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Food Systems Working Group

Booklet of Cases

OCTOBER 2025

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Introduction & Methodology

68 cases were received through the platform and went through a classification process, resulting in 6 shortlisted cases

Case gathering

Cases were **received via platform**

Total	**68**

Eliminatory

Pre-screened cases that were immediately perceived **out of scope**

Eliminated	**3**

Classificatory

Cases were assessed against the **Secretariat's criteria**, with top-scoring examples selected within **each transition archetype** defined by the **Working Group** to ensure **balanced representation**

Within scope	**65**

Shortlist

A final list of cases that were considered as the **most adhering** and **promising cases** was **compiled and presented for approval** by the Working Group and SBCOP Secretariat

Shortlisted	**6**

Evaluation framework proposed by the Secretariat for case selection

Scalable Emission Reduction

Contribute to emissions reductions and to achieve goals of Paris Agreement when adopted by multiple companies

1	2	3
Minimal or uncertain emissions impact, with limited alignment to Paris Agreement goals	Contributes to emissions reductions but faces scalability or impact limitations	Significantly reduces emissions and supports Paris Agreement goals when widely adopted

Short-to-Medium Term Achievable

Deliver impact within 5 years

1	2	3
Over 5 years to achieve impact	Up to 5 years to achieve impact	Up to 3 years to achieve impact

Economic Impact

Demonstrate returns and/or affordable implementation costs

1	2	3
Lacks proven financial returns, with high or unsustainable costs, making economic feasibility uncertain and requiring significant adjustments	Shows potential for returns, but they are unproven; costs are reasonable but may need optimization for sustainability	Clear and proven financial returns, with implementation costs that are both affordable and sustainable

Innovative

Close existing implementation gap, or introduce a pioneering approach

1	2	3
Fails to close existing implementation gaps and lacks originality, offering little to no pioneering value	Addresses some implementation gaps or incorporates innovative elements, but the approach is not entirely novel or transformative	Closes significant implementation gaps or introduces a groundbreaking, pioneering approach that sets a new standard in the field

Aligned with SB COP positioning

Contribute to SB COP priorities implementation

1	2	3
Presents arguments that contradict the priorities of the working group or fails to address any of its priorities	Addresses at least one of the working group's priorities and does not contradict them	Addresses multiple priorities of the working group and does not contradict them

To tailor the process to Food Systems, the Working Group adapted some of the criteria

Contextualization for Food Systems initiatives

Scalable Emission Reduction

Contribute to emissions reductions and to achieve goals of Paris Agreement when adopted by multiple companies

Cases that showed **quantified** and **realized emissions reductions, preferably those that:**

- Use internationally **recognized methodologies;**
- Have **3rd-party creating verifying or auditing results**

Therefore, more **mature initiatives** were preferred (vs. early-stage pilots). Other tracked indicators were considered a plus

Economic Impact

Demonstrate returns and/or affordable implementation costs

Most submissions didn't include formal financial indicators, so the alternative assessment was whether the initiative, when compared to mainstream practices at the farmer level, showed:

Parity or increase in productivity / yield AND OR **Parity or reduction in production costs** AND OR **Parity or increase in farmer profitability**

Short-to-Medium Term Achievable

Deliver impact within 5 years

1	2	3
Over 5 years to achieve impact	Up to 5 years to achieve impact	Up to 3 years to achieve impact

Innovative

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Contribute to SB COP priorities implementation

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Other considerations

Enough data and details were submitted to enable the assessment of against the criteria

The company is **willing to share data and results** with the WG and potentially more broadly, later on

Five archetypes were prioritized based on emissions, crop and regional diversity, to enable scalable food systems transformation

Types of crops
- Tree crop
- Livestock
- Row crop

Minimizing deforestation

Reduce farmland expansion by sustainably increasing productivity

Agroforestry systems

Tropical
Oil palm, cocoa, coffee

Improved agriculture management practices

Improve management practices of agricultural land

Large/Industrial crops solutions

Tropical
Sugarcane, soybeans

Temperate
Maize, soybeans, wheat

Rice methane emissions solutions

Tropical (Asia focused)
China, India

Address livestock management and enteric fermentation

Livestock solutions

Tropical
Solutions that help reduce the expansion of pastureland and/or address enteric fermentation

Temperate
Solutions that address enteric fermentation

Integrated Systems (Crop-Livestock-Forestry, Crop-Livestock, Livestock-Forestry etc.)

Tropical
Cattle, soy, sugarcane

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Portfolio of Cases

Awards

PRELIMINARY

Short list of selected cases

Archetype	Region	Crop	Company	Case name	Maturity	Productivity	Profitability/Cost	GHG Impact
Agroforestry	Brazil/ Global	Coffee	Nestlé	**Supporting a resilient future for Brazilian coffee farming through regenerative agriculture**	Mature	**18%** yield increase	**~10%** profitability increase	**30%** GHG emissions reduction
Integrated systems	Brazil	Soy, maize, beef cattle	Grupo Roncador	**Fazenda Roncador Sistema Regenerativo Integrado Roncador - SRI**	Mature	**10%** increase in bags per hectare (soybean); **21%** reduction in months of slaughter age (beef cattle)	**8%** cost reduction vs standard practices (soybean)	Reduced from **+17,471** tCO_2e/year (2007/08) to **-231,595** tCO_2e/year (2019/20)
Industrial crops	USA	Cross-cutting (maize, soy, wheat, alfafa, sugarbeets)	PepsiCo; Soil and Water Outcomes Fund	**Soil & Water Outcomes Fund**	Mature	**$33** per acre in average farmer payments; **94%** reported yield parity or increase	**97.5%** reported profitability parity or increase	**403,151** MTCO2e sequestered since 2020
	Brazil/ Argentina	Soy, maize, cotton	Bayer	**PRO Carbono**	Mature	**11%** yield increase	**7%** profitability increase	**16%** increase in carbon sequestration
Rice	India	Rice	UPL	**Low Methane Rice Project**	Implemented	**5%** yield increase	**~5%** profitability increase	**23%** of GHG emissions reduction
Livestock	Brazil	Beef cattle	JBS	**Green Offices 2.0**	Mature	**27%** productivity increase (head/ha)	**29%** increase in gross revenue; **$3.76** return per **$1** invested in ATER	**23%** of GHG emissions reduction

Transition: Supporting a resilient future for Brazilian coffee farming through regenerative agriculture | Nestlé

Food Systems
case selection

Archetypes
Agroforestry Systems

Crop / Product
Coffee

South America
Brazil

Overview

Case objectives

Support the transition of over 2,000 Brazilian coffee farms toward regenerative agriculture, embedded in Nestlé's responsible sourcing system. The program goes beyond certification by classifying farms into regenerative maturity levels and offering direct technical support

Institutions Involved

Nestlé Brasil; Embrapa; Rainforest Alliance; Labor Rural; EY; Agrotools

WG Alignment

Agroforestry; soil health; smallholder engagement

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Limited investment funds; scarce research data; high competition; risk of low farm engagement despite profitability, potentially undermining climate goals

Scalability

Up to 2,000 supplier farms in Espírito Santo and Bahia; regenerative agriculture model applicable across farm types and sizes

Impact

Innovative Drive

Blends technical assistance, traceability, and conditional economic incentives into one operational model; practice adoption tracked through an educational digital platform

Economic Impact

Farmers saw up to 18% yield increase and up to 10% higher profitability per hectare due to efficient nitrogen use, composting, and soil cover (comparison between 2023 x 2024 harvest)

CO2 Impact

Coffee farm GHG emissions decreased by up to 30% comparing 2023 x 2024 harvest

External Links: https://www.nestle.com/sites/default/files/2022-07/nestle-agriculture-framework.pdf

Fazenda Roncador - Sistema Regenerativo Integrado Roncador - SRI | Grupo Roncador

Food Systems
case selection

Archetypes
Integrated Systems

Crop / Product
Soy, maize, beef cattle

South America
Brazil

Overview

Case objectives

Implement a fully integrated regenerative agriculture model that combines soy, maize, forage, and rotational beef cattle across 53,000 hectares in the Cerrado-Amazon transition, replacing agrochemicals with biological soil activation, native microbiota, and circular nutrient flows

Institutions Involved

Grupo Roncador; Embrapa; KPMG; Pangea; IBS

WG Alignment

Integrated systems; regenerative agriculture; livestock sustainability

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Farmer adoption and execution at scale challenges; climate variability; availability of technical assistance; upfront funding challenges

Scalability

Replicable tropical model across soy, maize, and beef systems using native biology, composting, and rotations, with verified outcomes and third-party validation enabling cross-sector adoption

Impact

Innovative Drive

Pioneering integration of fully composted manure, native microbial inoculants, and silicalcium for soil remineralization, replacing agrochemicals with biologically active solutions

Economic Impact

Over the last 3 harvest seasones, the system demonstrated 10% yield gain and 8% reduction in production costs in soy; 21% reduction in cattle slaughter age

CO2 Impact

Net GHG impact reduced from +17,471 (2007 / 2008) to -231,595 tCO_2e/year (2019 / 2020), based on GHG Protocol, Embrapa factors, FAO GLEAM model, and field-verified data

External Links: https://gruporoncador.com.br/

Soil and Water Outcomes Fund (SWOF) | PepsiCo

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Cross-cutting (maize, soy, wheat, alfafa, sugarbeets)

North and Central Americas
USA

Overview

Case objectives

Enable agri-food companies and government agencies to pay farmers for quantified environmental benefits from regenerative agriculture practices, delivering modeled and verified outcomes

Institutions Involved

PepsiCo; Soil and Water Outcomes Fund; AgOutcomes (Iowa Soybean Association); USDA; Others

WG Alignment

Regenerative agriculture; soil health; MRV

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Verification complexity; regulatory variability; climate and adoption risks

Scalability

464,906 acres already enrolled with PepsiCo across 7 states; full implementation since 2023 after 2020–22 pilots

Impact

Innovative Drive

Integrated carbon-and-water MRV within the payment model; hybrid outcome finance blending pay-for-practice and pre-season pay-for-outcome verified post-season to de-risk adoption

Economic Impact

~$33/acre in averaged to farmers; 94% reported yield parity or increase; 97.5% reported profitability parity or increase

CO2 Impact

403,151 $MtCO_2e$ sequestered since 2020

External Links: https://theoutcomesfund.com/

PRO Carbono | Bayer

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Soy, maize, cotton

South America
Brazil, Argentina

Overview

Case objectives

Promote regenerative agricultural practices that reduce GHG emissions and increase soil carbon sequestration capacity.

Institutions Involved

Bayer; Bureau Veritas; Control Union; Mosaic Company; Fendt; Raix; Barenbrug; Safra & Cifras; Itau Bank; Others

WG Alignment

Regenerative agriculture; traceability; MRV

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Adaptation of carbon certification standards for the region; methodological acceptance; adoption barriers in rapid system intensification

Scalability

Program currently spans ~220,000 ha in Brazil and 17,000 ha in Argentina, with expansion planned into new crops and regions

Impact

Innovative Drive

Integration of a digital MRV platform and Tropicalized Carbon Model (PROCs), supported by blockchain-enabled traceability

Economic Impact

Farmers report +7% profitability and +11% productivity gains; technical assistance and data collection is subsidized by the program

CO2 Impact

+16% increase in carbon sequestration for farmers

External Links: https://www.agro.bayer.com.br/pro-carbono

Low Methane Rice | UPL Limited

Food Systems
case selection

Archetypes
Rice Methane Emission Solutions

Crop / Product
Rice

Asia / Oceania
India

Overview

Case objectives

Support Indian farmers in reducing methane emissions through Alternate Wetting and Drying (AWD), integrated with regenerative practices, field validation, and farmer training

Institutions Involved

UPL Limited; RARS

WG Alignment

Methane reduction; water management

Case maturity

Case Stage

Under implementation

Risks Involved

Possible changes in methodology approved by Registry; Farmer may skip few steps due to personal or environmental reasons

Scalability

Currently covers ~10,400 ha and 6,000 farmers, with scaling target of 100,000 ha and 60,000 farmers by FY 2029-30

Impact

Innovative Drive

Private gas chromatography lab for GHG measurement – unique among private players in India, digital traceability (via app + geofencing), and bundled accident insurance tied to UPL inputs

Economic Impact

Farmers benefit from ~5% profitability gains, 5% yield increase

CO2 Impact

~23% GHG emissions reduction and +40% water-use efficiency improvement

External Links: https://www.youtube.com/watch?v=1uHhO7b_Vbc; https://www.youtube.com/watch?v=ara4uj5aD6Y; https://www.linkedin.com/posts/upl-ltd_empowering-krishi-mitras-in-andhra-pradesh-activity-7341003241901518848-9ejo?utm_source=share&utm_medium=member_desktop&rcm=ACoAAAWnhT8BEKGjyTMOaz7qDlOcr4WjRLyJ1sc;

Green Offices 2.0 | JBS

Food Systems
case selection

Archetypes
Livestock Solutions

Crop / Product
Beef cattle

South America
Brazil

Overview

Case objectives

JBS's Green Offices 2.0 is an integrated platform to accelerate environmental compliance, productivity, and emissions reduction among small and medium-sized cattle producers in Brazil, with focus on Amazon and Cerrado biomes

Institutions Involved

JBS S.A.; Inttegra Institution; FGV

WG Alignment

Traceability; livestock sustainability

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Producer engagement and digital uptake challenges; data quality; climate shocks affecting pasture and emissions baselines

Scalability

Program has already regularized 15,336 farms and engaged 800+ producers; with ~73,000 hectares under technical assistance; model is designed to expand through digital green offices

Impact

Innovative Drive

First cattle supplier program to combine legal compliance, productivity improvement, and climate-resilient practices in one platform, leveraging digital tools and satellite monitoring

Economic Impact

Farmers report +29% increase in gross revenue, $3.76 return per $1 invested in ATER, and +27% productivity gains per head/year

CO2 Impact

Program achieved ~23% GHG emissions reduction across assisted farms

External Links: https://jbsesg.com/docs/JBS_Sustainability_Report_2023.pdf

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Portfolio of Cases

List of cases for the Food Systems Working Group (1/5)

Archetype	Region	Company	Case name	Crop
Agroforestry Systems	South America	Yara Brasil Fertilizantes S.A.	Low Carbon Regenerative Coffee	Coffee
		Salesforce	Agent Tierra: Recommendations for Regenerative Farming Starting in Colombia	Cocoa
	Asia / Oceania	IDH	Integrated traceability and carbon accounting system for deforestation-free, climate-resilient and regenerative coffee	Coffee
	Global	Capitals Coalition + ofi	Valuing Natural Capital in coffee production – GHG emissions and water use assessment	Coffee
		Asian Development Bank	ECOM Climate-Resilient Coffee Value Chain Project	Coffee
Integrated systems	South America	JBS	RestaurAmazônia	Beef cattle, cocoa
		ANDI	Zero Deforestation Roadmap for Sustainable Value AgriChains – ANDI	Cocoa, coffee, palm oil, beef cattle
		FUNDEPAG	RegenAGRO	Soy, coffee, cocoa
Large Industrial Crop Solutions	South America	Citrosuco	PSA Carbon Agro	Not disclosed
		Fundación Solidaridad Latinoamericana	GeRa Cana – Program of management and traceability of sugarcane production to rural producers	Sugarcane

List of cases for the Food Systems Working Group (2/5)

Archetype	Region	Company	Case name	Crop
Large Industrial Crop Solutions	South America	Produzindo Certo	**Reg.IA – First regenerative agriculture consortium in Latin America**	**Soy, maize**
		Geological Survey of Brazil	**Fertilizer and Agromineral Research: Advancing Food Security While Reducing Import Dependency and Mining Impacts**	**Not disclosed**
		AMAGGI	**Amaggi Regenera**	**Soy**
		Syngenta Crop Protection	**Reverte**	**Not disclosed**
		Siemens	**Digital Traceability for Sustainable and Deforestation-Free Soy**	**Soy**
		CNH Latin America	**Case IH Connected Farm: Digital Integration for Sustainable and Smart Agricultural Production**	**Soy, maize**
	North and Central Americas	PepsiCo	**Field to Market – Innovative Finance Initiative**	**Not disclosed**
		PepsiCo	**Regenerative Agriculture on the Canadian Prairies**	**Not disclosed**
	Asia / Oceania	PepsiCo	**Climate-Resilient Potato Supply Chain - Thailand**	**Potato**
		PepsiCo	**Cool Soils Initiative (CSI) – Australia**	**Wheat, canola**

List of cases for the Food Systems Working Group (3/5)

Archetype	Region	Company	Case name	Crop
Large Industrial Crop Solutions	Europe	PepsiCo	Lighthouse Regenerative Agriculture – Poland | PepsiCo	Wheat, canola
	Global	BASF	Life Smart Sprayer – Real-Time AI for precision weed management	Cross-cutting (maize; wheat; soy; sugarbeet etc.)
		Good Food Institute Brazil	The Protein Transition Tool: Unlocking Climate Solutions Through Innovation"	Not disclosed
		Solidaridad Network	IMPULSA - Incentives and rewards platform for continuous improvement of smallholder sugarcane farmers	Sugarcane
		Carrefour Group	Driving Sustainable Food Systems	Not disclosed
		BASF	Global Carbon Farming Program – your partner in delivering shared value through sustainable agriculture	Other (barley)
		PepsiCo	PepsiCo–Yara Partnership for Climate-Smart Fertilization Collaboration (LATAM and EU)	Cross-cutting (potatoes; oats; rapeseed; maize; wheat; bananas; coconuts)
		Bonsucro	Bonsucro's ClimateCane Tracker: helping to cut greenhouse gas emissions in sugarcane	Sugarcane
		CNH	From Field to Footprint: Tracking Carbon in Agriculture	Not disclosed
		UPL	Aplique Bem Program	Cross-cutting (fruits; vegetables)
		Proforest	Increasing the contribution of corporate commitments to achieving Brazilian agriculture's climate ambition	Cross-cutting (soy; sugarcane; palm oil; cocoa etc.)

List of cases for the Food Systems Working Group (4/5)

Archetype	Region	Company	Case name	Crop
Large Industrial Crop Solutions	Global	Bonsucro	Accounting for carbon removals in sugarcane production as a driver of farming best practices	Sugarcane
Rice Methane Emission Solutions	Asia / Oceania	BASF	Carbon Farming in Rice, Japan	Rice
		PepsiCo	Climate smart rice farming in Thailand	Rice
		Bayer	DirectAcres - Bringing Direct-Seeded Rice to the Ground	Rice
Livestock Solutions	South America	Danone	Jornada Flora	Dairy cattle
		Nestlé	Nature por Ninho: Incentivize regenerative agriculture in dairy production | Nestlé	Dairy cattle
		ESGpec - Sustentabilidade e Inovação na Pecuária Ltda	Scaling climate-smart livestock systems through digital ESG diagnostics	Dairy cattle
		Minerva Foods	The Renove Program	Beef cattle
		Marfrig Global Foods	Verde+	Beef cattle
	Africa	Mafisa	Mafisa Livestock Grazing Carbon Project	Beef cattle
	Europe	JBS	Pâturond Regenerative Grazing Project	Beef cattle

List of cases for the Food Systems Working Group (5/5)

Archetype	Region	Company	Case name	Crop
Livestock Solutions	Europe	JBS	Pilgrim's Europe regenerative pig production system	Pork
	Global	Tetra Pak International S.A	Tetra Pak Dairy Hub model - Development of dairy value chains in LMIC	Dairy cattle
		Carrefour Group	Driving Forest-Positive Transformation in Brazil's Beef Supply Chain	Beef cattle
		Ajinomoto	How to reduce GHG emissions from the cattle-related value chain and produce the world's greenest cattle-related products in Brazil.	Dairy cattle, beef cattle
Other	South America	Sigma Lithium	Rainwater Reservoirs for Subsistence Farmers	Not disclosed
	Asia / Oceania	Asian Development Bank	Thai Union Sustainable Shrimp Value Chain Project	Other (shrimp)
	Africa	INSECTIPRO	Scaling Production of Insect-based inputsto Transform Food Systems in Africa	Other (insects)
	Global	Electrolux do Brasil S.A.	Promoting More Sustainable Eating Among Thousands Around the World	Not disclosed
		World Economic Forum	First Movers Coalition for Food	Cross-cutting (multi-commodity, global demand aggregation initiative)

Food Systems framework

Types of crops

Tree crop | Livestock | Row crop

Minimizing deforestation

Reduce farmland expansion by sustainably increasing productivity

Agroforestry systems

Tropical
Oil palm, cocoa, coffee

Improved agriculture management practices

Improve management practices of agricultural land

Large/Industrial crops solutions

Tropical
Sugarcane, soybeans

Temperate
Maize, soybeans, wheat

Rice methane emissions solutions

Tropical (Asia focused)
China, India

Address livestock management and enteric fermentation

Livestock solutions

Tropical
Solutions that help reduce the expansion of pastureland and/or address enteric fermentation

Temperate
Solutions that address enteric fermentation

Integrated Systems (Crop-Livestock-Forestry, Crop-Livestock, Livestock-Forestry etc.)

Tropical
Cattle, soy, sugarcane

Low Carbon Regenerative Coffee | Yara Brasil Fertilizantes S.A.

Food Systems
case selection

Archetypes
Agroforestry Systems

Crop / Product
Coffee

South America
Brazil

Overview

Case objectives

Demonstrate Yara's pioneering leadership in offering an ultra-low-carbon fertilizer solution for Brazilian coffee growers, in partnership with Cooxupé

Institutions Involved

Yara Brasil Fertilizantes S.A.; Cooxupé

WG Alignment

Agroforestry; soil health; smallholder engagement

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Not disclosed

Scalability

Potential for expansion across Brazilian coffee sector and beyond

Impact

Innovative Drive

First commercial-scale application of ultra-low-carbon fertilizer in Brazil

Economic Impact

Farmers saw 14% productivity increase (from 48 to 55 bags/ha), sensory quality improvement (+3 points), and an income gain of R$ 5,000/ha

CO2 Impact

22% reduction in carbon footprint achieved with Climate Choice™ fertilizer; potential to reach 40% reduction with broader adoption

External Links: https://www.yarabrasil.com.br/sobre-yara/sustentabilidade/

Agent Tierra: Recommendations for Regenerative Farming Starting in Colombia | Salesforce

Food Systems
case selection

Archetypes
Agroforestry Systems

Crop / Product
Cocoa

South America
Colombia

Overview

Case objectives

Pilot an AI-powered virtual agent in Colombia to deliver personalized, climate-smart guidance to farmers, aiming to scale globally and accelerate regenerative agriculture adoption

Institutions Involved

Salesforce; Rare

WG Alignment

Regenerative agriculture; digital innovation

Case maturity

Case Stage

Under implementation

Risks Involved

Low digital access or literacy; climate shocks; adoption resistance; data privacy concerns; limited institutional buy-in

Scalability

Target of reaching 100,000 smallholder farmers and 5,000 km² under regenerative practices by 2030

Impact

Innovative Drive

Pioneers AI use and behavioral science in regenerative ag to drive lasting behavior change. It integrates local context and social norms, using voice features & peer examples to ensure accessibility and build trust beyond typical ag-tech

Economic Impact

Delivering tailored mobile advice to cut costs & boost productivity, with a 30-50% potential drop in agrochemical use, its design integrates with financial products to unlock value

CO2 Impact

Estimated 143,111 tCO2e sequestered by 533 farmers using chronosequence modelling and soil lab analysis

External Links: Not disclosed

Integrated traceability and carbon accounting system for deforestation-free, climate-resilient and regenerative coffee | IDH

Food Systems
case selection

Archetypes
Agroforestry Systems

Crop / Product
Coffee

Asia / Oceania
Viet Nam

Overview

Case objectives

Develop a national system combining traceability and GHG accounting to ensure credible claims, EUDR compliance, and scaling of deforestation-free, regenerative, climate-resilient coffee

Institutions Involved

IDH; Simexco; LDC; ACOM; Intimex; OFI; Sucafina; Vinh Hiep; ETG; JDE (roaster, co-funder and market anchor); MAE (Ministry of Agriculture & Environment); VICOFA; South Pole; IAE

WG Alignment

Agroforestry; traceability; MRV

Case maturity

Case Stage

Under implementation

Risks Involved

Limited data quality; evolving standards; system integration challenges; unclear benefit-sharing for farmers; insufficient buyer investment

Scalability

Designed for nationwide adoption in Viet Nam with potential to expand to other commodities and replicate in other producing countries

Impact

Innovative Drive

A unique model embedding farm database and GHG accounting into a national traceability system, enabling credible Scope 3 insetting and integrity-based low-carbon claims

Economic Impact

Traceability integrated with GHG data unlocks climate finance and premium sourcing, driving lower transaction costs and higher farmer incomes, and strengthening the resilience of Vietnam's coffee sector

CO2 Impact

Farm-level carbon baselines established with GHG tools aligned to global standards (185 baselines), enabling emission reduction planning and Scope 3 alignment with corporate climate targets

External Links: https://idh.org/news/vietnams-coffee-sector-marks-a-landmark-step-towards-sustainability-launching-the-eudr-database-system-for-forest-and-coffee-growing-areas

Valuing Natural Capital in coffee production – GHG emissions and water use assessment | Capitals Coalition + ofi

Food Systems
case selection

Archetypes
Agroforestry

Crop / Product
Coffee

Global
Focus on Peru, Mexico, Colombia, India and Honduras

Overview

Case objectives

ofi, in collaboration with Capitals Coalition, assessed the changes in Natural Capital across twenty coffee farmer groups in five origins. The project applied BS 8632:2021 to quantify natural capital in this way enables us to assess and mitigate risks while fostering investments that promote a positive impact on landscapes and ecosystems.

Institutions Involved

Capitals Coalition; ofi (Olam Food Ingredients)

WG Alignment

Regenerative agriculture; MRV and natural capital accounting

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Climate variability affecting yields; data reliability for social metrics; economic viability at scale; market volatility for prices of agricultural products; dependence on stakeholder engagement

Scalability

The valuation methodology was designed to be replicable across sourcing regions. It provides a framework that can support natural capital preservation and inform climate-aligned sourcing

Impact

Innovative Drive

First known corporate application of BS 8632:2021 to value in monetary terms environmental impacts. The project integrates scenario modeling and monetized impact evaluation to pave the way to guide future sustainable sourcing decisions in agricultural products

Economic Impact

Demonstrated that reducing emissions and water use can also increase yields and potential farm-level returns, reinforcing the business case for regenerative practices in smallholder supply chains

CO2 Impact

Emissions per metric tonne of green-bean equivalent (GBE) procured dropped from 5.13 tCO_2e to 4.12 tCO_2e

External Links: https://www.olamgroup.com/content/dam/olamgroup/investor-relations/ir-library/annual-reports/annual-reports-pdfs/2023/olam_annual_report_2023.pdf#page=143

ECOM Climate-Resilient Coffee Value Chain Project | Asian Development Bank

Food Systems
case selection

Archetypes
Agroforestry

Crop / Product
Coffee

Global
Focus on India, Indonesia, Papua New Guinea and Viet Nam

Overview

Case objectives

Enhance the resilience of coffee farmers to climate change by strengthening their market linkages and enabling investments in climate-smart practices resulting from working capital support, while supporting extension services that promote both climate adaptation and gender inclusion

Institutions Involved

ECOM Agroindustrial Corp.; ECOM Agroindustrial Asia Private Limited; Asian Development Bank

WG Alignment

Climate adaptation; smallholder inclusion

Case maturity

Case Stage

Under implementation

Risks Involved

Not disclosed

Scalability

The project reaches over 62,000 smallholder farmers and is designed to expand extension services and pilot sustainability projects

Impact

Innovative Drive

Structured as a certified social loan aligned with Social Loan Principles; connects climate and social finance; integrates extension services, such as certification support, and farmer training

Economic Impact

Provides reliable incomes to smallholders, enabling adoption of climate-smart practices and stabilizing livelihoods. Integrates farmers into export markets through ECOM's supply chains

Climate Impact

Promotes carbon sequestration and improved climate resilience of smallholder coffee farmers through climate-smart practices

External Links: https://www.adb.org/projects/58316-001/main

Food Systems framework

Types of crops

Tree crop | Livestock | Row crop

Minimizing deforestation

Reduce farmland expansion by sustainably increasing productivity

Agroforestry systems

Tropical
Oil palm, cocoa, coffee

Improved agriculture management practices

Improve management practices of agricultural land

Large/Industrial crops solutions

Tropical
Sugarcane, soybeans

Temperate
Maize, soybeans, wheat

Rice methane emissions solutions

Tropical (Asia focused)
China, India

Address livestock management and enteric fermentation

Livestock solutions

Tropical
Solutions that help reduce the expansion of pastureland and/or address enteric fermentation

Temperate
Solutions that address enteric fermentation

Integrated Systems (Crop-Livestock-Forestry, Crop-Livestock, Livestock-Forestry etc.)

Tropical
Cattle, soy, sugarcane

RestaurAmazônia | JBS

Food Systems
case selection

Archetypes
Integrated Systems

Crop / Product
Beef cattle, cocoa

South America
Brazil

Overview

Case objectives

Restore forests and boost productivity via agroforestry systems (SAFs) and grazing, combining conservation and income generation to support low-carbon farming and resilience in the Amazon

Institutions Involved

JBS Fund for the Amazon (FJBSA); Fundação Solidariedad; Others

WG Alignment

Restoration; agroforestry; low-carbon livestock; biodiversity; smallholder livelihoods

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Not disclosed

Scalability

Designed to restore 1,500 ha by 2026 and benefit 1,500 families; positioned as a scalable low-cost model aligned with Brazil's NDCs

Impact

Innovative Drive

Integrates restoration with productive SAFs and grazing, linking conservation and income generation for smallholders

Economic Impact

Increases productivity, diversifies income, and improves market access; farmers can see up to 30% income gains; aligned with private sector profitability

CO2 Impact

The project restores degraded areas through SAFs and grazing, sequestering carbon and supporting NDC targets

External Links: https://fundojbsamazonia.org/en/

Zero Deforestation Roadmap for Sustainable Value AgriChains – ANDI | ANDI

Food Systems
case selection

Archetypes
Integrated Systems

Crop / Product
Cocoa, coffee, palm oil, beef cattle

South America
Colombia

Overview

Case objectives

Provide Colombian coffee, cocoa, palm oil, and cattle companies with a practical roadmap to comply with EU deforestation-free products regulation, integrating environmental and legal due diligence

Institutions Involved

ANDI

WG Alignment

Deforestation-free; traceability; regenerative agriculture

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Limited SME capacity for digital tools; labor informality; regulatory volatility and frequent changes; risk of companies shifting to less demanding markets, reducing competitiveness

Scalability

Applicable across major agri-chains in Colombia and replicable in Latin America

Impact

Innovative Drive

First voluntary private-sector roadmap in Latin America aligned with EUDR; offers interactive tool with checklists, decision trees, and links to complementary resources

Economic Impact

Improves market access and competitiveness for exporters, reduces regulatory risk, and avoids trade exclusion costs.

CO2 Impact

Through prevention of deforestation in supply chains, roadmap indirectly contributes to avoided emissions linked to land use change in tropical forests; quantitative estimates not reported

External Links: https://view.genially.com/66fc4116c8fcb52bbe28bda7

RegenAGRO | FUNDEPAG

Food Systems
case selection

Archetypes
Integrated Systems

Crop / Product
Soy, coffee, cocoa

South America
Brazil

Overview

Case objectives

Deploy digital technologies to ensure traceability of agricultural chains (starting with soy, coffee, and cocoa), verifying sustainability practices, deforestation-free origin, and full value chain transparency aligned with global taxonomy standards

Institutions Involved

FUNDEPAG; IPEN – Instituto de Pesquisas em Energia Nuclear; Siemens; Instituto Biológico

WG Alignment

Regenerative agriculture; soil health; MRV

Case maturity

Case Stage

Under implementation

Risks Involved

Not disclosed

Scalability

Multi-regional pilots for soy, coffee, and cocoa planned through 2028; platform designed for expansion to other supply chains; pay-for-performance model supports scaling

Impact

Innovative Drive

Combines multicriteria ESG diagnostics, end-to-end digital traceability, and automated compliance; integrates logistics with digital custody and regenerative practices such as biochar and remineralizers to drive near-zero emissions

Economic Impact

Buyer premiums and long-term contracts for producers; lower input and logistics costs; service/verification revenues; business model targets positive NPV and resilient IRR

CO2 Impact

CO2e cuts from biochar, no-till/ILPF and lower fertilizer needs; GHG accounting under development to consolidate reductions

External Links: https://ainfo.cnptia.embrapa.br/digital/bitstream/doc/1177864/1/6354.pdf

Food Systems framework

Types of crops

Tree crop | Livestock | Row crop

Minimizing deforestation

Reduce farmland expansion by sustainably increasing productivity

Agroforestry systems

Tropical
Oil palm, cocoa, coffee

Improved agriculture management practices

Improve management practices of agricultural land

Large/Industrial crops solutions

Tropical
Sugarcane, soybeans

Temperate
Maize, soybeans, wheat

Rice methane emissions solutions

Tropical (Asia focused)
China, India

Address livestock management and enteric fermentation

Livestock solutions

Tropical
Solutions that help reduce the expansion of pastureland and/or address enteric fermentation

Temperate
Solutions that address enteric fermentation

Integrated Systems (Crop-Livestock-Forestry, Crop-Livestock, Livestock-Forestry etc.)

Tropical
Cattle, soy, sugarcane

PSA Carbon Agro | Citrosuco

Food Systems
case selection

Archetypes
Large Industrial
Crop Solutions

Crop / Product
Not disclosed

South America
Brazil

Overview

Case objectives

Remunerate rural producers for environmental services in agriculture through quantification, certification and carbon credit issuance

Institutions Involved

Citrosuco; ECCON Soluções Ambientais; Reservas Votorantim

WG Alignment

MRV; carbon markets

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Not disclosed

Scalability

Scalable for perennial crops, this methodology generates Carbon Plus (C+) credits to remunerate good practices

Impact

Innovative Drive

This is the first methodology in Brazil to value ecosystem services from perennial crops, filling a major implementation gap

Economic Impact

Strengthens farmer livelihoods via access to carbon revenue while supporting practice adoption

CO2 Impact

Expected: 20,000 tCO_2e over the next 5 years; stored/sequestered: 5,000 tCO_2e

External Links: https://www.citrosuco.com/commitments/carbon/; https://gaveacarbono.com/

GeRa Cana – Program of management and traceability of sugarcane production to rural producers | Fundación Solidaridad Latinoamericana

Food Systems
case selection

Archetypes
Large Industrial
Crop Solutions

Crop / Product
Sugarcane

South America
Brazil

Overview

Case objectives

Implement management and traceability improvements in sugarcane supply to raise sustainability and performance.

Institutions Involved

Bonsucro; Fundación Solidaridad Latinoamericana; ORPLANA; APMP Bioenergia; APROCANA

WG Alignment

Traceability; regenerative agriculture

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Absence of historical harvest data and limited familiarity with digital tools hinder accurate analysis and informed decision-making.

Scalability

Potential to reach ~12,000 producers from 34 associations linked to ORPLANA, covering 900,000 ha

Impact

Innovative Drive

The project supports small and medium producers, combining training with a unique sustainable production and cost management tool

Economic Impact

By adopting sustainable practices and reducing their carbon footprint, farmers can qualify for RenovaBio. This program offers financial incentives for low-emission farming, representing at least 60% of the value mills get from decarbonization credits

CO2 Impact

As farmers adopt sustainable practices and reduce their carbon footprint, carbon should be absorbed; quantitative CO_2e not yet reported

External Links: Not disclosed

Reg.IA – First regenerative agriculture consortium in Latin America | Produzindo Certo

Food Systems
case selection

Archetypes
Large Industrial
Crop Solutions

Crop / Product
Soy, maize

South America
Brazil

Overview

Case objectives

Reg.IA is a multisector initiative led by Produzindo Certo to promote regenerative agriculture through a standardized protocol that restores soil health, reduces emissions, and expands socio-environmental impact. The consortium integrates farmers, corporations, and buyers to create shared value in agricultural supply chains

Institutions Involved

Produzindo Certo; Bayer; Agrivalle; BRF; Milhão

WG Alignment

Regenerative agriculture; MRV and traceability; blended finance; biodiversity

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Limited farmer adoption, regulatory changes such as EUDR, and insufficient financing or demand for regenerative products at premium prices

Scalability

The model is designed for replication, scaling through a standardized regenerative agriculture protocol and traceable MRV system across regions

Impact

Innovative Drive

Reg.IA is Latin America's first regenerative agriculture consortium, combining on-farm support with satellite monitoring, verifiable ESG metrics, and market-based incentives that bridge farm practices with financial returns from the first harvest

Economic Impact

The program strengthens rural livelihoods by integrating small and medium farmers into regenerative supply chains, generating price premiums, and improving productivity

CO2 Impact

Regenerative practices avoided 159,551 tCO_2e, cutting emissions by ~66% in soy and ~83% in maize versus national averages

External Links: https://www.produzindocerto.com.br/reg-ia/

Fertilizer and Agromineral Research: Advancing Food Security While Reducing Import Dependency and Mining Impacts | Geological Survey of Brazil

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Not disclosed

South America
Brazil

Overview

Case objectives

Reduce fertilizer import dependence and costs by developing local agrominerals as sustainable inputs, boosting productivity, circular economy, and strategic mineral autonomy

Institutions Involved

Geological Survey of Brazil; EMBRAPA

WG Alignment

Soil health; regenerative agriculture

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Delays in regulatory approvals; market resistance to new inputs; limited awareness among farmers; infrastructure for production scale-up; data gaps in unexplored areas

Scalability

Rock powder-based remineralization reduces CO2 and fertilizer costs, enhancing sustainability when adopted by producers across Brazil and potentially other tropical countries

Impact

Innovative Drive

Introduces a circular economy model that recycles mining waste into certified agricultural inputs; closes the gap between mining sector and sustainable farming

Economic Impact

Local inputs lower fertilizer costs, boost competitiveness of smallholder farming, and create new value chains for mining waste utilization

CO2 Impact

Reduces emissions by replacing imported, energy-intensive fertilizers with local rock powders, lowering the carbon footprint across production and logistics

External Links: https://www.sgb.gov.br/remineralizadores/estudos.html

Amaggi Regenera | AMAGGI

Food Systems
case selection

Archetypes
Large Industrial
Crop Solutions

Crop / Product
Soy

South America
Brazil

Overview

Case objectives

Support the transition to low-carbon agricultural systems through regenerative agriculture, improving soil health, biodiversity, and climate resilience

Institutions Involved

AMAGGI; IPAM; Embrapa Arroz e Feijão

WG Alignment

Regenerative agriculture; traceability

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Climate variability; implementation costs; need for long-term results; scarcity of financial incentives; ongoing need for training and technical support

Scalability

232,000 ha under monitoring; positioned for expansion across large production chains with certification protocol

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Impact

Innovative Drive

Goes beyond practices by monitoring impact indicators (soil carbon, biodiversity, water); includes a regenerative certification protocol and focuses on building a ‘regenerative culture’ among producers

Economic Impact

Reduces input costs and increases productivity in medium term; preliminary studies show positive return from certification with premium markets

CO2 Impact

Reduces emissions through low-carbon agricultural practices such as cover crops, crop rotation, the use of bio-inputs, bio composts and soil health monitoring

External Links: https://www.amaggi.com.br/amaggi_regenera/

Reverte | Syngenta Crop Protection

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Not disclosed

South America
Brazil

Overview

Case objectives

Support farmers in transforming degraded areas into productive areas through agronomic techniques and long-term financing

Institutions Involved

Syngenta Crop Protection; The Nature Conservancy; Itaú BBA

WG Alignment

Regenerative agriculture; soil health

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Not disclosed

Scalability

Medium-term plan to recover 455k ha by 2026; 259k ha already in recovery; ultimate target of 1 million ha restored by 2030

Impact

Innovative Drive

Integrates regenerative agriculture with long-term financing; combines cover crops, integrated crop-livestock systems, crop rotation, and innovative agronomic practices to regenerate soil health and carbon stocks

Economic Impact

Improves on-farm efficiency and productivity; reduces input dependency

CO2 Impact

98.420 tons CO2eq/year estimated soil carbon sequestration

External Links: https://www.syngenta.com.br/programa-reverte

Digital Traceability for Sustainable and Deforestation-Free Soy | Siemens

Food Systems
case selection

Archetypes
Large Industrial
Crop Solutions

Crop / Product
Soy

South America
Brazil

Overview

Case objectives

Develop digital technologies that ensure soy traceability, enabling sustainable, deforestation-free sourcing and full value chain transparency in compliance with global taxonomy standards

Institutions Involved

Siemens Brasil; Fundepag – Fundação de Desenvolvimento da Pesquisa do Agronegócio

WG Alignment

Deforestation-free; traceability; MRV

Case maturity

Case Stage

Under implementation

Risks Involved

Low stakeholder engagement; limited digital infrastructure; resistance from supply chain actors to transparency

Scalability

Effective traceability systems allow for the assessment of the carbon footprint of agricultural products and enables the exclusion of products with high GHG emission from the supply chain

Impact

Innovative Drive

Integrates real-time traceability across agriculture and logistics; platform captures field data and generates GHG reports, enabling compliance and sustainable sourcing

Economic Impact

Ensures compliance with legal frameworks, protects brand reputation, and enables producers to access global markets through sustainability claims

CO2 Impact

Traceability platform enables exclusion of soy with high GHG emissions from supply chains, indirectly reducing carbon footprint

External Links: www.portal.fundepag.br

Case IH Connected Farm: Digital Integration for Sustainable and Smart Agricultural Production | CNH Latin America

Food Systems
case selection

Archetypes
Large Industrial
Crop Solutions

Crop / Product
Soy, maize

South America
Brazil

Overview

Case objectives

To enhance productivity and sustainability by integrating advanced agtech and regenerative agriculture, leveraging a real farm as a 4G-connected testbed with smart machinery and digital ecosystems

Institutions Involved

CNH Latin America; Agropecuária Jerusalém; TIM

WG Alignment

Precision agriculture; ag-tech; regenerative agriculture

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Low, but challenges include partner alignment, project design risks, and agronomic variability in effective technology delivery

Scalability

Designed as an open-air laboratory farm (3,000 ha) in Água Boa, MT; platform can be expanded to other regions and production scales

Impact

Innovative Drive

Integrates selective application, variable-rate planting, regenerative practices, and connectivity to optimize resources and restore soil health

Economic Impact

26% cost reduction per hectare in soil preparation, 20% cost reduction per sack/ha, and higher yields compared to regional averages

CO2 Impact

34% reduction in CO_2 emissions achieved during 23/24 (-20.7% fertilizers, -6.4% fuel, -6.4% productivity gain); 25% reduction in diesel use

External Links: https://fazendaconectada.caseih.com.br/

Field to Market – Innovative Finance Initiative | PepsiCo

Food Systems
case selection

Archetypes
Large Industrial
Crop Solutions

Crop / Product
Not disclosed

North and Central Americas
USA

Overview

Case objectives

Enable data-driven regenerative agriculture adoption at scale through robust MRV tools and technical assistance, aligned with PepsiCo's Positive Agriculture goals and USDA's Advancing Markets for Producers program

Institutions Involved

Field to Market; PepsiCo; Practical Farmers of Iowa; Precision Conservation Management; Midwest farmer networks; USDA

WG Alignment

Regenerative agriculture; MRV

Case maturity

Case Stage

Under implementation

Risks Involved

Farmer retention without sufficient compensation; data quality control; system complexity; supplier engagement; multi-year variability

Scalability

Scalable across the U.S. Midwest with potential for replication globally using existing farmer networks and MRV systems

Impact

Innovative Drive

Combines national MRV standards with supply chain reporting to deliver practical, scalable outcomes while minimizing farmer reporting burden

Economic Impact

Low upfront investment per acre; co-funding model attractive to growers; high ROI from yield stability and ecosystem co-benefits

CO2 Impact

Expected reduction of 0.5–1.2 tCO_2e/acre depending on crop, geography, and practice intensity

External Links: https://fieldtomarket.org/innovative-finance-initiative/

Regenerative Agriculture on the Canadian Prairies | PepsiCo

Food Systems
case selection

Archetypes
Large Industrial
Crop Solutions

Crop / Product
Not disclosed

North and Central Americas
Canada

Overview

Case objectives

Support farmers in Saskatchewan and Manitoba in adopting regenerative agriculture through farmer-led, science-backed trials and in supporting their adoption of conservation practices through a pay-for-practice program – contributing to both climate mitigation and growth in productivity and profitability

Institutions Involved

PepsiCo; Southeast Research Farm (SERF)

WG Alignment

Regenerative agriculture; soil health

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Adoption variability; equipment access; environmental variability; staff capacity; seasonal inconsistencies

Scalability

Farmer-led governance and plot-to-field scale testing model is replicable across Canada and globally

Impact

Innovative Drive

Co-led grower innovation platform with data feedback loops into corporate sourcing and procurement

Economic Impact

Farmer designed trial model minimizes overhead; yield and input savings will determine longer-term cost curve – increasing affordability for farmers

CO2 Impact

Early models show 0.8–1.5 tCO_2e/ha reduction

External Links: Not disclosed

Climate-Resilient Potato Supply Chain | PepsiCo

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Potato

Asia / Oceania
Thailand

Overview

Case objectives

Enhance the resilience and productivity of smallholder potato growers in Northern Thailand through a whole-farm approach, including regenerative agriculture, technology integration, and market-linked business training

Institutions Involved

PepsiCo Thailand, GIZ, Department of Agricultural Extension (DOAE), Thai Government, Local Farmer Cooperatives

WG Alignment

Regenerative agriculture; water management

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Limited land tenure security; climate shocks; extension delivery gaps; farmer retention

Scalability

Model scalable to other PepsiCo sourcing regions with climate-sensitive crops; lessons from rice systems in Thailand can be widely applied

Impact

Innovative Drive

Combines whole-farm adaptation with “business school” training and regional demo farms; systems-level approach that integrates agronomy, technology, and enterprise capacity

Economic Impact

Farmers report income increases of 50–100% in pilot farms

CO2 Impact

GHG emissions reduced by 20% per ton of potatoes

External Links: Not disclosed

Cool Soils Initiative (CSI) – Australia | PepsiCo

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Wheat, canola

Asia / Oceania
Australia

Overview

Case objectives

Improve GHG footprint and soil health of Australian broadacre farmers using locally relevant regenerative practices

Institutions Involved

PepsiCo; Mars; Kellanova; Manildra; Corsons; Allied Pinnacle; Charles Sturt University; Sustainable Food Labs

WG Alignment

Regenerative agriculture; soil health; MRV

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Climate variability; farmer adoption; funding continuity; rotational gaps; irrigation water metrics

Scalability

Replicable across Australia's grain belt and globally (PepsiCo wheat sourcing regions)

Impact

Innovative Drive

Combines academic rigor with real-time on-farm impact; integrates ecosystem services modeling

Economic Impact

Shared investment lowers producer cost exposure; practice bundles validated by benchmarking

CO2 Impact

Canola emissions intensity reduced from 0.498 to 0.460 $kgCO_2e/kg$ (2022–2023); 23,664 reportable GHG acres transitioned

External Links: http://www.csu.edu.au/research/agriculture/cool-soils-initiative

Lighthouse Regenerative Agriculture – Poland | PepsiCo

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Wheat, canola

Europe
Poland

Overview

Case objectives

Establish a lighthouse for regenerative practices in Polish supply chains to improve soil health, resilience and yields while reducing GHG

Institutions Involved

PepsiCo; Mars; ADM; Biospheres

WG Alignment

Regenerative agriculture; soil health; MRV

Case maturity

Case Stage

Under implementation

Risks Involved

Farmer engagement; long-term ROI for suppliers; climate variability; tracking complexity

Scalability

Supply chain-wide integration offers scalability in other EU markets with similar cropping systems

Impact

Innovative Drive

First-of-kind cross-brand regenerative pilot between PepsiCo and MARS; outcome-focused and traceable

Economic Impact

Farmer income and resilience strengthened by de--risking transition by new practice incentive with long-term increase in farm business profitability

CO2 Impact

11.7% reduction in MT CO2/acre; target: 20% reduction over 5 years, equivalent to ≥0.5 MT CO_2e/ha/year

External Links: Not disclosed

Life Smart Sprayer – Real-Time AI for precision weed management | BASF

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Cross-cutting (maize; sunflower; soy; sugarbeet etc.)

Global

Overview

Case objectives

Deploy smart spraying (AI weed detection) to cut herbicide use while maintaining yields; digital mapping/MRV for sustainable farming

Institutions Involved

BASF Digital Farming GmbH; Bosch Engineering GmbH; Amazone; Bosch BASF Smart Farming GmbH; University of Hohenheim

WG Alignment

Precision agriculture; ag-tech

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Investment costs and adoption resistance; technological availability and connectivity limitations; non-fitting crop protection regulation and risk assessment

Scalability

Technology is modular and integrates into existing sprayers; commercial deployment already ongoing with OEM partners in Europe and Latin America; potential global adoption

Impact

Innovative Drive

Real-time AI weed detection, precision spot spraying, high-resolution recognition, 24/7 operability, digital planning, mapping, and spraying reports

Economic Impact

Reduces grower input costs and improves operational efficiency; ROI estimated at 2–5 years

CO2 Impact

73.7–479 tCO_2 (one season, area applied); saving potential ~4.4–28.6 kg CO_2/ha/yr

External Links: https://webgate.ec.europa.eu/life/publicWebsite/project/LIFE20-ENV-DE-000650/demonstration-of-an-agronomy-integrated-see-spray-technology-for-a-more-sustainable-use-of-pesticide-in-agriculture

The Protein Transition Tool: Unlocking Climate Solutions Through Innovation | Good Food Institute Brazil

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Not disclosed

Global

Overview

Case objectives

To show how Brazil is becoming a climate leader by promoting sustainable proteins, enabling climate and health co-benefits through data-driven decision support

Institutions Involved

Good Food Institute Brazil (GFI Brazil)

WG Alignment

Sustainable supply chains; ag-tech

Case maturity

Case Stage

Under implementation

Risks Involved

Not disclosed

Scalability

Platform designed to connect hundreds of projects globally with funding, potentially unlocking gigaton-level CO_2 mitigation if adopted at scale

Impact

Innovative Drive

First platform aligning alternative protein projects with climate funding using readiness assessment and impact matching

Economic Impact

Presents opportunities to unlock the main bottlenecks to price parity in Global South countries. It reduces manufacturers' production costs while aligning with climate targets and corporate ESG goals

CO2 Impact

With 50% market share, alternative proteins could reduce 310 $MtCO_2eq$/year in Brazil and 2.1 $GtCO_2eq$/year globally by 2050 (up to 6.1 $GtCO_2eq$/year under expanded scenarios)

External Links: Not disclosed

IMPULSA - Incentives and rewards platform for continuous improvement of smallholder sugarcane farmers | Solidaridad Network

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Sugarcane

Global

Overview

Case objectives

Incentives/rewards platform to accelerate sustainable practice adoption in sugarcane and other crops

Institutions Involved

Solidaridad Network; Bonsucro; ALUR; Raízen; Cenicaña; Cooperativa Manduvira

WG Alignment

Sustainable supply chains; smallholder support

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Main risk was designing incentives and rewards packages that truly met farmer expectations and effectively drove adoption of sustainable practices

Scalability

Pilot demonstrated efficacy in boosting sustainable practices; new phase being planned in Mexico

Impact

Innovative Drive

Combines digital tools with behavioral research to empower producers

Economic Impact

Improved smallholder income and compliance; farmers rewarded for adopting sustainable practices

CO2 Impact

As farmers adopt sustainable practices (soil analysis, agrochemical management, agroforestry), carbon should be absorbed; quantitative CO_2e not reported

External Links: https://bonsucro.com/impact-fund/solidaridad/; https://www.youtube.com/watch?v=IZ-RItbua8I; https://drive.google.com/file/d/1Dg9JD9guLGn7qLSIaI6mvLtIJ4oZI2Hp/view?usp=drive_link; https://www.novacana.com/noticias/projeto-pequenos-produtores-cana-selecionado-fundo-impacto-bonsucro-011222

Driving Sustainable Food Systems | Carrefour Group

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Not disclosed

Global

Overview

Case objectives

Corporate-led program to accelerate regenerative agriculture, traceability, and supplier engagement across multiple crops and regions.

Institutions Involved

Carrefour Group

WG Alignment

Regenerative agriculture; traceability; sustainable supply chains

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Non-compliance risk for Scope 3 target, since over 80% of emissions come from sold products, the Group's main impact source, potentially compromising climate goals

Scalability

Methodology is replicable and aligned with SBTi, enabling Carrefour to scale supplier engagement across its global value chain

Impact

Innovative Drive

The project is innovative in addressing Scope 3 emissions and SMEs, using a scalable methodology and targets aligned with the SBTi. It strengthens the food transition and increases decarbonization throughout the value chain

Economic Impact

The project is cost-effective for emission reduction, with low implementation cost and high impact. Financial returns come from mitigating regulatory and reputational risks, positively affecting performance

CO2 Impact

Strategy aims to reduce 20 $MtCO_2e$ by 2030: 6 $MtCO_2e$ (15% of target) expected from TOP100 suppliers, with the remainder from SMEs and the Food Transition Pact

External Links: https://www.carrefour.com/en/group/food-transition

Global Carbon Farming Program – your partner in delivering shared value through sustainable agriculture | BASF

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Other (barley)

Global
Ireland data

Overview

Case objectives

Bring together farmers, value chain partners, and international certifiers to decarbonize agricultural value chains with climate-smart agricultural practices

Institutions Involved

BASF Agricultural Solutions; Boortmalt; Others

WG Alignment

Regenerative agriculture; soil health; MRV

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Farmer adoption resistance; data-intensive certification processes; soil sampling costs; scaling challenges with many stakeholders

Scalability

With adaptation to regional and crop specificities, climate-smart practices can be scaled globally; revenue generation through Verified Impact Units and low-carbon crop premiums

Impact

Innovative Drive

First European initiative to issue Verified Impact Units (VIUs) for farming from reducing/removing on-farm GHGs; integrates digital solutions, agronomic practices, and third-party verification

Economic Impact

Farmers gain revenue from carbon certificates and premiums for low-carbon barley; companies reduce Scope 3 emissions; strengthens rural livelihoods and value chain resilience

CO2 Impact

In Ireland (barley pilot), achieved 90% CO_2e reduction vs. baseline, equal to 2.3 tCO_2e/ha or 0.33 tCO_2e/ton barley produced; 771 VIUs verified by SustainCERT; partner Boortmalt targets 30% Scope 3 reduction by 2030

External Links: https://www.agricentre.basf.co.uk/en/News-Events/BASF-Ag-Solutions-News/Journey-towards-net-zero-barley-production-101120.html

PepsiCo–Yara Partnership for Climate-Smart Fertilization Collaboration (LATAM and EU) | PepsiCo

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Cross-cutting (potatoes; oats; rapeseed; maize; wheat; bananas; coconuts)

Global
Europe and South America focus

Overview

Case objectives

Reduce GHG emissions intensity of fertilizer use across PepsiCo's supply chains by integrating low-carbon inputs and precision application systems, while improving nutrient efficiency and productivity

Institutions Involved

PepsiCo and Yara

WG Alignment

Regenerative agriculture; low-carbon fertilizers; nutrient use efficiency

Case maturity

Case Stage

Under implementation

Risks Involved

High cost of low-carbon fertilizers; resistance to practice change; scalability across regions; limited service presence; fragmentation of smallholders; risk of not demonstrating fertilizer efficiency

Scalability

Yara's production expansion and PepsiCo DemoFarms increase adoption capacity; digital tools and farmer training support replication globally

Impact

Innovative Drive

Combines low-carbon fertilizer inputs with precision digital tools

Economic Impact

Yield and efficiency gains justify investments; PepsiCo co-funds premiums to reduce farmer risk

CO2 Impact

Yara fertilizers have reduced GHG intensity by 20-40% per ton of potatoes

External Links: https://www.linkedin.com/posts/jpandrew_as-a-food-company-that-sources-more-than-activity-7320062252009623553-P4WA?utm_source=share&utm_medium=member_desktop&rcm=ACoAACfWkBcBbm9brdb2fLpEXm1LTlQU0gympnA

Bonsucro's ClimateCane Tracker: helping to cut greenhouse gas emissions in sugarcane | Bonsucro

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Sugarcane

Global

Overview

Case objectives

Provide a sector tool to plan/track on-farm mitigation in sugarcane to set science-based emissions reduction targets in line with SBTi FLAG (Forests, Land and Agriculture) guidance

Institutions Involved

Bonsucro

WG Alignment

MRV; regenerative agriculture

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Low uptake of the tool; limited awareness about emissions reduction across the sugarcane sector

Scalability

If adopted by all Bonsucro-certified operators, targets could cover ~4 $MtCO_2e$/year; global adoption could address up to 400 $MtCO_2e$/year (current sugarcane sector footprint)

Impact

Innovative Drive

A unique sugarcane-specific target-setting tool built on SBTi FLAG methodology; allows companies to easily define and monitor reduction targets with minimal data inputs

Economic Impact

Tailored targets help reduce costs and improve efficiency; better monitoring supports financial returns, competitiveness, and market positioning

CO2 Impact

1 MM tons of CO_2eq reduced as a result of targets set with the use of the tool

External Links: https://climatecanetracker.com/wp-content/uploads/ClimateCane-Tracker-User-Guide.pdf

From Field to Footprint: Tracking Carbon in Agriculture | CNH

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Not disclosed

Global
Brazil, United States (pilots)

Overview

Case objectives

Demonstrate FarmScore platform for carbon intensity (CI) modeling in agriculture using real-time telemetry and geospatial data

Institutions Involved

CNH; CASE IH; São Martinho S.A.; Fazenda Conectada

WG Alignment

MRV; precision agriculture

Case maturity

Case Stage

Under implementation

Risks Involved

Connectivity limitations; data privacy; adoption resistance; validation delays; certification barriers

Scalability

FarmScore uses agronomic and machine data to analyze the crop on a carbon intensity basis within each field. The system shows how and where inputs and operations can be further optimized and is scalable across a range of farm sizes

Impact

Innovative Drive

Uses real-time telemetry and geospatial modeling to calculate carbon intensity at field level, avoiding averages that mask variability; supports simulations of practice changes and certification (e.g., Low Carbon Seal)

Economic Impact

By relying on existing agronomic and machine data sources, FarmScore has a low barrier to adoption. Producers are enticed by cost reduction opportunities that align with reduced carbon intensity objectives

CO2 Impact

Potential to reduce CI of crops by 10–15% through optimized input allocation and machine use

External Links: https://media.cnh.com/emea/cnh/cnh-supports-expanded-rural-connectivity-in-latin-america/s/a163d2ff-9bf5-4ece-b727-4f935ab0dbb8

Aplique Bem Program | UPL

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Cross-cutting (fruits; vegetables)

Global
Brazil (main focus)

Overview

Case objectives

Provide free training in pesticide application technology to farmers, promoting safe and efficient use of inputs. Public–private initiative recognized globally for 18 years

Institutions Involved

Instituto Agronômico (IAC); UPL

WG Alignment

Precision agriculture; sustainable supply chains

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Not disclosed

Scalability

Mobile training units and adapted vehicles allow replication in multiple regions; scalable globally as reference model

Impact

Innovative Drive

On-site training using farm equipment and simple language; theory reinforced by practice; model adapted to daily farmer routines

Economic Impact

Initiative strengthens brand reputation and open negotiations for services with direct benefits

CO2 Impact

Indirect reductions via efficiency gains: less water use, fewer repeated applications, minimized losses; quantitative CO_2e not reported

External Links: https://www.upl-ltd.com/images/stewardship/program-and-resources/Program-1-Aplique-Bem-Stewardship-Program-In-Brazil.pdf

Increasing the contribution of corporate commitments to achieving Brazilian agriculture's climate ambition | Proforest

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Cross-cutting (soy; sugarcane; palm oil; cocoa etc.)

Global

Overview

Case objectives

Promote the alignment of agribusiness with Brazil's NDC by strengthening the use of SBTi and insetting through sectoral engagement, case studies, and tool mapping

Institutions Involved

Proforest; Institute for Climate and Society (iCS)

WG Alignment

Sustainable supply chains; MRV; NDC alignment

Case maturity

Case Stage

Under implementation

Risks Involved

Lack of partners willing to share data for case study; low adherence to Call to Action due to crowded stakeholder agendas

Scalability

Insetting methodologies can be applied across multiple agricultural chains; potential to contribute to Brazil's NDC and serve as a model for other countries

Impact

Innovative Drive

Promotes insetting as an alternative to offsetting, aligning science-based targets with Brazil's agricultural reality; integrates regenerative agriculture and landscape approaches into corporate commitments

Economic Impact

Attracts private climate financing, reduces reputational risks, and strengthens business partnerships; enhances value chain resilience and access to new markets

CO2 Impact

More climate targets in the agro sector will drive insetting projects, reducing CO_2 via supply chains; methodologies aligned with GHG Protocol and SBTi FLAG

External Links: Not disclosed

Accounting for carbon removals in sugarcane production as a driver of farming best practices | Bonsucro

Food Systems
case selection

Archetypes
Large Industrial Crop Solutions

Crop / Product
Sugarcane

Global

Overview

Case objectives

Develop a carbon removals system to allow sugarcane farmers to go beyond emissions accounting, quantifying field-level removals to incentivize adoption of best practices

Institutions Involved

Bonsucro; Raízen (Brazil); Socicana (Brazil); SA Canegrowers (South Africa); SW Sugar Mills (Pakistan); Agroícone (Brazil)

WG Alignment

Soil health; regenerative agriculture; MRV

Case maturity

Case Stage

Under implementation

Risks Involved

Ensuring compliance with evolving standards and guidance

Scalability

Bonsucro-certified production already covers ~8% of global sugar supply; integration of carbon removals into the Bonsucro Calculator could scale impacts significantly

Impact

Innovative Drive

The tool closes a gap in available tools that previously only measured emissions

Economic Impact

Builds the foundation for future monetization of carbon claims deriving from the use of the tool

CO2 Impact

Globally sugarcane accounts for significant GHG; program positions field-level carbon removals to cut footprints by practice

External Links: https://bonsucro.com/climate-toolkit-sustainable-agriculture/

Food Systems framework

Types of crops

Tree crop | Livestock | Row crop

Minimizing deforestation

Reduce farmland expansion by sustainably increasing productivity

Agroforestry systems

Tropical
Oil palm, cocoa, coffee

Improved agriculture management practices

Improve management practices of agricultural land

Large/Industrial crops solutions

Tropical
Sugarcane, soybeans

Temperate
Maize, soybeans, wheat

Rice methane emissions solutions

Tropical (Asia focused)
China, India

Address livestock management and enteric fermentation

Livestock solutions

Tropical
Solutions that help reduce the expansion of pastureland and/or address enteric fermentation

Temperate
Solutions that address enteric fermentation

Integrated Systems (Crop-Livestock-Forestry, Crop-Livestock, Livestock-Forestry etc.)

Tropical
Cattle, soy, sugarcane

Carbon Farming in Rice, Japan | BASF

Food Systems
case selection

Archetypes
Rice Methane Emission Solutions

Crop / Product
Rice

Asia / Oceania
Japan

Overview

Case objectives

Enable methane-smart rice via AWD/residue/water management with MRV to access carbon credits and improve farmer profitability

Institutions Involved

BASF Agricultural Solutions; NEWGREEN

WG Alignment

Methane reduction; Water management; Carbon markets; MRV; farmer profitability

Case maturity

Case Stage

Under implementation

Risks Involved

Farmer adoption risk; technical and data reliability risk; market demand and financial incentive risk; regulatory and certification risk

Scalability

Replicable across Japan and other rice-producing regions. Significant potential to cut methane emissions and generate carbon credits through broad adoption of AWD and DSR practices

Impact

Innovative Drive

Japan's first rice carbon farming project. DDSR and AWD cut methane by 30–70%, save water, lower costs and labor, and gain economic benefits. They offer scalable, climate-smart, and carbon-credit-eligible innovation

Economic Impact

The project attracts private investment, offers green premiums, and boosts sales of digital tools and sustainable crop inputs. It shows potential through monetized carbon credits and increased farm efficiency

CO2 Impact

Expected: Lower methane emissions (~30-70%). Lower labor intensity. Water savings (up to 18%). Farmers profit increase (lower production costs (~USD 160/ha), Carbon credits USD 45-150/ ha

External Links: https://agriculture.basf.com/global/en/sustainable-agriculture/climate-smart-farming/carbon-farming

Climate smart rice farming in Thailand | PepsiCo

Food Systems
case selection

Archetypes
Rice Methane Emission Solutions

Crop / Product
Rice

Asia / Oceania
Thailand

Overview

Case objectives

Shift smallholder rice systems to low-emission, climate-resilient development by implementing regenerative and climate-smart practices including alternate wetting and drying (AWD), site-specific nutrient management (SSNM), laser leveling, and improved seed systems, aligned with Thailand's NDC and sectoral transformation goals

Institutions Involved

PepsiCo, GIZ, Green Climate Fund (GCF), BMZ, Thai government, OLAM, MARS, Ebro Foods, Better Rice Initiative Asia

WG Alignment

Rice methane reduction; regenerative agriculture

Case maturity

Case Stage

Under implementation

Risks Involved

Irrigation access inconsistency; variable extension quality; carbon market price volatility; MRV complexity; local implementation capacity

Scalability

Applicable to smallholder rice globally via Thai Rice NAMA expansion and MRV toolkit; scale within Thailand is already expected to become significant, targeting ~250,000 farmers

Impact

Innovative Drive

Large-scale integration of rice NAMA, public finance, carbon markets

Economic Impact

Projected 20% yield and income increase for smallholder farmers; stable sourcing regions for buyers; supply chain security; reduced intervention cost with scale

CO2 Impact

Expected GHG reductions of 4 million tCO_2e + 11.94 million additional from National Scaling Pathway farmers by 2028

External Links: Not disclosed

DirectAcres - Bringing Direct-Seeded Rice to the Ground | Bayer

Food Systems
case selection

Archetypes
Rice Methane Emission Solutions

Crop / Product
Rice

Asia / Oceania
India

Overview

Case objectives

Scale DSR and methane-smart rice practices through farmer enablement, tech and market linkages

Institutions Involved

Indian Council of Agricultural Research (ICAR); International Rice Research Institute (IRRI); Farmer Producer Organizations; Bayer Forward Farming India; The Good Rice Alliance

WG Alignment

Methane reduction; water management; MRV

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Lack of labor; high irrigation demand; water depletion risks in project regions; high methane emissions from conventional flooded rice; improvement of soil health.

Scalability

Target to cover 1 million hectares by 2030, reaching ~2 million smallholder farmers in India and other Asian countries

Impact

Innovative Drive

Initiative offers to farmers a customized package of high-yielding hybrid seeds, a reliable weed management program, agronomic advice (in person and digital) and mechanization services

Economic Impact

75% of farmers achieve a higher return on investment compared to rice grown using the transplanted method

CO2 Impact

75% of farmers achieve a higher return on investment compared to rice grown using the transplanted method

External Links: https://www.bayer.in/en/bayer-launches-forwardfarm-in-india-to-demonstrate-positive-effects-of-regenerative-agriculture

Food Systems framework

Types of crops

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Temperate
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Rice methane emissions solutions

Tropical (Asia focused)
China, India

Address livestock management and enteric fermentation

Livestock solutions

Tropical
Solutions that help reduce the expansion of pastureland and/or address enteric fermentation

Temperate
Solutions that address enteric fermentation

Integrated Systems (Crop-Livestock-Forestry, Crop-Livestock, Livestock-Forestry etc.)

Tropical
Cattle, soy, sugarcane

ONE PAGERS

Jornada Flora | Danone

Food Systems
case selection

Archetypes
Livestock Solutions

Crop / Product
Dairy cattle

South America
Brazil

Overview

Case objectives

Decarbonize and bring resilience to Danone's dairy supply chain by promoting regenerative agriculture, improving animal welfare, enhancing farm efficiency, and strengthening farmer livelihoods, proving the business case for sustainability

Institutions Involved

Danone; Banco do Brasil; Sebrae; Clínica do Leite; ABS; St. Genetics; MDS Saúde Animal; Onfarm; Be Animal; Embrapa; Já Entendi Agro; Solar 8; Labor Rural; Corteva; Food Chain; Produzindo Certo

WG Alignment

Livestock sustainability; Regenerative agriculture; Methane reduction; Smallholder engagement

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Not disclosed

Scalability

Flora is scalable through Danone's regenerative agriculture programmes and partnerships with multiple companies and governments

Impact

Innovative Drive

Flora has its own laboratory for milk analysis, uses collars to track animal movements and health, operates a purchasing center, and is beginning to implement a feed additive that reduces methane emissions

Economic Impact

Improves pasture productivity and resilience, reducing input dependence and supporting producer profitability

CO2 Impact

47% CO_2eq reduction (2020–2024) at farmgate; 42% methane reduction in fresh milk (2020–2024)

External Links: https://acrobat.adobe.com/id/urn:aaid:sc:US:cf842d5a-0cda-43eb-a5f8-c0801c8e2b60

Nature por Ninho: Incentivize regenerative agriculture in dairy production | Nestlé

Food Systems
case selection

Archetypes
Livestock Solutions

Crop / Product
Dairy cattle

South America
Brazil

Overview

Case objectives

Drive dairy carbon equivalent related emissions with pasture improvement, herd/feeding practices and supplier engagement

Institutions Involved

Nestlé Brasil; Labor Rural; Embrapa;

WG Alignment

Regenerative agriculture; carbon reduction; livestock emissions; biodiversity; supply chain resilience

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Weather variability; lack of farmer training; insufficient financial resources; market fluctuations; resistance to change in farming practices

Scalability

Potential to reach 50% of Nestlé's milk supply chain by 2030; The program started in 2022 with 12% of the farms volume in the high level of the program (Gold), and has already scaled to 36%, with framework adaptable to wider dairy sector.

Impact

Innovative Drive

Incentive system rewarding farmers based on regenerative agriculture adoption (Bronze to Gold categories); integration of carbon footprint calculators (Farm Assessment Tool, Cool Farm Tool)

Economic Impact

When comparing Bronze farmers with Gold category, an increase on profitability (+15%) through productivity improvements (+78%); subsidies for dairy farmers (about 2–5% bonus on milk price) support adoption of regenerative practices; strengthens rural livelihoods

CO2 Impact

Dairy farms achieved 19% lower carbon footprint (2022–2024) through regenerative practices; 82M liters of water saved in 3 years

External Links: https://www.nestle.com/sites/default/files/2022-07/nestle-agriculture-framework.pdf

Scaling climate-smart livestock systems through digital ESG diagnostics | ESGpec - Sustentabilidade e Inovação Na Pecuária Ltda

Food Systems
case selection

Archetypes
Livestock Solutions

Crop / Product
Dairy cattle

South America
Brazil

Overview

Case objectives

Provide ample access to simple and science-based digital tools for ESG diagnostics and carbon footprint measurement in milk production, enabling measurable climate, social, and economic progress on farms

Institutions Involved

ESGpec; UFV; FairFood; Cotrijal

WG Alignment

Livestock sustainability; MRV

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Low digital maturity in rural areas; resistance to change; limited connectivity; data input errors; slow adoption by industry leaders

Scalability

Scalable through cooperatives and processors nationally and internationally; already applied to ~1% of Brazilian milk volume

Impact

Innovative Drive

First Brazilian integrated ESG platform for dairy processors; combines carbon footprint (IPCC/ISO standards) with social, animal welfare, and governance metrics in a single, user-friendly system

Economic Impact

SaaS-based platform, free for individual farmers; allows private sector to address market demands on traceability, welfare and sustainability, showcasing their efforts towards supplier base (Scope 3)

CO2 Impact

Nearly 100 carbon footprints calculated with PEC Calc, average 1.2 kg CO_2e/FPCM (37% from enteric methane)

External Links: https://www.esgpec.com.br/

The Renove Program | Minerva Foods

Food Systems
case selection

Archetypes
Livestock Solutions

Crop / Product
Beef cattle

South America
Brazil

Overview

Case objectives

Promote low-carbon, profitable livestock through supply chain collaboration by boosting productivity and cutting emissions, generating climate, environmental, and social benefits

Institutions Involved

Minerva Foods

WG Alignment

Regenerative grazing; livestock sustainability

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

No significant risks reported; program designed as win-win (productivity gains for producers and sustainable sourcing for Minerva)

Scalability

Target to source 50% of cattle from farms in the Renove Program by 2030; strong potential for systemic change in livestock systems

Impact

Innovative Drive

Combines on-the-ground partnerships with producers and remote sensing technologies; hybrid model ensures trust, monitoring, and scalability

Economic Impact

Improves productivity and reduces feed costs, supporting producer profitability

CO2 Impact

Reduces emissions by up to 37% through improved productivity and pasture management

External Links: Not disclosed

Verde+ | Marfrig Global Foods

Food Systems
case selection

Archetypes
Livestock Solutions

Crop / Product
Beef cattle

South America
Brazil

Overview

Case objectives

Launched in 2020, the Verde+ Program aims to track the entire cattle supply chain back to the birth farm, promoting sustainability and traceability across all Brazilian biomes

Institutions Involved

Marfrig Global Foods

WG Alignment

Livestock sustainability; supply chain traceability

Case maturity

Case Stage

Under implementation

Risks Involved

Not disclosed

Scalability

The company targets 100% traceability across its supply chain by 2025; replicable monitoring system with satellite geomonitoring and blockchain

Impact

Innovative Drive

Integrates satellite geomonitoring, blockchain, and risk maps; applies production protocols such as Low Carbon Meat and Carbon Neutral Meat developed with Embrapa

Economic Impact

The initiative aligns with civil society and international buyers demanding deforestation-free beef; no information regarding the economic impact disclosed

CO2 Impact

Marfrig has SBTi-verified targets, committing to reduce Scope 3 emissions by 33%

External Links: https://api.mziq.com/mzfilemanager/v2/d/b8180300-b881-4e6c-b970-12ad72a86ec8/03376b4e-97e4-0254-5b68-825b045d076b?origin=2

Mafisa Livestock Grazing Carbon Project | Mafisa

Food Systems
case selection

Archetypes
Livestock Solutions

Crop / Product
Beef cattle

Africa
Zambia

Overview

Case objectives

Transform livestock production systems by implementing rotational grazing across 118 communities in Western Province. The initiative improves animal health and farmer livelihoods while sequestering carbon, reducing fires, and restoring degraded rangelands

Institutions Involved

Mafisa Community Transformation Trust; Shell

WG Alignment

Carbon markets; regenerative livestock systems

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Carbon market price volatility, extreme drought events, delays and uncertainty in certification processes, and logistical constraints in scaling

Scalability

Designed to expand from 9 pilot communities to 118, covering >200,000 hectares of rangeland. The model is replicable globally, enabling carbon finance to support farmer incomes

Impact

Innovative Drive

Pioneers large-scale rotational grazing in Africa, integrating RFID and GPS to monitor animal movement, coupled with digital applications for field data collection. Infrastructure such as boreholes and spray races is tailored to local conditions

Economic Impact

+5,470 individuals have benefited directly, with 170 permanent jobs, a 40% reduction in cattle mortality, and improved incomes in communities where 90% live below the poverty line

CO2 Impact

Expected to sequester over 24 million tCO_2e. Initial results show ~500,000 tCO_2e avoided annually

External Links: https://mafisa.org/

Pâturond Regenerative Grazing Project | JBS

Food Systems
case selection

Archetypes
Livestock Solutions

Crop / Product
Beef cattle

Europe
France

Overview

Case objectives

Compare three grazing methods on French cattle farms to measure carbon storage, biodiversity and performance; support climate-resilient cattle

Institutions Involved

JBS; McDonald's France; Pilgrim's Europe; INRAE; VetAgro Sup

WG Alignment

Livestock sustainability; regenerative grazing; soil health

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Breeder dropout; AMP applied to only one pasture to limit production risks during the learning phase

Scalability

Promotes soil carbon storage and sustainable grazing to cut CO2 while supporting productivity for land-based climate solutions and resilient agriculture

Impact

Innovative Drive

Combines scientific rigor (PhD research, multiple indicators) with direct farmer engagement; compares grazing systems in real-world conditions

Economic Impact

Provides reference data to help farmers choose systems balancing productivity, cost, and sustainability; private sector (McDonald's, Pilgrim's) benefits through supply chain resilience

CO2 Impact

Project enhances soil carbon storage and offers low-emission pathways for cattle farming through improved grassland management

External Links: https://impact.economist.com/projects/mcdonalds-and-regenerative-agriculture/a-more-sustainable-future-for-farming-why-farmers-cant-do-it-alone/

Pilgrim’s Europe regenerative pig production system | JBS

Food Systems
case selection

Archetypes
Livestock Solutions

Crop / Product
Pork

Europe
United Kingdom

Overview

Case objectives

Use high-welfare outdoor pig systems in mixed farms with regenerative practices to improve animal welfare, reduce emissions intensity and enhance soil health

Institutions Involved

JBS; Pilgrim’s Europe; UK Government; NGOs (various)

WG Alignment

Regenerative agriculture; livestock emissions; animal welfare; crop-livestock integration

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Tenant farmers manage herds rather than landowners, which may limit continuity and soil investment; outdoor pigs face biosecurity risks

Scalability

Outdoor pig systems can expand in regions with retailer and consumer demand for higher-welfare pork; crop rotation integration supports regenerative farming and lowers input use

Impact

Innovative Drive

Integrates outdoor pigs into crop systems to reduce inputs, improve soil health, and enhance biodiversity while addressing animal welfare goals

Economic Impact

Pilgrim’s benefits from consumer demand for higher-welfare pork; model integrates manure into crop rotations, reducing fertilizer costs and improving resilience of tenant-farmer systems

CO2 Impact

Outdoor pig farms emit less CO_2 than UK average; manure and crop rotation reduce synthetic fertilizer and pesticide use, lowering overall carbon footprint

External Links: Not disclosed

Tetra Pak Dairy Hub model - Development of dairy value chains in LMIC | Tetra Pak

Food Systems
case selection

Archetypes
Livestock Solutions

Crop / Product
Dairy cattle

Global

Overview

Case objectives

Build dairy value chains via extension, aggregation and market access to strengthen smallholder productivity/resilience

Institutions Involved

Tetra Pak International S.A.

WG Alignment

Livestock sustainability; smallholder engagement

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Informal milk distribution poses major risks to dairy quality and public health, making food safety one of the most pressing challenges in informal dairy markets

Scalability

Model proven in Bangladesh, Kenya, and Colombia; already 29 hubs established and nearly 84,000 farmers reached, with target of 100,000 by 2030. Highly replicable across emerging markets

Impact

Innovative Drive

Links smallholders to formal markets, combining tech, training, and guaranteed milk offtake to boost income, reduce waste, and build resilient, sustainable dairy systems

Economic Impact

Improves household income resilience via productivity gains and stable buyer relationships

CO2 Impact

Higher milk yields reduce emissions per liter via improved herd/feed/energy management

External Links: https://www.tetrapak.com/about-tetra-pak/news-and-events/newsarchive/tetra-pak-launches-dairy-hub-handbook-paving-the-way-for-a-more-resilient-dairy-value-chain

Driving Forest-Positive Transformation in Brazil's Beef Supply Chain | Carrefour Group

Food Systems
case selection

Archetypes
Livestock Solutions

Crop / Product
Beef cattle

Global

Overview

Case objectives

Advance forest-positive beef through traceability, supplier engagement, and compliance to eliminate deforestation risk

Institutions Involved

Carrefour Group

WG Alignment

Livestock sustainability; traceability; supply chain transparency

Case maturity

Case Stage

Mature
generating stable results

Risks Involved

Lack of agile monitoring and traceability support may enable sourcing from deforested areas, undermining compliance and transparency

Scalability

Case demonstrates potential for sector-wide adoption; Carrefour became the only retailer monitoring deforestation across all Brazilian biomes, setting a replicable benchmark

Impact

Innovative Drive

First retail-led case to integrate legal enforcement, open data (MapBiomas), satellite monitoring, and grievance channels across all biomes

Economic Impact

With low-cost tech and rapid deployment, traceability reduces exposure to legal and reputational risks, safeguards market access, and aligns ESG performance with long-term profitability and investor expectations

CO2 Impact

Deforestation avoidance through geomonitoring of 24.6M ha and 31,802 farms (2024); quantitative CO_2e to be reported

External Links: https://api.mziq.com/mzfilemanager/v2/d/32539bbc-7be4-42e1-a485-98a052dc3a81/d6456036-793d-b025-4113-8afef5b972f0?origin=2

How to reduce GHG emissions from the cattle-related value chain and produce the world's greenest cattle-related products in Brazil | Ajinomoto

Food Systems
case selection

Archetypes
Livestock Solutions

Crop / Product
Dairy cattle, beef cattle

Global

Overview

Case objectives

Introduce AjiPro®-L, a nutritional solution that integrates innovation, regenerative practices, and green financing to generate environmental and economic value in sustainable livestock farming

Institutions Involved

Ajinomoto

WG Alignment

Livestock sustainability; regenerative grazing

Case maturity

Case Stage

Under implementation

Risks Involved

Not disclosed

Scalability

By utilizing AjiPro®-L, it is possible to achieve a reduction of 1t-CO2-eq/cattle/Y. If introduced to 1% of the world's cattle through a scalable model via dairy and meat manufacturers, a reduction of 10 million tons of GHG emissions is anticipated

Impact

Innovative Drive

Provides amino acid–balanced feed solution that reduces enteric methane, CO_2 from supply chain, and N_2O from manure

Economic Impact

Producers save ~$100 per head per year by replacing more expensive conventional feed; no upfront investment needed for adoption

CO2 Impact

Using AjiPro®-L results in 25% reduction in N2O from manure, 20% reduction in CO2 from purchases, and 10% reduction in methane from burps. Methodology is registered in several carbon credit systems

External Links: https://www.ajinomoto.com/innovation/our_innovation/ajipro-l

Food Systems framework

Types of crops

Tree crop | Livestock | Row crop

Minimizing deforestation

Reduce farmland expansion by sustainably increasing productivity

Improved agriculture management practices

Improve management practices of agricultural land

Address livestock management and enteric fermentation

Other

Rainwater harvesting system for subsistence irrigation| Sigma Lithium

Nature Bases Solutions
case selection

Archetypes
Other

Crop / Product
water resources / family farming

South America
Brazil

Overview

Case objectives

The project will build 2,000 rainwater harvesting reservoirs in priority micro-basins of Brazil's Jequitinhonha Valley, enhancing community water resilience, reducing soil erosion, and empowering women farmers through training and access to value chains to strengthen food security

Institutions Involved

Sigma Lithium

WG Alignment

Climate adaptation; smallholder support

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Poorly prepared soils, unsuitable site selection, or rainfall exceeding the designed capacity can compromise the stability and efficiency of the water harvesting system, leading to loss of retention or erosion.

Scalability

The project is a scalable, low-cost solution for water security and micro-basin regeneration. It reduces the risks of drought and erosion, strengthens family farming, and promotes women's productive inclusion. Its expansion generates positive climate impacts, protects natural resources, and contributes to global goals under the Paris Agreement and the SDGs.

Impact

Innovative Drive

Empowers women in community water management, transforming rainwater harvesting systems into drivers of sustainable food security

Economic Impact

Aligned with Sigma Lithium's focus on environmental preservation, the project generates tangible economic value by reducing agricultural losses, increasing productivity, and lowering water-related costs through women's leadership.

CO2 Impact

Indirect reductions through environmental gains from increased vegetation, reduced deforestation pressure, prevention of soil erosion, and sustainable use of water resources; not quantified.

External Links: Not disclosed

Thai Union Sustainable Shrimp Value Chain Project | Asian Development Bank

Food Systems
case selection

Archetypes
Other

Crop / Product
Other (shrimp)

Asia / Oceania
Thailand

Overview

Case objectives

Enhance the sustainability and climate resilience of Thailand's shrimp value chain by financing Thai Union's procurement, processing, and exports of responsibly sourced shrimp

Institutions Involved

Thai Union Group PLC; Asian Development Bank; Commercial lenders

WG Alignment

Innovative financing; climate resilience; rural development

Case maturity

Case Stage

Under implementation

Risks Involved

Farmer ability to pursue and access to certifications; vulnerability to climatic shocks and natural hazards; market volatility in shrimp and feed prices; demand for certified shrimp

Scalability

Instead: The Project supports capacity building for representatives from at least 500 shrimp farms, with scalable frameworks. The approach is replicable across shrimp supply chains in the region

Impact

Innovative Drive

The loan was classified as a blue loan under Green Finance Framework, and will support Thai Union in reaching its commitment of 100% responsibly-sourced shrimp by 2030 and related expenses supporting this commitment

Economic Impact

Improves farm profitability and resilience and builds long-term export competitiveness for responsibly sourced shrimp

Climate Impact

The facilitation of the transition to sustainable shrimp farming will reduce environmental impacts and support ecosystem conservation while improving climate resilience of shrimp farmers

External Links: https://www.adb.org/projects/58263-001/main

Scaling Production of Insect-based inputs to Transform Food Systems in Africa | INSECTIPRO

Food Systems
case selection

Archetypes
Other

Crop / Product
Other (insects)

Africa
Kenya

Overview

Case objectives

Scale insect-based food, feed, and fertilizer production using circular, low-cost, and sustainable models to improve nutrition and environmental resilience in African food systems

Institutions Involved

InsectiPro

WG Alignment

Ag-tech; circularity; regenerative agriculture

Case maturity

Case Stage

Implemented
generating first results

Risks Involved

Insufficient insect egg production; low market acceptance; inconsistent organic waste supply; climate variability; contamination/biosecurity risks

Scalability

Planned scale-up to 150T/month production capacity within 3–5 years; supported by R&D pilots, partnerships, and training programs; potential to avoid 100,000+ tCO_2e in 5 years

Impact

Innovative Drive

Integrates insect bioconversion with school nutrition, gender-sensitive farmer training, and circular economy practices; pilots genetic improvement of BSF and product diversification

Economic Impact

500+ green jobs created; low-cost waste input ensures profitability; farmers trained (20,000+, 48% women) reported 28% higher yields

CO2 Impact

30,602 tCO_2e avoided through waste upcycling; estimated potential of 100,000+ tCO_2e reduction over 5 years; quantified via Life Cycle Assessment (LCA)

External Links: www.insectipro.com

Promoting More Sustainable Eating Among Thousands Around the World | Electrolux do Brasil S.A.

Food Systems
case selection

Archetypes
Other

Crop / Product
Not disclosed

Global

Overview

Case objectives

Promote dietary shifts and procurement choices to lower food-system emissions and improve health outcomes

Institutions Involved

Electrolux Food Foundation; AIESEC; World Association of Chefs Societies; Electrolux Group

WG Alignment

Sustainable supply chains

Case maturity

Case Stage

Under implementation

Risks Involved

Not disclosed

Scalability

The Electrolux Food Foundation and its case contributes toward Responsible Consumption and Production (SDG 12) and Global Partnerships for Sustainable Development (SDG 17)

Impact

Innovative Drive

Uses free, engaging toolkits and workshops (especially for children) to spread awareness; combines education, training, and food aid in a scalable, low-cost, high-impact model

Economic Impact

Builds brand trust, engages employees, supports community resilience

CO2 Impact

By promoting plant-based diets and reducing food waste, the project indirectly contributes to lowering food-related emissions across communities and supply chains

External Links: https://www.electroluxgroup.com/en/category/sustainability/food-foundation/

First Movers Coalition for Food | World Economic Forum

Food Systems
case selection

Archetypes
Other

Crop / Product
Cross-cutting (multi-commodity, global demand aggregation initiative)

Global

Overview

Case objectives

Aggregate buyer demand and commitments to accelerate decarbonization in key food-system categories through procurement levers

Institutions Involved

Nestlé; PepsiCo; Danone; Carlsberg; Kraft Heinz; Coca-Cola

WG Alignment

Demand signals; corporate climate targets; sustainable procurement

Case maturity

Case Stage

Under implementation

Risks Involved

Not disclosed

Scalability

Designed for multiple geographies and commodities; procurement target of US$10–20Bn; coalition members represent >US$900Bn in sales and most have Paris-aligned SBTi Scope 3 targets

Impact

Innovative Drive

Demand signals are key to ensure the viability of scaling sustainable agricultural production. These support tailored mechanisms and proposals for financial actors to participate at scale, and in optimizing costs along the value chain

Economic Impact

The initiative has a core objective to improve productivity, farmer livelihoods and build resilience for farmers and value chains, while enabling decarbonization, and other co-benefits

CO2 Impact

Initiative aligned with Scope 3 decarbonization for corporate members; indirect reductions through scaled adoption of low-carbon practices

External Links: https://initiatives.weforum.org/first-movers-coalition-for-food/home

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Annex

Annex A – Disclaimer

The information presented in this booklet is the sole responsibility of the institutions that submitted the cases. All case descriptions reflect the information shared directly by the applicants.

The primary source for the evaluations described herein was the submitted cases; however, in certain instances, additional publicly available information from websites and/or official documents was consulted.

Where specific information was not provided by the applicants, the Working Group applied its best judgment to interpret missing parts, taking into account the context of each case.

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CNI Brazilian National Confederation of Industry