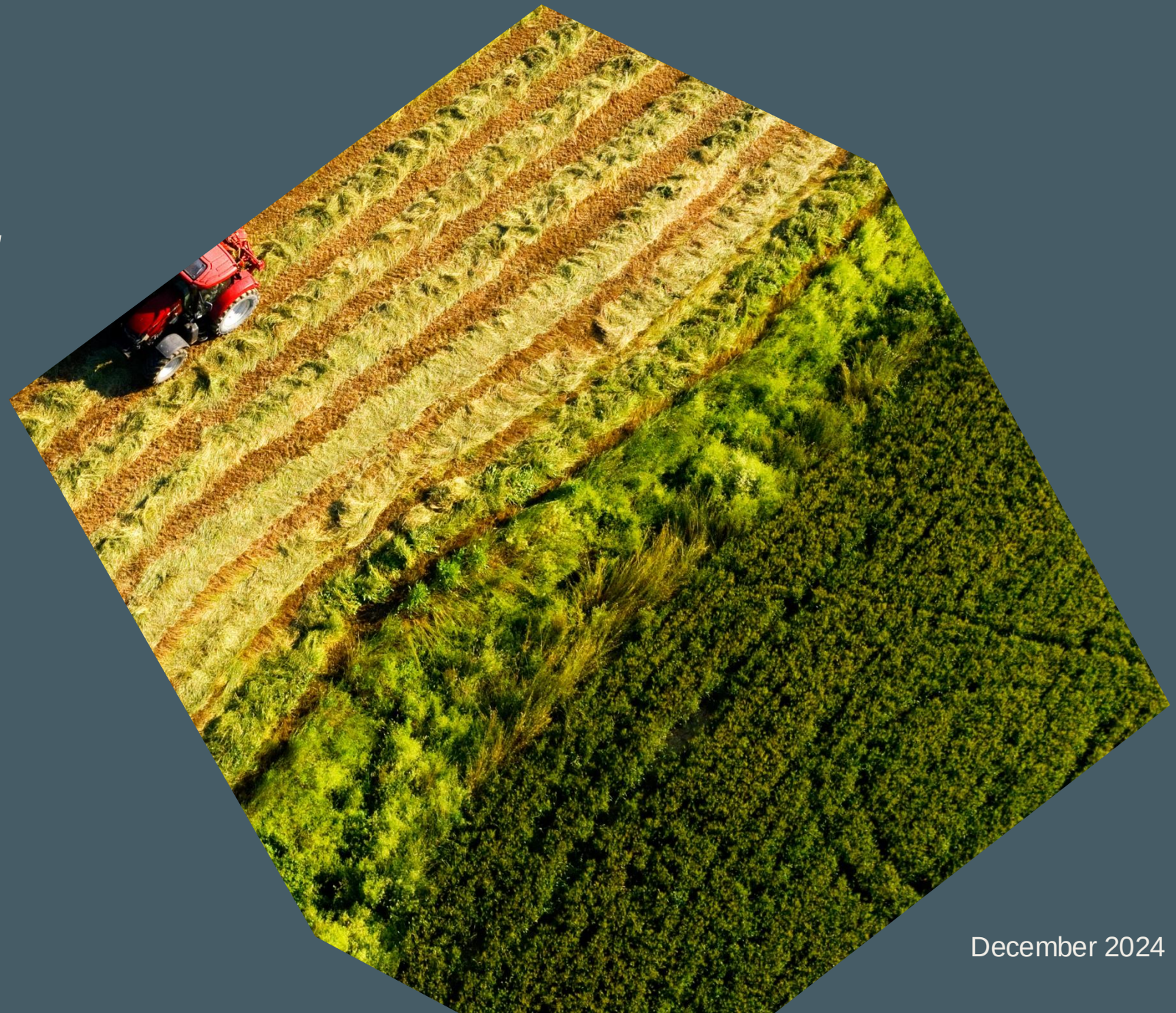
Scope 3 Navigator *for Agri-food*



World Business Council *for Sustainable Development*

December 2024

WBCSD's Scope 3 land-based emissions workstream

This guidance complements a broader suite of resources in the WBCSD Agriculture & Food Scope 3 Toolkit:

1 **Scope 3 Navigators for Agriculture and Food (A&F)**

Purpose: Ensure carbon accounting standards and frameworks are robust and pragmatic and align with clear adoption pathways for business.

2 ***Scope 3 Data and MRV Guidance***

Purpose: Identify data and monitoring, reporting and verification (MRV) approaches to accelerate the adoption of standards and practices.

3 ***Financing mechanisms for land-based action*** **&** ***Co-financing case studies***

Purpose: Drive consensus on financing models for collective value chain investment that prioritizes farmer equity in scope 3 interventions.

Click here to access further scope 3 resources for agri-food

Introduction

The purpose of this document is to **engage the C-suite on the importance of scope 3 emissions for agri-food businesses:** why scope 3 is critical for business, understanding the impact of key standards and regulations, the need for value chain collaboration and the enablers to drive scope 3 action at scale.

Scope 3 is considered a major obstacle for agri-food companies to set and reach climate targets.[1]

This body of work is one tool in a broader toolbox that aims to **empower and equip the agriculture and food industry** with the knowledge to take impactful scope 3 action today at scale.

[1] Analysis from the world Benchmarking Alliance shows that out of 350 of the most influential food & agriculture companies, only 13 have set science-based scope 3 targets, 165 companies still need to disclose scope 3 data or commitments & only 30% of companies with scope 3 commitments are confident that their roadmap will help them achieve their goals.

Successful scope 3 action in the industry must be context-specific, put farmers first, protect nature and provide accessible, nutritious food to a growing population

A scope 3 action plan needs to consider the following

1

Agriculture is globally diverse

Agriculture's globally diffused nature means companies need to customize land-based interventions for the specific context, geography and region.

2

Livelihoods

Billions depend on agriculture (one in four people are farmers, 65% of low-income working adults make a living through agriculture) and are on the frontlines of climate change and acutely vulnerable to economic shocks.

3

Food & nutrition security

Agriculture and land-use is at the center of food and nutrition security, as well as the production of fiber, fuel and bio-materials, and productivity is highly exposed to climate change related risks.

4

Scale of action

Large-scale scope 3 action requires business, farmers, policymakers & civil society to collaborate to deliver regenerative and equitable agricultural systems producing quality raw materials and nutritious food for all.

Leverage context-specific expertise

Collaborate with partners with technical agronomic knowledge to create customized on- farm solutions and in-field practices that are suitable for the farmer segment, farm site and region.

Drive a just transition

Include social and equity targets for a just transition. The risk of lower yields, even in the short term, is untenable for a vast majority of farmers.

Ensure productivity

Scope 3 interventions must not come at the expense of yield, which it is necessary to maintain (or increase) to meet growing demand for agricultural raw materials, protect farmer livelihoods and curb land conversion.

Focus on *no regret* mitigation levers

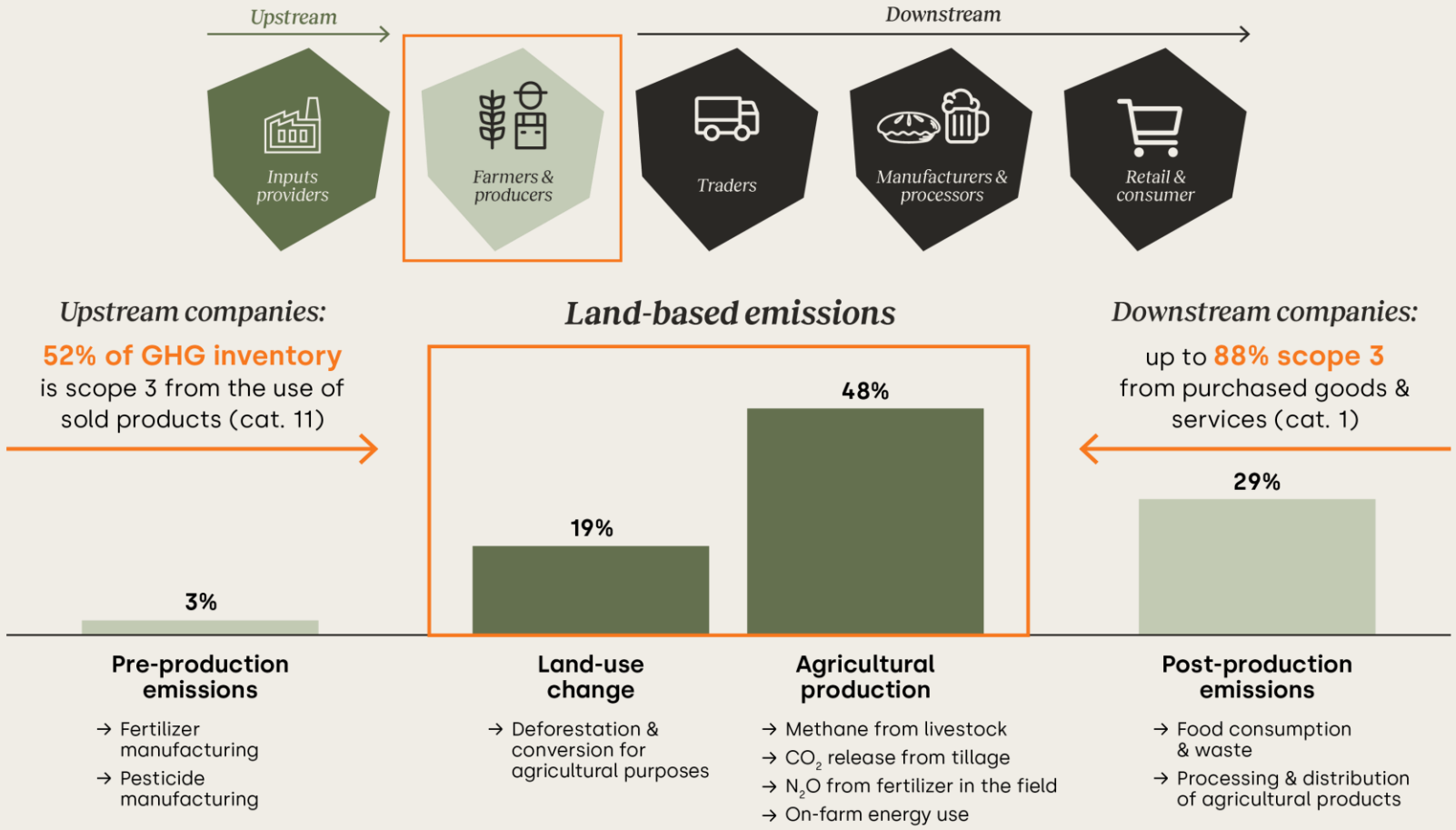
Prioritize decarbonization levers that are the easiest to implement, with fewer barriers for farmer adoption, do not compromise yield, present a maximum abatement potential and follow a marginal abatement cost curve.

Scope 3 in agri-food is unique compared to other industries because most emissions are from land-based activities: from on-farm & associated land-use change

Reduction of land-based emissions is a significant opportunity to reduce corporate GHG inventories. These are shared emissions: companies can report a reduction in land-based emissions in the GHG inventory for stakeholders across the value chain from agricultural input providers to the food industry.

This drives the business case for collaboration to share the cost & value of scope 3 action.

***GHG emissions by source of activity in 2021**, % of total emissions from agrifood systems*

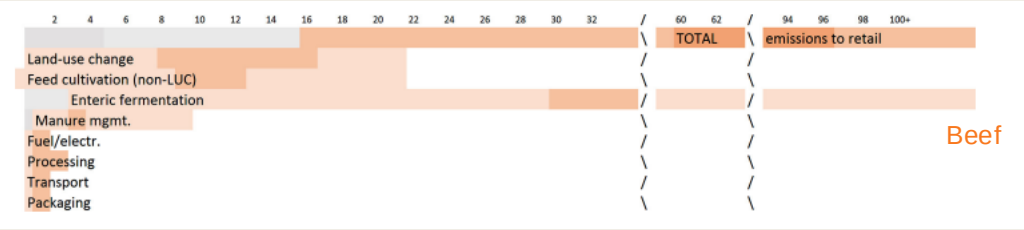


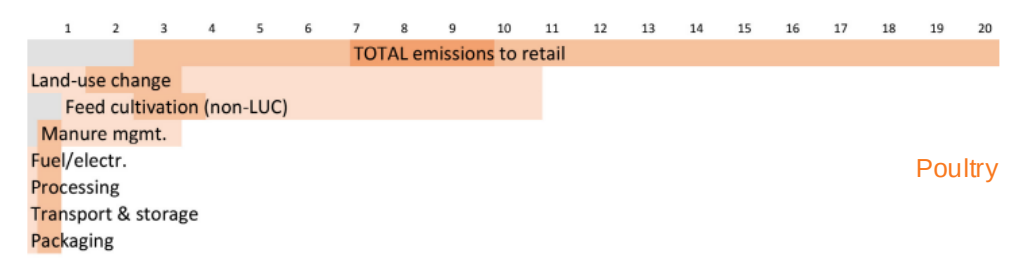
For more information, see WBCSD's Scope 3 action agenda for the agri-food sector: Tackling land-based emissions & removals publication.

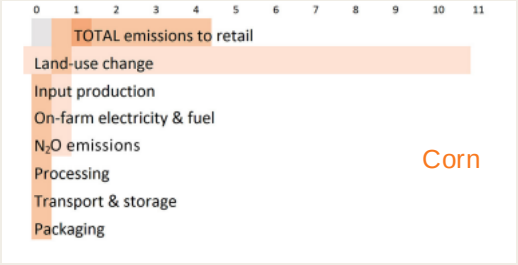
Source: Food & Agriculture Organization (FAO) of the United Nations (2021). Emissions totals. Retrieved from: https://www.fao.org/faostat/en/#data/GT.

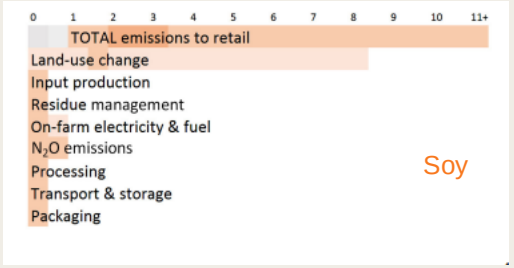
Emissions hotspots vary by value chain

Although the majority of emissions are from the farm, there is variation in which activities contribute most – depending on the crop, geography and farming practices









Key take-aways on emissions hotspots:[1,2]

1. **Dairy & beef:** land-use change, enteric emissions & manure
2. **Poultry:** feed
3. **Crops:** selection of incorrect fertilizer product & the poor management of fertilizer in the field
4. **In European or US supply chains**: incorrect fertilizer management more relevant as an emissions source while land-use change more relevant in the **Global South**

Example: European potato & wheat production:[3]

Some **26% of the total carbon footprint** of crops comes from **on-farm emissions**. This is because land-use change is not relevant in these production systems.

- On-farm emissions in wheat: 40% arise from N_2O emissions from the soil after fertilizer application, 31% from fertilizer production
- On-farm emissions in potatoes: 33% arise from N_2O emissions from the soil after fertilizer application, 25% from fertilizer production

Hotspot analysis enables the identification of key decarbonization levers that will reduce corporate GHG inventory

1 Environmental Defense Fund (2024). *Strategic Roadmaps for SBTi Forest, Land, & Agriculture Targets: Prioritizing Action for Impact*. Retrieved from: EDF-SBTi-FLAG-Report-2024.pdf.
2 World Wildlife Fund. Measuring & Mitigating Greenhouse Gas Emissions for Specific Commodities. Retrieved from: https://www.worldwildlife.org/topics/measuring-and-mitigating-greenhouse-gas-emissions-for-specific-commodities.
3 Average figures based on several cradle-to-grave life-cycle analyses using Yara calculations based on data from peer reviewed academic articles. See annex 2 in the Scope 3 Navigator for Practitioners for the full list of references.

The business case for scope 3 action in agri-food

Climate change risk

- High exposure to the risks of climate change, which will affect the core business. Near-term physical risk is rising rapidly. As a leader, you need to understand the risk and costs.
- Financial impacts will be severe and associated with access to raw materials, unpredictable yields, quality, price volatility, logistic shifts, labor costs, new farmers and insurance premiums.
- Mitigating the industry's risk exposure will require collective industry-wide scope 3 action.

Building resilience & future-proofing your business

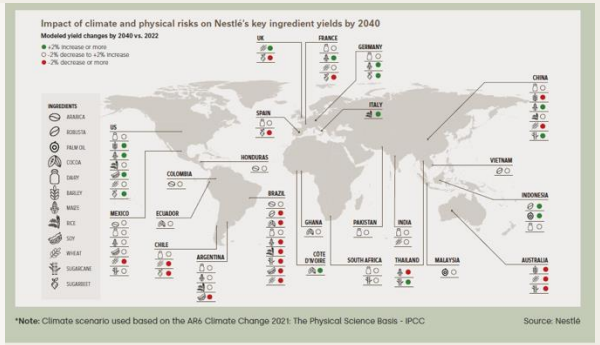
- The cost of inaction far outweighs the cost of action in mitigation and adaptation efforts.
- Scope 3 action also lays the foundations for adaption.
- As a leader, you need to identify and manage the physical risks of climate change and ensure the long-term resilience of supply chains. For more information, see WBCSD's *The Business Leaders Guide to Climate Adaptation & Resilience*.

Mobilizing financial capital

- Capital markets are evolving to recognize and reward climate action. For more information, refer to the WBCSD Corporate Performance & Accountability System (CPAS), the missing link between financial systems and business transformation.
- Access to capital increasingly depends on carbon accounting and climate risk management.
- Interest rates and credit facilities linked to carbon reduction targets are gaining in popularity.

Proof point: Business case for mitigation & adaptation

West Africa produces over 80% of the world's cocoa. In 2023-2024, cocoa prices surged by 400%[1] because of reduced harvests due to climate change-related events.[2] The industry is at a pivotal moment & the viability of the chocolate industry is in question. The sector must urgently address the shortage of cocoa, in the context of climate change and smallholder farming, while simultaneously considering farmer welfare, traceability and compliance requirements.



Proof point: Scope 3 action supporting access to credit

Green credit facility: Bunge has refinanced a $1.76 billion credit facility tied to sustainability targets, which includes scope 3 reduction targets.[3]

[1] Southey, F. (2024). Cocoa crisis hits chocolate: Which companies will survive? Food Navigator Europe. Retrieved from: https://www.foodnavigator.com/Article/2024/04/04/cocoa-crisis-hits-chocolate-which-companies-will-survive.
[2] UN Trade & Development (UNCTAD) (2024). Chocolate price hikes: A bittersweet reason to care about climate change. Retrieved from: https://unctad.org/news/chocolate-price-hikes-bittersweet-reason-care-about-climate-change.
[3] Bunge (2021). Bunge Refinances its $175 Billion Revolving Credit Facility Tied to Enhanced Sustainability Linked Targets. Retrieved from: https://www.bunge.com/Press-Releases/Bunge-Refinances-its-175-Billion-Revolving-Credit-Facility-Tied-to-Enhanced-Sustainability-Linked-Ta.

The business case for scope 3 action in agri-food

Compliance in scope 3 reporting

- Governments worldwide are increasingly using legislation to mandate scope 3 disclosure requirements and target-setting as part of corporate climate transition plans.
- Mandatory requirements for scope 3 reporting are likely to grow globally.
- The most common voluntary reporting frameworks have requirements for scope 3 disclosure and action, such as SBTi, IFRS.
- Forward-thinking companies practice *smart compliance* by looking ahead to voluntary frameworks that tend to inform mandatory legislation.

Your customers' expectations

- Given the shared nature of scope 3, suppliers and customers are on the same decarbonization pathway.
- In line with new reporting requirements, customers will expect scope 3 reporting and actions from their suppliers and will tend to select or switch to suppliers that are equipped.
- This provides an opportunity for forward-thinking companies to add value and grow a client base.

Investors

- The investor community is increasingly expecting meaningful corporate disclosure of non-financial climate-related information and transition plans in line with recognized standards.
- The most widespread and globally adopted disclosure frameworks – GRI & ISSB – have scope 3 requirements.

Proof point: Ripple effects of policy & mandatory reporting requirements

From 2024 onwards, with the introduction of the European Union's Corporate Sustainability Reporting Directive (CSRD) almost **50,000 companies worldwide** will have to comply with the CSRD reporting guidelines, which include scope 3 reporting and action requirements.

CSRD will affect also non-eligible companies, driven by the requests of compliant customers and suppliers.

Proof point: Investor interest in climate-related disclosure & risk assessment

"Asset managers see clearly the links between climate and financial returns: inflation, insurance premiums and access to raw materials."

– Nicolas Tangen, CEO of Norges Bank Investment Management[1]

[1] Financial Times. Who killed the ESG party? Video. Retrieved from: https://www.youtube.com/watch?v=hMW_pT7w-Y8.

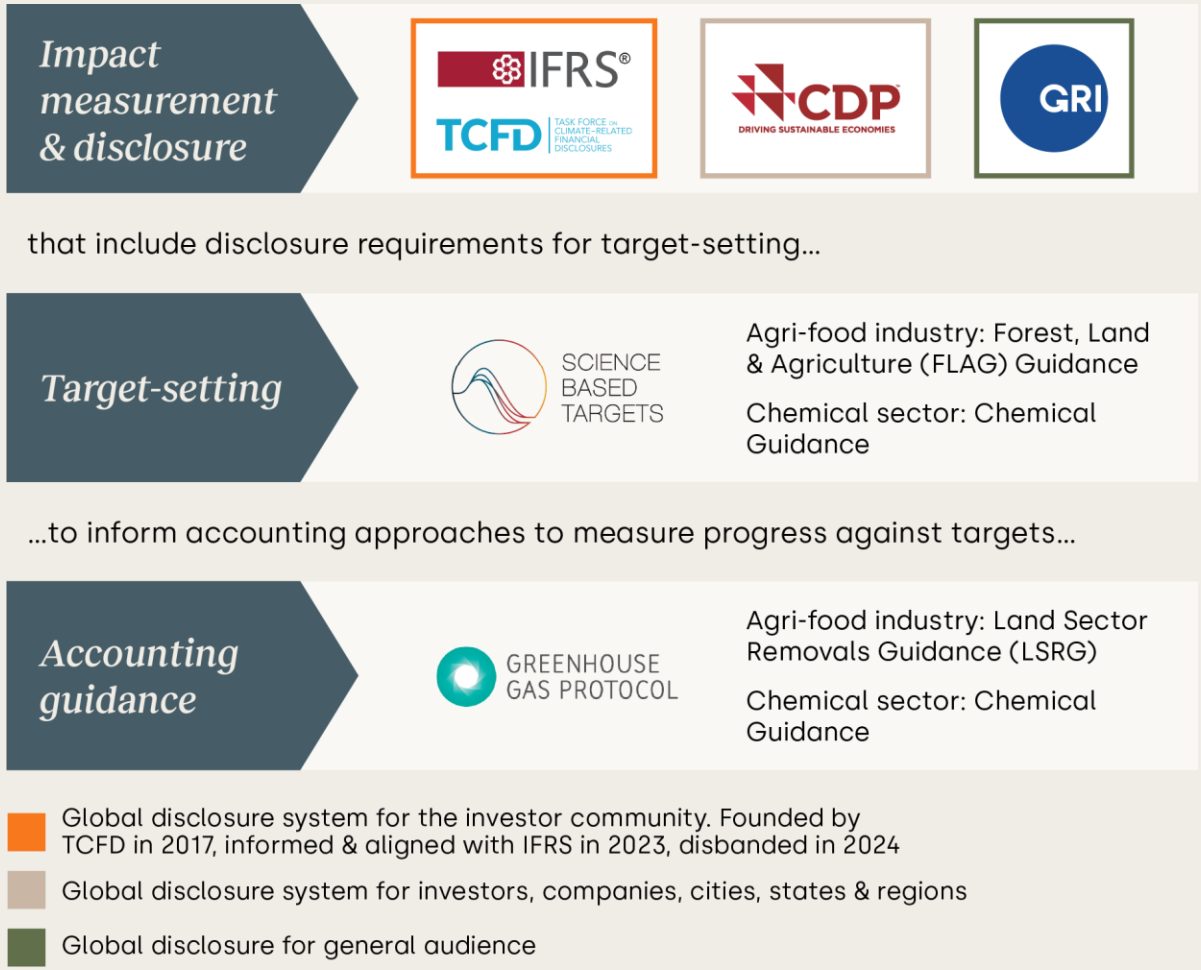
Scope 3 frameworks: what you need to know

Governments worldwide are increasingly using legislation to mandate scope 3 disclosure requirements

- In the EU, the Corporate Sustainability Reporting Directive (CSRD) requires scope 3 reporting & action towards a transition plan.
- In the United States, the California government has introduced the Climate Corporate Data Accountability Act (CCDAA) & will require scope 3 disclosures in 2027.
- Asia-Pacific countries, Canada & Brazil are in the process of implementing legislation making scope 3 disclosures mandatory.

Increasing requirements to disclose & act on scope 3 emissions, which will affect your license to operate

The most common voluntary frameworks have requirements for scope 3 disclosure & action. There is increasing consolidation of voluntary frameworks and with specific scope 3 guidance



Business case for smart compliance

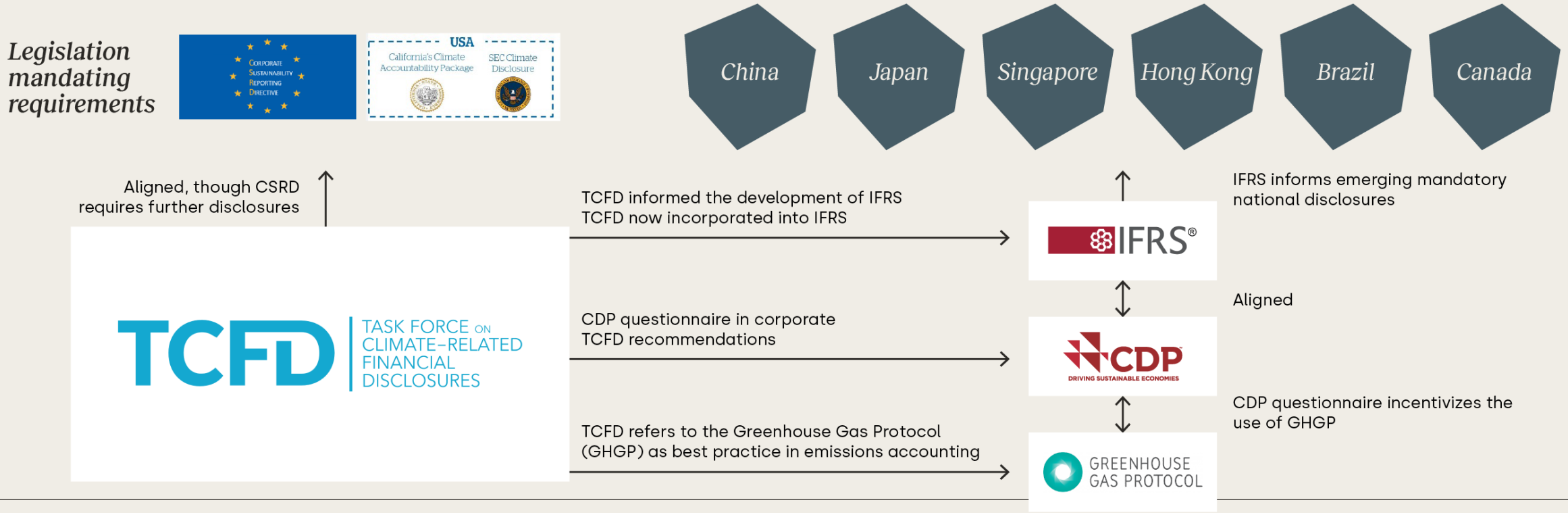
A **compliance agenda** focusing on **implementing requirements mandated by government legislation** in a short-term ***firefighting approach*** drives many companies.

Smart compliance means looking ahead to an early adoption of **voluntary frameworks** that inform mandatory requirements.

Considering voluntary frameworks becomes a strategic exercise and provides an opportunity to minimize risks and maximize competitive advantage as companies experience fewer disruptions, less risk of penalties and front-runner benefits.

Making the case for smart compliance:

The Task Force on Climate-related Financial Disclosures (TCFD) has informed mandatory legislation and globally adopted reporting frameworks



Note: Diagram based on Twomlow, A. (2024). The brave new world of mandatory climate disclosure – Ensuring movement beyond box-ticking in North America. EcoAct. Retrieved from: https://eco-act.com/blog/mandatory-climate-disclosure-north-america/.

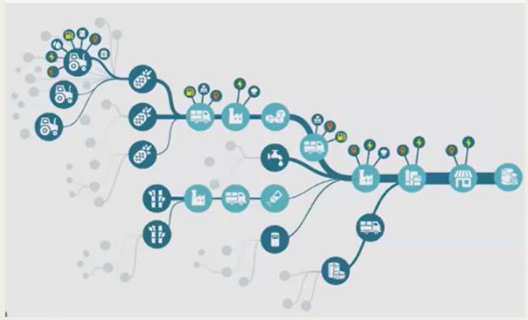
Scope 3 reporting & action in the agri-food industry is unique: complexities & solutions

1 Complex supply chain

- Multi-tiered networks with no or low traceability
- Frequent spot purchasing vs. long-term relationships
- Commodities aggregated with no or low traceability to farm gate
- Tier 1 suppliers generally lack information on product carbon footprints and, if data is available, accuracy is unclear

Solution: *See supplier engagement section*

Example of complexity of food supply network



2 Biological nature of land-based activities

- Farming is a biological process, meaning it is uncontrolled and unpredictable, exacerbated by climate change variability
- Shifting to annual data collection means that scope 3 emissions may fluctuate on a year-on-year basis
- Unlike other sectors, land-based sectors can account for carbon removals but the biological nature means that removals can occur easily through fire, decomposition, harvest, erosion, etc., which presents a series of challenges in permanence

Solution: *See standards and policy section*

An important component of in-field emissions is the nitrous oxide (GHG) emissions from the soil. It is dependent on temperature, rainfall, microbes, soil and biological processes. It cannot be measured directly but rather through models. *See point 4*

3 Collecting farm-level data

- Primary data collected from farm allows to measure crop carbon footprint more accurately
- Calculations require a significant number of data points
- Data collection is difficult, time consuming and labor intensive
- Farmer must receive compensation/incentives for collection and sharing

Solution: *See data section*

Example of farm data complexity:

The Cool Farm Tool is one of the most commonly used tools to calculate on farm emission and requires up to 100 data points to unlock its full potential. Despite the complexity of collecting on-farm data, primary data is important in helping build more accurate models, identify emission hotspots and understand the impact of on-farm practice changes.

4 Accuracy of models & methodologies

- Measuring crop carbon footprints can rely on models using secondary data
- Access to secondary datasets is expensive
- Difficult to quantify the level of uncertainty and inaccuracy in the model results
- Outputs of the models introduce limitations to scale as data lack disaggregation
- Models are still evolving to be accurate, science based and practitioner-ready

Solution: *See standards and policy section*

This informs the case for investing in collecting primary data. Despite the complexity of collecting on-farm data, primary data is important in helping build more accurate models, identify emission hotspots & understand the impact of on-farm practice changes.

Given the above complexities, agri-food companies are more exposed to the risk associated with changes in corporate GHG emissions inventory & need to manage this risk with internal & external stakeholders

Key decarbonization levers: Despite the complexity & uncertainty, the key mitigation levers to reduce corporate GHG inventories are known

Three priority categories for mitigation solutions

Prevent commodity-driven **deforestation** and **peatland degradation** to reduce land-use change emissions

Reduce emissions through **improved livestock diets, nutrient management, manure** management and improved **rice cultivation** practices**.**

Remove carbon dioxide from the atmosphere through **agroforestry**, improved **soil organic carbon sequestration** and the application of **biochar** soil amendments.

Reduce emissions from agricultural production and relieve pressure on agricultural land by **reducing the quantity of agricultural production needed and shifting demand** away from emissions-intensive commodities.

Source: Food & Land Use Coalition (FOLU) (2024). *Future Fit Food & Agriculture: The financial implications of mitigating agriculture & land use change emissions for businesses*. Retrieved from: https://www.foodandlandusecoalition.org/wp-content/uploads/2024/03/FOLU-Future-Fit-paper-2_compressed.pdf.

Key decarbonization levers
Example of a *no regret* decarbonization lever: Improved nitrogen fertilizer management

Nitrogen fertilizer contributes to the carbon footprint of food products by 1) the **type of the fertilizer production**, 2) **how farmers apply fertilizer** in the field. Improving nitrogen fertilizer management can significantly the **reduce carbon footprint (PCF)** of food products, **reduce costs** for farmers & **improve externalities on nature,** without causing **yield loss**. Effectively delivering this potential will require **collaboration across the value chain**.

There is considerable decarbonization potential in the selection of the nitrogen fertilizer product

Switching from conventional to green fertilizer (low-carbon ammonia-based fertilizers) can reduce the carbon footprint of a food product by ~5% (based on analysis of 10 products typically found in a European consumer shopping basket).[1]

Optimizing the use of nitrogen in the field provides further opportunity to reduce PCF of food

SBTi recognizes that optimizing nitrogen-use efficiency (NUE) is a significant decarbonization lever. According to GHGP, food companies can account for improved NUE as reductions in their GHG inventories.

Scalable, cost-effective action is possible today

Low-carbon footprint fertilizer products are available and technologies in place to optimize NUE. There are high abatement levels relative to the costs of the intervention and costs will likely decrease as the industry mainstreams.[1]

Challenges & solutions

Farmers lack incentives to overcome barriers to change on-farm products and in-field practices. Providing farmers with bundled incentives will require value chain collaboration. There must be alignment in chemical and agri-food industry decarbonization pathways to incentivize NUE throughout the value chain to accelerate collaboration and investment.

Case study

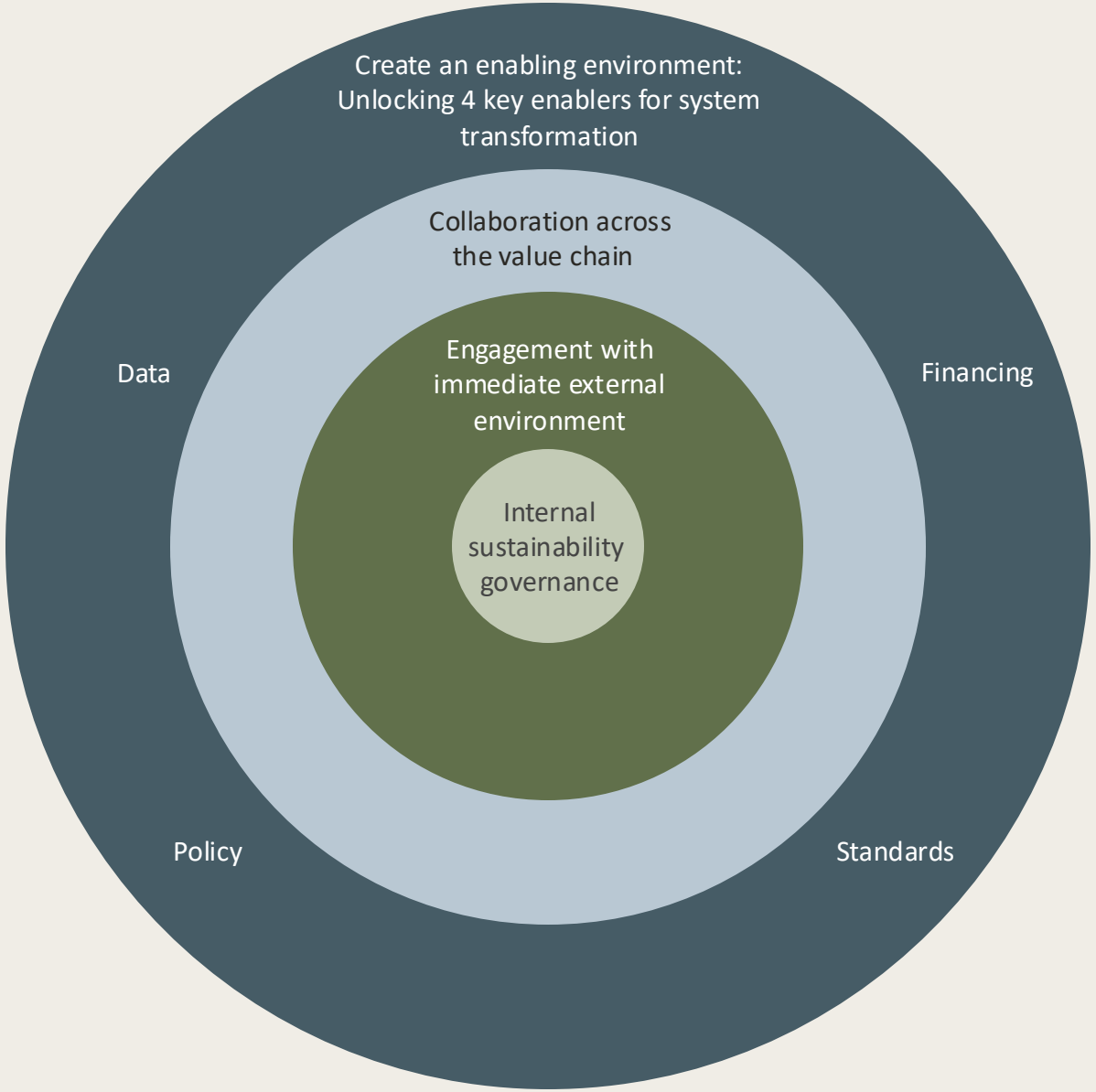
El Parque Papas is the biggest potato farmer in Argentina, supplying 14,000 MT/year to industry. El Papas has signed an MoU with Yara to receive low-carbon ammonia-based fertilizers (green fertilizers) **that will reduce in-field emissions by 28% while still maintaining yield & quality.** By doing so, they can **reduce the carbon footprint** in the final product (potato chips) **by ~5-10%.**[2,3]

Reduced emissions from nitrogen fertilizer production and the improved management of nitrogen in the field support scope 3 reductions of downstream companies while maintaining or improving the yield & quality of raw materials.

1 McKinsey & Co. (2023). From green ammonia to lower-carbon foods. Retrieved from: https://www.mckinsey.com/industries/agriculture/our-insights/from-green-ammonia-to-lower-carbon-foods.
2 El Parque Papas. Firma de convenio con Yara para el uso de fertilizantes verdes. Retrieved from: https://www.elparquepapas.com/reduccion-de-la-huella-de-carbono/.
3 Yara (2022). Turning potato chips climate friendly in Argentina. Retrieved from: https://www.yara.com/corporate-releases/turning-potato-chips-climate-friendly-in-argentina/.

Scaling scope 3 action requires a focus on **four** spotlight areas

1. Scale scope 3 action inside an organization through **strong internal sustainability governance**
2. Scale scope 3 action by **engaging the immediate external environment:** suppliers, customers, board of directors & investors
3. Scale scope 3 action via **collaboration with stakeholders throughout the value chain**
4. Scale scope 3 action by shaping the ecosystem: **unlocking key enablers in data, finance, policy & standards**



1 Scaling by setting an internal governance structure

When business units operate in silos, it significantly hinders the achievement of scope 3 targets. It is essential for companies to embed scope 3 and sustainability with KPIs across the organization. The C-suite level must provide the strategy, leadership and resources needed to drive change and embed scope 3 actions into the core of the business.

- The roles & responsibilities of C-suite leadership in scope 3 action
- Set the strategy at senior leadership level & create cross-KPIs
- Deploy strategy to functional business to scale action across the organization

Set strategy

Set up the organization for success

→ Onboard the right stakeholders

→ Create cross-KPIs

→ Ensure there is cross-talk between the business units

→ Enable a flow of decision-useful data

→ Cascade message through the organization

→ Create a culture of awareness of the importance of scope 3

CEO

→ Meet decarbonization goals while maintaining profitability

→ Link scope 3 action with value creation

→ Onboard shareholders to shift from quarterly to long-term returns

CFO

→ Calculate the costs of scope 3 action: reduce, monitor, report

→ Set the internal carbon price

→ Set the budget to reduce scope 3

→ Engage with other CFOs to determine the costs of collective scope 3 action

CSO

→ Educate leadership & organization on the relevance of scope 3

→ Broaden the ownership of scope 3 beyond the sustainability business unit

→ Reinforce the business case for scope 3

COO

→ Mobilize procurement team to integrate climate considerations into supplier agreements

→ Develop a supplier engagement plan

→ Mobilize R&D to create innovation to link scope 3 with new value creation

CMO

→ Identify opportunities to communicate scope 3 action to enhance brand value (e.g., labelling, claims or brand stories)

→ Ensure product innovation & diversification and create new products or renovate existing projects

CTO

→ Set up internal capabilities for data management for new incoming data on scope 3

→ Enable flow of decision-useful data in the company

→ Consider new sources of data access & exchange

An internal carbon price embeds climate considerations into decision-making processes by linking carbon costs to financial performance and integrates carbon into the broader business strategy. To be effective in a scope 3 action agenda, it is necessary for companies to integrate an ICP into procurement protocols, investment evaluations and product development pipelines. For more information, see WBCSD's Navigating internal carbon pricing *publication.*

2 Scaling by shaping the immediate external environment

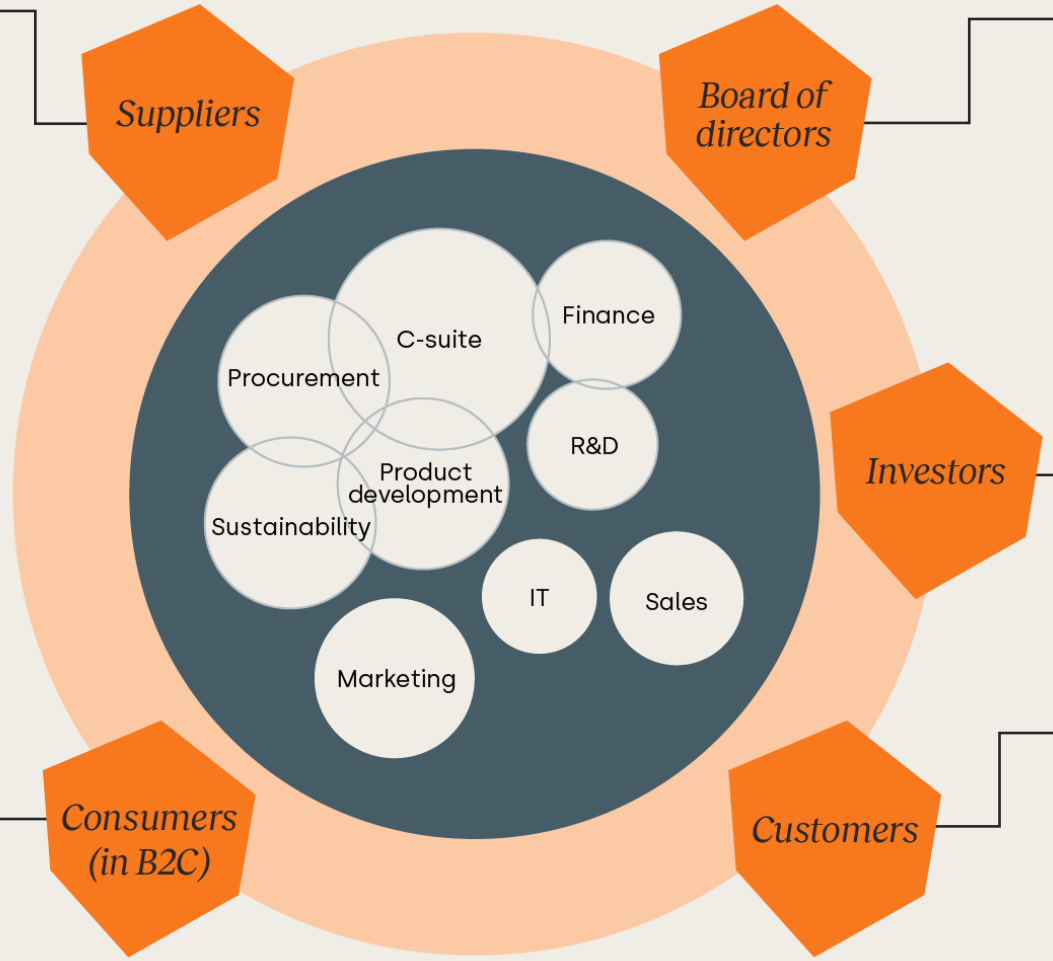
- Develop a supplier engagement strategy
- Invest in relationships to support in the journey
- Send the right demand signals
- Update procurement protocols
- Provide procurement team with the budget to select suppliers with transparent data & improved emissions profiles
- Consider financing options as an incentive

For more information, refer to WBCSD's *Incentivizing supply chain decarbonization by engaging with suppliers beyond tier 1* publication.

Rabobank & CCEP collaborate to reward suppliers based on ESG & sustainability KPIs. That includes scope 3 disclosures where suppliers that meet targets receive early payment regardless of payment terms agreed with CCEP.

- Integrate carbon & sustainability into product marketing
- Invest in consumer education
- Balance accuracy, credibility & transparency to avoid greenwashing

Note that some niche consumer segments are willing to pay a premium, a first step in building momentum to work towards a broader system transformation as an end goal.



- Engage the board of directors early on in the importance of scope 3 action for long-term business viability
- Use scenario analysis to frame the cost of inaction vs the cost of action; for support, see the Food, Agriculture & Forest scenario in WBCSD's climate scenarios catalogue
- Present a case of decarbonization goals linked with value creation; see WBCSD's Corporate Performance & Accountability System (CPAS) theory of change.

- Recognize that perceived conflict between fiduciary duty & climate action often depends on investment horizon
- Engage investors with long-term horizons that recognize the links between climate factors & financial returns

- Prepare for deeper collaboration with customers
- Internally prepare for requests for data sharing & assurance of product carbon footprints
- Evaluate how to strike a balance between cost, accuracy & data credibility
- Be transparent about uncertainty in data to manage risks

3 Scaling through value chain collaboration

The nature of scope 3 is that it's a shared responsibility and can deliver a shared benefit. This requires collaboration between stakeholders in the value chain: cost, value and risk sharing.

Each stakeholder has a distinct role and set of challenges in this transformation. Effective collaboration requires addressing the cost-value asymmetry, where those upstream bear the costs and those downstream realize the value. The C-suite needs to engage in conversations on cost, value and risk sharing with partners.

	Input providers	*Farmers & producers*	*Traders*	*Manufacturers & processors*	*Retail & consumer*
Opportunities	• Connect to the farmer • Ensure technical agronomic expertise • Develop & deploy innovation to reduce emissions in field	• Transition on-farm practices to reduce emissions & improve resilience • Commit to & implement deforestation- & conversion-free production practices	• Equip traders to support product traceability • Ensure main relationship is owners with farmers & growers	• Provide the supply chain with the appropriate market signals • Act as important gatekeeper in traceability • Have the opportunity to collect data on yield, quality & waste	• Provide the appropriate market signals in the supply chain • Ensure consumer connectivity & education • Create a selection of low-carbon products • Create value with premiums on low-carbon product lines
Challenges	• Downstream traceability • Lack of data; measuring each by farm is not always possible • Requires robust verification of on-farm practice • CapEx investment is very high for low-carbon fertilizer; high risk & long-term return horizon • Governed by different scope 3 frameworks than downstream companies (e.g., SBTi), which leads to inconsistencies • Long & expensive R&D pipeline for novel products	• Lack of financial support & clear market signals to cover transition costs • Data capture is time consuming & there are competing requests from off-takers • Potential negative impacts on yields, farm economics & food security • Requires support from value chain partners to share risks associated with transition	• Often several stakeholders between farm gate & the trader, who also require incentives • Traceability in commodity supply chains • Customers reluctant to share downstream scope 3 data for accurate inventory reporting • Administrative cost burden of customer requests for scope 3 data & emissions factors in different formats & LCAs • Freeloaders	• Distance from the farm • Lack of know-how of on farm practices • Complex upstream value chains with multiple commodities	• Fierce price competition in the retail market • Mass consumer base is price sensitive • Distance from the farmer • Traceability in long, complex supply chains

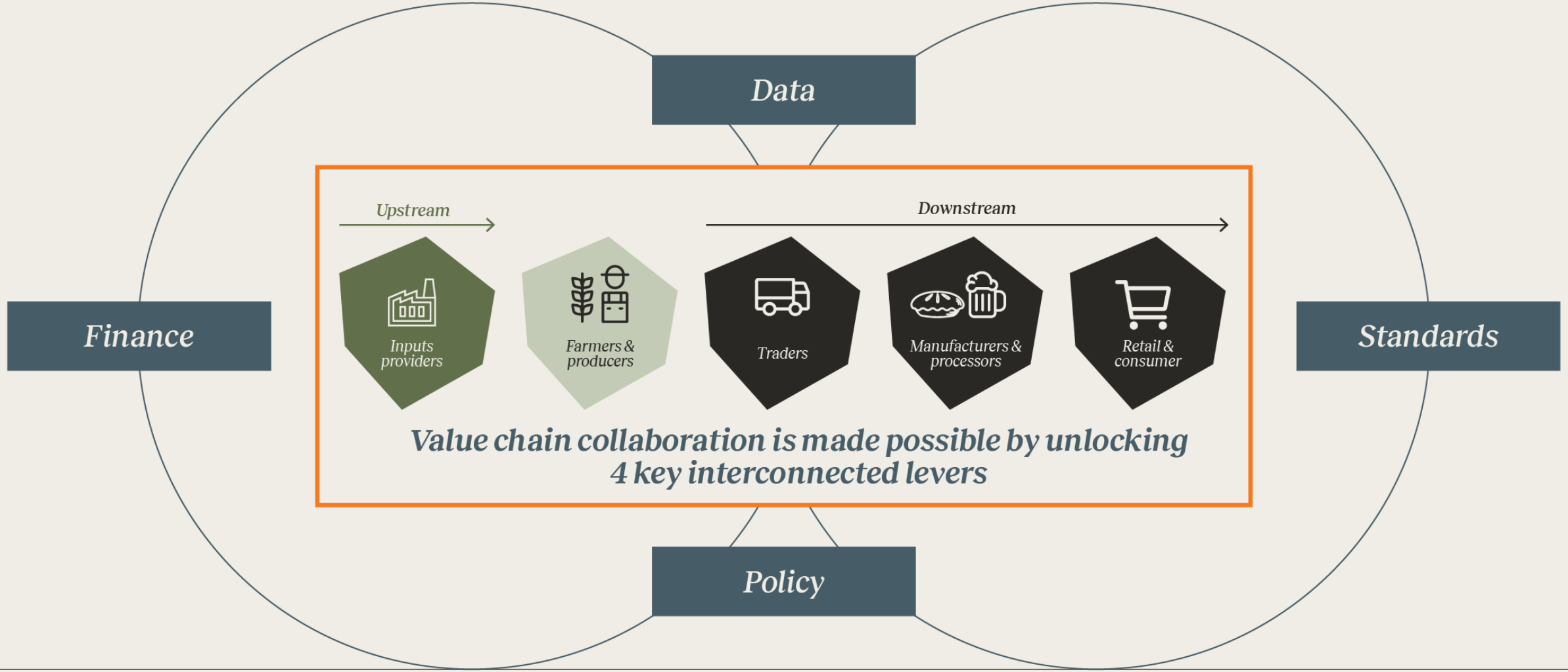
PepsiCo partners with Yara to reduce in-field emissions for potatoes. *See WBCSD's* Value chain co-financing mechanisms *publication*

Danone leverages strong relationships with grain suppliers to engage with farmers.

Rabobank provides favorable credit facilities for supply chain actors that disclose scope 3 data to their customers.

4 Scaling scope 3 action by creating an enabling environment

Unlocking 4 enablers: data, policy, finance & standards



Data

Data integrity & traceability requires a systems approach: data ecosystem

The data ecosystem can leverage and contribute to open-source data: collaboration between companies on open-source data platforms to reduce costs for individual companies, government sources, future opportunity for standardized emissions factor (EF) datasets & methodologies

Credible data enables reporting according to: 1) mandatory requirements; 2) voluntary frameworks; 3) needs of the board of directors; 4) demands from the investor community

Upstream farm

Leverage digital tools provided by agricultural input companies to automate on-farm data collection

- Farm level
- Supply chain
- Company level
- External stakeholders

At the farm

Use satellite imagery to detect some on farm practices.

Leverage a globally harmonized field ID to streamline data exchange

Use models & secondary data to fill the gaps where primary data is not yet available

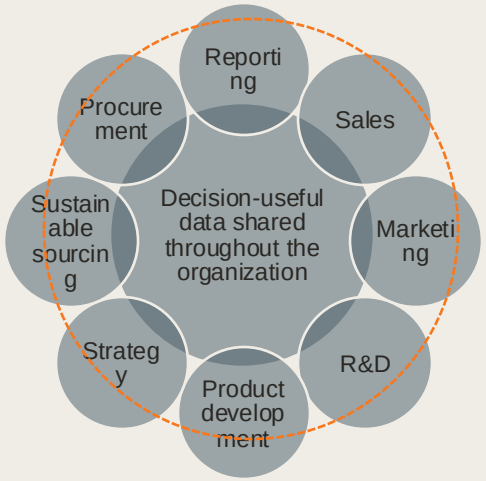
In the supply chain

PACT is the global standard to harmonize data exchange on product carbon footprint

4. Scaling scope 3 action by creating an enabling environment

Data flow in the supply chain: supplier ↔ customer

At company level



Data flow in a company: internal buy-in & cohesive scope 3 strategy

In the supply chain

Use PACT-compliant ERP software to enable data flow in the supply chain

Data flow in the supply chain: supplier ↔ customer

Consumer

Consumer claims

Credibility
Buffer against greenwashing
Create value
Frontrunner advantage

What a functional data ecosystem requires. For more information, see *WBCSD publication* Scope 3 Data and MRV Guidance for Agri-food

- Roles & responsibilities in data collection
- Business models for data ownership & sharing
- System interoperability
- Streamlining costs vs data integrity

ERP systems can enable the sharing of useful data across the organization to inform strategic decisions & create value from scope 3 information

Policy

Market forces alone cannot address the scope 3 challenge; the public sector must play a crucial role in creating an environment that encourages agri-food companies to take action. How can policy support scope 3 action? There are 5 key dimensions that policy can address to support scope 3 action.

Reporting & disclosures

- Create clear corporate scope 3 corporate disclosure requirements & implementation guidance
- Engage with governments at an international level for globally harmonized reporting standards
- Provide clarity on carbon performance claim & emissions trading schemes & clarify the role of the agri-food industry in nationally determined contributions
- Align with the private sector on data metrics

Data collection

- Integrate emissions-related metrics into existing government farm-level surveys & data collection efforts
- Centralize jurisdiction-level emissions data related to agri-food supply chains to ensure accessibility, consistency & accuracy
- Support efforts to address gaps in secondary data sets
- Explore the role of government in developing satellite imagery capacities for more accurate emissions tracking

Finance

- Support the transition with direct resource allocation & repurpose harmful subsidies
- Support early-stage R&D that supports in-field emissions reductions & removals
- Increase options for & optimize access to blended finance

Corporate incentives

- Create incentives for early movers
- Provide loans with favorable interest rates
- Offer tax credits & rebates for investment in scope 3 action level

Associated regulations

- Create accommodating regulatory frameworks to enable financial institutions to support directly & rewards companies with a scope 3 agenda
- Design policies to enable insurance companies to support in de-risking the transitions
- Remove barriers in commercializing innovations & reduce time to market for the registration of new products & technologies

Financing

Scope 3 action requires financing

The food & agriculture sector should expect to spend, on average, an additional USD $205 billion per year between 2025 and 2030 to achieve up to 9 $GtCO_2eq$ of mitigation per year by 2030.[1]

Mobilize the finance needed for scope 3 action will require dialogue between all stakeholders in the ecosystem

What requires financing?

Upstream value chain investments

- → Significant CapEx investment in low-carbon fertilizers
- → Investments in R&D for innovation in emissions reductions and removals
- → Using R&D to automate data capture

On-farm practice changes

- → Purchase of machinery, irrigation
- → Low-carbon fertilizer
- → No tillage, cover crops, crop rotation
- → Data collection & data sharing
- → Additional agronomic support

Downstream value chain investments

- → Cost associated with data sharing & transparency in the supply chain
- → Differentiated storage capacity based on chain of custody

Most of the costs are in-field & increasing farm cost & accepting lower yields is untenable for a vast majority of farmers

There must be a business case, a bundle of incentives, for the farmer to adopt new practices

Costs | On-farm incentives options | Company needs for financing

Agri-input providers
- → Provide agronomic support
- → Bring innovation to the field

- → Green credit facilities
- → Blended finance
- → Regulations that support CapEx & R&D investments, accelerate time to market

Food Industry
- → Reward farmer practice change
- → Premiums to farmers & premiums to suppliers for low PCF products

- → Green credit facilities
- → Blended finance
- → Repurpose harmful subsidies

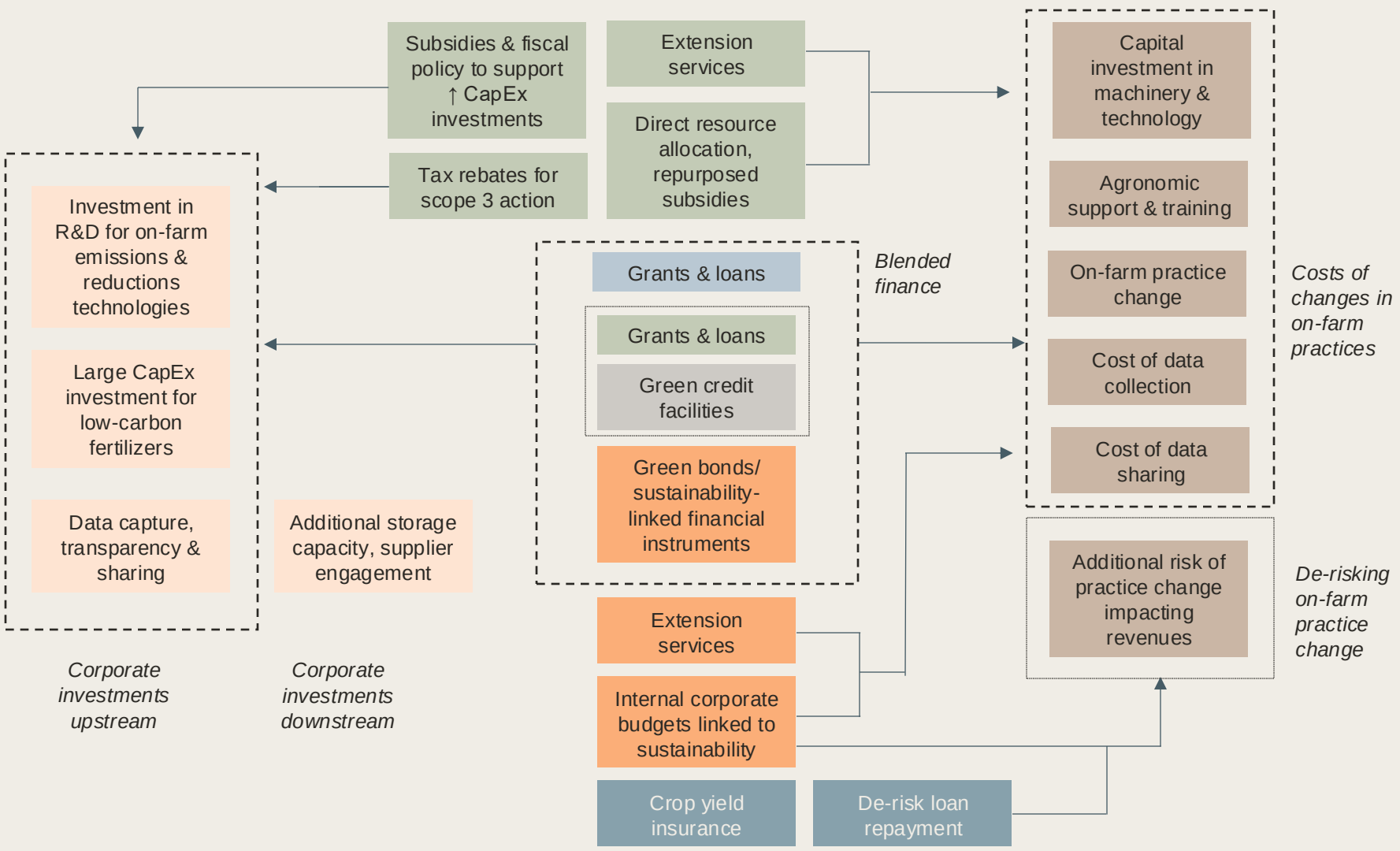
Financial institutions: favorable interest rates, incentives for data transparency, credit facilities linked to scope 3 KPIs

Insurance: crop yield insurance & derisk credit

Policy: direct resource allocation, blended finance options, financing early-stage R&D & extension services

Source: Food & Land Use Coalition (FOLU) (2024). *Future Fit Food & Agriculture: The financial implications of mitigating agriculture & land use change emissions for businesses*. Retrieved from: https://www.foodandlandusecoalition.org/wp-content/uploads/2024/03/FOLU-Future-Fit-paper-2_compressed.pdf.

Financing: Ecosystem



Key takeaways

1. Most of the cost burden is on the farm & risks associated with possible yield losses.
2. Farmer needs a bundle of incentives to overcome barriers, costs & risks associated with practices.
3. Multiple stakeholders need to contribute to the incentive bundles: companies, governments, financial institutions & insurance companies.
4. Upstream companies face costs associated with CapEx investment, R&D & data. Downstream companies may have costs from storage facilities & data traceability.
5. Companies can benefit from policy that supports their scope 3 investments & that engages financial institutions & insurance companies to do the same.
6. Large-scale scope 3 action would benefit from easily available blended finance options.

Policy significantly affects the financing available to support scope 3 action. The recent Inflation Reduction Act enacted in 2022 by the US Congress has earmarked funding of ~USD $369 billion for clean energy security & climate change action. The act has catalyzed CapEx investments in green technologies, making the US one of the most competitive locations for the production of blue ammonia, a key decarbonization lever in the agri-food industry.

Corporate costs | Corporate financing for farms | Financial institutions | Government | Philanthropic & development banks | Insurance companies | Farmer costs

Standards

Standards refer to setting targets, accounting for and reporting scope 3 emissions in voluntary reporting frameworks. The most widely adopted target-setting framework is from the Science Based Targets initiative (SBTi), with the support of the Greenhouse Gas Protocol (GHGP) for guidance on accounting and reporting.

Organizations generally develop standards to be sector-agnostic, meaning they many not accommodate complexities and unique features of the industry. SBTi has sector-specific guidance for food, land and agriculture (FLAG). Similarly, the GHGP has developed the Land Sector Removal Guidance (LSRG). Upon its finalizations, LSRG and the resulting guidance will have a significant impact on the feasibility, scalability and cost of scope 3 action. In this context, there is a business imperative to become involved early in the co-development process to ensure standards are realistic and cost-effective.

The agri-food industry must pay attention to the following:

Consistency across the food supply chain	Challenges with project vs inventory accounting	Defining boundaries	Adaptation	Alignment with non-climate related standards
Different sector decarbonization approaches (SDA), which have different rules, govern the chemical & food industries. The industry needs to advocate for harmonized SDA frameworks in the value chain to enable common KPIs & collaboration.	When a company invests in a carbon reduction project, there is uncertainty on how to account for the reduction in the corporate GHG inventory & allocation with the value chain. Product traceability also introduces a challenge on claiming.	The boundaries of scope 3 action are not clear. The boundaries between on-farm, off-farm & adjacent land interventions are often ambiguous.	Current frameworks focus primarily on mitigation & do not incorporate adaptation.	There are several emerging frameworks for nature & equity targets.
Alignment in SDA in the chemical & food industries in the decarbonization metric for NUE is essential to supporting value chain collaboration for scope 3 action	Industry must advocate for clarity on accounting rules & market-based accounting mechanisms	Industry to ask for clarity on what constitutes in-value chain intervention for scope 3 action	Standards must include support to implement adaption strategies to build resilience & the long-term viability of the sector.	There must be alignment between climate & non-climate standards for boundaries, metrics & reporting.

Conclusion: The 4 key enablers interlink to unlock the scaling of industry-wide scope 3 action

Policy that creates an enabling environment for companies and financial institutions, and to support scope 3 action with direct finance and data collection

Standards must be clear & consistent to enable private sector to invest long-term, incentivize collaboration, cost sharing and value sharing in the supply chain

Finance to provide the right incentives for farmers, create the business case to change on-farm practices and de-risk the transition; all parties – companies, financial institutions & public sector – must be involved in providing financing solutions

Data to support decision-making and credible communication to financial institutions, investor community, consumers and public sector

- **Support the decarbonization of the agriculture & food industry** and help reach the Paris Agreement's 1.5°C targets.
- **De-risk climate change in the industry** through industry-wide scope 3 mitigation efforts and improve the resilience of supply chains with adaptation planning strategies.
- **Lay foundations to support action in nature, equity & food security** by simultaneously incentivizing regenerative agricultural practices for increased resilience and more equitable food systems
- **Accelerate collaboration** in the value chain to share the cost and value of scope 3 action.
- **Ensure value creation**, increase investor attractiveness, obtain access to capital and public/blended finance for companies demonstrating scope 3 action.

Thank *You*

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