



Independent Research in
Responsible Investment



Capital ... naturally Nature & Biodiversity in investor presentations

A review of how companies are (and are not) communicating directly to investors about their exposure to and management of issues related to nature & biodiversity – with particular reference to the ways that they contextualise natural capital and biodiversity issues within their business activities.

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IRRI – Independent Research in Responsible Investment

IRRI is a joint-venture market research initiative between Institutional Investor Research and SRI-Connect that seeks to advance understanding of the economics, dynamics and communications practices within the sustainable investment value chain.

The initiative comprises the annual IRRI Survey, ad hoc research and working papers such as this one.

This paper was written by SRI-Connect and does not necessarily represent the views of Institutional Investor Research.

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The analysis and perspectives in this report are those of SRI-Connect and do not necessarily represent the views of Institutional Investor Research, WBCSD or the Gordon and Betty Moore Foundation.

Executive Summary

Action points for companies

To improve the effectiveness of their communications to investors on their exposure to and management of nature & diversity issues, we find that companies should:

- Identify which of their investors are most interested in natural capital and biodiversity issues
- Explain clearly to investors (and analysts) the ways in which these issues do (and don't) relate to the business operations of the company
- Contextualise nature and biodiversity issues within a materiality matrix that ranks the significance of all sustainability issues to your company
- Ensure that discussion of such issues is presented in 'mainstream' investor presentations where they threaten to have financial significance and in specialist sustainability presentations where their significance lies primarily on your firm's impact on the environment rather than the issues impact on your firm's profitability

We reached these conclusions from research into presentations of 69 companies with exposure to the food & fibre value chain presented below:

Findings

Overall, we found that a disappointingly low percentage of companies actively present natural capital and biodiversity issues to their investors.

In data

- While 65 of the 69 companies published mainstream presentations, only 14 companies released sustainability presentations.
- In total, only 2 companies have significant coverage of nature & biodiversity issues within both their mainstream and sustainability presentation.
- 5 companies included significant coverage of nature & biodiversity issues within their mainstream presentation only compared to 6 companies which have significant coverage of nature & biodiversity issues within their sustainability presentation only.

In case studies

However, our research did identify some interesting exceptions that we present in the Working Paper as case studies:

- [Archer Daniels: N&B: Aligned and relevant](#)
- [Asahi: Research, training, innovation and exchange](#)
- [Barry Callebaut: Clarity on materiality](#)
- [Carrefour: Transition, translation & tracking](#)
- [ITC: A \(just\) biodiverse transition](#)
- [Nestle: Regenerative agriculture](#)
- [Nestle India: Referencing specific initiatives](#)
- [Pernod Ricard: Sustainable agriculture through partnerships](#)
- [Stora Enso: Specific targets on biodiversity](#)

Capital ... Naturally: Sustainability and investment value driver alignment

This Working Paper is presented alongside a complementary paper on how companies are communicating to investors on sustainability factors and their alignment of these with key value drivers of their business. See [Capital Naturally – Alignment of sustainability and investment value drivers](#).

Focus

In this working paper, we review how companies communicate to investors on their exposure to and management of nature & biodiversity issues, specifically within their presentations to both 'mainstream' investors and to specialist sustainability investors.

In doing this, we have focused on 69 companies with exposure to the food & fibre value chains as these sectors might reasonably be expected to take a lead on these issues as they have higher exposure (and responsibility) than other sectors.

The companies cover all regions and are from five stock market sectors:

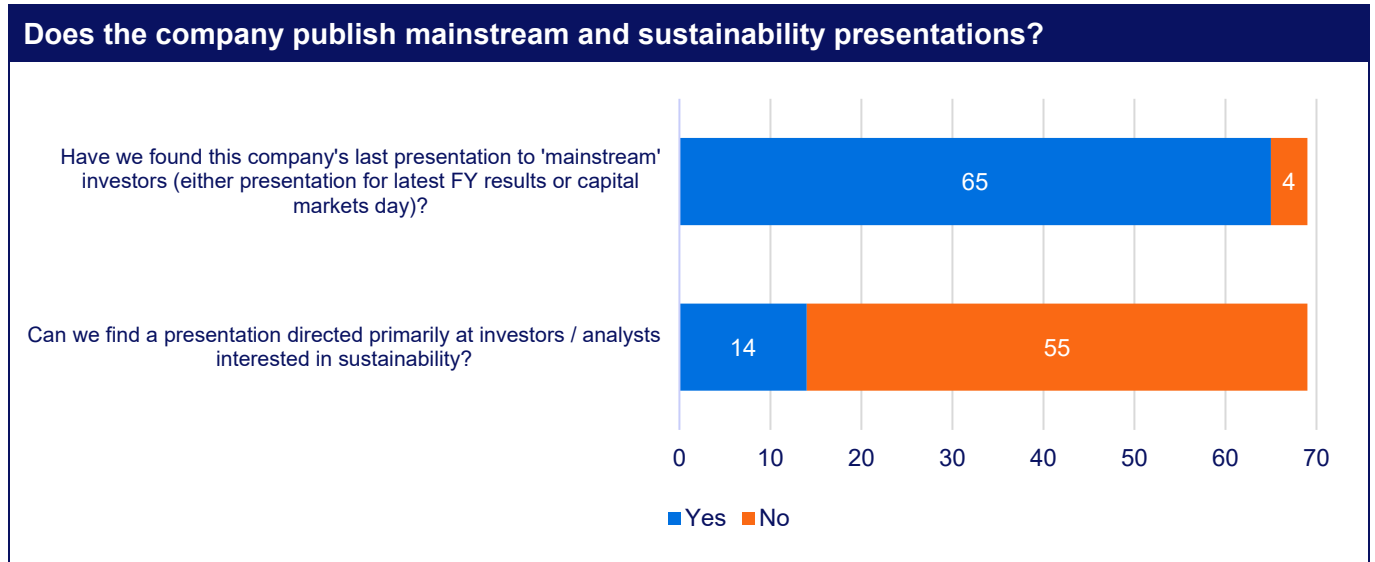
- Beverages
- Food Products
- Food & Staples Retailing
- Paper & Forest Products
- Tobacco

(See Appendix B for a full list of the companies assessed).

By applying the questions asked and criteria applied in Appendix A, we aimed to discover the extent to which companies mention nature & biodiversity issues in their mainstream and sustainability presentations.

Findings

Most companies published presentations to mainstream investors. However, only 20% (14) of the companies created presentations dedicated to sustainability analysts.



Specialist sustainability presentations

The analysis of the 14 sustainability presentations showed that:

- 6 companies include 'significant coverage'* of nature & biodiversity issues within their sustainability presentation only;
- 2 companies include 'significant coverage' of nature & biodiversity issues within both their mainstream and sustainability presentation;
- 6 companies articulate the connection between nature & biodiversity issues and their business operation.

Mainstream investor presentations

We found that 65 companies within our dataset had published presentations for mainstream analysts. Amongst these 'mainstream' presentations we found:

- 5 companies include significant coverage of nature & biodiversity issues within their mainstream presentation only;
- 2 companies feature significant coverage of nature & biodiversity issues within both their mainstream and sustainability presentations;
- 2 companies articulate the connection between nature & biodiversity issues and their business operation.

* Definitions on the extent of coverage of nature & biodiversity issues is found in [Appendix A](#).

Tips

Social and political pressure to address the loss of biodiversity and the broader 'nature crisis' is building. Correspondingly investor pressure on companies to act is growing.

We have two concerns:

- that companies have little financial exposure to these issues;
- investors are developing heavy-handed data frameworks that will require considerable corporate resource to populate - but deliver little information of value.

To ensure that investors are well and appropriately informed about the biodiversity and natural capital issues that they face, companies can:

Tip 1: Identify investors and analysts with specific interest in these issues

When communicating with investors, companies should always identify the analysts and investors most interested in their stock and sector. This should remain a priority. See:

- [Sustainable investors with an interest in the Beverages sector](#)
- [Sustainable investors with an interest in the Food products sector](#)

(Et cetera. This search function can be applied to any sector and can also be filtered further to focus on asset managers only, research providers only, etc as appropriate)

As well as identifying investors and analysts with sector coverage, the growth of investor interest in the specific issues of nature and biodiversity makes it appropriate for companies to identify investors and analysts with these specific interests as well:

- [SRI-Connect users with an interest in Env - Biodiversity](#)
- [SRI-Connect users with an interest in Env - Sustainable agriculture](#)

(Et cetera. This search function can be applied to any issue and can also be filtered further to focus on asset managers only, research providers only, etc as appropriate)

Tip 2: Review recent investor research on the issues

One easy way to do this is to search SRI-Connect's Market Buzz as follows:

- [Buzz on Env - Biodiversity](#)
- [Buzz on Env - Sustainable agriculture](#)
- [Buzz on Env - Ecosystem services](#)

(Et cetera. This search function can be applied to other sustainability issues and indeed to stock market sectors as well.)

Tip 3: Demonstrate materiality

Contextualise nature & biodiversity issues for your business and present these by using a 'materiality matrix' that ranks the significance of all sustainability issues to your company ([Barry Callebaut AG: Clarity on materiality](#)).

Tip 4: Context is critical

Companies could pick up the best practice ideas that we have presented in the case studies below and repurpose these for their own presentations.

As illustrated by these, they could present nature and biodiversity issues:

- ... within the context of specific crop value chains
- ... with reference to the social welfare issues that often arise within agricultural supply chains
- ... with reference to their other business (and sustainability) priorities (by using a materiality matrix)
- ... with reference to national policy, international agreements and political priorities

Tip 5: Present to mainstream investors

Where financially-material, companies may present nature and biodiversity issues to 'mainstream' investors within their full year results presentations or on their 'capital markets days'. Typically, this would be done where these issues have (or threaten to have) financial significance for the company.

Appendix A: Research overview

Research outputs

Our analysis for both 'Capital ... Naturally' reports ('Alignment' and 'Nature & Biodiversity') was undertaken simultaneously.

Source material

Companies communicate to investors through two primary channels:

- Published reports (annual reports, sustainability reports, integrated reports etc)
- Direct presentations and meetings

There is plenty of guidance already available to companies on how to report on sustainability issues and we do not intend to add to this already over-commentated upon subject. Instead, in this paper, we focus on direct presentations and meetings which compared to published reports tend to be:

- More timely
- Forward-looking
- Give broader context than published reports
- Written primarily for an investor audience – so can be more focused on investors' specific interests
- Designed to give rise to two-way discussions around investors' and analysts' specific needs

In these respects, presentations and meetings are an essential complement to published reports but are something which – hitherto – has largely been overlooked by the sustainability reporting commentariat.

We have therefore concentrated our analysis on presentations mainly for mainstream analysts (either the latest “capital markets day” presentation or full-year annual results) and presentations to sustainability analysts.

Coverage of nature & biodiversity issues

Our primary aim with this working paper has been to discover how companies communicate their exposure to and management of natural capital and biodiversity issues.

Whilst these factors are closely intertwined with all sustainability issues, we have focused (for the purposes of this analysis) on 'biotic' issues such as:

- Deforestation
- Species abundance

... and have considered 'abiotic' issues such as the following to be out of scope:

- Climate regulation
- Water
- Waste management etc

While these latter issues are – of course – extremely important, we did not focus on them in this particular study.

In respect of nature and biodiversity issues, we note that the political prominence that they are starting to achieve does not necessarily translate into exposure for companies – even within the food value chain.

For this reason, we have been particularly interested to highlight – as best practice – those companies that create a line of sight between the macro issue of 'biodiversity loss and the nature crisis' and their own operations – such that they contextualise their exposure and response to the issue.

Questions asked & criteria applied to companies

In assessing companies on the extent and nature of their communication on nature and biodiversity issues, we asked the following 8 questions:

- To what extent does this company mention nature & biodiversity issues in mainstream presentation?
- How are nature & biodiversity issues mentioned?
- Does the company articulate the connection between Nature & Biodiversity issues and the business operations of the company?
- How does the company articulate the connection between N&B issues and its business operations?
- Does the company declare tangible objectives for reducing their negative impact and enhancing their positive impact on nature and biodiversity?
- Are the company's objectives on nature and biodiversity quantified?
- Does the company articulate the impact of biodiversity on the key value drivers of their business?
- How does the company articulate the impact of biodiversity on the key value drivers of their business?

Questions on coverage of nature & biodiversity issues

When assessing “to what extent does this company mention nature & biodiversity issues in mainstream/sustainability presentation” (the first question above), we used the following definitions:

Grading applied	Grade description
NA	There isn't a presentation
No significant N&B content	There is no mention of N&B issues
In passing	There is passing reference(s) to N&B issues (e.g. sustainable agriculture is mentioned but not elaborated on)
Partially	There are some references to N&B issues with details of company's initiatives and engagement on these issues
Significantly	There are significant references to N&B issues with assessment of the company's exposure to and management of these issues

Appendix B: Companies analysed

We assessed the presentations of the following companies:

Company name	GICS Industry Name
Ambev SA	Beverages
Anheuser Busch Inbev SA	Beverages
Asahi Group Holdings Ltd	Beverages
Brown-Forman Corp	Beverages
Budweiser Brewing Company APAC Ltd	Beverages
Carlsberg A/S	Beverages
China Resources Beer Holdings Co Ltd	Beverages
Coca Cola HBC AG	Beverages
Coca-Cola Co	Beverages
Coca-Cola Europacific Partners PLC	Beverages
Constellation Brands Inc	Beverages
Davide Campari Milano NV	Beverages
Diageo PLC	Beverages
Fomento Economico Mexicano SAB de CV	Beverages
Heineken Holding NV	Beverages
Heineken NV	Beverages
Keurig Dr Pepper Inc	Beverages
Monster Beverage Corp	Beverages
PepsiCo Inc	Beverages
Pernod Ricard SA	Beverages
Aeon Co Ltd	Food & Staples Retailing
Alimentation Couche-Tard Inc	Food & Staples Retailing
Avenue Supermarts Ltd	Food & Staples Retailing
Carrefour SA	Food & Staples Retailing
Costco Wholesale Corp	Food & Staples Retailing
Jeronimo Martins SGPS SA	Food & Staples Retailing
Kesko Oyj	Food & Staples Retailing
Koninklijke Ahold Delhaize NV	Food & Staples Retailing
Kroger Co	Food & Staples Retailing
Loblaw Companies Ltd	Food & Staples Retailing
Ocado Group PLC	Food & Staples Retailing
Seven & i Holdings Co Ltd	Food & Staples Retailing
Sysco Corp	Food & Staples Retailing
Tesco PLC	Food & Staples Retailing
Walgreens Boots Alliance Inc	Food & Staples Retailing
Walmart Inc	Food & Staples Retailing
Woolworths Group Ltd	Food & Staples Retailing

Archer-Daniels-Midland Co	Food Products
Associated British Foods PLC	Food Products
Barry Callebaut AG	Food Products
China Mengniu Dairy Co Ltd	Food Products
Chocoladefabriken Lindt & Spruengli AG	Food Products
Danone SA	Food Products
General Mills Inc	Food Products
Hershey Co	Food Products
Hormel Foods Corp	Food Products
International Holding Company PJSC	Food Products
JDE Peets NV	Food Products
Kellogg Co	Food Products
Kerry Group PLC	Food Products
Kraft Heinz Co	Food Products
McCormick & Company Inc	Food Products
Mondelez International Inc	Food Products
Mowi ASA	Food Products
Nestle India Ltd	Food Products
Nestle SA	Food Products
SIT Land Holdings Ltd	Food Products
Tyson Foods Inc	Food Products
Mondi PLC	Paper & Forest Products
Stora Enso Oyj	Paper & Forest Products
Svenska Cellulosa SCA AB	Paper & Forest Products
UPM-Kymmene Oyj	Paper & Forest Products
Altria Group Inc	Tobacco
British American Tobacco PLC	Tobacco
Imperial Brands PLC	Tobacco
ITC Ltd	Tobacco
Japan Tobacco Inc	Tobacco
Philip Morris International Inc	Tobacco
Swedish Match AB	Tobacco

Appendix C: Case studies on presenting nature and biodiversity issues in a business context

Archer Daniels Midland: N&B: Aligned and relevant

Archer Daniels Midland: Financial Results Presentation for 2020

Contextualisation

In their financial results presentation to 'mainstream' investors, Archer-Daniels-Midland (ADM) contextualises their nature and biodiversity exposures within the UN SDGs and the SASB framework.

The company also provides specific milestones on the key areas of palm oil, soy and sustainable agriculture.

This creates alignment between biodiversity objectives and the commodities that are of particular relevance to the company and also between these commodities and the benchmarks and metrics that sustainable investment analysts are likely to be using.

To consider

Other companies may - when creating links between international targets, reporting metrics and biodiversity/nature issues might also contextualise the relevance (of each commodity) to the business.

It might also be useful for companies that are using a commodity focus to provide a materiality matrix that ranks commodities both in respect of relevance to their business and in respect of the extent of biodiversity concern around that particular commodity.

Responsible Sourcing Goals and KPIs

Palm Action Plans

Material Topic	Milestone	UN SDG Alignment	SASB Alignment
Traceability	Maintain traceability scores of at least 98% of palm oil and palm kernel oil to mill	SDG 12 (Responsible Consumption and Production)	Environmental and Social Impacts of Ingredient Supply Chain
Supplier Engagement & Implementation	Execute Engagement for Policy Implementation (EPI) with 100% of direct suppliers	SDG 12 (Responsible Consumption and Production)	Ingredient Sourcing
Monitor and Verification	Evaluate and identify mechanisms to monitor on-the-ground impacts	SDG 12 (Responsible Consumption and Production)	Ingredient Sourcing

Soy Action Plans

Material Topic	Milestone	UN SDG Alignment	SASB Alignment
Traceability	Increase digital satellite farm maps (polygons) of direct soy suppliers	SDG 12 (Responsible Consumption and Production)	Environmental and Social Impacts of Ingredient Supply Chain
Monitor and Verification	Monitor and verify 100% of soy sourced from direct suppliers complies with the following initiatives: <ul style="list-style-type: none"> Aviation Soy Monitorium IBAMA embargoed areas National Pact for the Slavery Work Eradication Papa Green Green Protocol ADM's No Deforestation Policy for 100% of polygons 	SDG 12 (Responsible Consumption and Production)	Ingredient Sourcing

Sustainable Agriculture

Type	Description of Goal	SDG Alignment	SASB Alignment
Sustainable Agriculture Project Acres in North America	Increase acreage dedicated to sustainable agriculture	SDG 12 (Responsible Consumption and Production)	Ingredient Sourcing
STAR Challenge	Enroll at least 50 farmers as STAR participants	SDG 12 (Responsible Consumption and Production)	Ingredient Sourcing
STAR Challenge	STAR Ratings: 50% acres to earn at least 3 of 5 stars, 25% acres to earn 5 of 5 stars	SDG 12 (Responsible Consumption and Production)	Ingredient Sourcing
STAR Challenge	Enroll acres representing at least 10% of U.S. wheat processing volume	SDG 12 (Responsible Consumption and Production)	Ingredient Sourcing

Source: Slide #31 | ['Unlocking Nature. Enriching life.'](#), ADM's first quarter 2021 presentation

Asahi: Research, training, innovation and exchange

Asahi: “Asahi IR Day ESG initiatives” for Analysts and Investors

Contextualisation

The case study presented here by Asahi describes the extent of collaboration needed for the company to address biodiversity objectives (by producing sustainable malt).

Recognising and disclosing the nature of this programme and the nature of collaboration involved is useful to help analysts understand the complexity that is likely to be needed to deliver results.

To consider

Adding case studies to investor presentations can give tangible examples of how sustainability initiatives result in real-world impacts.

However, when highlighting individual research programmes and initiatives, companies should always provide context around the nature of their dependence on the commodity in question, the volumes that might be affected by the initiative, the timescale over which any project might mature from research and testing into adoption at scale.

Without such context, analysts cannot determine whether the company is likely to resolve its negative externalities and mitigate the costs that alternative resolution might involve.

Community: Food



The Campus Peroni agricultural support project in Italy uses co-creation with stakeholders to produce sustainable malt

An initiative launched in partnership with a malt factories, the national agricultural research center, and local universities' agriculture departments to explore the cultivation of barley

Promotes research, training, innovation, and exchange between agricultural producers

Social sustainability + business sustainability
= business growth



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Source: Slide 15 | “Asahi IR Day ESG initiatives” for Analysts and Investors

Barry Callebaut AG: Clarity on materiality

Barry Callebaut AG: Forever Chocolate Sustainability Roadshow

Contextualisation

Barry Callebaut's inclusion of a materiality assessment in their presentation on sustainability to investors contextualises 'Biodiversity & Soil Degradation' alongside other sustainability issues.

This helps investors to understand the relative significance of each specific sustainability issue and demonstrates strong understanding and monitoring of the materiality of sustainability factors.

To consider

While all companies should include materiality assessments in both their 'mainstream' IR slides and their sustainability slides, it is likely that different companies will use different factors on the y-axis. (Typically, the y-axis is used for the relationship to business performance whereas the x-axis is used to grade environmental / social impact).

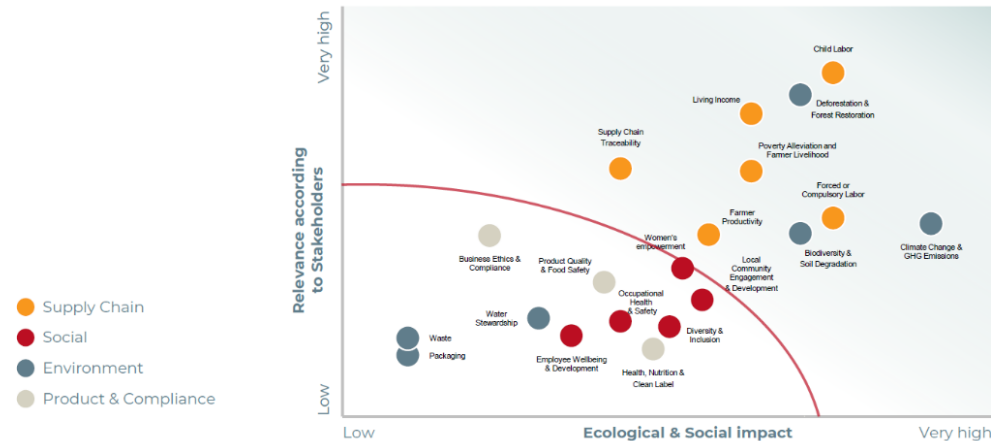
In the case of Barry Callebaut, the link to business performance is via a measure of 'Relevance according to Stakeholders'.

Other companies may use different y-axis measures to establish the relevance of different issues to business performance.

Given growing investor (and political) interest in the issue, all companies should ensure that biodiversity features on materiality matrices that they publish in future.



Materiality Assessment 2021



15 Forever Chocolate - Sustainability Roadshow

Source: Slide 15 | [Forever Chocolate Sustainability Roadshow](#)

Carrefour: Transition, translation & tracking

Carrefour: FY 2020 Results presentation

Contextualisation

Transitions in the food system (towards healthier food and less ecological damage) have important implications for supermarket chains and for biodiversity.

In this slide, Carrefour presents a dashboard of KPIs of which four are notably relevant to biodiversity: organic agriculture, agroecology, sustainable fishing and sustainable forests.

Significantly, the company has created a quantitative index of progress that enables it (and analysts covering the firm) to track progress.

To consider

Whilst quantitative indicators inevitably simplify the complexity of issues inherent to nature and biodiversity, they are very useful for analysts who value quick reference tracking of progress.

Such indicators become particularly useful when targets and timeframes are set for them and their significance within wider business strategy is articulated. (In other words, when the business rationale as well as the environmental rationale is articulated)

CSR AND FOOD TRANSITION INDEX AT 115% IN 2020



Source: Slide #36 | FY 2020 Results presentation

ITC: A just (biodiverse) transition

ITC: 'Impactful Social Performance'

Contextualisation

It is noticeable how much of the reporting on biodiversity is woven into reporting on social factors around supply chains and farmer livelihoods.

The example here from ITC's Analyst & Investor presentation is a good case in point. The company sets out how its various initiatives are helping farmers to upskill and increase their incomes through crop diversification, increased yields and direct links to market.

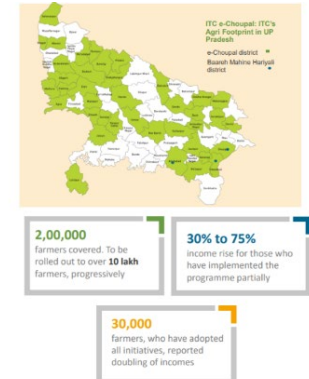
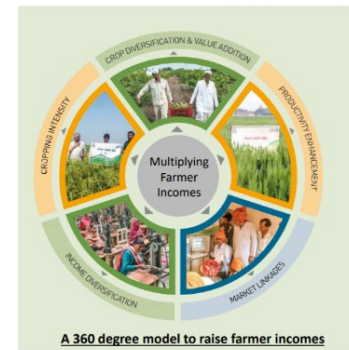
The slide is followed by further data on social and environmental benefits from its sustainability initiatives.

To consider

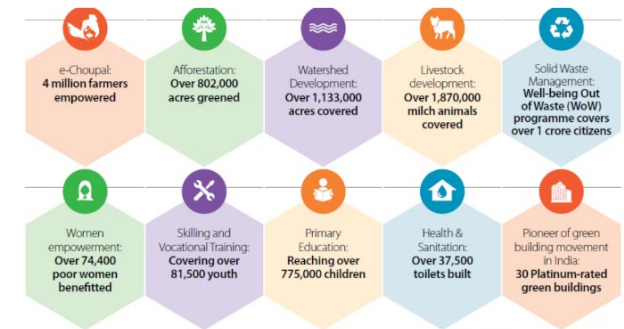
These types of initiatives are often referred to as 'shared value', where the company gets higher quality, cost effective and more sustainable products and farmers benefit from improved yields and better technology provided by the company.

They have the benefit of positive environmental and social impacts and can be especially suitable case studies for companies measuring their effects on the Sustainable Development Goals.

Baareh Mahine Hariyali : ITC's Pilot project in Eastern UP



Impactful Social Performance



Source: Slide #37/8 | 2021 Analyst and Investor Presentation

Nestlé: Regenerative agriculture

Nestlé: Value creation from regenerative agriculture

Alignment

Within this investor presentation, Nestlé presents a number of slides on the importance of regenerative agriculture, explaining the rationale and the resources they have allocated to it.

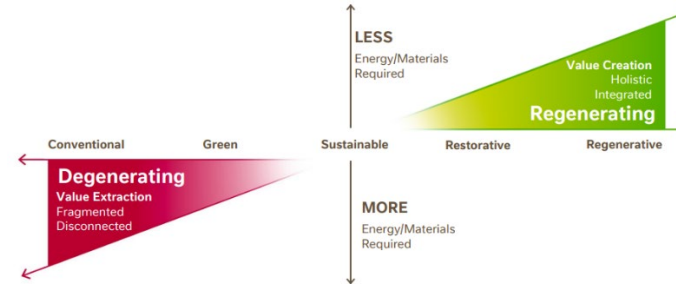
The slides contrast the advantages of regenerative agriculture, such as better soil health and increased biodiversity, with the drawbacks of conventional agriculture, such as soil erosion and loss of biodiversity.

Importantly, the company reports on the inputs required to deliver the anticipated improvements in a quantitative way that analysts can relate to.

To consider

The argument that regenerative agriculture creates value for the company is interesting for analysts and investors. Further information could be supplied on how this is achieved, supported by quantitative measures such as reduced costs or increased yields. This would create a compelling argument for investors, as well as enabling analysts to more accurately forecast future earnings.

What do we mean regenerative



What levers will we pull

Know-how	Tools	Reach	Programs	Market mechanism
 1 200+ agronomists 39 250 agripreneurs / with more to come...	 Industry and proprietary solutions	 4.5 m farmers via supplier relationships to enable landscape solutions	 400 climate projects launched in 2021	 CHF 1.2 bn allocated to regenerative agriculture practices and premiums (2021-2025)

Source: Nestle

Nestlé India: Referencing specific initiatives

Nestlé India: 'Good food good life'

Contextualisation

Nestlé India establishes the relevance of biodiversity issues for its business by breaking these down into actionable issues of soil health, pesticide residues and biodiversity enhancements – all within the context of its MAGGI Spice Plan.

To consider

Companies reporting on specific initiatives (for example those centred on individual brands) should always contextualise these within a description of activity by the whole business.

It is good to report on innovative projects but investors will always want to see how significant these are within the context of the wider business.

MAGGI Spice Plan - Key areas for intervention 2022 - 2025



Good Food Good Life

Good Food Good Life

Source: Slide #43 | 2021 Analyst and Investor Presentation

Pernod Ricard: Sustainable agriculture through partnerships

Pernod Ricard: 'Nurturing terroir'

Contextualisation

In its half-year results presentation for 2021, Pernod Ricard explains that it has developed a 'nurturing terroir' concept, using an example from its operations in Ireland.

This slide talks about sustainable agriculture through partnerships, leading to biodiversity enhancement and reduced carbon footprint, with 220 farmers participating in the programme.

To consider

Working in partnership with supply chains is a widespread and effective way of tackling systemic nature-related problems for downstream companies, as many sustainability issues are found upstream.

Companies may want to set out the sustainability issues that they need to address, and why a partnership approach is more effective than acting unilaterally.

Background information could be provided to explain how partnerships are created and what the goals are for farmers and for nature. These goals could be quantified and further data could be given on costs and benefits of the program if these are not confidential.



Source: Slide # 27 H1 2021 Results Presentation

Stora Enso: Specific targets on biodiversity

Stora Enso: ' Shaping our business for higher growth and value'

Contextualisation

In its 2020 Q4 Roadshow presentation, Stora Enso offers a biodiversity teach-in to investors, setting out its targets for 2030 and an overarching ambition for 2050 of having a net positive impact on biodiversity within its land.

The company also provides the indicators it will use to measure its progress and assess its impact on biodiversity, which is a key part of being transparent and accountable to its stakeholders.

These targets and KPIs are put within the context of the business as a whole, moving towards higher growth and higher value, with the company's forests being a significant part of their balance sheet.

To consider

Putting biodiversity and nature-related initiatives within business context is important to enable analysts to understand what value companies are creating or protecting.

In Stora Enso's case, improving biodiversity of its land is effectively protecting it from degradation and is an investment in the long-term assets of the business. Other reasons for biodiversity targets might be risk reduction, improved yields or response to increasing regulations.

Biodiversity target for 2030 – 40 actions developed and initiated, own forest as a development platform

- Active and adaptive biodiversity management
- Biodiversity research and knowledge sharing
- >15 indicators for holistic measuring
- Attractive biodiversity management services
- Precision forestry for granular data
- Online reporting during 2022

16 3 November 2021
Stora Enso Biodiversity teach-in

THE RENEWABLE MATERIALS COMPANY

Stora Enso's biodiversity indicators

Indicator	Measure
Quality of our work	
• Soil damage close to water (crossings + damage to edge/buffer zones)	% of affected streams/lakes/wetlands
• Damages to retention trees, prioritised habitats or their edge zones during harvesting	% of affected habitats/zones
• Damage to deadwood	% of affected logs >15 cm
• Retention at felling	% of volume/area left
• Creation of new deadwood as high stumps	Number ha-1
State of biodiversity	
• Forest age class distribution	Landscape % of area in 20-year age classes or as an index
• Streams with high nature quality	Landscape Length of stream
• Dispersal barriers in streams	Landscape Number of barriers in nature quality streams
• Stands with high age	Habitat Area of % above 120 and 140 years
• Prioritised habitats	Habitat Area (ha) of defined habitat
• Deciduous rich/dominated stands	Habitat Area of deciduous dominated and/or rich stands
• Mixed species stands	Habitat Area of mixed species forests
• Nature value trees	Habitat Number/ha (mean)
• Amount of deadwood	Habitat Volume/ha (mean)
• Vertical layering	Habitat % of plots in different layering classes
• Abundance of selected keystone species	Species Species abundance habitat-1
Active biodiversity management	
	Area (ha) managed each year

Source: Slide #43 | 2021 Analyst and Investor Presentation