

# Inside COP15: The race to protect the natural world and its biodiversity

Primer on UNCBD COP15

NOVEMBER, 2022

BCG × Quantis



## ➤ Executive Summary

What is the UN CBD and why it matters for business

The imperative to reverse nature loss by 2030

The UN CBD COP15 agenda

Implications for business leaders

BCG x Quantis expertise on Biodiversity



# Executive Summary



**1** The **Convention on Biological Diversity** is one of the 3 Rio Conventions (1992). It focuses on **Biodiversity with 3 main pillars**: the conservation of Biological diversity, the sustainable use of biological diversity components and the fair sharing of resulting benefits.

## Biodiversity loss, causes and consequences

**2** **Biodiversity** (the term did not exist in 1992, hence the use of "biological diversity") encompasses **all forms of life on Earth** and is **experiencing an alarming loss** resulting in the **6<sup>th</sup> mass extinction** of species, which represents one of the 9 "planetary boundaries" crossed by humanity. There is now a growing scientific, political & business consensus that the conservation of species & ecosystems is not sufficient to protect biodiversity and that the CBD should address key drivers of nature loss.

**3** Unlike previous extinction events caused by natural phenomena, the scientific community, through the IPBES (equivalent of IPCC for biodiversity), unquestionably demonstrates that the 6th mass extinction is **driven by human activity** through the **changes in land and sea use; direct exploitation of organisms; climate change; pollution; and invasion of alien species**. The global rate of species extinction is already at least 10-100x higher than it has averaged over the past 10 million years.

**4** **Despite critical risks** for human health and economy, the **topic receives limited attention** when compared to the climate agenda. Yet, climate mitigation and adaptation objectives cannot be met without Nature Based Solutions (NBS). In addition, climate change will become the major driver of biodiversity loss if not addressed. **Synergies between climate and biodiversity generate co-benefits** and are indispensable to make our societies & economies **resilient to climate change**.

**5** COP15 is the **15th UN CBD COP**, under the Presidency of China. Its goal is to **provide a Global Biodiversity Framework (GBF) for action on biodiversity**. It gathers the 196 countries that signed up in 1992 at the Earth Summit, with the notable exception of the US.

## Zoom on COP15

**6** It was originally positioned by China as a major world summit showcasing Chinese environmental leadership, with the **ambition to reach the "Paris Agreement of Nature"**. After being postponed due to Covid & relocated, it will take place on **December 2022 in Montreal**.

**7** The previous GBF was adopted in Aichi in 2010, setting 20 targets to be achieved in 2020, however **none of the targets were met**. The objective of COP15 is to overcome this failure and set goals to guide global actions through 2050 to protect and restore nature by creating a new GBF including a flagship target, **the "30% by 2030" target**, and a set of 21 other targets on mainstreaming, sustainable use and benefit-sharing of the components of biodiversity, and financing, etc.

**8** The ability to reach an agreement, and the level of ambition of that agreement, depend on the **ability to reach a consensus between different regional coalitions**, in the context of a global divide between North and South. More than 100 countries now support some of the objectives of the HAC (High Ambition Coalition for Nature and People, which pushes for strong GBF).

## Implications for Business leaders

**9** Regardless of the outcome of COP15, regional regulations, consumer expectations and smart risk management create a **strong case to act now**. Businesses should start **adopting integrated strategies to contribute to a "nature positive" world**. There is an **ecosystem of organizations and coalitions** that are structuring this space and **shaping tomorrow's regulation**, notably SBTN and TNFD, which are replicating the Climate initiatives SBTi and TCFD, and seeking to have a more holistic perspective.

**10** There is an **increasing realization that biodiversity is critical for businesses**, just like climate, as **50% of global GDP depends directly on Nature's ecosystem services**. However, Biodiversity is a **complex issue** requiring a full materiality assessment and deep transformation of the businesses. Leaders show that it is possible to measure impacts and dependencies and act on them. BCG & Quantis are at the heart of the ecosystem and are committed to support clients in their journey to contribute to a nature positive world.



BCG × Quantis

## Inside COP15: Agenda

Executive Summary

- What is the UN CBD and why it matters for business

The imperative to reverse nature loss by 2030

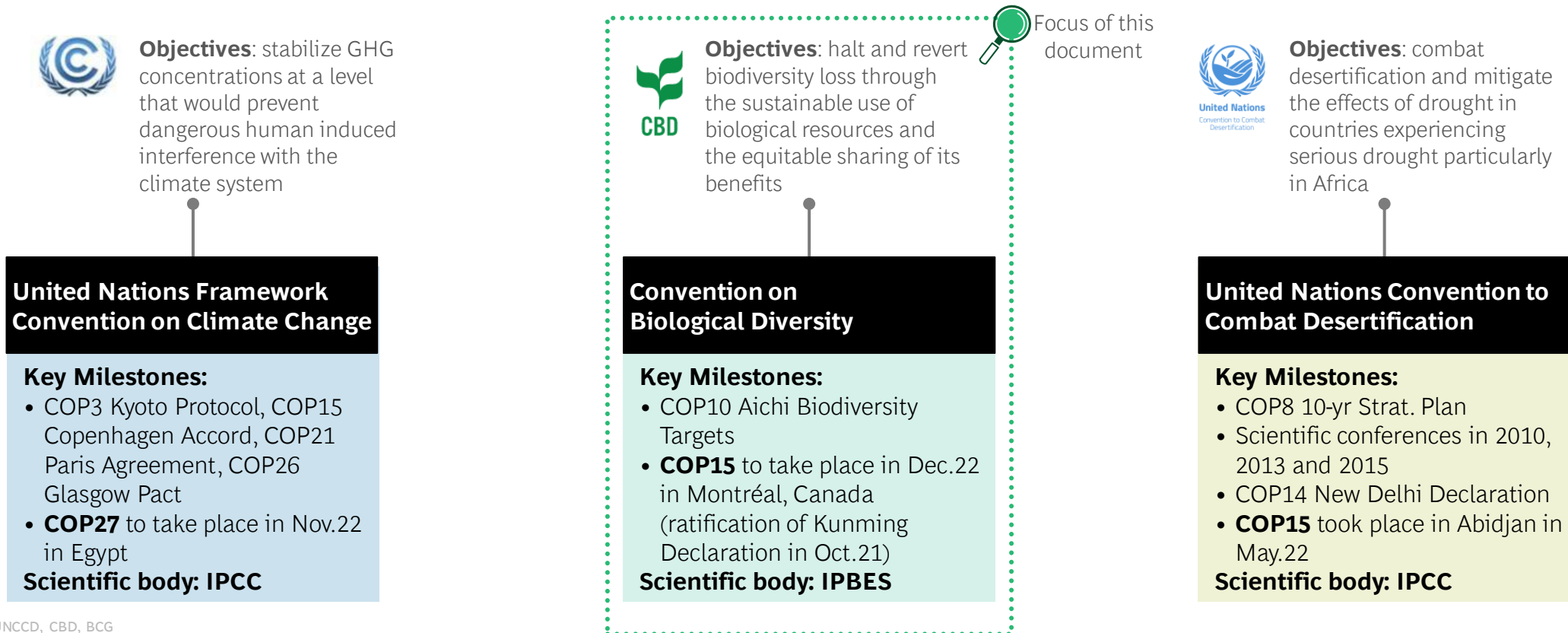
The UN CBD COP15 agenda

Implications for business leaders

BCG x Quantis expertise on Biodiversity

# UN CBD is one of the 3 Conventions seeking to form an integrated and worldwide governance framework for environmental challenges

- The **3 Rio Conventions** were adopted at the **1992 Earth Summit**
- Each instrument represents a way of **contributing to the sustainable development goals of Agenda 21**
- The **3 conventions are intrinsically linked**, and address interdependent issues





... with CBD focusing on 3 main pillars to address Biodiversity loss



1

The **conservation** of biological diversity

2

The **sustainable use** of the components of biological diversity

3

The **fair and equitable sharing** of the benefits arising out of the utilization of genetic resources



# Why is biodiversity important for business resilience?



## Aiming for leadership on climate and nature

Ensuring your company contributes to the imperative to reverse nature loss, in order to achieve climate goals and protect biodiversity



## Managing risks in the value chain

50% of global GDP directly depends on ecosystem services<sup>1</sup>, some key sectors even more heavily than others (e.g., agriculture, utilities, food & beverage, construction)



## Capturing new value creation opportunities

Investing in sustainable supply chains has been found to decrease operational costs of up to 16% and increase revenue by up to 20%<sup>2</sup>



## Capturing first mover advantage

Being among the first to start this journey with the potential to lead your industry's nature-positive transition, while contributing to regenerating ecosystems and preserving resources



## Anticipating regulation and societal pressures

COP15 political and social momentum around the world (e.g., New EU Biodiversity Strategy for 2030, increasing pressure from indigenous peoples and local communities, strong demand for financial flows to developing countries, etc.)



## Why is COP15 important to follow?

1

**An ambition to reach the equivalent of the Paris agreement**, a new Global Biodiversity Framework that will shape policies across the world for the next decade

2

**Clear commitments expected from governments on national-level biodiversity strategies and protected areas**, with clear business implications such as increased regulatory pressure on land use change

3

**A set of specific and concrete targets on the main drivers of biodiversity loss** (e.g., plastic pollution) which could accelerate the regulatory momentum and foster international standardization

4

**A goal to align financial flows with a trajectory to reverse nature loss**, which could shape regulation in finance in the coming decade





BCG × Quantis

Executive Summary

What is the UN CBD and why it matters for business

➤ The imperative to reverse nature loss by 2030

The UN CBD COP15 agenda

Implications for business leaders

BCG x Quantis expertise on Biodiversity

# The 6th mass extinction of wildlife on Earth is accelerating

Species biodiversity is declining at an alarming rate, resulting in the freefall of wildlife across the globe:

**-69%**

**Average decrease in population sizes** of mammals, birds, amphibians, reptiles and fish between 1970 and 2018

**~1M**

Animal and plant species now **threatened with extinction, many within decades**, more than ever before in human history

**-83%**

Global decline in monitored **freshwater populations<sup>1</sup> since 1970**, the **largest decline of any species group**

1. Including elements and compounds serving as food or respiration source, plants, consumers (fish, shellfish, frogs, etc.), and decomposers (worms, insects, etc.)  
Source: WWF Living Planet Report (2022)

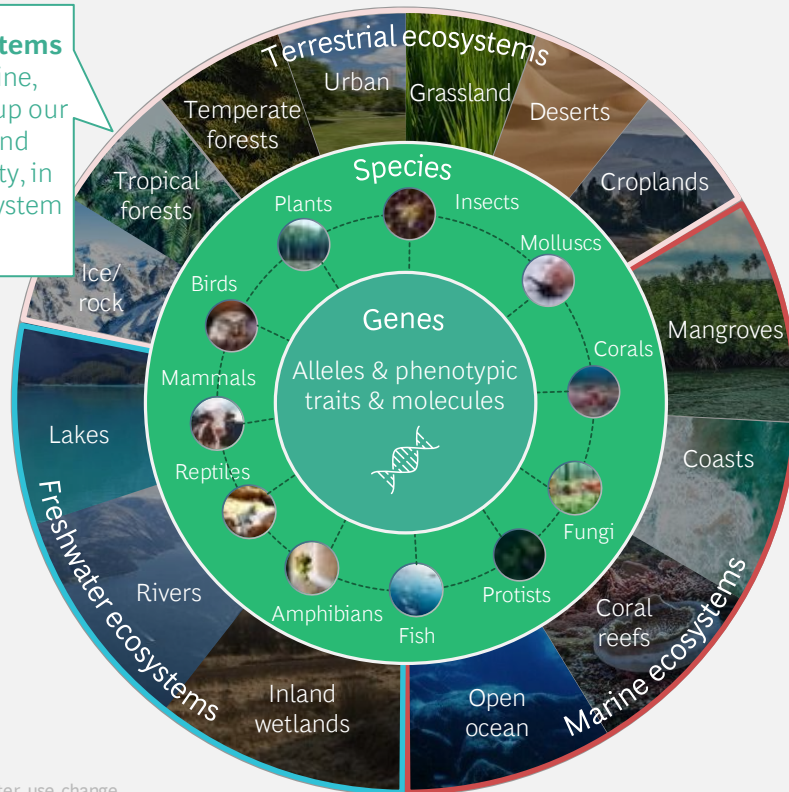


# Biodiversity encompasses all forms of life on Earth, and is increasingly threatened by human activities

## What is biodiversity?

**Biodiversity, or "Biological diversity",** is the variety of life on Earth, it includes **all living things** and the **ways they interact with each other and their environment** (i.e. Genetic diversity, Species diversity and Ecosystem diversity)

**3 types of ecosystems** (Terrestrial, Marine, Freshwater) make up our natural assets and support biodiversity, in turn creating ecosystem services



## What is causing its loss?

**Biodiversity, has been declining at an alarming rate** in recent years, mainly due to **human activities, such as land use changes, pollution and climate change**



Land/sea<sup>1</sup> use change



Direct exploitation



Climate change



Pollution



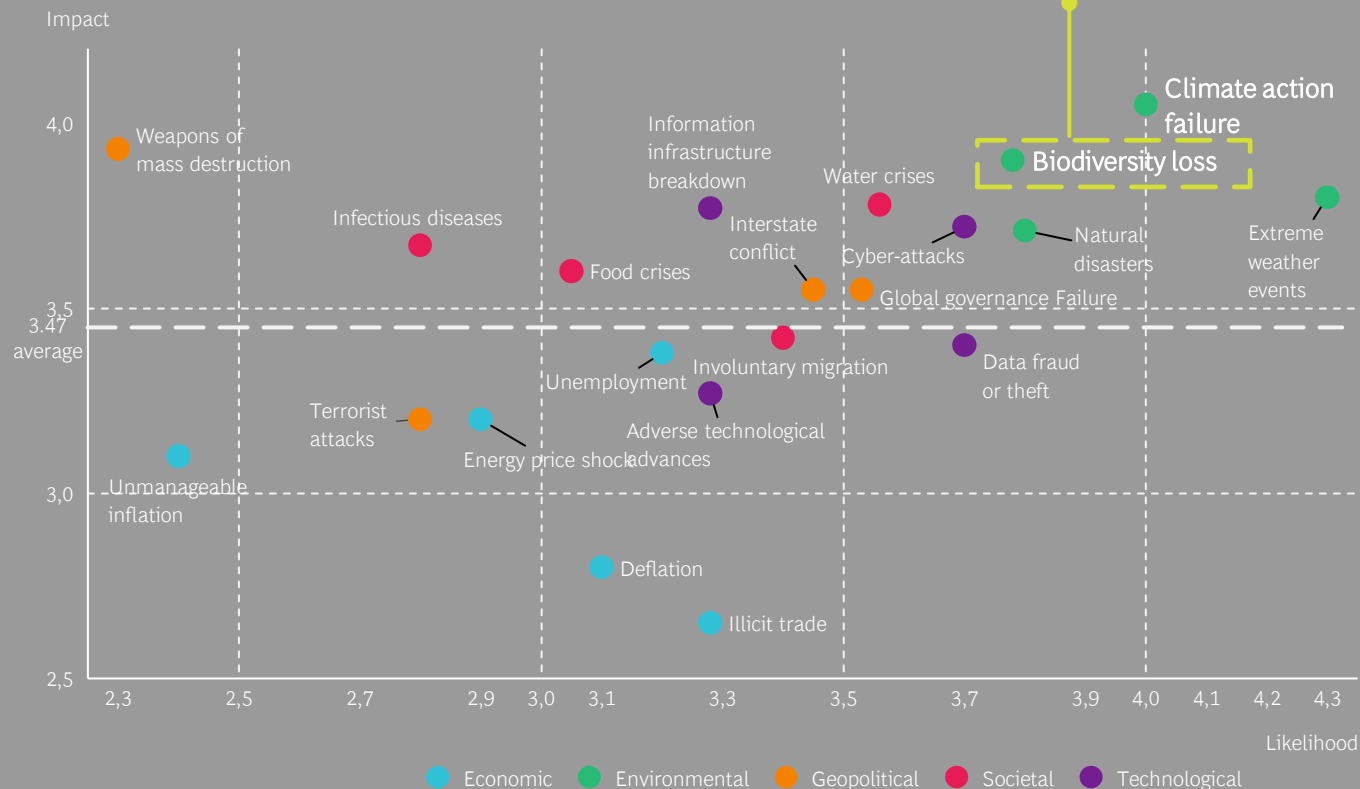
Invasive alien species

<sup>1</sup>Including freshwater use change  
Source: IPBES

# Biodiversity loss is classified as a risk with high probability and high impact...

WEF Global Risks Landscape

3<sup>rd</sup> biggest risk in terms of impact and 4<sup>th</sup> in terms of likelihood



...and has risen in the World Economic Forum Global Risks Landscape ranking compared to other major global risks in the past years

- Biodiversity is crucial for securing the supply of goods & services, and enabling the inhabitability of the Earth
- Strong interlinkage of biodiversity loss to other environmental risks, such as climate change and infectious diseases



# Failing to stop and reverse biodiversity loss may trigger global and irreversible consequences...



Biodiversity loss poses a **systemic risk** threatening **ecosystem collapse** with unpredictable consequences questioning the viability of the planet for our ways of life as humans



The **mutual reinforcement of biodiversity loss and climate change** threatens to accelerate global warming beyond control

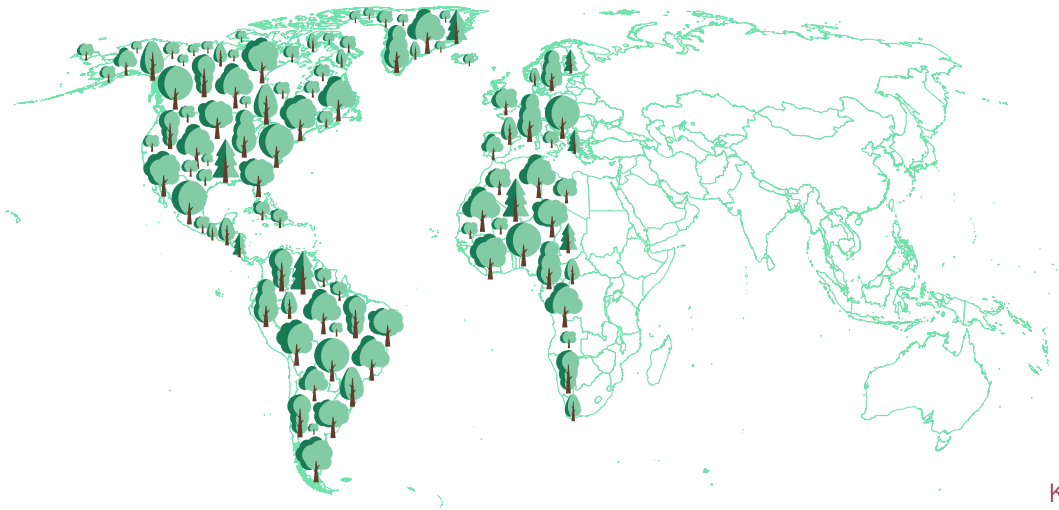


Costs of inaction amount to at least **\$5-25 trillion** of annually **lost ecosystem services**, essential for society



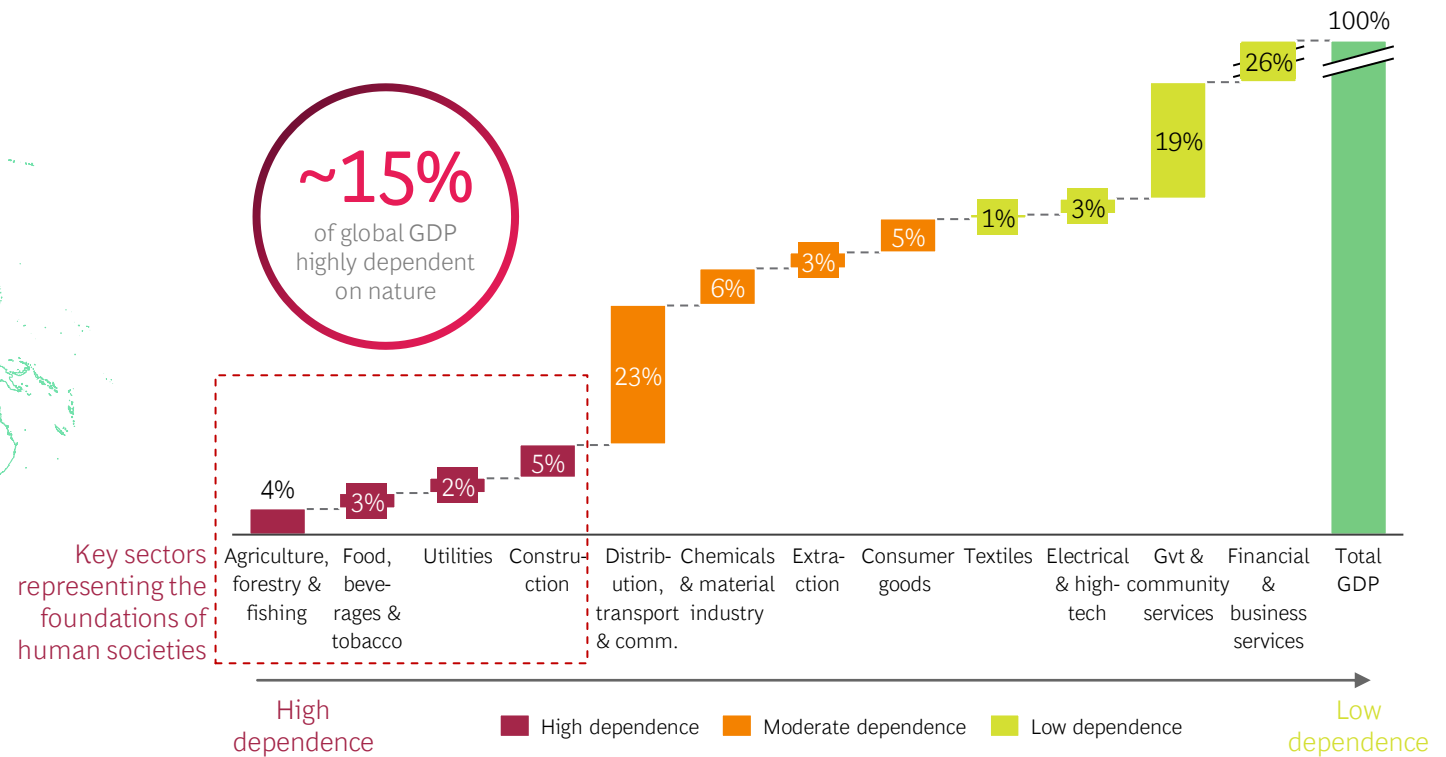
# ... as our economy and society highly depend on natural assets and the ecosystem services that they provide, especially 4 key sectors

>50% of global GDP directly depends on ecosystem services...



... But not all sectors are equally dependent ; those highly dependent generate ~15% of global GDP

Split of global GDP by sector and nature dependence (in % of global GDP)



Note: Analysis based on Oxford Economics split of global GDP by sector in year 2020  
Source: Oxford economics, WEF, World bank, BCG analysis



# Despite critical risks, the topic receives limited attention when compared to the climate agenda

## UN conference on Climate change has much more visibility than Biodiversity ones

The first IPBES report came out in 2019 vs.1990 for IPCC; the limited visibility on Biodiversity is also linked to the ~30-year gap in scientific state of the art reports availability



~4000 attendees

~50 countries represented on site

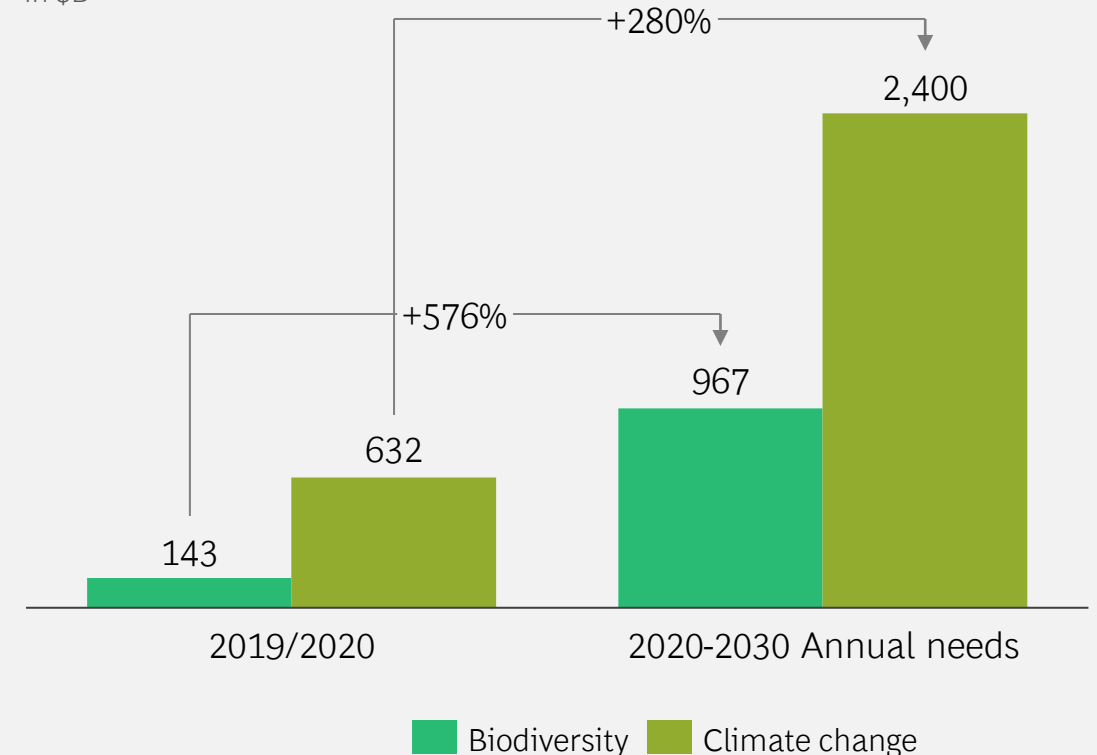


+40.000 attendees

~200 countries represented on site (Including 120 countries leaders)

## Biodiversity requires proportionally more funding than climate change, even if the overall funding need is lower

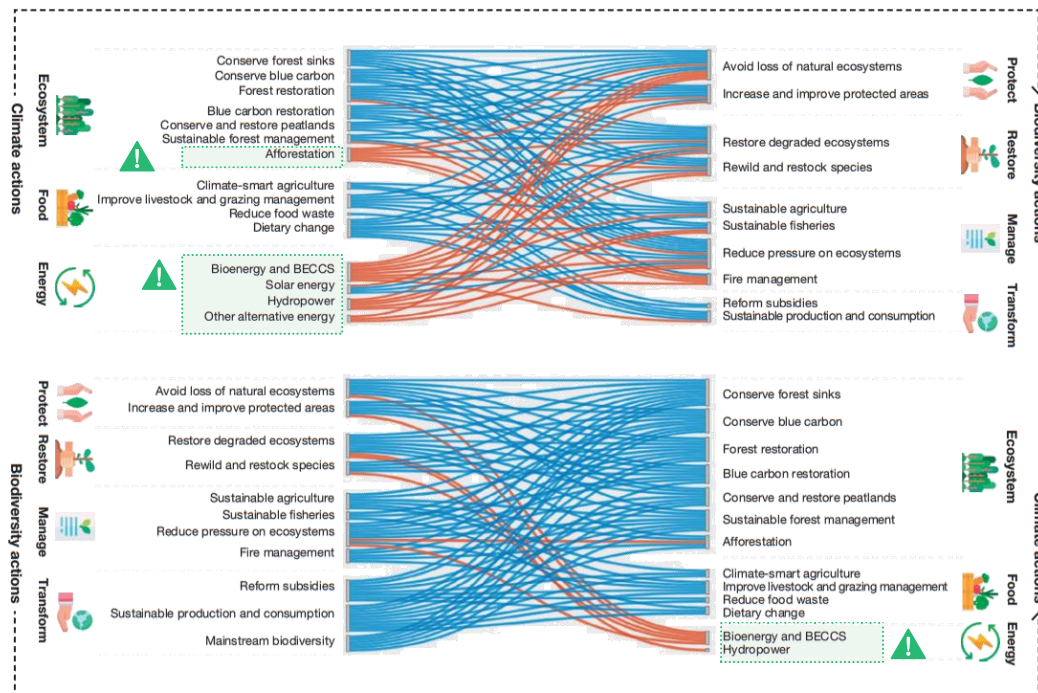
Estimated annual spending needs to tackle Biodiversity and Climate change, in \$B



# Most biodiversity actions have mainly positive effects on climate and can be considered as co-benefits, the opposite is not always true

## Climate actions do not always benefit to Biodiversity, despite it being a **key tool in the effort to combat climate change**

Numerous climate mitigation actions, particularly in the energy sector, raise concerns and risks for biodiversity preservation actions, which need to be anticipated and well-managed



## nature-based Solutions are among most effective climate actions

“Restoring carbon- and species-rich ecosystems (...) is among the **cheapest and quickest nature-based climate mitigation measures to implement**”<sup>1</sup>

“Increasing sustainable agricultural and forestry practices (...) is jointly estimated by the report to offer **annual climate change mitigation potential of 3-6 gigatons of carbon dioxide equivalent**”<sup>1</sup>





BCG × Quantis

Executive Summary

What is the UN CBD and why it matters for business

The imperative to reverse nature loss by 2030

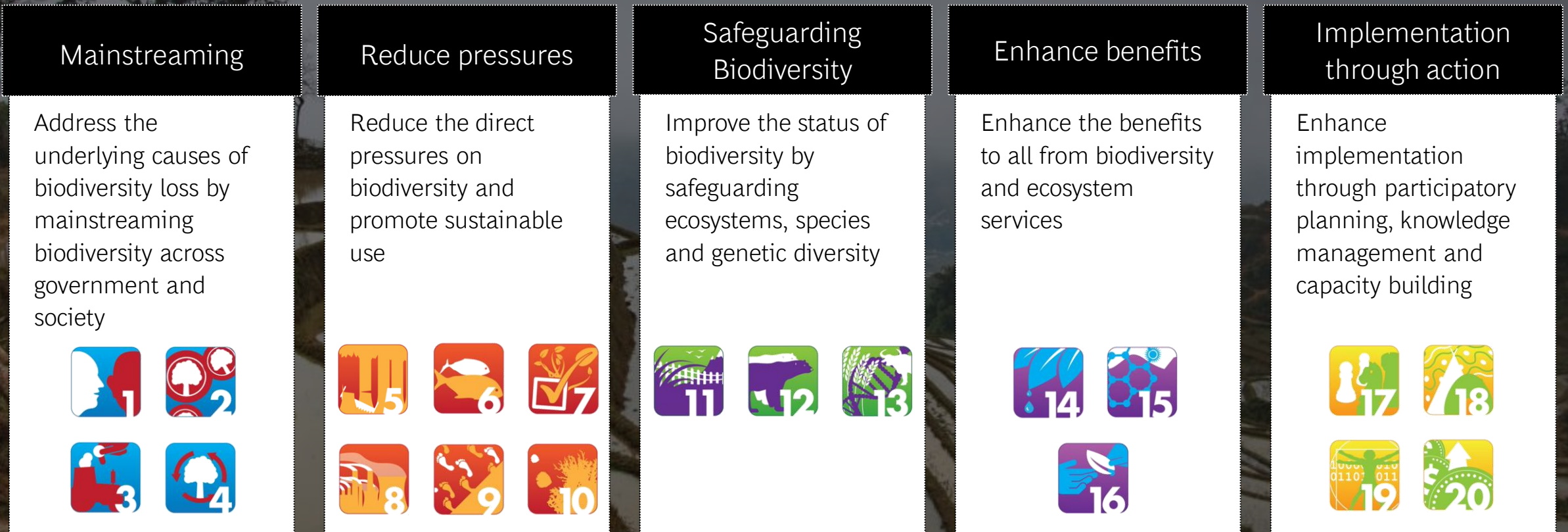
➤ The UN CBD COP15 agenda

Implications for business leaders

BCG x Quantis expertise on Biodiversity

# The challenge: the world did not meet any of the targets from the previous Global Biodiversity Framework adopted in Aichi in 2010

- The **10<sup>th</sup> meeting of the Conference of the Parties to the CBD**, held in 2010 in Nagoya, Japan, adopted a revised **Strategic Plan for Biodiversity 2011-2020**, including 20 Aichi Biodiversity Targets, related to 5 Strategic Goals
- The Aichi Biodiversity Targets were established in an effort to **protect and conserve the biodiversity that underpins global food security, health and clean water**. However, to this date, **none of the targets were met** (See details on next slide)





# The race to protect nature: how will the 3 CBD's pillars be addressed during COP15 in Montréal?

## Global Biodiversity Framework (GBF)

1

### The conservation of biodiversity



Have all CBD signatories commit to the "30 by 30" goal

Main theme of negotiations

Key discussion points

- Key target to protect 30% of lands and seas by 2030
- Discuss level of quality and financing for protected areas (vs. risks of "paper parks")

2

### The sustainable use and benefit-sharing of the components of biodiversity



Validate set of **targets on sectors, and sustainable consumption** after failing to achieve Aichi Biodiversity targets and discuss the **fair and equitable sharing of the benefits arising out of the utilization of genetic resources**

- Esp. key targets on Agriculture, aquaculture and forestry - first draft of the framework published in Sept. 2021 with no disclosed update since then
- Potential update to **Nagoya's protocol** on DSI<sup>1</sup> on genetic resources - Can be a blocking point for genetically-rich developing countries who are dependent on this source of financing

3

### The implementation and mainstreaming of Biodiversity targets and measures



Ensure the **integration of biodiversity into policies**, regulations and development processes and **increase the level of financial resources made available** from all sources

- Measures for business and financial institutions to assess and disclose impacts on nature and act to reduce impacts
- Increase of external funding for developing countries to help them implement their biodiversity strategies

# COP15 will take place in Montreal, Canada from 5-19 December with both government and business-related entities



The COP15 UN Biodiversity Conference was supposed to take place in 2020, but began as virtual, online talks in **October last year**. Negotiations were meant to reconvene in Kunming, China in April but that was repeatedly postponed due to Covid and geopolitical reasons. Talks will now conclude in **Montreal between December 5-19, 2022**



The aim of the summit, which **China will still chair** despite the venue change, is to **approve the final version of the draft UN Convention on Biological Diversity (CBD)**

	Wednesday	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	07-12-22	08-12-22	09-12-22	10-12-22	11-12-22	12-12-22	13-12-22	14-12-22	15-12-22	16-12-22	17-12-22
Forums					Nature and Culture Summit			Finance Day			
					Cities Summit						
					Science Forum						
						Business Forum					
Action Zone			Business Hub						Action Days		
Ministerial									High Level Segment		
Pavilions	Side events							Side events			
	CEPA Pavilion							Rio Convention Pavilion			
	China Pavilion										
NP Pavilion	Launch	Diversity of voices	30x30, restoration, sustainable management	Reimagining conservation & human rights	Partnerships & solidarity	Innovation & tech	Role of business	Finance	Climate change	Close	

Please click on "Side events" to access the full list of side events confirmed by the CBD.



# The ability to reach an agreement, and the level of ambition, depend on the ability to reach a consensus between different regional coalitions



**Like-Minded group of Developing Countries** on biodiversity and development (LMDC)<sup>1</sup>

## Positioning towards CBD

- ✔ Party to the UN CBD since 1992, active signatory of the convention, contributing to the implem. of biodiv.-related international agreements
- ✘ Not signatory to the CBD, although participating to the nego. and the drafting of the convention
- ✔ Party to the UN CBD since 1993, initially supposed to host COP15, still chairing the event despite postponement & relocation
- ✔ Party to the UN CBD since 1994. However, holding up progress in climate talks due to reliance on resources exploitation for its development
- ✔ Mostly UN member countries parties to the CBD, however lack of funding to implement and scale biodiversity measures

## Local Biodiversity strategies

- European Biodiversity strategy for 2030: proposal for EU's contribution to COP15 nego.
  - European Green Deal: -55% GHG emissions by 2030 + Farm to Fork strategy (e.g., 50% pesticides & fertilizers, plant 3M trees, 25% of agri. land to be used for organic farming)
- Appointment of special envoy for Biodiversity and Water Resources in Sept.22
  - Biodiversity Policy established in 2014: advocating valuation and safeguarding of biodiversity
  - Commitment to 30 by 30
- China Biodiv. Conservation Action Plan (1994), China Program for Conserv. & Use of Bio. Resources (2006-20)
  - Commitment to reach an agreement during COP15
  - China still facing pressures and challenges due to fast urbanization & indus.
- One of the 1<sup>st</sup> South American countries to fully adopt a National Biodiv. Strategy
  - 2020 Biodiv. Targets adopted in Sept.13, aligned with Aichi
  - Habitat loss most significant cause of biodiv. loss (land use change and direct expl.)
- Series of IGOs and institutes addressing biodiversity (e.g., Central African Forest Commission (COMIFAC) - Working Group on Biodiversity)
  - Habitat loss and spread of invasive species most significant cause of biodiv. loss



"Europe will also play its role in the global green transition. Ahead of COP15 in December, we are **confirming an unprecedented investment in support to our partners**"

President of the EC, Ursula von der Leyen, UN General Assembly, Sept. 22

"The order commits to the goal of **conserving at least 30% of our lands and oceans by 2030** and launches a process for stakeholder engagement (...) to identify strategies that will result in broad participation"

Executive order signed by President Joe Biden, Jan. 21

"**Finance and a strong implementation mechanism should be the biggest legacy of China's CBD presidency.** Our planet needs not just another set of targets on paper, but their actual fulfilment"

President of China, Xi Jinping, during Kunming talks, Oct.21

"We preserve more [rainforest] than anyone. No country in the world has the moral right to talk about the Amazon. You **destroyed your own ecosystems.**"

President of Brazil, Jair Bolsonaro, 2019

Pending 2022 election

"Developing countries are asking for the possibility of **tabling another fund mechanism that will be more accessible, simple and enhance our capabilities to conserve our biodiversity**"

Ministry of Environment and Sustainable Development, Democratic Republic of the Congo (DRC), Daniel Mukubi, 2022

1. The group includes the African Group, and Argentina, Bolivia, Brazil, Cuba, Dominican Republic, Ecuador, Guatemala, India, Pakistan and Venezuela  
Source: CBD, European Parliament, National Geographic, World Bank, BCG analysis



BCG × Quantis

## Executive Summary

What is the UN CBD and why it matters for business

The imperative to reverse nature loss by 2030

The UN CBD COP15 agenda

### ➤ Implications for business leaders

BCG x Quantis expertise on Biodiversity



# Forward-looking companies know that Biodiversity is the "next Climate"



**Biodiversity: a complex issue with many approaches**

- There are several approaches to biodiversity (5 human pressures, 9 planet boundaries, dozens of metrics and possible targets, etc.) and companies need a robust materiality assessment and a good understanding of the topic to pick the right approach
- There is a call for upstream (e.g., agricultural) and collective (e.g., regulatory) actions to drive impact at scale

123

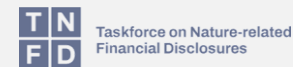
**Increasing realization that biodiversity is a critical topic for businesses**

- The mapping of economic value chain's major pressures reveals impact hotspots - while the Climate lens puts the focus on Energy, the broader nature lens puts the focus on the Agricultural system, also including the Food & Beverage, Fashion, Pharma, Personal Care and Energy sectors

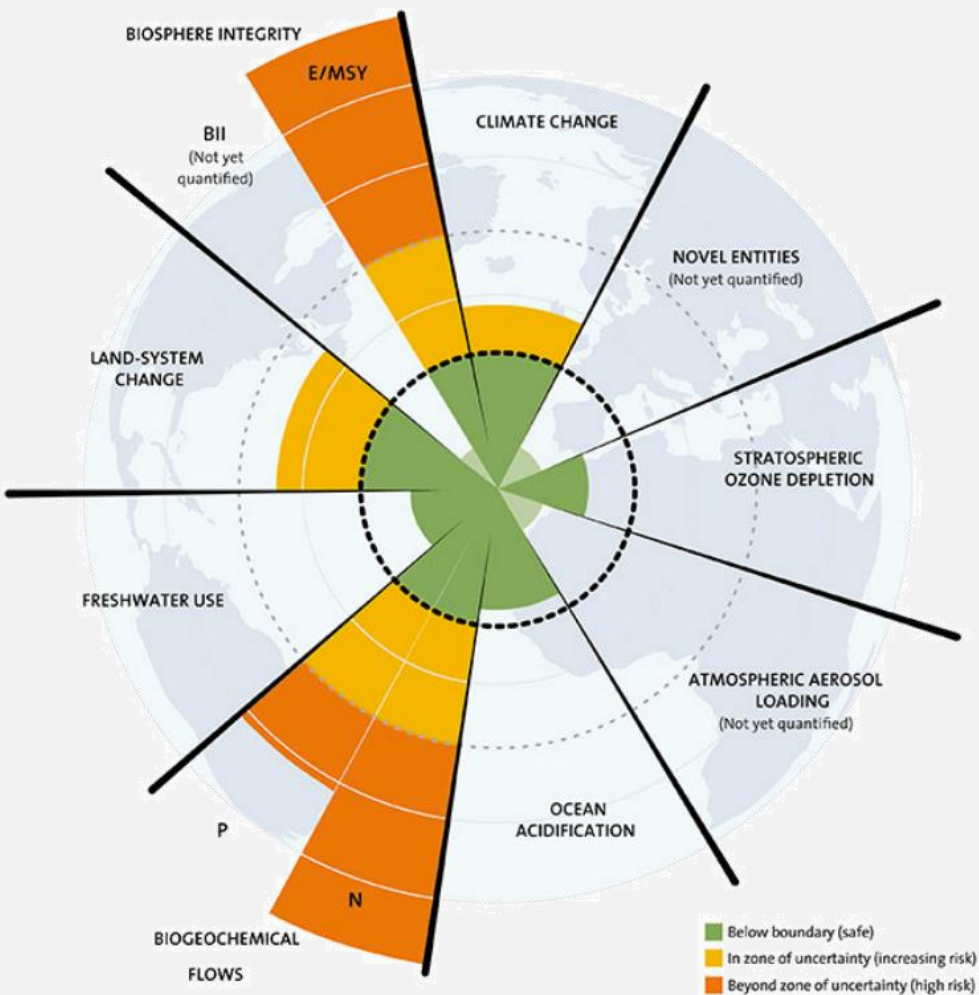


**Metrics and coalitions emerging in the field**

- There is an ecosystem of organizations and coalitions that are structuring this space and shaping tomorrow's regulation, even though it is still fragmented and complex to navigate
- The COP15 will contribute to shape and structure this ecosystem and will be a key opportunity for businesses to contribute to the nature agenda



# Planetary Boundaries extend the concept of SBTs<sup>1</sup> beyond Climate



Biodiversity loss poses a **systemic risk** threatening **ecosystem collapse** and unpredictable, related consequences for our economy at large



The **mutual reinforcement of biodiversity loss and climate change** threatens to accelerate global warming beyond control

1. The Science Based Targets initiative was established in 2015 to help companies to set emission reduction targets in line with climate science and Paris Agreement goals. This initiative is a collaboration between the CDP (was Carbon Disclosure Project), the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF)  
Source: Stockholm Resilience Institute  
NB: "Safe and Just" Planetary Boundaries are being developed by the Earth Commission as part of the Global Commons Alliance



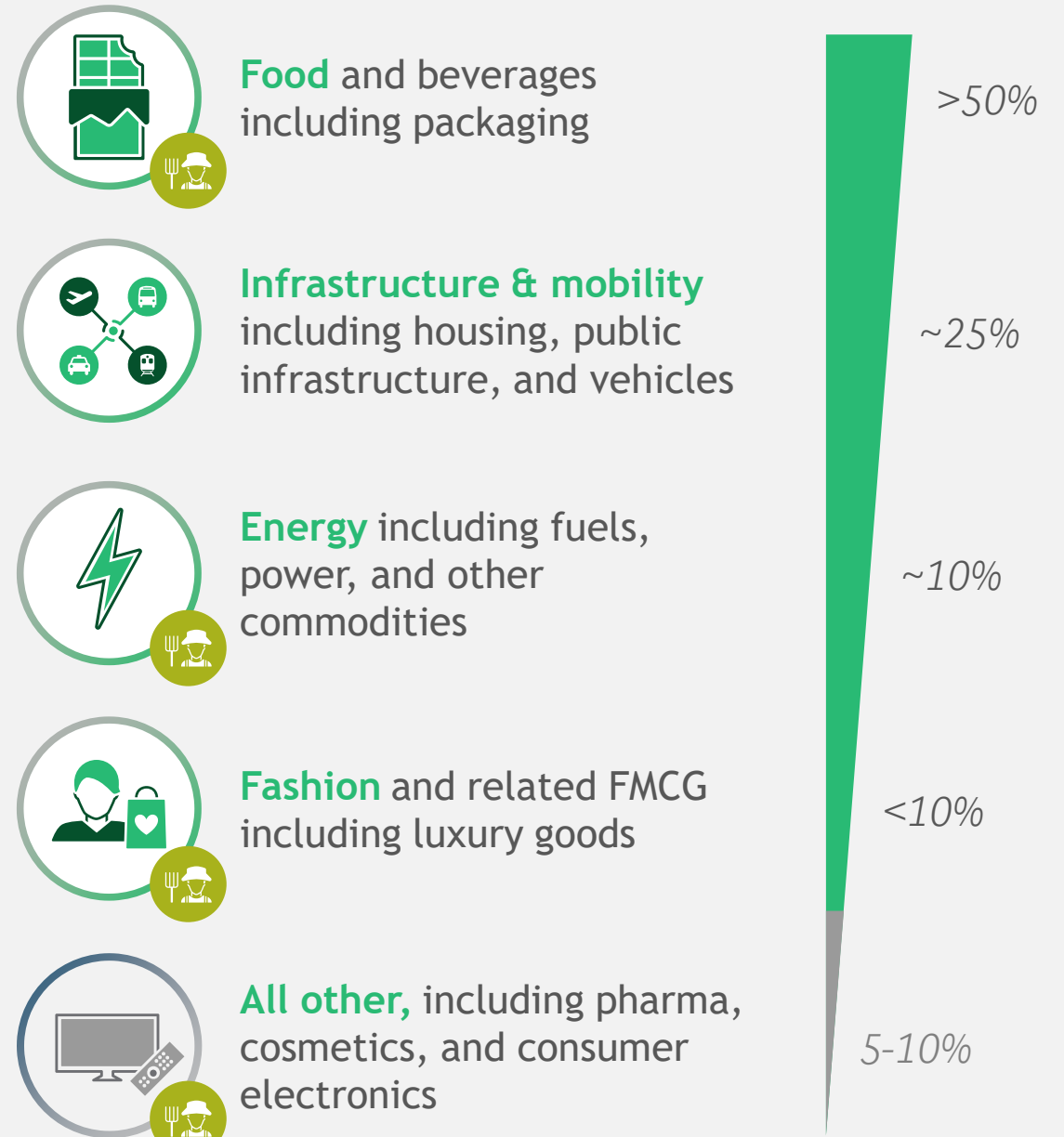
While the **Climate lens** puts the focus on **Energy**, the broader **nature lens** puts the focus on the **Agricultural system**

Note: Value chains defined by consumer end products;  
Source: BCG analysis

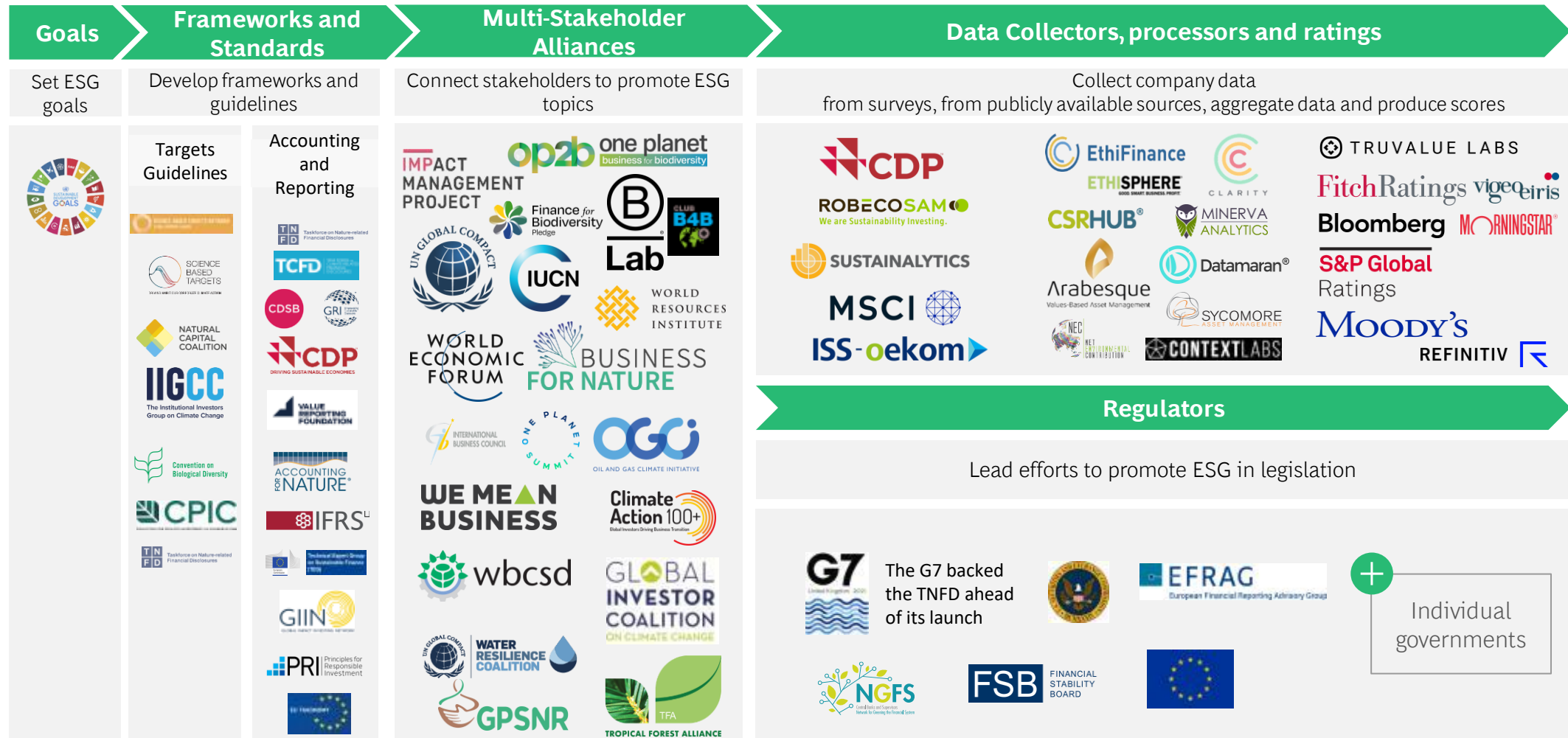


Agricultural system including the Food & Beverage, Fashion, Pharma, Personal Care and Energy sectors

Estimated share in pressures across value chain



# Nature x Business: a very fragmented landscape providing tools and guidance to tackle the deteriorating 'State of Nature'





# COP15 is a key opportunity for businesses to contribute to the nature agenda and a resilient and sustainable future

---



Engage to **develop long term sustainability-focused** strategy incorporating nature-positive objectives



Contribute to creating a **stable operating environment** for business and nature



**Exposure and engagement opportunities** with next generation of leading businesses supporting nature restoration



Develop understanding of **new and upcoming regulation** and adapt quickly to emerging constraints



BCG × Quantis

Executive Summary

What is the UN CBD and why it matters for business

The imperative to reverse nature loss by 2030

The UN CBD COP15 agenda

Implications for business leaders

➤ BCG x Quantis expertise on Biodiversity



**BCG and Quantis can help you navigate the complexity of the topic and the ecosystem**



Nature is complex and there is no single metric to approach it



There is an ecosystem of organizations and coalitions that are shaping this space and shaping tomorrow's regulation



This ecosystem is highly fragmented, and hard to navigate, with competing / overlapping organizations and frameworks



We have the expertise to navigate this ecosystem, and help companies prioritize their efforts



BCG and Quantis are actively engaged with the key players in this space. Our approach covers TNFD and SBTN, the two leading frameworks

# BCG and Quantis have established a cutting edge and extensive Sustainability experience



- We know your business agenda, and your industry's sustainability constraints
  - We are long-term strategic partners to our clients , and we continuously support them in harnessing climate innovation to accelerate the development of corporate action across all sectors.
- We are leaders in change management and transformation for sustainability
  - We have extensive industry knowledge and transformation capabilities, and we help our clients turn their challenges into action by seizing new opportunities to build competitive advantage.
- We have a dedicated "Climate & Sustainability" practice to support key players of the ecosystem
  - We have executed hundreds of nature projects over the past 5 years with leading companies and organizations across all industries on sustainability and nature.
  - We are the exclusive consulting partner for COP27 and also have partnerships with leading organizations and nature coalitions including with the WEF, SBTi, CDP, SBTN, and WWF.

- We have a deep environmental expertise in science-based Nature impacts and strategies
  - We are SBTN partners and are working with 10+ companies of the corporate engagement programs.
  - We have helped the SBTN Technical Team and worked on the steps 1, 2 guidance, freshwater hubs pilots, land hub pilots.
- We have been contributing to bring biodiversity to the business agenda as a key topic for several years
  - We have a proven track record of implementing a science-based, systems-level approach to accelerate sustainable business transformation to operate within planetary boundaries.
  - We drive innovative solutions to critical and diverse environmental challenges, from climate change to biodiversity loss
- We work with leading organizations to implement strategies that contribute to a nature positive world
  - We have been working on more than 5000 projects related to environment over the past 15 years.



# For more information, please reach out to our Nature & Biodiversity experts



**Dimitri Caudrelier**  
CEO Quantis



**Guillaume Charlin**  
Managing Director and Senior Partner  
Paris



**Pierre Collet**  
Global Climate Expertise lead



**Lorenzo Fantini**  
Managing Director and Partner  
Milan



**Tatiana Fedotova**  
Global Water Expertise lead



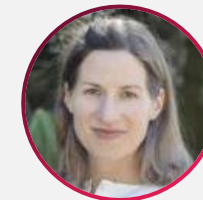
**Michel Frédeau**  
Managing Director and Senior Partner  
Paris



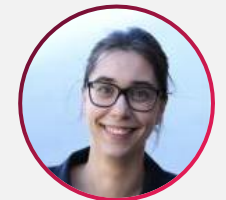
**Fabien Hassan**  
Principal  
Paris



**Torsten Kurt**  
Managing Director and Senior Partner  
Berlin



**Amanda Martin**  
Global Client Transformation  
Lead



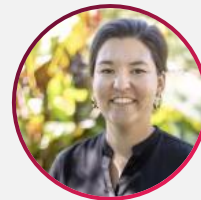
**Edith Martin**  
Global Biodiversity + Nature Expertise  
Lead



**Jesper Nielsen**  
Managing Director and Senior Partner  
London



**Laura Peano**  
Global Plastics & Packaging  
Expertise lead



**Tetyana Pecherska**  
Global Land & Ag. Expertise  
lead



**Adrien Portafaix**  
Partner and Associate Director  
Paris



**Shalini Unnikrishnan**  
Managing Director and Partner  
Chicago

---

**Appendix** – details on nature impact assessment and targets



# Unlike previous extinction events caused by natural phenomena, the 6th mass extinction is driven by human pressures

And its rate is already at least 10-100x higher than it has averaged over the past 10 million years<sup>2</sup>

## Socio-economic drivers

- Changing consumption patterns including lifestyle harmonization & rising resource use



- Innovation in production patterns



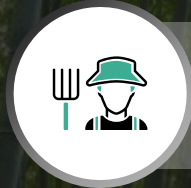
- International trade & globalization



- Demographic trends incl. urbanization



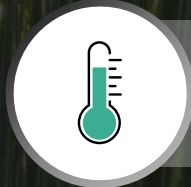
- Governance developments



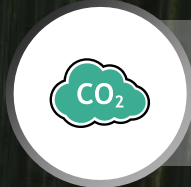
Agriculture is responsible for **80%** of global deforestation and accounts for **70%** of the planet's freshwater use<sup>1</sup>



**66%** of the ocean area have been significantly altered by excessive exploitation<sup>2</sup>



2°C global temperature rise will result in a **99%** loss of coral reefs globally (almost complete eradication)<sup>3</sup>



**x10** Marine plastic pollution increase since 1980, affecting at least **267** species<sup>2</sup>



Invasive alien species have increased by **40%** since 1980, associated with expanding trade and human population dynamics and trends<sup>2</sup>

# Planetary boundaries have high impacts on the different biomes composing our ecosystems once they are crossed

## 9 planetary boundaries and their impact on earth ecosystem

## Biomes impacted

**Land-system change:** Human modification of land and oceans ecosystems impacting not only the absolute amount of available space, but also its functions, quality, and spatial distribution (e.g., draining of wetlands to build houses)



**Freshwater use:** Industry freshwater consumption and environmental flow requirements to maintain the level of water needed for living species. It is essential to point out that regional variations occur regarding water availability and the freshwater cycle



**Biosphere integrity:** Direct human impact such as hunting, fishing and picking, causing extinction of species due to overconsumption (E/MSY) and ecosystem disturbance due to the introduction/disappearance of new species and the occurrence of noise, visual or physical disturbances (BII) (e.g., car sound, streetlights or dams)



**Climate change:** The production of greenhouse gases (measure in CO2 equivalent) causing global warming increasing the frequency of natural disasters such as hurricanes, floods, ...



**Atmospheric aerosol loading:** Aerosol play a critically important role in the hydrological cycle affecting cloud formation and atmospheric circulation, such as the monsoon systems in tropical regions. They also have a direct effect on climate, by changing how much solar radiation is reflected or absorbed in the atmosphere



**Stratospheric ozone depletion:** The emission of gases such as chlorine, bromine or fluorine reacts with and reduces the ozone layer, leading to a reduction in earth's UV protection, causing a higher incidence of skin cancer in humans as well as damage to terrestrial and marine biological systems



**Biogeochemical flows:** The overconsumption of nitrogen and phosphorus for agricultural production leads to a massive influx of these nutrients into the oceans and freshwaters, which causes eutrophication of the water by the proliferation of algae, depletion of oxygen, ...



**Novel entities:** Chemical pollution and release of heavy metals and physical entities .g., plastics have irreversible effects on living organisms and can cause reduced fertility and permanent genetic damage



**Ocean acidification:** The nitrogen, carbon and sulfur compounds emitted in the atmosphere are absorbed by the oceans by chemical reaction, causing a drop in water's pH and a depletion in carbonate ion. This induces a decrease in the development of the first links of the food chain (corals, plankton)



Biomes  
Legend



Land



Ocean



Freshwater



Atmosphere

# The UN recognizes the failure of Aichi

Target not achieved
  Target partially achieved
  Target achieved

	Level of achievement		Level of achievement
 <p>By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably</p>		 <p>By 2020, at least 17% of terrestrial and inland water, and 10% of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed (...)</p>	
 <p>By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems</p>		 <p>By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained</p>	
 <p>By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied (...)</p>		 <p>By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained (...)</p>	
 <p>By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits</p>		 <p>By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable</p>	
 <p>By 2020, the rate of loss of all natural habitats, including forests, is at least halved and were feasible brought close to zero, and degradation and fragmentation is significantly reduced</p>		 <p>By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15% of degraded ecosystems (...)</p>	
 <p>By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem-based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species (...)</p>		 <p>By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation</p>	
 <p>By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity</p>		 <p>By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan</p>	
 <p>By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity</p>		 <p>By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected</p>	
 <p>By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment</p>		 <p>By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied</p>	
 <p>By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning</p>		 <p>By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, (...), should increase substantially from the current levels. This target will be subject to changes (...)</p>	

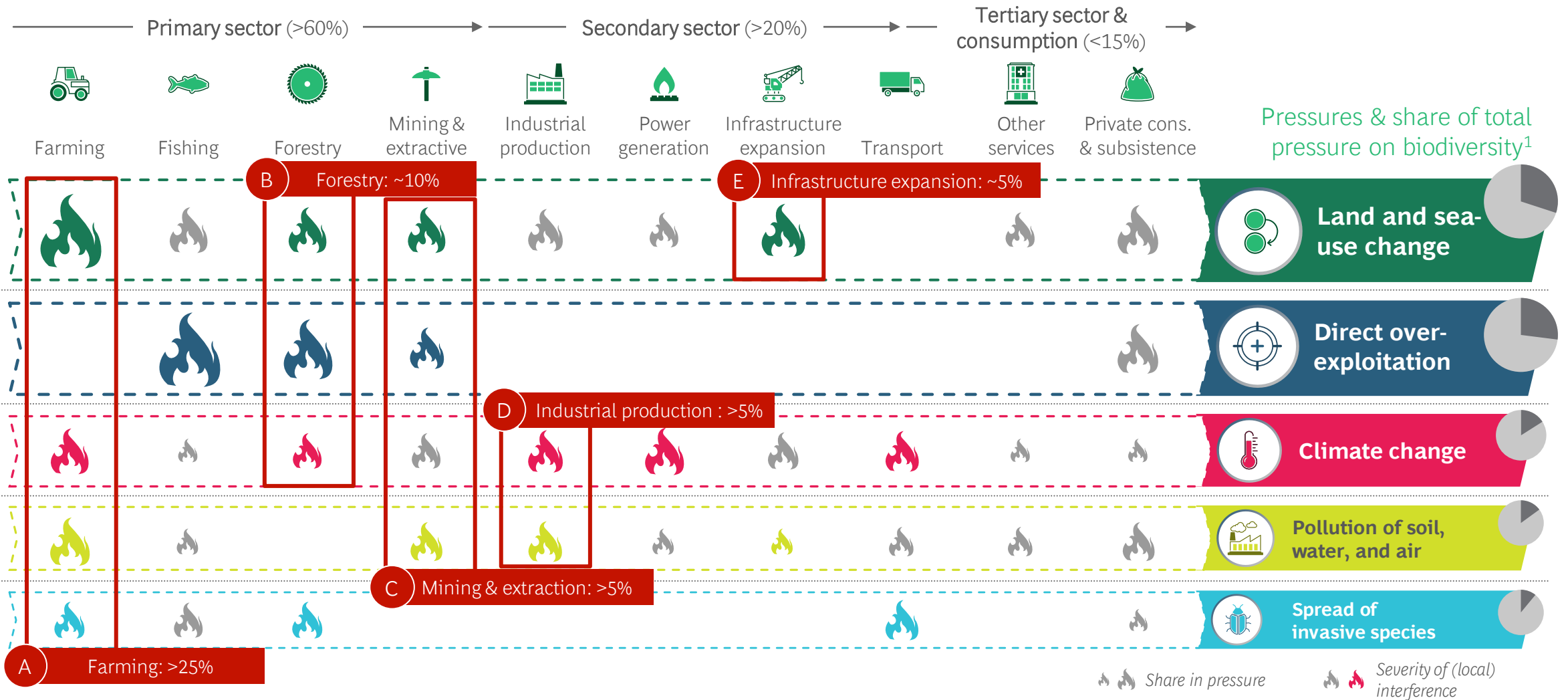


# Working groups to propose 22 targets focused on reducing threats, implementation & Mainstreaming and Sustainable use & Benefit-sharing

What are the key elements for the post-2020 framework for business ?



# Mapping of economic value chain to major pressures reveals impact hotspots—five underlying economic activities analyzed in deep dives



Rough estimates based on IPBES data and equal weighting of biomes, not accounting for aggravation of climate change  
 Note: Size of flame roughly reflects share in total pressures on biodiversity; activities with very small share in respective pressure disregarded, illegal activities disregarded  
 Source: IPBES (2019), BCG



BCG × Quantia

---

Thank you