Corporate Biosphere Stewardship provocation

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David Hume Institute

A bit of a route map

We are not going to revisit this context

- Step 1: the context
  - Nature resilience & biodiversity revitalisation are ‘grand challenges’
  - Corporations impact upon nature and biodiversity
- Step 2: what would biosphere stewardship entail?
  - The wish-list for stewardship … who could be stewards?
  - How could you obtain data to do this?
- Step 3: Enabling biosphere stewardship?
  - Mapping and valuing business-biosphere relationships
  - Biosphere as a critical infrastructure

Jan – infrastructuring (as a verb)

Ian – infrastructuring (as a noun)

What comes together for corporate biosphere stewardship?

- Vision alignment between corporations & society on stewardship
- Frameworks to support corporations to pursue sustainability
- Transformation in 'licence to operate' (regulatory & consumer focused)
- Support of the financial sector (& tools for them to be stewards too)
- Radical transparency & translate corporate actions in ecological terms
- Accountability through disclosure

Who are the companies that collectively could steward?

Keystone actors – those who mobilise the biosphere

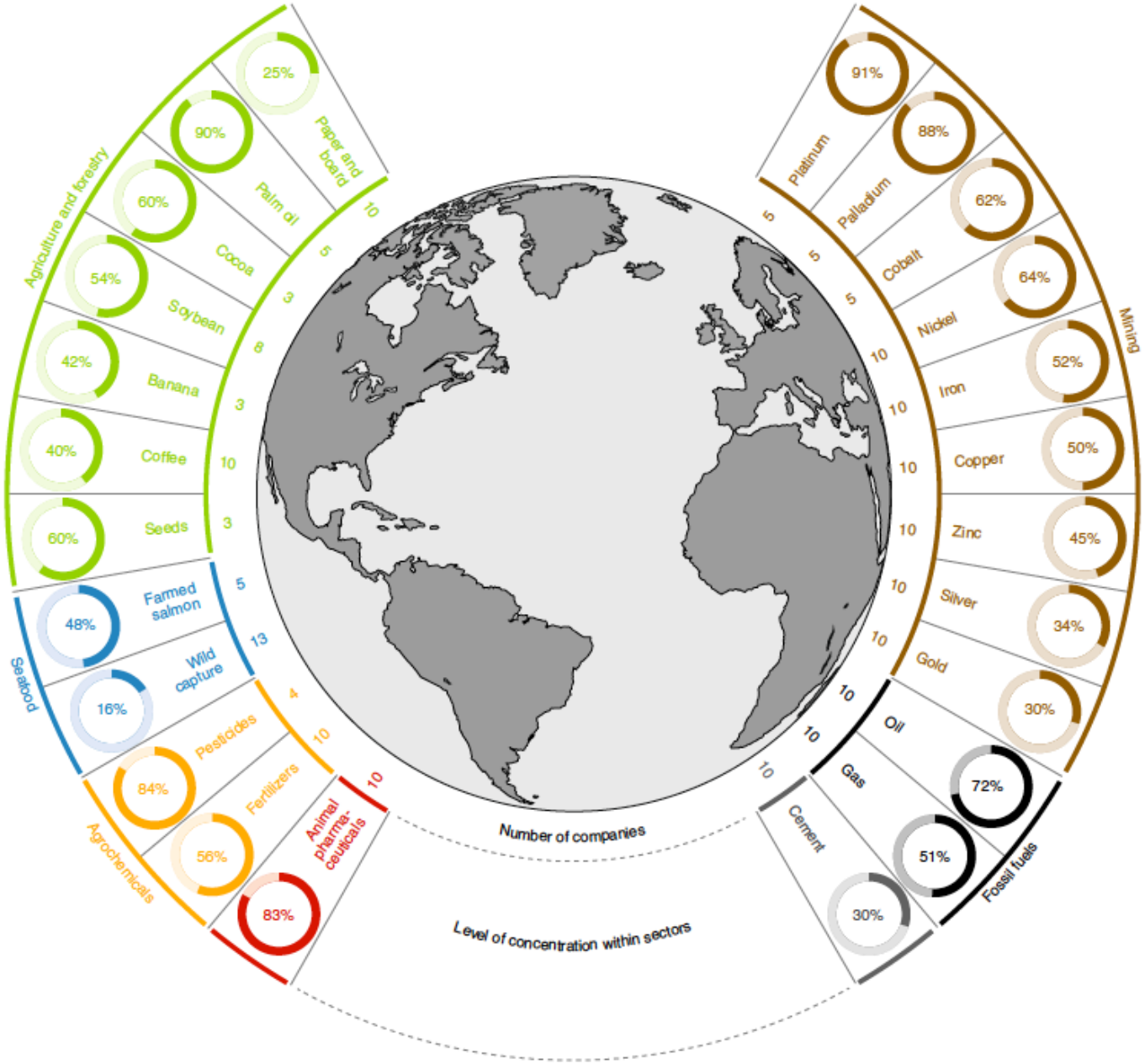
nature ecology & evolution

PERSPECTIVE

https://doi.org/10.1038/s41559-019-0978-z

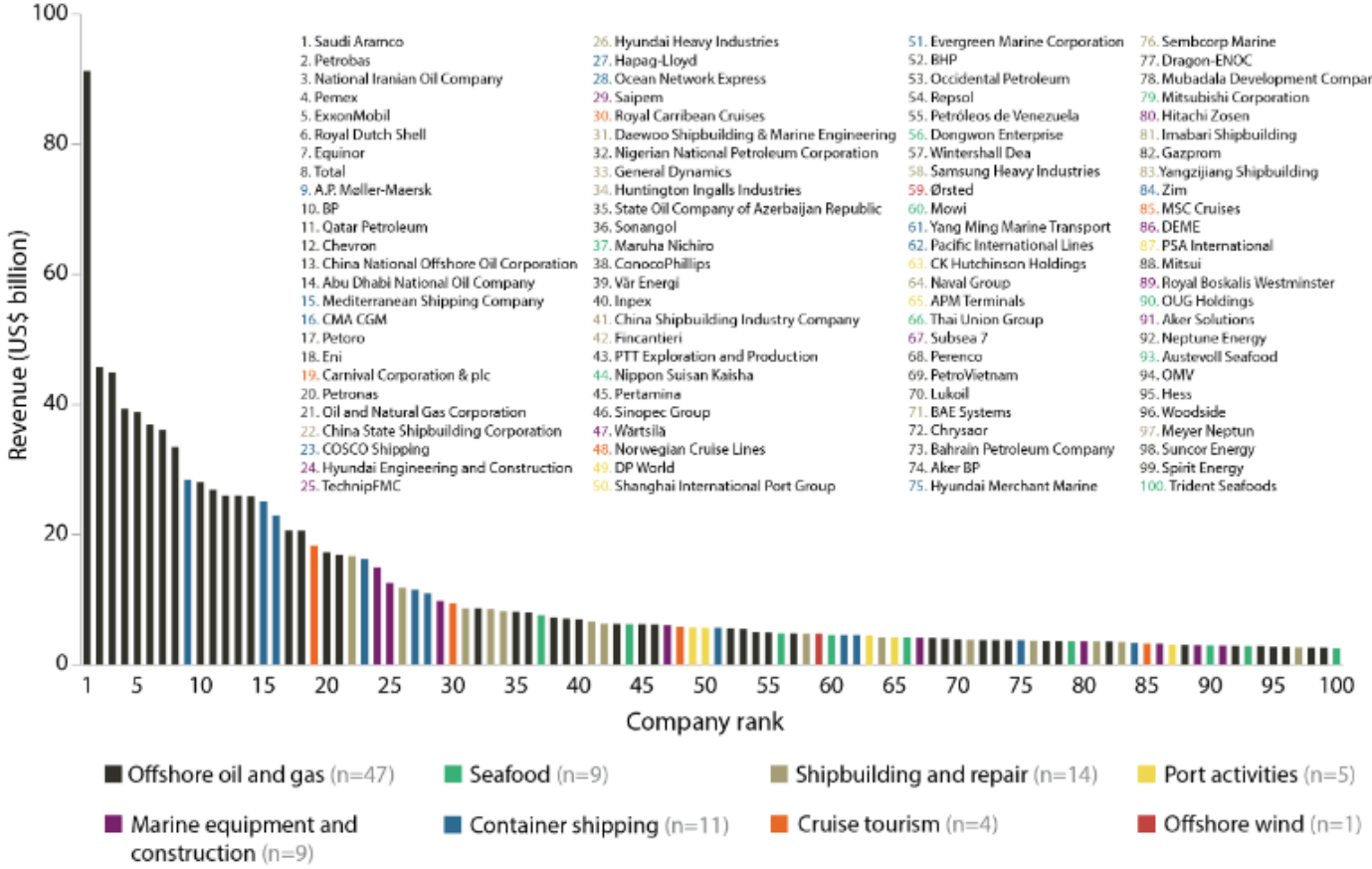
Transnational corporations and the challenge of biosphere stewardship

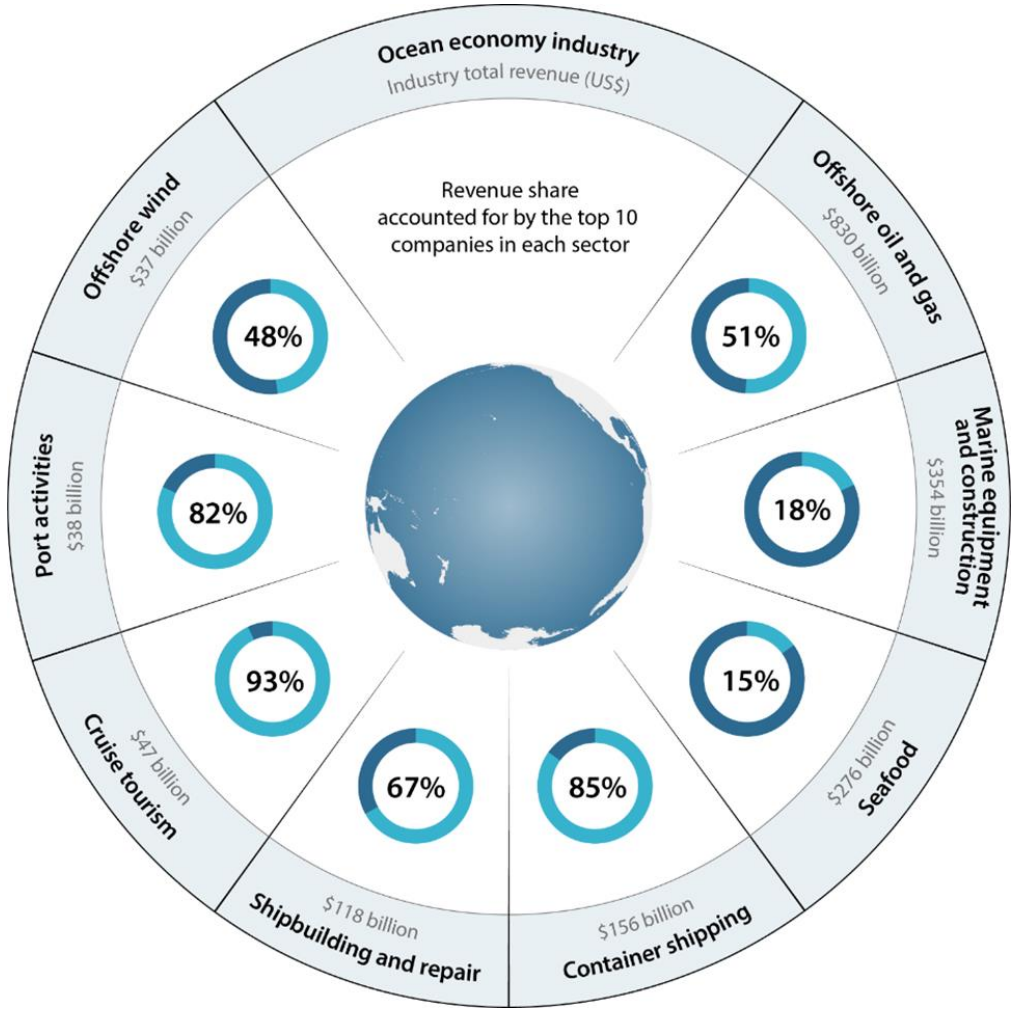
Carl Folke[1,2,3*], Henrik Österblom[2], Jean-Baptiste Jouffray[2,3], Eric F. Lambin[4,5,6], W. Neil Adger[7], Marten Scheffer[8], Beatrice I. Crona[2,3], Magnus Nyström[2], Simon A. Levin[9], Stephen R. Carpenter[10], John M. Anderies[1,11], Stuart Chapin III[12], Anne-Sophie Crépin[1,2], Alice Dauriach[3], Victor Galaz[1,2,3], Line J. Gordon[2], Nils Kautsky[13], Brian H. Walker[14], James R. Watson[3,15], James Wilen[16] and Aart de Zeeuw[17]



Ocean industries (& the Ocean-100)

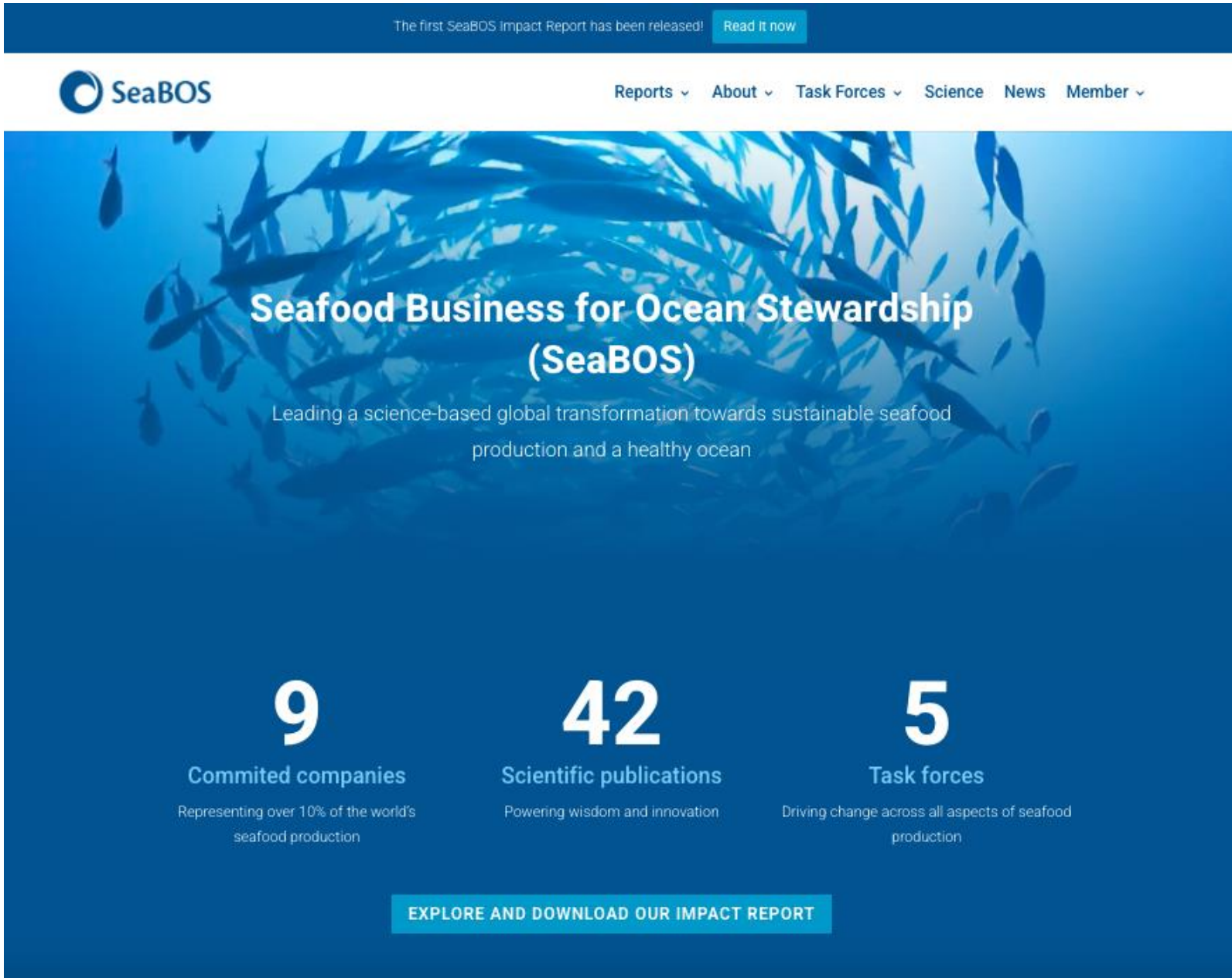
The Ocean 100 list is dominated by offshore oil and gas companies with a combined revenue of $830 billion. The only non-oil and gas company in the top ten is the shipping company A.P. Møller–Mærsk at No. 9.





Virdin, J., Vegh, T., Jouffray, J.-B., Blasiak, R., Mason, S., Osterblom, H., Vermeer, D., Wacthmeister, H., and N. Werner. 2021. The Ocean 100: Transnational corporations in the ocean economy. *Science Advances* 7: eabc8041

Seafood Business for Ocean Stewardship



Traceability & translation – knowledge infrastructure

Inquiries

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MARUHA NICHIRO
For the ocean. for life

Maruha Nichiro Group

Integrated Report 2022

Year ended March 31, 2022

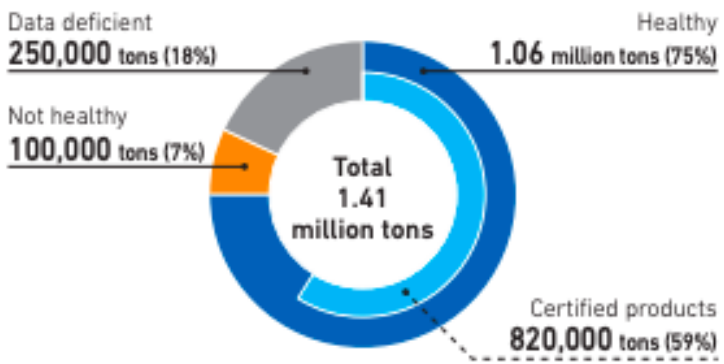
Results of the first marine resources survey

Maruha Nichiro Corporation and domestic and international Groups conducted surveys to ascertain the volume of seafood products handled for raw materials and products procured from outside the Maruha Nichiro Group between April 2019 and March 2020, and announced the survey results in FY2021.

Details of survey method and results can be seen at this URL:

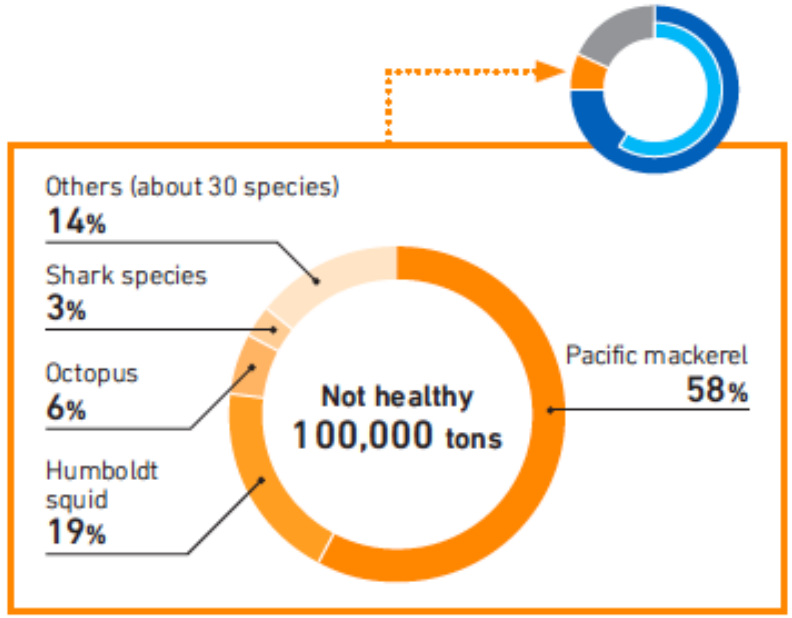
In the evaluation results of the resource status of wild seafood products, of the wild seafood products handled of 1,410,000 tons, seafood products that have been certified to be sustainable was about 820,000 tons accounting for a majority of all wild seafood products (59%). While recognizing these as our Group's strengths, we continue to promote the handling of sustainable fisheries certified seafood products.

Wild capture seafood products resource status



The resource status of wild seafood products handled by Maruha Nichiro Group (2019)

"Not healthy" details on 100,000 tons

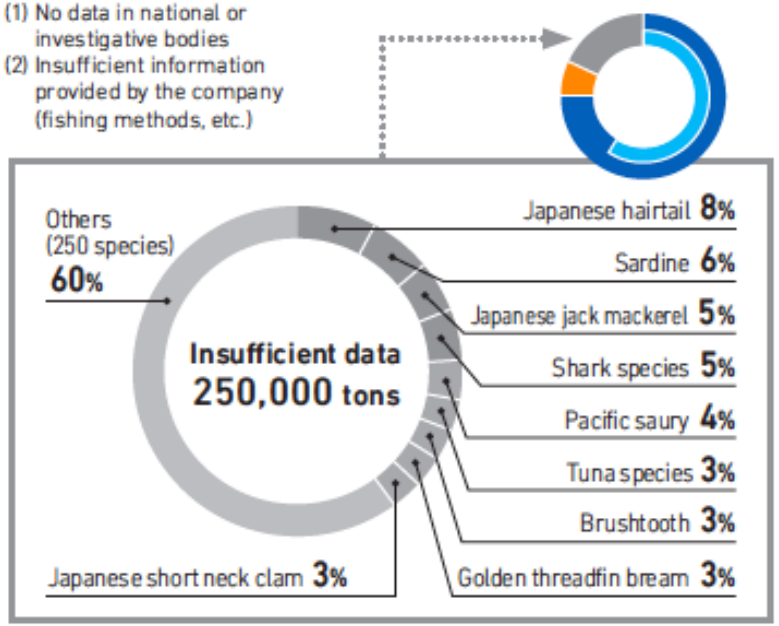


"Data deficient" details on 250,000 tons

Possible reasons

(1) No data in national or investigative bodies

(2) Insufficient information provided by the company (fishing methods, etc.)



Handling of threatened species (at the time of the survey, July to September 2020)

Red List Assessment	Ministry of the Environment assessment	Fish species	Scientific name	Weight (tons)	Procurement country	Remarks
CR* (Nearly extinct species)	Threatened Species Category I	Southern bluefin tuna	Thunnus maccoyii	136	New Zealand	Stock recovery plan in place
EN* (Threatened Species)	Threatened Species Category I	Atlantic bluefin tuna	Thunnus thynnus	10	USA, Spain, Greece, Japan	Stock recovery plan in place
EN* (Threatened Species)	Threatened Species Category I	Shortspine thornyhead	Sebastolobus alascanus	3	America	Considering review of handling
EN* (Threatened Species)	Threatened Species Category I	Nibe croaker	Japanese meagre	9	Japan	Considering review of handling

*CR: IUCN category - Critically Endangered (CR)
*EN: IUCN category - Endangered (EN)

Add information intermediators
and
spatial & species level data sets

Stakeholder Voice

Mr. Jim Cannon

Sustainable Fisheries Partnership Foundation
CEO

Sustainable Fisheries™
PARTNERSHIP

Profile updated on 4 March 2022

SUMMARY

IDENTIFICATION

SCIENTIFIC NAME(s)
Gadus chalcogrammus

SPECIES NAME(s)
Alaska pollock, Walleye pollock, pollock, Минтай.

COMMON NAMES
Bering Sea/Aleutian Islands (BS/AI) pollock, EBS pollock

Although the stock structure of Alaska pollock in the N Pacific is still not fully understood, E Bering sea pollock is treated as a single stock for management and assessment purposes *(NPFMC 2017)*. According to a study on the genetic population structure of pollock in the North Pacific (Grant et al. (2010) in *(Ianelli et al. 2015)*, "the analyses of phenotypic and demographic population traits in pollock are more important for identifying local populations because these variables reflect the short-term environmental drivers of larval survival and recruitment. Hence, the combined results of genetic studies on pollock do not provide information that would alter the present practice of managing pollock on the scale of continental shelf regions." The stock structure as presently considered in the E Bering sea is also supported to some extent by the genetic isolation by distance (IBD) pattern along the North Pacific. However, clear evidence for genetic population structure is still lacking, and further large-scale genetic studies are underway *(Ianelli et al. 2021)*.

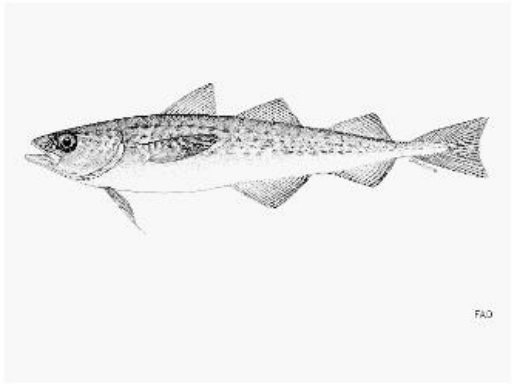


Image: Cohen et al. 1990 via FishBase

RELATED LINKS:

- See this species on FishBase
- Management Entities: North Pacific Fishery Management Council (NPFMC)
- Assessment Entities: Alaska Fisheries Science Center (AFSC)

ANALYSIS

Strengths

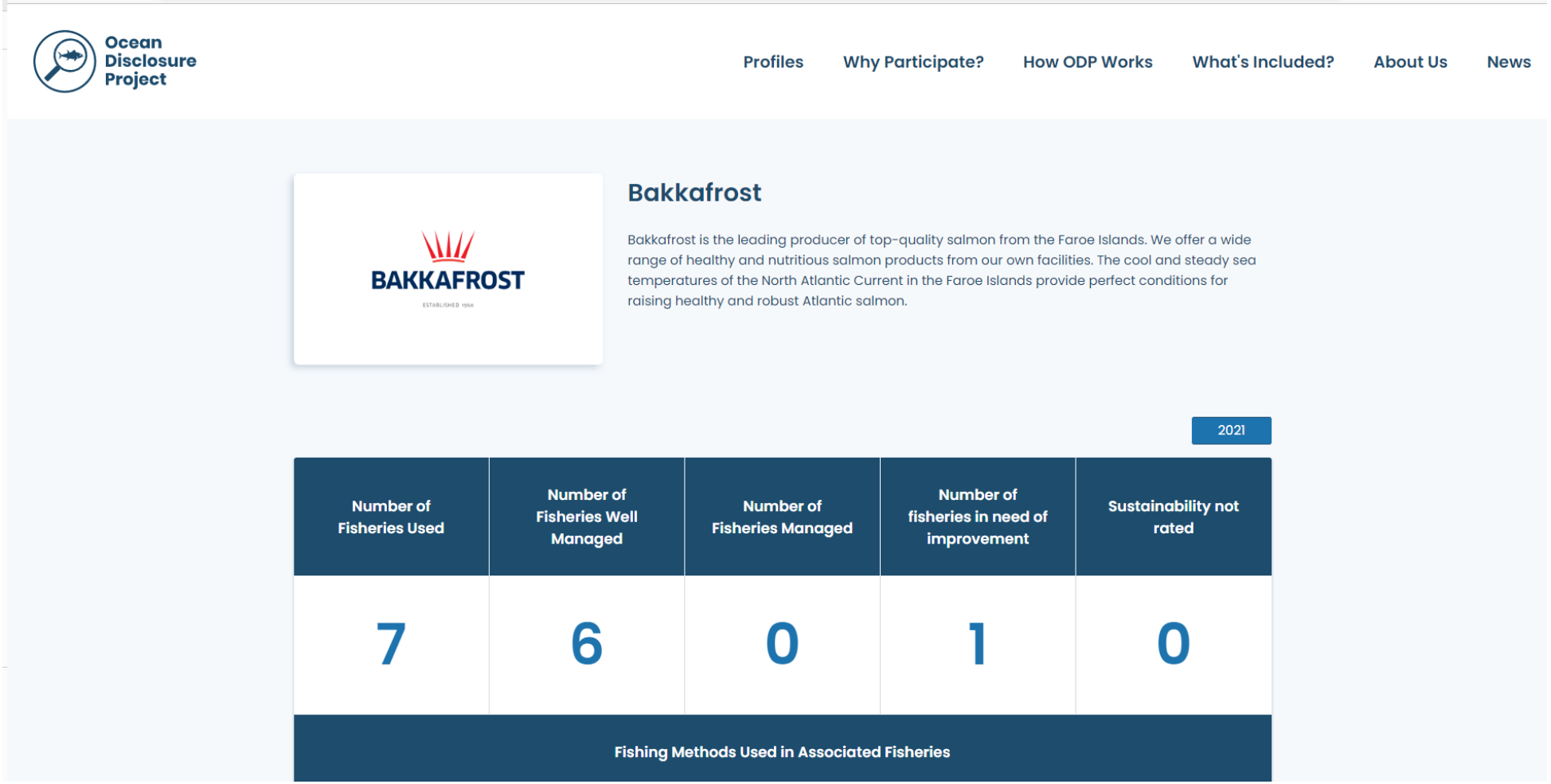
- Harvest policy and assessment employ many precautionary practices.

FISHSOURCE SCORES

Management Quality:

Management Strategy:	Managers Compliance:	Fishers Compliance:
10.0	10.0	10.0

Ocean Disclosure Partnership



Species and Location	Production Methods	Certification or Improvement Project	Sustainability Ratings	Notes
NE Atlantic Spring spawners **Fishery countries:** Faroe Islands, Greenland, Iceland	• Seine nets		Recommended **Ocean Wise** Recommended	
 **Atlantic mackerel** *Scomber scombrus* **NE Atlantic** **Fishery countries:** Faroe Islands	• Midwater trawl • Seine nets	**Not certified or in a FIP**	**FishSource** Needs Improvement **Ocean Wise** Not recommended	⌄
 **Blue whiting** *Micromesistius poutassou* **NE Atlantic** **Fishery countries:** Denmark, Faroe Islands	• Midwater trawl	**Certified**	**FishSource** Well Managed **Ocean Wise** Recommended	⌄

Co-op

The Co-op is a leading convenience retailer with more than 2,500 stores across the UK – that's one in every postal area. As a member-owned co-operative, it is guided by principles that include open membership and concern for community. As set out in the Co-op Future of Food ambition, they are committed to caring for the environment in which ingredients are sourced from. To achieve this, the Co-op support credible certification where it drives change. Co-op members and customers care about protecting the marine environment - that's why Co-op source seafood using strict criteria as part of their Healthy Oceans strategy, making sure we have fish for the future and thriving marine ecosystems.

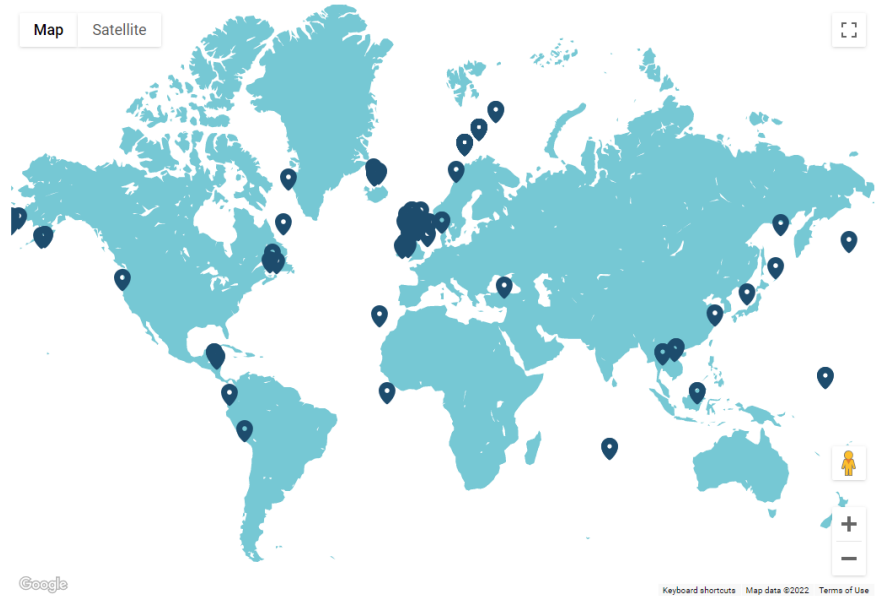
This profile covers all the farmed and wild-caught seafood sourced by the Co-op in 2020.

2021

Number of wild-caught species used	% volume from certified fisheries	% volume from a FIP	Number of farmed species used	% volume from certified farms
19	59	30	5	100

Production Methods Used

Associated Fisheries



Species and Location	Production Methods	Certification or Improvement Project	Sustainability Ratings	Notes
Fishery countries: Russia				
Atlantic cod *Gadus morhua* **Barents Sea** Fishery countries: United Kingdom	• Bottom trawl	Certified	**FishSource** Well Managed **Seafood Watch** Eco-Certification Recommended **Good Fish Guide** Best Choice 2 **Ocean Wise** Not recommended	^

Environmental Notes

- There are concerns about the cumulative impacts of the Barents Sea fishery upon the endangered species, golden redfish.
- There is bycatch for this fishery but non-target species are retained. Management measures are in place to reduce impacts on retained species.
- Bottom trawls will directly impact on the sea bed. Management measures are in place to limit impacts on benthic habitats.

General Notes

Land based resources for fish feeds

Example from Cargill's soy report

South America's major biomes

The Amazon, Cerrado and Gran Chaco biomes spread across several countries. In order to understand them in the context of our supply chain mapping, it's important to recognize that they are vastly different in terms of their natural characteristics and the local communities that depend on them. The Amazon is the world's biggest tropical forest, home to an immense amount of biodiversity as well as indigenous cultures. Soy farming occurs mainly around its edges. Meanwhile, the Cerrado is a savannah that stretches across Brazil's agricultural heartland. Farming activity here serves as the backbone for local economies and 46 million inhabitants.[1] The Gran Chaco spreads across parts of Argentina, Bolivia and Paraguay. It is the continent's second-largest forest, home to important biodiversity and many different communities as well.

The Amazon

85% of native vegetation in Brazil still intact[2]

2.0% of soy planted in Brazil today is on land that was native vegetation in 2008, none of which enters Cargill's supply chain[3]

The Cerrado

52.5% of native vegetation still intact[4]

8.3% of areas cleared of native vegetation between 2014 and 2019 had soy on them for the 2019-20 crop[5]

The Gran Chaco

80.9% of native vegetation still intact[6]

1.5% of areas cleared of native vegetation since 2008 had soy on them for the 2019-20 crop[7]

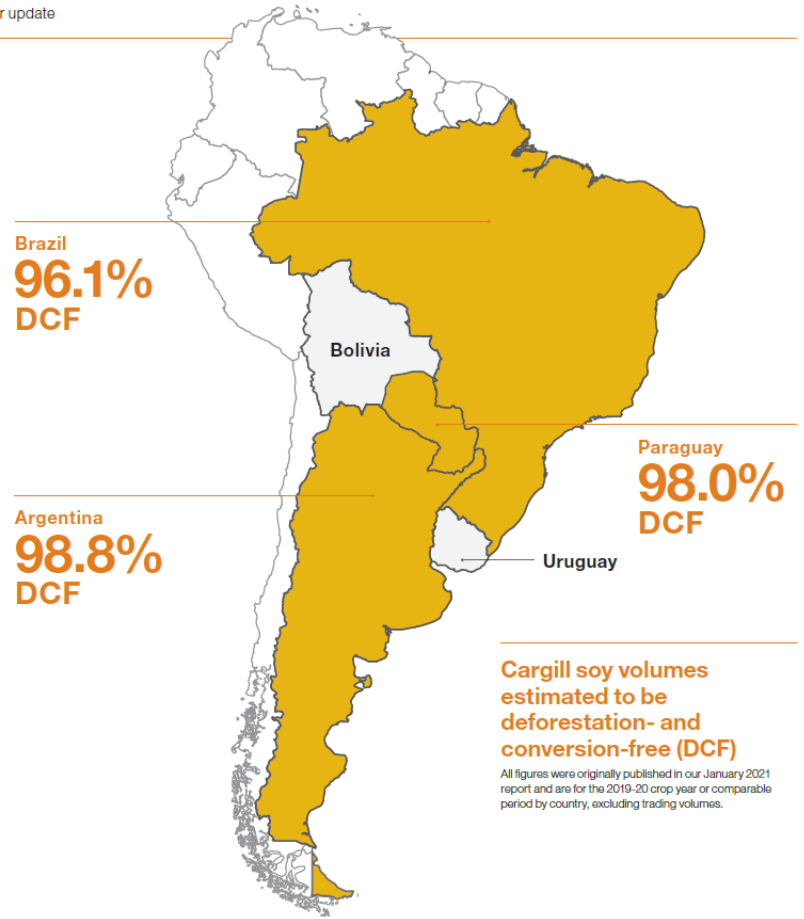
Sources: 1. Embrapa, 2. Brazil's Ministry of the Environment, 3. ABIOVE, 4. Agrosatélite, 5. Agrosatélite (internal document), 6. Mapbiomas, 7. Global Forest Watch

Understanding our DCF figures

We are committed to building a deforestation- and conversion-free (DCF) supply chain as quickly as possible. To do this, we are mapping where our South American business buys soy from and analyzing what portion of it was grown on land that may have been converted from native vegetation in recent years. This analysis will be done on an annual basis for each of the five countries where our South American business sources soy, ultimately based on polygon mapping of farms for direct suppliers.

As an intermediary step while we complete our polygon mapping, we established a methodology to report DCF estimates by determining how much of the sector's total soy production comes from areas free of conversion (see next page). We used 2008 as a reference point for our analysis, which aligns with Brazil's Forest Code. As a significant buyer of soy across the region, we used the assumption that our percentages of DCF soy in our direct supply chain are in line with the sector in total. We multiplied sector DCF rates by our market share of soy volumes to arrive at a total estimated DCF percentage for our soy in Brazil in our January 2021 report.

We used the same methodology to calculate our estimated DCF percentage for Argentina and Paraguay. Because complete data is not available for these two countries, we limited our analysis to areas where Cargill has commercial activities.



Cargill soy volumes estimated to be deforestation- and conversion-free (DCF)

All figures were originally published in our January 2021 report and are for the 2019-20 crop year or comparable period by country, excluding trading volumes.

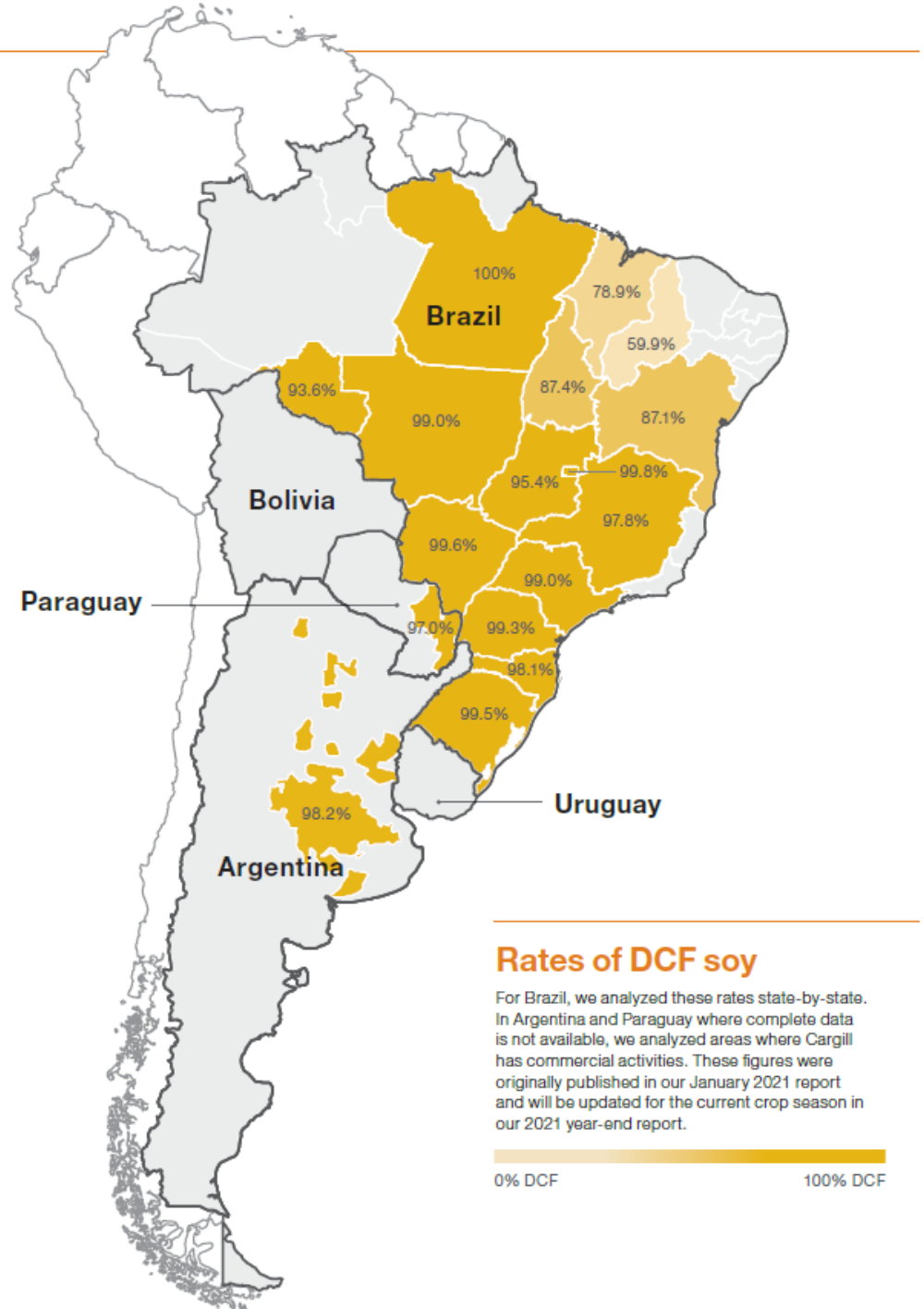
How we calculated our DCF percentages for direct supply

1. Satellites continuously gather data about land use and feed it to many organizations for research and analysis. The U.S. Geological Survey and the University of Maryland regularly publish datasets on crop production and land conversion, respectively.

2. Our team analyzed both of these datasets to calculate how much soy production in Brazil, Argentina and Paraguay did not take place on land converted from native vegetation since 2008, a date that aligns with Brazil's Forest Code. This deforestation- and conversion-free (DCF) soy makes up the vast majority of the crop in these countries.

3. Knowing the sectorwide rate of soy that is DCF for each state in Brazil, we multiplied those percentages by the soy volumes originated by the local Cargill business in the 2019-20 crop year. For areas inside Brazil's Amazon biome, we know that all of the soy we buy is DCF because every purchase we make is independently audited to ensure it is in compliance with the Amazon Soy Moratorium. So Cargill's DCF rate for those areas is 100%. We then tallied our estimated DCF soy for all of Brazil and divided by our total soy volumes countrywide to arrive at Cargill's estimated percentage of DCF soy.

4. We used the same methodology for Argentina and Paraguay. Because complete data is not available for all soy-producing states in these two countries, we used available data for all of the areas where we have commercial activities.



Business Biosphere Literacy and Competence

- All businesses possess ability to impact on critical functioning of biosphere
- Mainstreaming ***the exceptional***
  - 4% UK businesses integrated SDG 14 Life Under Water
  - 8% UK businesses integrated SDG 15 Life on Land
- Non-disclosure (ignorance?) of existential threats to business model
- Business exceptionalism, yet entangled with and connecting ecological systems
- (Mis)understanding dependency, positive impact and negative impacts on biosphere
- ***Known-knowns*** – tragedy of the commons & horizon

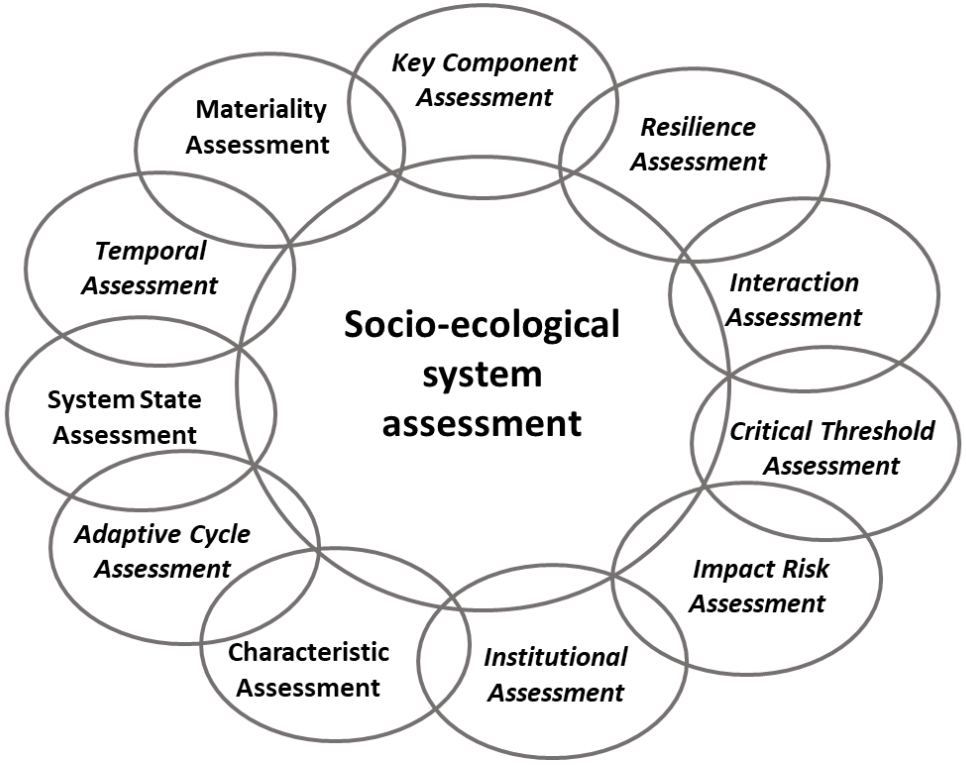
Business-Biosphere Relationships

- Simplification of landscape
- Loss of biodiversity
- Release of greenhouse gases
- Disrupting bio-geochemical cycles breaching planetary boundaries
- Disrupting freshwater cycles
- Marine Littering
- Reducing system resilience

- Complicating landscape
- Enhancing biodiversity
- Removal of greenhouse gases
- Rebalancing bio-geochemical cycles within planetary boundaries
- Rebalancing freshwater cycles
- Marine cleansing
- Increase system resilience

Nature as a critical infrastructure

- Everyone ‘wants’ effective infrastructure
- Infrastructure value creating activity for most
- No-one wants to pay for infrastructure
- Long lasting – NIMBY & NIMTO
- No-one wants to pay for infrastructure
- Infrastructure as market failure
- Even the best infrastructure crumbles and decays
- Resilient Infrastructure needs active stewardship



Data Hub

A data repository, refinery, processing & visualisation engine

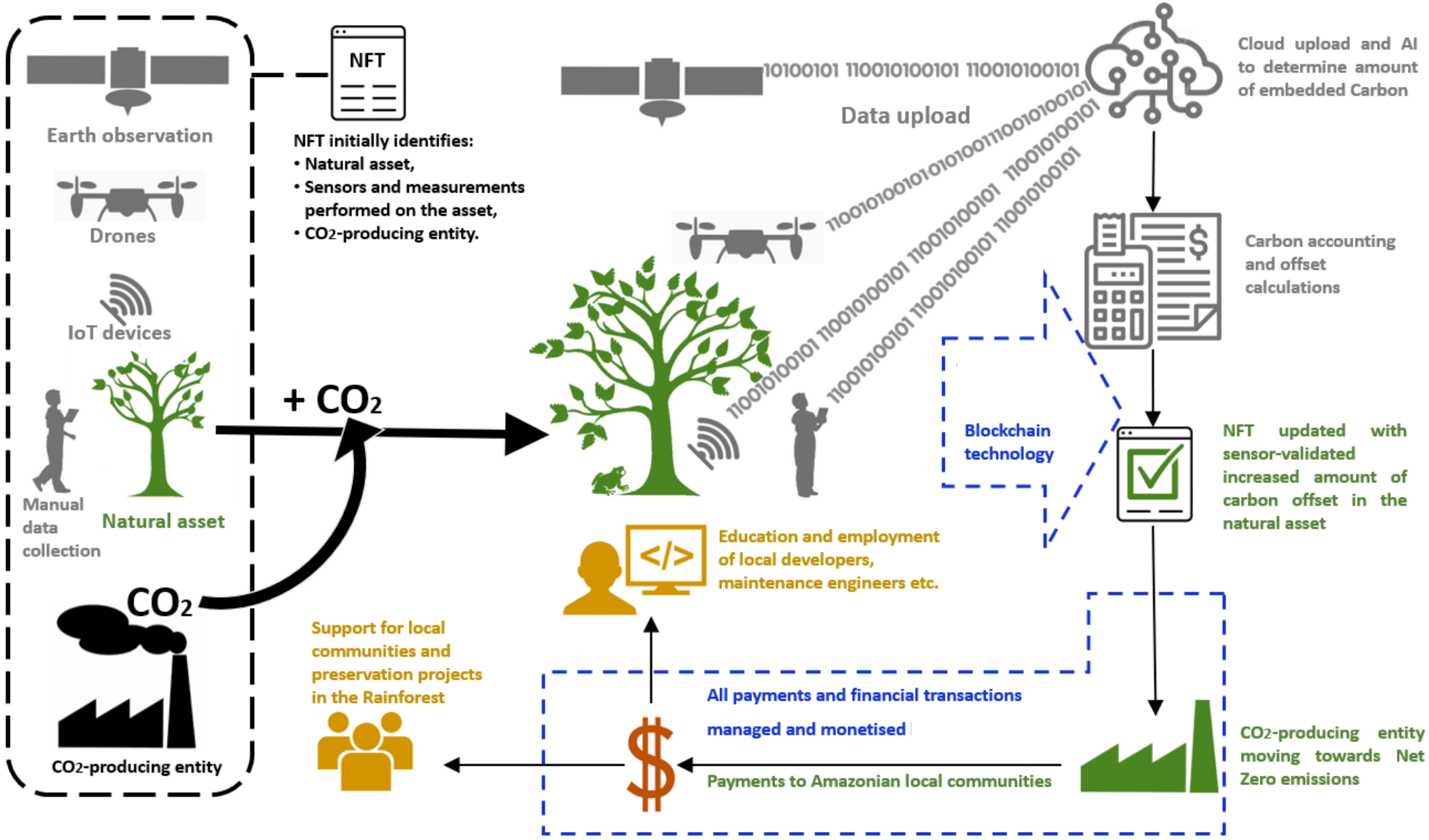
Innovation Lab

A physical / virtual R&D and Innovation facility, connected to a global network

Enterprise Accelerator

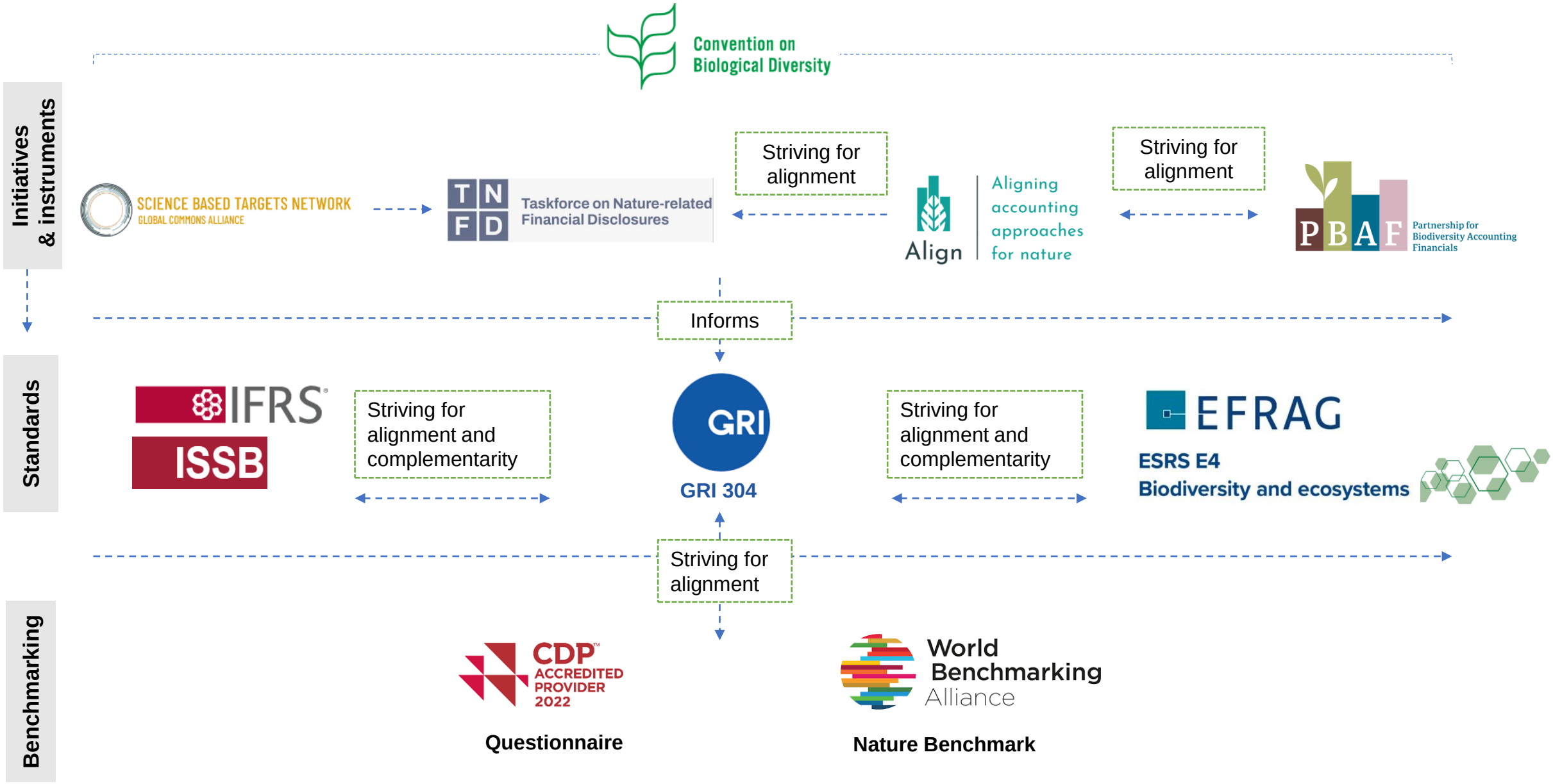
A start-up accelerator and venture studio

INTERCONNECTIONS & COVELLIANCE: MULTIPLE ACCOUNTS FOR BIOSPHERE STEWARDSHIP



DESIGNING INVESTABILITY INTO TRANSFORMATION PROJECTS

The rapidly evolving corporate biodiversity reporting (for stewardship?) landscape



Adapted from Yann Verstraeten

Infrastructuring stewardship

What comes together for corporate biosphere stewardship?

- Vision alignment between corporations & society on stewardship
- Frameworks to support corporations to pursue sustainability
- Transformation in ‘licence to operate’ (regulatory & consumer focused)
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