Summary for policymakers | Construction

ANALYSING THE IMPACTS OF THE CONSTRUCTION SECTOR ON BIODIVERSITY

The relationship between biodiversity and business involves both **impacts** and **dependencies**. Organisations interact with biodiversity in two main ways: through their **reliance on ecosystem services**, and through the **impacts their activities** have on biodiversity. These interactions can create **risks** that affect operations, turnover, and profitability by influencing costs, sales, and even access to capital. When impacts and dependencies are high, they can amplify these risks for organisations, making them more vulnerable to disruptions and financial losses. Physical, transition, and systemic risks linked to biodiversity loss can also be transmitted to the financial sphere and, through contagion, spread throughout the wider financial system.

This analysis is designed to provide a **clearer understanding** of how the **sector interacts with biodiversity**. It highlights the main **impacts** and **dependencies**, as well as the potential **risks** and **opportunities** that may arise. It can therefore be useful not only for companies and financial institutions, but also for public authorities and anyone interested in gaining broader knowledge about biodiversity challenges. The findings are grounded in an extensive review of existing literature, combined with a quantitative assessment using the **Global Biodiversity Score**, a tool that measures biodiversity footprints. All detailed results and further findings are provided in a sectoral report.

This sector covered in this sheet is **general construction and specialised construction** activities for buildings and **civil engineering** works. This includes **new constructions**, **repair**, **extensions** and **alterations**, the **erection of prefabricated buildings or structures on site**, and **temporary construction** activities. This analysis does not include real estate activities but remains a relevant resource for this sector as construction represents the large majority of its upstream impacts.

3rd

Most impactful sector on terrestrial biodiversity

behind agriculture and raw material extraction

Direct and upstream terrestrial impacts equivalent to the destruction of a land area about

x6

the size of France

More than 95%

of the impact in the upstream value chain

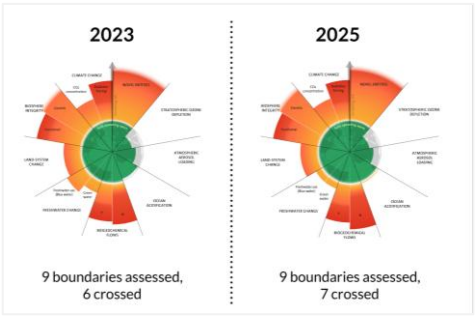
Mainly due to the extraction of raw materials and manufacture of construction materials

Land use, climate change and water pollutions

are the main pressures of the sector on biodiversity

IS THE SECTOR COMPATIBLE WITH PLANETARY BOUNDARIES?

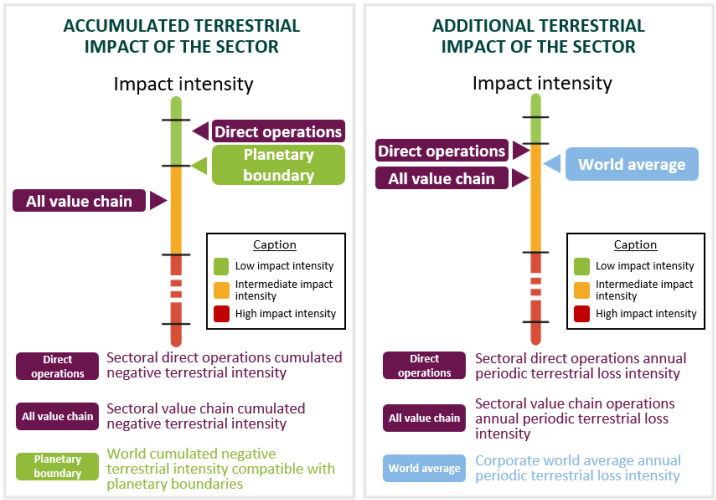
The Planetary Boundaries concept aims to **define the environmental limits within which humanity can safely operate**. This approach has significantly shaped the development of global sustainability policies and governance strategies. **6 out of the 9 boundaries are now exceeded** (2023) including biosphere integrity. Understanding and addressing biodiversity loss requires a holistic approach that considers its interplay with other planetary boundaries.



Source: Azote for Stockholm Resilience Centre, Stockholm University

Based on these boundaries, a global threshold that should not be exceeded has been estimated (traffic lights figure).

Accumulated terrestrial impacts and additional losses of **direct operations** are respectively below the planetary boundary and the corporate world average[1]. In contrast, impacts related to the **sector's value chain** exceed planetary boundaries and corporate world average. **The sector therefore remains deeply dependent on upstream activities that contribute substantially to their transgression.**



[1]*Direct impacts are likely underestimated due to the difficulty of accounting for the land use of construction sites*

Summary for policymakers | Construction

DEEP DIVE INTO THE SECTOR

KEY RESULTS ON DEPENDENCIES, IMPACTS, RISKS AND OPPORTUNITIES

IMPACTS

CONSTRUCTION MATERIALS ARE KEY

The **greatest impacts of the sector** on biodiversity are within its **Scope 3 upstream** (suppliers) terrestrial and aquatic impacts representing more than 95% of its total impacts across its value chain (see impact graph).

Land use, climate change, and terrestrial and water pollutions are the primary impact drivers, mainly due to **extraction and processing of building materials**

The building materials with the greatest impact on biodiversity are steel, cement, and glass.


Aluminium


Copper


Steel


Glass


Cement


Hardwood


Softwood


Sand

DEPENDENCIES

PROTECTION AGAINST DISTURBANCES

The sector is particularly dependent on ecosystem services that protect against **climatic and hydrological disturbances**.
Construction operations and timelines are highly sensitive to weather variability and extreme events such as storms or floods, making ecosystems like forests, wetlands, and vegetated soils essential for site stability and erosion prevention.

The sector also relies on **water-related ecosystem services** to secure the availability, and quality of water resources. From material processing to equipment cleaning, a steady supply of clean water is vital, and ecosystems that regulate flow and purify water help ensure uninterrupted construction activities.

KEY DEPENDENCIES

Very high	Rainfall pattern regulation
High	Soil and sediment retention
Medium	Storm mitigation Flood control
Medium	Water purification
Medium	Water flow maintenance

RISKS

HIGH EXPOSURE TO NATURE-RELATED RISKS

PHYSICAL RISKS

The sector is exposed to physical risks through its reliance on natural resources and ecosystem services. These risks can translate into higher input costs and supply disruptions (e.g. aggregates, timber, water), as well as direct damage to assets from extreme weather events such as floods or ground instability. Longer-term environmental degradation may also reduce the availability and quality of key materials and constrain project feasibility in certain areas.

TRANSITION RISKS

Stricter environmental requirements can increase compliance costs and delay projects, while shifts in client and investor preferences may reduce demand for high-impact practices. Companies may also need to invest in new materials and construction methods to adapt to evolving standards, creating additional technological and adjustment costs.

OPPORTUNITES

ECO-DESIGN AND LAND OPTIMISATION

01 ECO-DESIGN AND CIRCULAR CONSTRUCTION

Integrating biodiversity considerations at the design stage enables significant impact reduction. Prioritising reusable, recyclable, and dismantlable materials, as well as favouring renovation over new construction, helps reduce land-use change and lower demand for virgin resources.

02 BROWNFIELD REUSE AND LAND OPTIMISATION

Focusing development on brownfield sites rather than natural or semi-natural areas limits pressure on biodiversity. This approach supports more efficient land use while avoiding the conversion of high-value ecosystems.

03 NATURE-POSITIVE CONSTRUCTION PRACTICES

Adopting biodiversity-friendly site management can reduce operational impacts on ecosystems. Measures such as limiting invasive species, implementing greening initiatives, and using ecological compensation or restoration strategies help strengthen biodiversity outcomes in urban environments.

Summary for policymakers | Construction

ENGAGING THE SECTOR: WHAT'S NEXT?

REDUCING BIODIVERSITY IMPACTS IN THE CONSTRUCTION SECTOR REQUIRES ACTING PRIMARILY UPSTREAM IN THE VALUE CHAIN

Actions are presented based on their position in the value chain. Direct operations provide the most immediate leverage, followed by upstream supply chain interventions and downstream disclosure.

01 DIRECT OPERATIONS

Direct Operations — *Highest immediate control & accountability*

- Apply the **mitigation hierarchy** (avoid, reduce, restore & offset) to all construction-related impacts
- Limit **noise, pollution, and encroachment** during the construction phase for both wildlife and nearby residents
- Implement **permeable surfaces** or **soil decompaction** techniques to cancel soil sealing and prevent net land artificialisation
- Encourage **renovation** of old or unoccupied buildings to limit new land take
- Favour architectural designs that **minimise land use**
- Design sites to **create and maintain ecological corridors**, ensuring **ecological continuity**
- Integrate **green spaces** and infrastructures using native species and pollinator-friendly habitats

02 ENERGY USE DIRECT OPS

Energy Use for Direct Operations

- Use **renewable energy sources** with demonstrated low impact on biodiversity during the construction phase
- Optimise construction processes and machinery to **reduce energy consumption and noise**
- **Electrify construction equipment** where possible and monitor the carbon footprint of purchased electricity

03 UPSTREAM PHASES

Upstream Phases – *Greatest leverage on biodiversity — upstream phases drive 95% of impacts*

- Source materials from suppliers **with full environmental certifications** and **supply chain traceability**
- Integrate **biodiversity criteria in site selection**, based on early environmental impact assessments, avoided areas rich in biodiversity, habitats of endangered species, and protected areas
- Use **alternative materials** to replace conventional concrete where possible (*e.g.*, geopolymers, recycled aggregates, bio-based materials)

04 DOWNSTREAM PHASES

Downstream Phases

- Optimise building design to facilitate **dismantling, reuse and recycling** (design for disassembly, modular construction)
- Improve the recyclability of construction waste and develop **partnerships with local recycling facilities**
- Optimise the building **energy performance** through passive design (orientation, natural ventilation, insulation), use of natural light, and **biodiversity-friendly renewable technologies** (e.g., bird-safe solar panels)
- Use construction materials that **support biodiversity** (*e.g.*, porous surfaces as habitats for insects, mosses, lichens

MAIN REGULATIONS APPLICABLE TO THE SECTOR

A range of regulations and frameworks has been introduced aiming to regulate the sector's practices and mitigate its environmental impacts.

French regulations

- Measure 16 of France's Third National Biodiversity Strategy (2021–2030), Environmental Regulation 2020 – RE2020
- *"Plan bâtiment durable"*
- French Energy Transition for Green Growth Act – LTECV

European regulations

- Biodiversity strategy for 2030 integrated into the European Green Deal
- EU taxonomy

International regulations

- the 2030 Agenda and its Sustainable Development Goals
- Global Buildings Climate Tracker
- UN Environment Programme