiversity loss rulebook.

Voluntary indicators from standards and expertise

Voluntary indicators, sourced from standards or leveraging expertise, were incorporated when they added meaningful extensions to the elements of biodiversity. Like the selection from regulations, the inclusion of these indicators was contingent on:

a) Framework integration: Ensuring that voluntary indicators seamlessly integrate into the broader framework of biodiversity.

b) Alignment with guiding principles: Verifying that the chosen voluntary indicators align with one or more guiding principles, thereby reinforcing the comprehensive nature of our eco design rulebook.

This meticulous approach ensures that our selection of indicators is not only compliant with regulations but also reflects a nuanced understanding of biodiversity loss principles, creating a robust foundation for the development of our biodiversity loss rulebook.

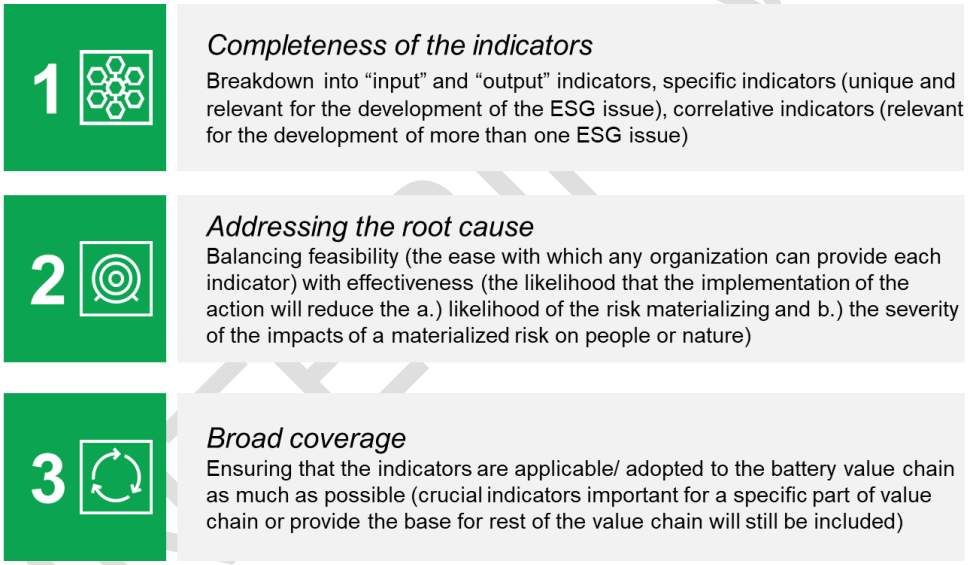

Figure 4: Guiding principles for the indicator selection

3.1.2 Shortlist of biodiversity loss indicators

Following the explained process guided by the principles of the Global Battery Alliance (GBA) objectives and incorporating a strategic framework of "Identify it, improve it, prevent it," our initiative to define biodiversity loss indicators has yielded a concise shortlist. This shortlist encapsulates key aspects that are integral to assessing and enhancing biodiversity practices in alignment with GBA goals. The core set of biodiversity loss indicators, meticulously selected through iterative refinement, is as follows:

	#	Indicator	Description
Location	1	**Biodiversity screening and footprint**	Defined set of methods and approaches on how to assess the organization's interface (status, connection and function of business operations) with biodiversity. → Goal is to identify the location and areas with impact and interaction from a organization on the function of biodiversity at large.
Evaluation & assessment	2	**Risk and dependency on habitats, species & ecosystem service**	"Double materiality" principle of assessing influence from nature on an organization and vis-à-vis correlation for each of the locations identified above. Every impact on habitats or species which leads to incapability to supporting its native function including the influence on evolution and biological diversity or ecological balance of a particular species within its habitat or ecosystem. → Goal is to identify specific global, national and local requirements how habitats and species need to be protected and how influence can be limited to a minimum.
Mitigations & adaptations	3	**Biodiversity loss mitigation: Objectives & targets**	Setting goals for organization in preventing biodiversity loss, combined with a plan how to achieve this goals and mitigate existing process which lead to biodiversity loss. → Goal is to develop priority areas for an own biodiversity strategy, setting science-based targets to limit biodiversity loss and develop accurate metrics for measuring the progress.
	4	**Biodiversity loss adaptation: Influence on biodiversity loss**	Assessment of organization's impact via biodiversity screening to adapt processes in order to eliminate negative effects on biological diversity form own business area. → Goal is to have a positive influence on the supply chain and help companies to adapt based on e.g. TNFD LEAP approach.

Figure 5: Biodiversity loss indicators

3.2 Regulations

At the heart of our efforts lies a conscientious integration of various international regulations and standards, pivotal in advancing sustainable practices across industries. Three key regulations have been meticulously examined to underpin our endeavors, offering indispensable guidance on pertinent elements and requisites for mitigating biodiversity loss. These regulations stand as the linchpin of our approach, fostering a resilient framework in harmony with contemporary sustainability and biodiversity conservation standards.

EU Battery Regulation

The EU Battery Regulation, stemming from the 2019 European Green Deal, is a pivotal element in Europe's growth strategy. Aimed at achieving climate neutrality by 2050, it emphasizes the shift to electromobility and recognizes batteries as key to sustainable development. Anticipating a surge in battery demand, the regulation seeks to establish a harmonized framework covering sustainability, performance, safety, and end-of-life considerations. It replaces Directive 2006/66/EC to ensure legal clarity, prevent trade barriers, and apply uniformly across all battery categories. The regulation applies to batteries, whether integrated into products or sold independently within the Union, fostering a clear and unified approach to address the challenges of the evolving battery market.

In crafting our biodiversity loss rulebook, we draw inspiration from the pivotal aspects outlined in the EU Battery Regulation, adapting them to address the urgent challenges facing global biodiversity. Our rulebook emphasizes proactive measures to identify, assess, and mitigate risks to biodiversity throughout supply chains, while also prioritizing adaptation strategies to address emerging threats. At the heart of our rulebook lies the risk & dependency indicator, mandating economic operators to meticulously evaluate the adverse impacts of their activities on biodiversity. This involves a comprehensive assessment of risk categories, utilizing both publicly available information and insights from stakeholders. Economic operators are tasked with gauging the probability of adverse impacts within their supply chains, integrating risk management into their operational frameworks. The mitigation indicator underscores the responsibility of economic operators to develop robust strategies for preventing, mitigating, and addressing biodiversity loss. These strategies must align with internationally recognized due diligence instruments, enabling economic operators to exert pressure on suppliers to uphold biodiversity conservation measures. Monitoring and reporting mechanisms are crucial components, allowing for the continual evaluation of mitigation efforts and the possibility of suspending engagement with non-compliant suppliers. Moreover, our rulebook prioritizes the adaptation indicator, recognizing the need for agile responses to evolving biodiversity threats. Each economic operator is required to establish a grievance mechanism equipped with early-warning systems and remediation processes. This ensures swift action in addressing biodiversity-related grievances and facilitates adaptive management practices to safeguard biodiversity in the face of changing circumstances. By integrating these core elements into our biodiversity loss rulebook, we lay the groundwork for proactive and holistic approaches to biodiversity conservation. Through stringent risk assessment, robust mitigation strategies, and adaptive management, we aim to foster a culture of sustainability and responsible stewardship of our planet's biodiversity.

European Sustainability Reporting Standard (ESRS) E4 (underlaying part of the CSRD)

This regulation seeks to establish comprehensive Disclosure Requirements within sustainability statements to provide stakeholders with a clear understanding of the impacts of undertakings on biodiversity and ecosystems. Its overarching objective is to foster transparency and accountability in environmental stewardship by ensuring that users of these statements can grasp the full spectrum of an undertaking's influence on natural systems. Firstly, the regulation outlines the necessity for disclosures to elucidate how the undertaking interacts with biodiversity and ecosystems. This encompasses an analysis of both positive and negative impacts, including an assessment of the undertaking's contribution to the drivers of biodiversity loss and degradation. Moreover, it mandates the reporting of actions taken to address these impacts, including measures to prevent or mitigate negative effects and initiatives aimed at protecting and restoring biodiversity and ecosystems. Furthermore, the regulation underscores the importance of alignment with global biodiversity frameworks and relevant directives. It necessitates disclosures regarding the undertaking's plans and capacity to adapt its strategy and business model in accordance with planetary boundaries related to biosphere integrity, as well as the vision outlined in the Kunming-Montreal Global Biodiversity Framework. Additionally, it emphasizes compliance with specific directives such as the EU Biodiversity Strategy for 2030 and relevant legislation pertaining to habitats and marine ecosystems. The regulation extends its purview to encompass the terrestrial, freshwater, and marine realms, emphasizing the interconnectedness of biodiversity and ecosystems with indigenous peoples and affected communities. It underscores the significance of recognizing the variability within and between species, as well as the intricate interrelations within ecosystems. Moreover, the regulation acknowledges the broader environmental context within which biodiversity and ecosystems operate. It identifies climate change, pollution, land-use change, freshwater-use change, direct exploitation of organisms, and invasive alien species as primary drivers of biodiversity and ecosystems change. While certain aspects such as climate change and pollution fall under the purview of other standards, this regulation ensures that disclosures provide a holistic understanding of material impacts and dependencies. In conclusion, this regulation emphasizes the integration of biodiversity and ecosystems considerations into sustainability reporting frameworks. By delineating specific Disclosure Requirements, it aims to enhance transparency, accountability, and informed decision-making concerning the preservation and sustainable management of natural resources.

In drafting the biodiversity loss rulebook, we prioritize transparency, accountability, and effective action in safeguarding biodiversity and ecosystems. Embracing the ESRS E4 (CSRD) guidelines, we underscore the following key elements. To comprehensively assess our material impacts on biodiversity and ecosystems, undertakings must report metrics that capture the essence of their interactions. This includes metrics covering biodiversity-sensitive areas affected by the undertaking's operations, detailing the number and extent of sites within or near protected areas or key biodiversity areas. Undertakings are expected to provide a thorough description of methodologies and metrics utilized, ensuring clarity on their selection, scope, and integration of ecological thresholds. Additionally, undertakings should disclose the frequency of monitoring, sources of data, and alignment with relevant national, EU-level, or intergovernmental guidelines, policies, legislation, or agreements. Undertakings must articulate their process for identifying and assessing material impacts, risks, dependencies, and opportunities related to biodiversity and ecosystems. This encompasses evaluating actual and potential impacts throughout the value chain, including supplier facilities located in risk-prone areas. Undertakings are encouraged to disclose the percentage of procurement spend from such suppliers and the size and scale of dependencies on biodiversity and ecosystems. Moreover, undertakings should consider opportunities for ecosystem protection, restoration, and regeneration, aligning with sustainability performance categories. Undertakings are urged to explain policies enabling them to avoid, reduce, and minimize negative impacts on biodiversity and ecosystems across their operations and value chain. This includes detailing actions taken in accordance with the mitigation hierarchy—avoidance, minimization, restoration/rehabilitation, and compensation or offsets. Disclosure of biodiversity and ecosystems-related actions and allocated resources for implementation is essential for transparency and accountability. Mitigation efforts should be accompanied by measures to adapt to changing conditions and mitigate further biodiversity loss. Undertakings are encouraged to apply the mitigation hierarchy in their actions and disclose how policies address production, sourcing, or consumption from ecosystems managed to maintain or enhance biodiversity conditions. Regular monitoring and reporting of biodiversity status and gains or losses are integral components of these efforts, facilitating informed impact assessment, management planning, and adaptive management. In essence, the biodiversity loss rulebook emphasizes a proactive and holistic approach, guided by robust metrics, risk assessments, mitigation strategies, and adaptation measures. Undertakings are called upon to align their practices with these principles, contributing to the preservation and restoration of biodiversity and ecosystems for present and future generations.

EUDR

The regulation aims to combat deforestation and forest degradation, aligning with the European Green Deal and the Paris Agreement. It seeks to fulfil the EU's commitment to reach climate neutrality by 2050 and reduce greenhouse gas emissions by at least 55% by 2030. It acknowledges global agreements and frameworks, including the UN Strategic Plan for Forests, the Paris Agreement, and the UN Convention on Biological Diversity, emphasizing the importance of international cooperation. Additionally, the regulation complements other measures to address the root causes of

deforestation, such as weak governance and corruption, by encouraging trade in deforestation-free products. It targets commodities with the highest impact on global deforestation, informed by scientific literature and stakeholder consultation.

For the purpose of the biodiversity loss rulebook, we emphasize a thorough approach to address deforestation challenges comprehensively. Economic operators are tasked with assessing the legal framework in the production country, covering land use rights, environmental protection, and indigenous peoples' rights, among others. When risks of non-compliance are identified, operators must implement mitigation measures, such as independent surveys or audits. These decisions are documented, reviewed annually, and transparently reported to competent authorities. Additionally, our framework promotes adaptive management, ensuring that mitigation strategies evolve with changing circumstances. By adopting this approach, we aim to combat deforestation and promote sustainable forest management practices effectively.

EU Taxonomy

This regulation aims to address global environmental challenges in alignment with the 2030 Agenda for Sustainable Development, emphasizing the integration of Sustainable Development Goals (SDGs) into the European Union's policy framework. It seeks to adopt a systemic and forward-looking approach to environmental sustainability, recognizing the interconnectedness of economic, social, and environmental dimensions. The regulation outlines six environmental objectives, including climate change mitigation, adaptation, sustainable water and marine resource management, circular economy transition, pollution prevention, and biodiversity protection and restoration, to guide the evaluation of environmental sustainability in economic activities.

In developing both the circular design and biodiversity loss rulebooks, we draw inspiration from key regulations and guidelines to foster sustainability. The circular design rulebook emphasizes the EU Battery Regulation's focus on durability, recyclability, and repairability. This regulation promotes sustainable battery design, aligning with circular economy goals by encouraging recycling and recovery of raw materials. Similarly, the biodiversity loss rulebook aligns with the EU Taxonomy's emphasis on protecting and restoring biodiversity and ecosystems. It highlights the importance of economic activities contributing substantially to conservation efforts, aiming to achieve favorable conditions for habitats and species. Both rulebooks prioritize proactive measures to mitigate environmental degradation and promote sustainable practices for preserving natural resources and ecosystems.

3.3 Standards

In addition to the key regulations outlined before, our rulebook addressing biodiversity loss is further enriched by the incorporation of a set of highly relevant international standards. These standards play a crucial role in shaping and detailing our indicators for combating biodiversity loss by providing essential elements and requirements.

Two of these standards are the Science Based Targets Network (SBTN) and the Taskforce on Nature-related Financial Disclosures (TNFD), which are fundamental when addressing biodiversity loss through structured and scientifically grounded approaches. The SBTN helps organizations set clear, evidence-based targets to reduce their environmental impact, focusing not just on climate change but also on the preservation of water, land, and biodiversity. This collaborative effort aligns corporate sustainability goals with global ecological needs, ensuring that companies contribute positively to biodiversity conservation. On the other hand, the TNFD provides frameworks for businesses and financial institutions to disclose and manage risks associated with nature loss, promoting transparency and accountability. By assessing and reporting their impacts on nature, companies can mitigate risks, contribute to global biodiversity goals, and drive investments towards more sustainable practices. Together, the SBTN and TNFD offer comprehensive strategies for integrating specific biodiversity considerations into business and financial decision-making, which is critical for reversing biodiversity loss and ensuring a sustainable future for all.

The utilization of these biodiversity specific international standards, in additional to supply chain-relevant and other overarching standards, ensures that our indicators align with global best practices for biodiversity conservation. By taking into consideration the valuable insights offered by these standards, we enhance the comprehensiveness and robustness of our rulebook, positioning it to meet not only regulatory expectations but also international benchmarks for sustainable biodiversity management.

Standards
ASI Chain of Custody
ASI Performance Standard
CCCMC

CRAFT 2.0 Code
Drive Sustainability Self Assessment Questionnaire
EITI
GRI 101
ICMM Mining Principles - Performance Expectations
IFC Performance Standard 1
IFC Performance Standard 6
IRMA Chain of Custody
IRMA draft
IRMA
ISO 31000:2018
OECD DD f. RBC
OECD Handbook on Environmental Due Diligence in Mineral Supply Chains
RBA Code of Conduct and VAP
RMAP ESG
SASB - Metals & Mining
SBTN SCIENCE-BASED TARGETS for NATURE- Initial Guidance for Business
The Copper Mark Chain of Custody
The Copper Mark DD
The Copper Mark RP/ RMI RRA Criteria Guide
TNFD LEAP guidance
TNFD LEAP guidance
TNFD Mining sector guidance
TSM
UNDP Social and Environmental Standards (SES) Standard 1
UNGP

Table 1: International standards with relevance for biodiversity loss indicators

3.4 Indicators and requirements

These levels are:

I. Foundational requirements - drawing on the regulatory compliance baseline
II. Intermediate requirements - drawing on the regulatory compliance baseline and voluntary sustainability standards
III. Leading practice - drawing on the regulatory compliance baseline and voluntary sustainability standards

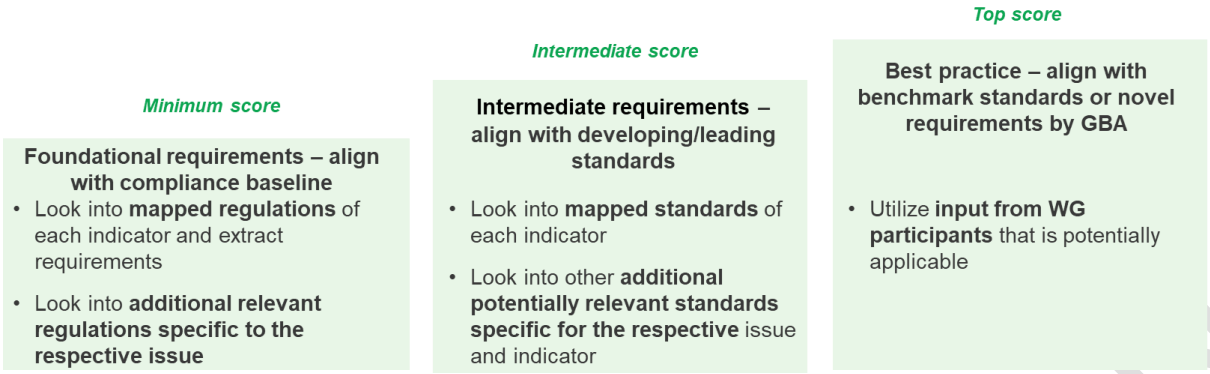

Figure 6: Indicator requirements level

In addition to the initial set of indicators and requirements, it's crucial to emphasize that ongoing updates are essential to align with evolving regulations and interpretations. Regular reviews, guided by the latest guidance from the EU Commission, delegated and implementing acts, and legal guidance and interpretations, ensure the battery passport remains compliant and relevant. This dynamic approach ensures that participating companies stay ahead of regulatory shifts and maintain the highest standards of biodiversity loss and sustainability.

3.4.1 Biodiversity screening and footprint (draft)

Scoring	Proposed consolidated language	Mapped Regulations / Standards[14]
F. Foundational requirement	**0. The company fulfils the foundational requirements of the Presence and Quality of Environmental and Human Rights Due Diligence and Risk Management Systems rulebook, and** 0.1 Ensures that biodiversity loss is included in the scope of its human rights and environmental due diligence process, including impact assessment. *In addition, it includes the following in its due diligence steps:* **1. The company shall identify and document relevant sites which it owns, leases, or manages in or near biodiversity-sensitive areas which are negatively affecting biodiversity areas and map proposed / actual area of influence of operations, including areas that may be or are affected by associated activities. Subsequently the company shall:** 1.1 Report on methodologies and metrics used incl. explanation on selection, assumptions, limitations, uncertainties, and any changes in methodology over time and their reasoning, their scope incl. biodiversity components of the metrics 1.2 Report on geographies covered and explain why any relevant geographies were omitted 1.3 Report on a list of locations (number and area in hectares) where direct assets, operational activities and locations are interfacing with biodiversity-sensitive areas (biomes and ecosystems) 1.4 Report on reliance on data type (primary data, secondary data, modelled data, or data gained by expert judgement)	• CSRD ESRS E4 • TNFD Mining guidance • RMAP ESG • GRI 101 • The Copper Mark DD • IRMA • IRMA draft
I. Intermediate requirements	*In addition to F,* **2. The company shall:** 2.1 List the boundaries of protected areas (international recognition and regional, national, sub-national and local legally protected areas) identified to be located in the vicinity of project/operation 2.2 Gather information on affected or potentially affected ecosystems including (I) ecosystem type and size (hectares) for base year and (II) ecosystem condition for the base year and the current reporting period 2.3 Gather information on areas of modified habitat, natural habitat and critical habitat within the site's proposed or actual area of influence and its location to the site (in/near and the distance of the sites to the habitat) 2.4 These habitats include areas of biodiversity importance, of high ecosystem integrity, of rapid decline in ecosystem integrity, of high physical water risks, and areas important for the delivery of ecosystem service benefits to Indigenous Peoples, local communities, and other stakeholders	• RMAP • GRI 101 • RRA • IRMA • IRMA draft • SASB – Metals & Mining • ASI Performance Standard • TSM

[14] For a detailed reference of referenced parts of the regulations and standards, please check the corresponding standard equivalency mapping

L. Leading practice	*In addition to F and I,* **3. The company shall have a scoping process that:** 3.1 Includes description of values being protected in the identified protected area and habitats 3.2 Results in the identification of whether any protected areas or values, which were designated to the area, could not only be affected by proposed or current activities but have been affected by past activities	• The Copper Mark DD • RMI • IRMA • IRMA draft

References to regulations and standards for Biodiversity screening and footprint (some may still be added as standard equivalency mapping proceeds)

Requirement (draft)	EU Battery Regulation	ESRS E4 (CSRD)	EU Taxonomy	EUDR	TNFD Mining Guidance	UNGP	OECD DD f. RBC	RMAP ESG	GRI 101	The Copper Mark DD	RMI RRA Criteria Guide	IRMA	IRMA draft	Drive Sustainability Self Assessment	ISO 31000:2018	SASB - Metals & Mining	IFC Performance Standard 6	ASI Performance Standard	EITI	ICMM	TSM	RBA Code of Conduct	ASI Chain of Custody	IRMA Chain of Custody	The Copper Mark Chain of Custody	CRAFT 2.0 Code	CCCMC
Foundational requirements																											
1		x						x				x	x														
1.1		x							x																		
1.2		x			x																						
1.3		x								x																	
1.4		x																									
Intermediate requirements																											
2																											
2.1								x			x	x	x			x		x									
2.2									x																		
2.3									x			x	x								x						
2.3.1									x		x					x											
Leading practice requirements																											
3																											
3.1												x	x														
3.2													x														

3.4.2 Risk and dependency on habitats, species & ecosystem service (draft)

Scoring	Proposed consolidated language	Mapped Regulations / Standards[15]
F. Foundational requirement	**0. The company fulfils the foundational requirements of the Presence and Quality of Environmental and Human Rights Due Diligence and Risk Management Systems rulebook, and** 0.1 Ensures that biodiversity loss is included in the scope of its human rights and environmental due diligence process, including risk assessment. *In addition, it includes the following in its due diligence steps:* **1. The company shall assess the materiality of biodiversity and ecosystems in its own operations as well as supply chain and conduct its materiality assessment. Therefore, the company shall describe its process to identify material impacts, risks, dependencies and opportunities. This assessment process shall include:** 1.1 Demonstration of compliance with applicable national laws and regulations on Biodiversity 1.1.A. For it's operations 1.1.B. For the supply chain 1.2 Identification of business processes and activities that interface with biodiversity and ecosystems 1.3 Consideration of direct, indirect, and cumulative impacts on habitats, species and ecosystems 1.4 Consideration of physical, transition, systemic risks and contagion risks (e.g., financial difficulties of financial institutions or other corporations might link to own biodiversity-related risks) 1.5 Indication of the size, scale, frequency of occurrence and timeframe of the impacts on biodiversity and ecosystems 1.6 Indication of the size and scale of the dependencies on biodiversity and ecosystems, including on raw materials, natural resources and ecosystem services 1.7 Opportunities such as business performance opportunities (e.g., resource efficiency, reputational capital) and sustainability performance opportunities (e.g., ecosystem protection, restoration and regeneration) **2. The company shall publish a report that discloses information on its assessment process and findings in a manner that is easily comprehensible for end-users. This shall include:** 2.1 List of material sites in or near own operations (incl. sites under operational control) by (I) specifying activities negatively affecting biodiversity sensitive areas, (II) categorizing according to the identified impacts, dependencies and ecological status of areas, and (III) specifying biodiversity-sensitive areas impacted 2.2 Findings of the risk and impact assessment for risks, impacts and/or incidents associated with land degradation, desertification or soil sealing 2.3 Findings of the risk and impact assessment for risks, impacts and/or incidents associated with affected threatened species 2.4 Quantification of anticipated financial effects in monetary terms before considering biodiversity and ecosystems-related actions incl. description of effects considered, impacts and dependencies which they	• EU Battery Regulation • CSRD ESRS E4 • EUDR • TNFD LEAP guidance • TNFD Mining guidance • UNGP • OECD • RMAP ESG • GRI 101 • RRA • IRMA • IRMA draft • SASB – Metals & Mining • IFC Performance Standard 1 • IFC Performance Standard 6 • ASI Performance Standard • ICMM • TSM • RBA Code of Conduct • CCMC

[15] For a detailed reference of referenced parts of the regulations and standards, please check the corresponding standard equivalency mapping

	relate to, the time horizon of their possible materialization and critical assumptions used to quantify financial effects	
I. Intermediate requirements	*In addition to F,* **3. In order to identify risks and impacts associated with the company's operational activities, the company shall:** 3.1 Conduct consultations with affected communities on sustainability assessment of shared biological resources 3.2 Establish a baseline for the biodiversity/ecosystem for the company's area of influence including (I) description of natural habitats and species of flora, fauna, and fungi within the baseline study area, including quantitative measures of abundance, distribution and other measures of viability and/or function for each species (terrestrial and aquatic) and (II) identification of the beneficiaries of the ecosystem services 3.3 Consider impacts and dependencies on financial situation, reputational impact, and impact on employee and stakeholder health, wellbeing, safety and/or livelihoods 3.4 Document findings and provide evidence of the assessment procedure when determining that no risks or impacts are in scope	• CSRD ESRS E4 • TNFD Mining guidance • UNGP • RMAP ESG • GRI 101 • RRA • IRMA • IRMA draft • IFC Performance Standard 6 • ASI Performance Standard • ICMM • TSM
L. Leading practice	***Benchmark standards or novel requirements under development by the Working Group***	

References to regulations and standards for Risk and dependency on habitats, species & ecosystem service (some may still be added as standard equivalency mapping proceeds)

Requirement (draft)	EU Battery Regulation	ESRS E4 (CSRD)	EUDR	TNFD LEAP guidance	TNFD Mining sector guidance	UNGP	OECD DD f. RBC	RMAP ESG	GRI 101	The Copper Mark DD	The Copper Mark RP/ RMI RRA Criteria Guide	IRMA	IRMA draft	Drive Sustainability Self Assessment	ISO 31000:2018	SASB - Metals & Mining	IFC Performance Standard 1	IFC Performance Standard 6	EU Taxonomy	ASI Performance Standard	EITI	ICMM Mining Principles -	TSM	RBA Code of Conduct and VAP	CCCMC
Foundational requirements																									
1.																									
1.1.A	x		x			x		x				x	x			x				x					
1.1.B	x		x			x		x				x	x			x				x					
1.2		x		x				x																	
1.3						x					x	x	x				x								
1.4		x																							
1.5		x																							
1.6		x		x																					
1.7		x						x				x	x									x			
2.																									
2.1		x							x																
2.2	x	x							x	x	x	x	x									x			
2.3		x							x																
2.4		x																							
Intermediate requirements																									
3.																									
3.1		x						x		x	x	x	x							x		x	x		
3.2									x		x	x	x				x						x		
3.3					x	x																			
3.4											x														
Leading practice requirements																									

3.4.3 Biodiversity loss mitigation: Objectives & targets (draft)

Scoring	Proposed consolidated language	Mapped Regulations / Standards[16]
F. Foundational requirement	**0. The company fulfils the foundational requirements of the Presence and Quality of Environmental and Human Rights Due Diligence and Risk Management Systems rulebook, and** 0.1 Ensures that biodiversity loss is included in the scope of its human rights and environmental due diligence process, including mitigation. *In addition, it includes the following in its due diligence steps:* **1. In order to respond to the identified risks and impacts, the company shall design and implement a strategy and targets to prevent, mitigate and otherwise address adverse impacts and risks. This process shall include:** 1.1 (In accordance with the mitigation hierarchy) Mitigation of impacts only if ceasing all actions which are causing or contributing to negative impacts on biodiversity, natural habitats, or critical habitats, is not possible (avoidance of impact) 1.2 Information on usage and details of ecological thresholds and allocation of impacts during target setting incl. identification methodology 1.3 Biodiversity and ecosystem protection policy covering operational sites owned, leased, or managed in or near a biodiversity sensitive area	• EU Battery Regulation • ESRS E4 • EUDR • TNFD LEAP guidance • SBTN science-based targets for nature • UNDP SES • OECD • OECD Handbook on Environmental Due Diligence • RMAP ESG • GRI 101 • The Copper Mark DD • RRA • IRMA • IRMA draft • SASB – Metals & Mining • IFC Performance Standard 1 • ASI Performance Standard • ICMM Mining Principles – Performance Expectations • TSM • CCCMC • GSRM

[16] For a detailed reference of referenced parts of the regulations and standards, please check the corresponding standard equivalency mapping

I. Intermediate requirements	*In addition to F,* **2. The company shall:** 2.1 Not pursue any impacts / actions in the area of internationally recognized sites or legally protected sites (UNESCO world heritage sites and UNESCO biosphere areas) 2.2 Design and implement targets and mitigation actions to deliver at least no net loss in important biodiversity values and ecosystem services 2.3 Develop targets with measurable conservation outcomes, timelines, locations and activities	• TNFD LEAP guidance • SBTN science-based targets for nature • UNDP SES • OECD • RMAP ESG • GRI 101 • The Copper Mark DD • RRA • IRMA • IRMA draft • IFC Performance Standard 1 • IFC Performance Standard 6 • ASI Performance Standard • ICMM Mining Principles – Performance Expectations • TSM • CRAFT 2.0 Code • GSRM
L. Leading practice	*In addition to F and I,* **3. The company shall:** 3.1 Develop and implement programs to promote and enhance conservation aims 3.2 Collaborate with suppliers to establish measurable risk-mitigation actions to achieve at least no net loss outcomes intended to promote progressive performance improvement 3.3 Maintain a buffer zone between own areas and protected areas if the ESIA assessment confirms its positive effect 3.4 Set targets to achieve no conversion of Critical Habitats and High Conservation Value areas 3.4.A In own operations & 3.4.B Sourcing capacities 3.5 Additionally to World Heritage and legally protected sites (see indicator 3.2), not pursue any actions which would impact areas classified as IUCN protected areas management categories I-III	• OECD Handbook on Environmental Due Diligence • RMAP ESG • IRMA draft • IFC Performance Standard 6 • SBTN Technical Guidance 2023 - Step 3 • TSM • GSRM

References to regulations and standards for Biodiversity loss mitigation: Objectives & targets
(some may still be added as standard equivalency mapping proceeds)

Requirement (draft)	EU Battery Regulation	ESRS E4 (CSRD)	EUDR	TNFD LEAP guidance	TNFD Mining sector guidance	SBTN SCIENCE-BASED TARGETS for NATURE	SBTN Technical Guidance 2023 - Step 3	UNDP SES	OECD DD f. RBC	OECD Handbook on Environmental Due Diligence	RMAP ESG	GRI 101	The Copper Mark DD	The Copper Mark RP/ RMI RRA Criteria Guide	IRMA	IRMA draft	Drive Sustainability Self Assessment Questionnaire	ISO 31000:2018	SASB - Metals & Mining	IFC Performance Standard 1	IFC Performance Standard 6	EU Taxonomy	ASI Performance Standard	EITI	ICMM Mining Principles - Performance Expectations	TSM	CRAFT 2.0 Code	CCCMC	GSRM
	Foundational requirements																												
1.																													
1.1				x					x			x			x	x				x	x								
1.2		x																											
1.3		x								x		x		x															
	Intermediate requirements																												
2.																													
2.1															x	x					x		x		x				x
2.2						x								x	x	x					x		x		x	x			
2.3				x		x									x	x				x									
	Leading practice requirements																												
3.																													
3.1																x					x					x			x
3.2										x																			
3.3											x																		
3.4.A							x																						
3.4.B							X																						
3.5															x	x													

3.4.4 Biodiversity loss adaptation: Influence on biodiversity loss (draft)

Scoring	Proposed consolidated language	Mapped Regulations / Standards[17]
F. Foundational requirement	**0. The company fulfils the foundational requirements of the Presence and Quality of Environmental and Human Rights Due Diligence and Risk Management Systems rulebook, and** 0.1 Ensures that biodiversity loss is included in the scope of its human rights and environmental due diligence process, including adaptation. *In addition, it includes the following in its due diligence steps:* **1. In case the company is unable to mitigate their impacts as described in Indicator 3 (after conducting of ESIA), it shall have processes in place to provide restoration or offsets for negative impacts the company is connected with. These processes shall include:** 1.1 Design and implementation of restoration / rehabilitation measures for degraded or cleared ecosystems following exposure to non-avoidable impacts 1.2 Preparation and implementation of measures for opportunities regarding the protection of ecosystems **2. The company shall have in place:** 2.1 Explanation on how the policy enables the restoration and rehabilitation of biodiversity 2.2 Measurable targets about the improvements achieved (e.g., size and locations of areas protected or restored, number/percentage of projects whose ecological integrity has improved) 2.3 Information on usage of biodiversity offsets in its action plan incl. description and aim of offsets	• EU Battery Regulation • ESRS E4 • EUDR • EU Taxonomy • UNDP SES • OECD • OECD Handbook on Environmental Due Diligence • RMAP ESG • GRI 101 • The Copper Mark DD • RRA • IRMA • IRMA draft • SASB – Metals & Mining • IFC Performance Standard 1 • IFC Performance Standard 6 • ASI Performance Standard • CRAFT 2.0 Code • CCCMC • GSRM
I. Intermediate requirements	*In addition to F,* **3. The company shall:** 3.1 Ensure that from biodiversity loss affected stakeholders are at least as well off as they were before the impact occurred	• TNFD LEAP guidance • SBTN science-based targets for nature • UNDP SES • OECD

[17] For a detailed reference of referenced parts of the regulations and standards, please check the corresponding standard equivalency mapping

	3.2 Ensure that restoration projects maintain or enhance biodiversity and ecosystem functionality referring to the set baseline 3.3 Use offsets of biodiversity losses through effective long-term conservation of ecologically comparable area/s elsewhere only if significant residual impacts remain after all prior steps in the mitigation hierarchy have been fully assessed and implemented 3.4 Design offsets to achieve measurable long-term conservation outcomes on-the-ground (net-gain) 3.5 Usage of experts with relevant academic qualifications in biology, ecology or ecological restoration, and experience in offset implementation and design 3.6 Report the size of area under restoration or rehabilitation and the already restored and rehabilitated area	• OECD Handbook on Environmental Due Diligence • RMAP ESG • GRI 101 • The Copper Mark DD • RRA • IRMA • IRMA draft • IFC Performance Standard 1 • IFC Performance Standard 6 • ASI Performance Standard • TSM • CCCMC • GSRM
L. Leading practice	*In addition to F and I,* **4. The company shall:** 4.1 Incentivize protection and conservation of natural forests (marine and terrestrial, e.g., temperate, boreal, kelp and mangrove) and their ecosystem services and other social and environmental benefits 4.2 Engage in a coordinated approach with producer countries and parts thereof to jointly address the root causes of biodiversity loss 4.3 Consult with stakeholders in order to design and implement additional conservation actions supporting the enhancement of important biodiversity values or ecosystem services 4.4 Report methodologies used to determine the size of area under restoration or rehabilitation and the already restored and rehabilitated area	• EUDR • UNDP SES • IRMA • IRMA draft • TSM • GSRM

References to regulations and standards for Biodiversity loss adaptation: Influence on biodiversity loss (some may still be added as standard equivalency mapping proceeds)

Requirement (draft)	EU Battery Regulation	ESRS E4 (CSRD)	EUDR	TNFD LEAP guidance	TNFD Mining sector guidance	SBTN SCIENCE-BASED TARGETS for NATURE	UNDP SES Standard 1	OECD DD f. RBC	OECD Handbook on Environmental	RMAP ESG	GRI 101	The Copper Mark DD	The Copper Mark RP/ RMI RRA Criteria Guide	IRMA	IRMA draft	Drive Sustainability Self Assessment Questionnaire	ISO 31000:2018	SASB - Metals & Mining	IFC Performance Standard 1	IFC Performance Standard 6	EU Taxonomy	ASI Performance Standard	EITI	ICMM Mining Principles - Performance Expectations	TSM	CRAFT 2.0 Code	CCCMC	GSRM
Foundational requirements																												
1.																												
1.1		x							x				x	x	x					x	x					x	x	x
1.2		x																										
2																												
2.1		x							x		x		x															
2.2		x							x		x			x	x													
2.3		x									x		x							x								
Intermediate requirements																												
3																												
3.1							x	x	x				x															
3.2				x		x	x															x						
3.3				x			x		x				x	x	x					x							x	
3.4							x				x		x	x	x					x								
3.5							x													x								
3.6											x																	
Leading practice requirements																												
4																												
4.1							x																					x
4.2			x																						x			

4.3														x	x											x
4.4																										

3.5 Data quality and reporting

Companies may report against the battery passport in one or more of the following ways:

- Where they are assured or audited against a regulation or standard equivalent to the battery passport requirement, provide proof of audit, assurance, or other verification
- Provide original documentation pertaining to company policies, practices, results, in line with guidance derived from materially existing standards

Please refer to the Battery Passport data governance rulebook for additional information on data verification in these two scenarios.

Companies will report on the biodiversity loss rulebook via the associated reporting templates. Please see Annex A for further guidance.

4 Final remarks and outlook

In conclusion, addressing biodiversity loss within the battery value chain is not just an environmental imperative but a moral obligation to safeguard the intricate web of life on our planet. Biodiversity, encompassing the richness of ecosystems and species, is not merely a commodity but a fundamental pillar of our existence, providing essential services and resilience to human societies. As the demand for batteries increases, driven primarily by the transition to cleaner energy solutions such as electric vehicles, we must confront the harsh reality of the ecological toll exacted by their production, use, and disposal. From the extraction of raw materials to the disposal of end-of-life batteries, each stage of the battery value chain poses significant risks to biodiversity, from habitat destruction to pollution. Recognizing the profound interdependence between the battery supply chain and biodiversity, this rulebook sets forth detailed requirements for a battery passport, serving as guidelines for companies to navigate the complexities of sustainability and mitigate their environmental footprint. By adhering to these indicators, companies not only fulfil regulatory obligations but also demonstrate a commitment to responsible stewardship of natural resources. Importantly, this rulebook consolidates existing regulations and standards, providing clarity and coherence for industry stakeholders. While no additional efforts may be required for companies already adhering to Leading practices, this consolidation streamlines compliance and fosters a culture of continuous improvement towards a more sustainable future for all.

In essence, by minimizing constraints on biodiversity and harnessing its potential for the benefit of people and the planet, we can ensure that the battery value chain serves as a catalyst for positive change, driving towards a future where economic prosperity is in harmony with environmental integrity. Through collective action and unwavering commitment, we can forge a path towards a more sustainable and biodiverse world for generations to come.

Looking forward, the GBA is committed to adapting to evolving global standards in biodiversity loss and environmental stewardship, particularly in the context of biodiversity loss in the battery supply chain. This is especially important when looking at developments in the near future. The currently under development SBTN guidance aims to provide clear and actionable steps for companies to align their practices with global biodiversity goals, potentially transforming business impacts on nature. This will potentially give a more detailed guidance on the target-setting for biodiversity. Additionally, the 16th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP-16) in October/November 2024 represents a critical opportunity for international leaders to commit to ambitious targets and collaborative strategies, offering hope for significant advancements in the global fight against biodiversity loss. The GBA will continue to collaborate with international bodies and stakeholders to refine the compliance baseline, integrating new legislative developments and technological advancements. This approach is aimed at not only achieving compliance but also setting a benchmark for sustainable practices in the battery industry.

5 Glossary

Term	Definition
Biodiversity	Biodiversity, therefore, includes *inter alia* components of diversity from ecosystems and species. The composition of a battery has implications for a wide range of natural realms, spanning raw material extraction, processing, transportation, and recycling. The foremost objective is to minimize constraints on biodiversity and instead capitalize on its potential for people and planet.[18]
Biological diversity	Biological diversity is the variability among living organisms from all sources, including terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems.[19]
Conservation values / values	According to IRMA: The ecological, biological, geomorphological, geological, cultural, spiritual, scenic or amenity values, features, processes or attributes that are being conserved.
Critical habitat / high conservation value	SBTN refers here to IFC PF6: "Critical habitats are areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered and/or Endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes."[20]
Ecosystem	Ecosystem is defined as a dynamic complex of plant, animal and microorganism communities and the non-living environment, interacting as a functional unit.[21]
ESIA	Environmental and social impact assessment
Habita t	Habitat means the place or type of site where an organism or population naturally occurs. The cohabitation of species in their habitats forms an ecosystem.[22]
Invasive alien species	Invasive alien species are non-native organisms that are introduced, either intentionally or accidentally, into a new environment where they establish themselves, proliferate rapidly, and cause harm to native species, ecosystems, or human interests. These species often outcompete native species for resources, disrupt ecosystems, and can lead to economic and environmental damage.[23]
Legally protected areas	According to the IUCN definition:" A clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values."
Loss of biodiversity	Loss of biodiversity refers to the reduction of any aspect of biological diversity in a particular area. It can refer to many scales from misfunction of habitats to global extinctions from populations, resulting in decreased total diversity at the same scale.[24]
Nature-based opportunities	New markets and brand differentiation as consumers, business customers and regulators demand sustainable products and services.
No Net Loss and Net Gain (of biodiversity)	According to IRMA: Targets for development projects in which the impacts on biodiversity caused by the project are balanced or outweighed by measures taken

[18] Art. 2 Convention on Biological Diversity (CBD)
[19] Art. 2 Convention on Biological Diversity (CBD)
[20] IFC Performance Standard 6 Biodiversity Conservation and Sustainable Management of Living Natural Resources Art. 16
[21] https://encorenature.org/en/assets/2
[22] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive)
[23] https://www.cbd.int/invasive
[24] https://www.ipbes.net/glossary-tag/biodiversity-loss

	to first avoid and minimize the impacts, then to undertake on-site rehabilitation and/or restoration, and finally to offset the residual impacts (if appropriate). **No net loss**, in essence, refers to the point where biodiversity gains from targeted conservation activities match the losses of biodiversity due to the impacts of a specific development project, so that there is no net reduction overall in the type, amount, and condition (or quality) of biodiversity over space and time. **A net gain** (sometimes referred to as net positive impact) means that biodiversity gains exceed a specific set of losses
NNL	No-net loss
Offset (biodiversity)	According to IRMA: As it relates to biodiversity, measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse impacts on biodiversity arising from project development after appropriate prevention and mitigation actions have been taken. The goal of biodiversity offsets is no net loss or a net gain of biodiversity on the ground with respect to species composition, habitat structure, ecosystem function, and people's use and cultural values associated with biodiversity.
Physical Risk	Operational disruption and rising costs due to reduced resource availability undermining markets and support structures.
Reputational Risk	The costs arising from how stakeholders judge environmental impact from pollution, land use change, over-exploitation – changing demand for goods and services.
Species	Species are living organisms that can interbreed and produce fertile offspring under natural conditions, sharing a common gene pool and distinct characteristics, including plants, animals, fungi, algae and genetic resources.[25]
Transitional Risk	Incoming regulations and reporting frameworks will require new data, systems, processes, and responsibilities and increase stakeholder scrutiny.
UNESO lists	Please find the UNESCO lists under • World Heritage list: https://whc.unesco.org/en/list/ • Biosphere areas: https://www.unesco.org/en/mab/map

[25] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive)

Annex 1 – Reporting template

Please refer to the Annexed Excel workbook for the reporting template and associated guidance for reporting for each indicator.