LITTLE BLUE RESEARCH SECTOR BRIEFING

The global food and agriculture system

LITTLE BLUE RESEARCH LTD

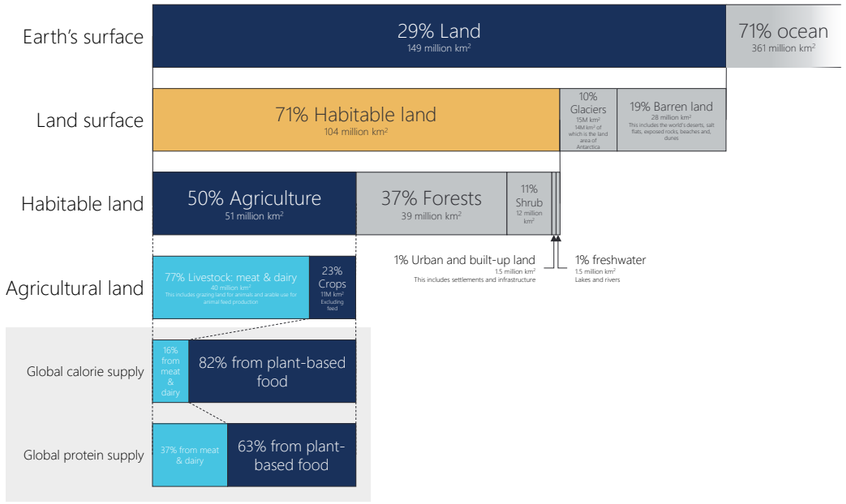
Helping companies to understand their social and environmental impacts.

+44 (0)788 763 33 45 | info@littleblueresearch.com | www.littleblueresearch.com

Sustainability in the global food and agriculture system

The global population has more than doubled since the 1960s[i], increasing the demand for food and other agricultural products. The agriculture sector has dramatically grown to meet this increasing demand over the last 60 years and today 50% of all habitable land is used for agriculture[ii]. Similarly, world fisheries and aquaculture production has increased by around 75% since the 1980s from 102 to 179 million tonnes per year[iii].

Global land use for food production



Adapted from Ritchie, H and Roser, M. (2013) "Land use". Published online at OurWorldInData.org. Retrieved from: 'https://ourworldindata.org/land-use' [Online Resource], March 2022. Data source: UN Food and Agriculture Organization (FAO)

The challenge

Increasing demands on nature and people have led to social and environmental concerns that can affect businesses, with both issues climbing to the top of the global risk agenda over the last few years.

Sustainability is a key factor expected to continue driving consumer trends. For example, the global market for natural and organic cosmetics is forecast to grow by almost 50% to over 15.5 billion U.S. dollars by 2025[iv]. In addition, increased compliance requirements, such as the mandated disclosure of climate-related financial data for large companies in the UK from April 2022, mean that businesses need to fully understand the extent of their reliance and impacts on nature and people.

Businesses with this understanding are able to make more informed decisions, improving business security and resilience over time.

Business drivers for understanding and addressing social and environmental issues include:

- Mitigating risks from environmental or social disruption by fully understanding potential impacts and dependencies throughout the value chain.
- Meeting investor and stakeholder demands by providing information on business impacts and dependencies.
- Stakeholder pressure to set targets aligned with global climate targets, Science Based Targets and SDGs.
- Increasing regulation, new standards and compliance requirements.
- Identifying opportunities and remaining competitive as the market evolves.
- Attracting and retaining talent by meeting employee expectations.

2,000+

businesses and financial institutions working with SBTI to reduce emissions[v]

$30.7tn

of sustainable investments worldwide 2018[vi]

66%

of European SMEs are improving employee working conditions[vii]

How to address this challenge

The challenges outlined are often complex and interlinked and can initially be overwhelming. A **capitals based approach** offers a way of managing this complexity. It can be used to identify, prioritise, measure and value business challenges and subsequently set out actions to address them.

What is a capitals based approach?

A capitals based approach enables businesses to evaluate the value they receive from four interlinked 'capitals'. These are:

NATURAL

The stock of renewable and non-renewable natural resources that combine to yield a flow of benefits to people.

HUMAN

The knowledge, skills, competencies and attributes embodied in individuals that contribute to improved performance and wellbeing.

SOCIAL

The networks together with shared norms, values and understanding that facilitate cooperation within and among groups.

PRODUCED

The human-made goods and financial assets that are used to produce goods and services consumed by society.

A capitals based approach addresses one or more of the capitals and their relevant issues within the context of a business value-chain, a product, or business unit in order to **aid decision making and longer term planning.**

The outputs of capitals based approach can help to:

- **mitigate risks**
- **identify opportunities**
- respond to **stakeholder pressure**
- respond to **changes in legislation**
- fulfil **disclosure requirements**
- **engage the workforce**

The starting point for a capitals based approach is the identification of impacts and dependencies.

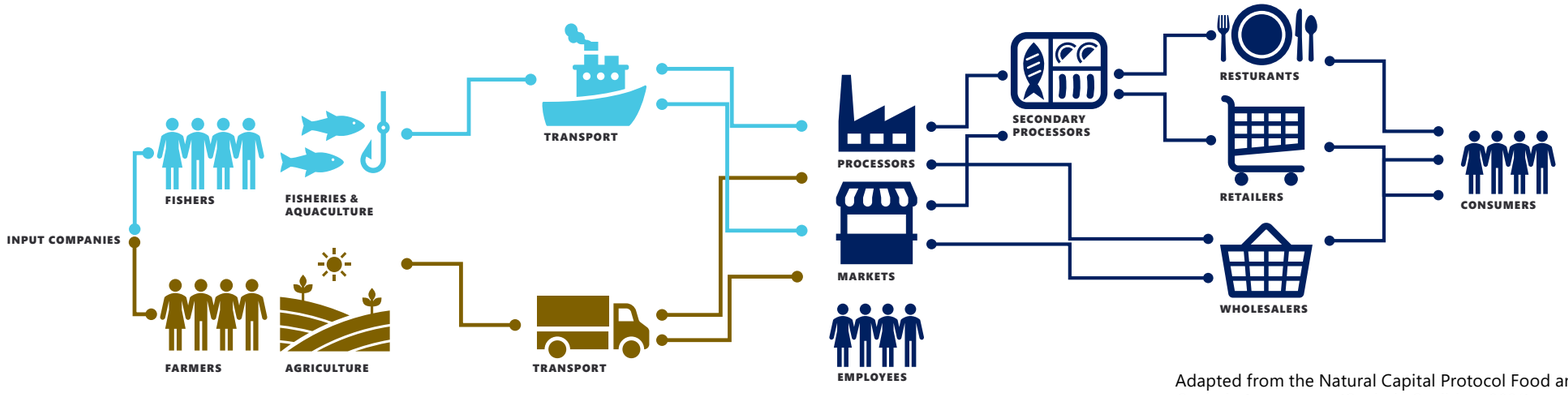
Impacts & dependencies

The continued functioning of the global food and agriculture system is **dependent** on the planet's resources, a healthy natural environment (natural capital) and people (social & human capital). To maintain food security, sustain profit and thrive, the food and agriculture industry is reliant on **natural capital** for resources such as pollinators, soil, water and forests and the services that they provide. The scale of this reliance is extremely large, illustrated through the many complex linkages identified on the following page.

Alongside, **dependencies** on the environment, the success of the food and agriculture industry is also reliant on **social capital** and the interaction between nature and people. These social dependencies include worker health and wellbeing, worker education, innovation and responses to legal and regulatory requirements.

Environmental and social risks are often complex and interlinked. As an example, risks associated with deforestation amplify climate change through increased carbon emissions. Climate change itself may then impact businesses' water supplies that the business is **dependent** on and which can also **impact** community water supplies and the health and wellbeing of individuals.

The value chain example



Adapted from the Natural Capital Protocol Food and Beverage Sector Guide and the Principles of Integrated Capitals Assessment (Capitals Coalition, 2021)

70%

of global water withdrawals are for agriculture[viii]

96.4 MMT

of fish captured from marine and inland waters in 2018[iii]

70%

of the world's leading crops increase in size, quality, or stability from bees and other animals' pollination[ix]

The rapid expansion of the global agriculture sector means that the industry has some of the largest **impacts** on **natural capital** through deforestation, greenhouse gas emissions and chemical use. Changes in consumer preferences and stakeholder pressure will continue to drive the industry to identify, mitigate and manage these environmental impacts and, where possible, impact in a positive way.

Similarly, positive or negative **impacts** relating to **social capital** such as, wages paid, and the health, wellbeing and education of workers and local communities, also affect the performance of the food and agriculture industry. As an industry, food and agriculture has significant social capital risk due to the vulnerability of workers within this sector, but also the opportunity to have a significant positive social capital impact when action is taken.

These impacts and dependencies are present throughout the agriculture value chain from the supply chain, through company operations to the use and final disposal of products (see the figure below).

Definitions

Dependency: a business reliance on or use of capital stocks (e.g. Natural, human, social and produced capital)

Impact: the negative or positive effect of business activity on capital stocks (e.g. natural, human, social and produced capital)

70%

of global deforestation attributable to agriculture[x]

17MT

of fish and seafood wasted globally in 2017[xi]

1/3

of GHG emissions attributable to agriculture[xii]

48%

of Africa's rural population paid at or below minimum wage in 2019[xiii]

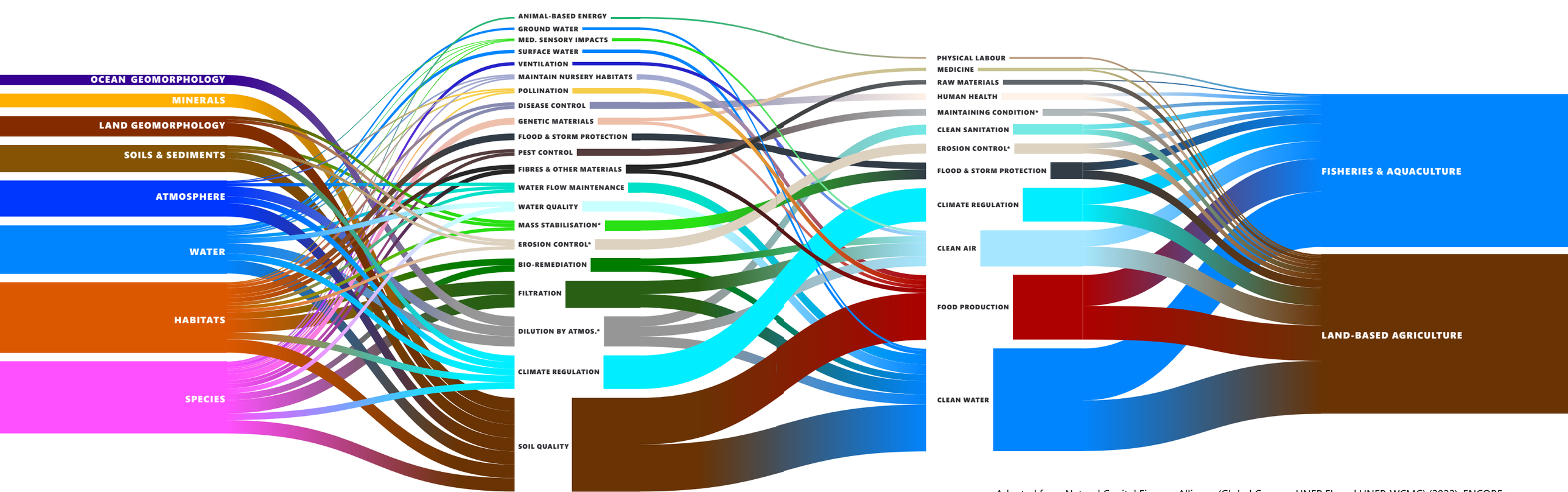
Natural capital dependencies

The following diagram shows the complex interlinkages between natural capital assets, ecosystem services and the benefits they provide to land-based agriculture and fisheries & aquaculture. Understanding these linkages enables companies to determine the risks they face from environmental change.

Definitions

Natural capital assets: are specific elements within nature that provide the goods and services that the economy depends on[xiv]

Ecosystem services: are the benefits to people from ecosystems, such as timber, fiber, pollination, water regulation, climate regulation, recreation, mental health, and others[xv]



Adapted from Natural Capital Finance Alliance (Global Canopy, UNEP FI, and UNEP-WCMC) (2022). ENCORE: Exploring Natural Capital Opportunities, Risks and Exposure. [On-line], March 2022, Cambridge, UK: the Natural Capital Finance Alliance. Available at: https://encore.naturalcapital.finance. DOI: https://doi.org/10.34892/dz3x-y059.

Mauri, M., Elli, T., Caviglia, G., Uboldi, G., & Azzi, M. (2017). RAWGraphs: A Visualisation Platform to Create Open Outputs. In Proceedings of the 12th Biannual Conference on Italian SIGCHI Chapter (p. 28:1–28:5). New York, NY, USA: ACM. https://doi.org/10.1145/3125571.3125585

Notes: * Abbrivated from original category text

How Little Blue Research can support

Little Blue Research works with businesses to understand their impacts and dependencies on nature and people to develop strategies that will protect and enhance company success by:

SCOPING

Working with clients to scope assessments, pilot approaches and develop proof of concept.

SUPPORTING

Working with clients to customise approaches to support project goals.

DELIVERING

Meaningful outputs to support decision-making and helping to develop user friendly models and reports.

These three steps are part of a phased approach to working with clients as part of **our services** of impacts & dependency measurement, strategy & risk, and research & training.

Our services

Impacts & dependencies

Identifying, measuring & valuing impacts & dependencies of programmes, interventions, investments and options appraisals by:

- developing impact measurement frameworks to value sustainability initiatives and performance
- scoping projects, assessing data needs and providing gap analyses
- prioritising and valuing impacts/ dependencies both positive and negative
- piloting new appraoches, e.g., SBTN, TNFD frameworks and providing peer reviews.

Strategy & risk

Identifying sustainability risks and articulating the business case for sustainability by:

- evaluating business processes and strategies
- prioritising areas for target setting and development
- undertaking risk and opportunity analyses
- quantifying value at risk from a sustainability perspective.

Research & training

Developing research, thought leadership and training on natural and social capital by:

- providing client training and ‘how to’ workshops
- providing bespoke research focusing on the use of economic valuation and/ or specific topics relating to natural and social capital
- designing and delivering qualitative and quantitative research
- developing process frameworks, methodologies and standards.

Case studies

A balance sheet approach to natural capital accounting

Little Blue Research produced a natural capital account for Olam Food Ingredients (ofi), a multinational food and agri-business, to understand the natural capital impacts and dependencies of a specific business unit.

Read more here.

Developing a social impact assessment: a scoping exercise

Little Blue Research undertook a scoping assessment for a leading food and agriculture business to set out the steps required to undertake a social capital assessment for its cotton supply chain in Africa.

Read more here.

Impact valuation of shellfish waters for the water industry

Little Blue Research updated a UK water company's economic model to determine the potential value of establishing new or improved coastal shellfisheries as an input into option appraisal for capex decision making. This project was undertaken in collaboration with an economic consultancy.

Read more here.

Impact valuation for a food and beverage company

Little Blue Research supported the development of an impact based framework, in collaboration with a strategy consultancy. This included developing valuations for environmental and social factors across the entire global value chain.

Read more here.

References

i. UNDESA, Population Division (2019). World Population Prospects 2019, Online edition. Rev. 1.

ii. Ritchie, H. and Roser, M. (2019). 'Land Use'. Our World in data https://ourworldindata.org/land-use

iii. FAO (2020). The state of world fisheries and aquaculture. Sustainability in action.

iv. Statista (2022). Consumer Trends. A Statista trend report on the future of consumption.

v. Science Based Targets (accessed 2022). https://sciencebasedtargets.org/companies-taking-action

vi. BlackRock (2018). Global Sustainable Investment Alliance.

vii. European Commission (2020). Flash Eurobarometer 486 SMEs, start-ups, scale-ups and entrepreneurship.

viii. FAO (2017). AQUASTAT Database. AQUASTAT https://www.fao.org/aquastat/statistics/query/index.html;jsessionid=BF126D1EEE31550E4557BE20CCF16951

ix. Dasgupta, P. (2021). The Economics of Biodiversity: The Dasgupta Review. From Klein et al. (2006). Importance of pollinators in changing landscapes for world crops. Proceedings of the Royal Society B: Biological Sciences, 274, 303–313.

x. Ritchie, H and Roser, M. (2021). Forests and deforestation. Our World in Data https://ourworldindata.org/drivers-of-deforestation.

xi. CEC (2017). Characterization and management of food loss and waste in North America. Adapted from Gustavsson et al. (2013) and FAO. (2017). The methodology of the FAO study: "Global Food Losses and Food Waste – extent, causes and prevention"– FAO, 2011. Stockholm: SIK – The Swedish Institute for Food and Biotechnology.

xii. Statista (2021). The environmental impacts of the food industry.

xiii. International Labour Organization (2020). Global wage report 2020-2021. Wages and minimum wages in the time of COVID-19.

xiv. Natural Capital Finance Alliance (accessed 2022). https://encore.naturalcapital.finance/en/data-and-methodology/assets

xv. Capitals Coalition (2016). The Natural Capital Protocol.

Disclaimer

LITTLE BLUE RESEARCH LTD

+44 (0)788 763 33 45 | info@littleblueresearch.com | www.littleblueresearch.com