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Financing for Regenerative Agriculture

WITH SUPPORT FROM



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Transformational Investing
in Food Systems



Contents



INTRODUCTION	4
Foreword	4
Introduction	6
Acknowledgements	10
Context on Regenerative Agriculture	14
Why Should Financiers Care About Regenerative Agriculture?	16
1. THE BANKABILITY GAP IN REGENERATIVE AGRICULTURE	18
(Macro) Systemic Barriers to Accelerating Regenerative Agriculture	20
(Micro) Complexities of Farm-Level Implementation	22
2. MARKET MATURITY AND IMPACT LEVERAGE	26
Finance Levers Across the Market Maturity Curve	28
Geographical Impact Leverage	36
3. INSTRUMENTS AND STRUCTURES	40
Early Models with Traction	44
Nascent Models with Potential	58
4. ADDITIONAL CONSIDERATIONS FOR FINANCIERS	70
Evolving Enabling Environments	70
Impact Scope for Regenerative	74

Foreword

For investors in agrifood systems, business as usual is no longer viable. Evidence shows that the negative externalities of global agrifood systems outstrip the global market value of agricultural production by a ratio of two to one.¹ Our food system has become value destroying as measured in climate change, water scarcity, biodiversity loss, diet-related disease, and erosion of farmer well-being – all of which threaten the resilience of agrifood supply chains. Nutritional concerns place pressure on food producers and distributors to increase the availability of affordable, healthy food, even as changing temperatures and precipitation patterns decrease crop yields. Meanwhile, policymakers are passing regulations to mitigate the negative climate, biodiversity, and health consequences of industrialised food production systems.

Investors and agrifood corporates have started to wrestle with these issues in piecemeal and disconnected ways. This approach has two downfalls: we perpetuate the disregard of negative externalities to people and planet, and we fail to harness the co-benefits that more systemic approaches can afford.

Regenerative and agroecological production offers an alternative. As a net-positive approach to agriculture production that makes more than it takes, regenerative agriculture changes the risks inherent in growing food. While the business of food production will always present risks – a late freeze, a hailstorm, a pest infestation – these risks are reduced when farmers optimise for ecological outcomes like increased soil organic matter, improved water retention, and enhanced biodiversity. Such ecological outcomes are accompanied by yield increases in most contexts, after a transition period that differs by crop and place. Moreover, the ability to better withstand extreme weather events means regenerative producers have a buffer against climate change. Evidence that supports the business case for investments in regenerative producers is growing. Consequently, we expect investors with a long-term value creation mindset to be increasingly attracted to this emerging segment of the market.

This report clarifies why the status quo is changing and how investors are beginning to drive the transition to a more resilient global agrifood supply chain. The report is primarily written for investors with access to large-scale capital and an interest in regenerative agriculture and food systems – including development finance institutions, large family offices, asset managers, institutional investors, and philanthropies. Though knowledge on investing in regenerative food systems is growing, it remains fragmented. This report organises existing information, describes pathways for investors, and provides illustrative examples of investment mechanisms to deploy capital in regenerative agriculture.

As you read this report, it is important to consider the range of interpretations of regenerative agriculture. We use a spectrum of "shallow" to "deep" to explain the spectrum of regenerative initiatives. Projects on the "shallow" end of the spectrum might only focus on mitigating the negative environmental impacts of agricultural production, such as reducing greenhouse gas emissions. "Deep" regenerative initiatives take a more holistic approach that includes sociocultural and power dimensions atop ecological. Regeneration is a journey, and the notion of a spectrum recognises there are many points of departure. As you examine financing regenerative agriculture, expect to encounter multiple approaches that may range from: incremental but meaningful change at scale in industrialised agrifood systems that integrate shallow regenerative practices to expansion of holistic approaches that generate the financial, ecological, and socioeconomic returns characterising deep regenerative.

WHY READ THIS REPORT?

Business as usual is no longer viable. Agrifood systems contribute over a third of global greenhouse gas emissions.² Land degradation reduces productivity in 23% of global terrestrial area, and pollinator loss jeopardises USD \$230 - \$580 billion in annual crop output.³ Through the lens of health, over

800 million people struggle with hunger, and nearly a third of the global population experience diet-related illnesses.⁴ The hidden environmental, health, and social costs of global agrifood systems equate to nearly USD \$20 trillion each year.⁵ Meanwhile, steady depletion of natural resources threatens the long-term productivity of food systems, with climate change further exacerbating supply chain volatility and endangering producer livelihoods.

A shift to regenerative agriculture and food systems unlocks new opportunities. The funding gap to shift conventional global food systems to regenerative is estimated between USD \$250 - \$430 billion annually for 10 years.⁶ Closing the gap would unlock USD \$4.5 trillion in new investment opportunities per year (~13x the investment cost) and \$5.7 trillion of costs per year saved in damages to people and the planet (~16x the investment cost).⁷

The risks and returns of agrifood investments must be rebalanced. Many investors are aware of climate risks, but few consistently integrate relevant risk management factors into investment processes. As a result, current assessments mischaracterise the risks and returns of conventional vs. regenerative agriculture. Consideration of the long-term profitability and resilience benefits of regenerative agriculture has yet to be factored into investor risk ratings. However, regenerative farmers and regenerative businesses do more than return financial investments. They build strong regional economies and resilient value chains, increase the availability of healthy food, and protect nature. These systemic returns regenerate the natural and social impacts highlighted above.

Today, we are in the early stages of transitioning to regenerative food systems. The path forward is difficult and messy, but as this report demonstrates, there are ways for investors to help advance the transformation process. Both commercial and concessional capital providers play a key role in accelerating capital deployment for regenerative agriculture. And while these moves can create

positive externalities for people and the planet, they will also create hearty financial rewards.

We encourage you to learn about existing approaches to financing regenerative agriculture and to join us and others charting the way forward.

Sincerely,



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Introduction

INTRODUCTION

In December 2023, the 28th UNFCCC Conference of the Parties ("COP") dedicated a full day to Food, Agriculture, and Water – a first for any COP. World leaders signalled the need for holistic food systems transformation as 150 countries committed to incorporate food systems into national climate plans by 2025 under the Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action. Commitments were echoed by the private sector, with over a dozen of the largest food companies in the world agreeing to advance regenerative agriculture practices on 160 million hectares of land – triple the size of France – by 2030. In tandem with pledges, USD \$7.1 billion was allocated for climate and nature action in food systems from public, private, and philanthropic sources of capital. Of this, USD \$2.2 billion was earmarked specifically for regenerative agriculture projects. The swell of interest in food systems transformation – **backed by capital mobilisation** – marked a watershed moment for food systems and their vast interdependencies with climate, nature, and society.

While the growing global momentum around food systems and regenerative agriculture investing is encouraging, **momentum is ahead of actual understanding of the topic by key financial actors in the food and agriculture value chain**. Many commercial and concessionary sources of capital remain on the sidelines; even organisations broadly interested in food systems investment opportunities may be uncertain if, when, and how they can play a role.

REPORT PURPOSE AND AUDIENCE

This report serves as a compendium of innovative financing instruments and structures currently deployed by financial actors engaging in the growing field of regenerative agriculture (see "Context on Regenerative Agriculture" for definitional discussion).

Although the report team hopes there are useful insights for a range of readers, **the primary intended audience for this report are financiers with access to flexible, scaled capital** (e.g., development finance institutions, large family offices, asset managers, institutional investors) who are gaining familiarity

with regenerative agriculture or have some familiarity already and are seeking to deploy additional capital. There are references made throughout to the contextual roles of policymakers, banks, insurers, philanthropies, technical assistance providers, and corporates in the food and agriculture value chain, but these actors are not the primary audience. We call attention to this because language and editorial choices are largely intended for the primary audience, and readers who hold more diverse lenses may have different interpretations of certain terminology and concepts.

Interest in regenerative agriculture in recent years has led to excellent research on a range of topics, including jurisdictional specific analyses on agronomic practices and operational costs, benefits, and barriers. We reference relevant existing research in citations but do not attempt to survey the field in a holistic way, and we encourage readers to review other existing publications that analyse different facets of regenerative agriculture.

As an additive contribution to the field, this report aims to:

- a. Reorganise existing information in the public domain from the lens of financing;
- b. Supplement existing publications with aggregated insights from 40+ primary interviews conducted with practitioners in the field deploying capital to regenerative agriculture in both developed and emerging markets; and
- c. Highlight instruments and structures in different jurisdictions globally that have the potential to individually reach scaled capital deployment (e.g., line of sight to reach thousands of producers, tens of thousands of hectares, hundreds of millions in capital deployment, etc) – even if current market penetration is more limited.

Despite the nascency of financing for regenerative agriculture, a growing community of investors like 12Tree, Agri3, Agriculture Capital, Impact Ag Partners, SLM Partners, and many others are lighting the way for financiers to follow, and their leadership provides inspiration for this work.



REPORT APPROACH AND STRUCTURE

It is important to recognise regenerative agriculture for what it is today – a promising, dynamic, and burgeoning field. Financing for regenerative agriculture is a nascent area, and across global financial markets, the degree of nascency cannot be overstated.

Cynically, one could argue that all financing to date in regenerative agriculture lacks scale and replicability. However, we believe there are valuable learnings from early movers already deploying capital to

regenerative agriculture, and the learnings captured in this report – even if gleaned from nascent financing structures – can expedite further financing.

Structurally, this report begins with the problem statement in Section 1, builds toward an organising framework in Section 2, showcases instruments and structures that enable transition in Section 3, and provides commentary on implementation considerations for practitioners in Section 4.

REPORT SECTION	KEY TOPICS	PAGE
Section 1: The Bankability Gap in Regenerative Agriculture	Describes the constraints and frictions that prevent the financing of regenerative agriculture, exploring questions including: <ul style="list-style-type: none"> • Why isn't capital flowing to regenerative agriculture? • What are the perceived barriers from the perspective of financiers? • What characteristics of the enabling environment stand in the way of financing regenerative practices? 	18
Section 2: Market Maturity and Impact Leverage	Provides a high-level assessment of the current maturity of the market for financing regenerative agriculture and potential pathway for regenerative agriculture to achieve widespread adoption. The market maturity curve presented in Section 2 is an organising framework that allows practitioners to self-identify where they should play based on the relative market maturity of their jurisdictional focus.	26
Section 3: Instruments and Structures for Regenerative Agriculture	Illustrates several innovative financing instruments and structures gaining traction. Although structures highlighted are still nascent and have limited current market penetration, practitioners aspiring to deploy capital into regenerative agriculture may find this section particularly useful in providing ideas on specific instruments and structures they can deploy.	40
Section 4: Additional Considerations for Financiers	Presents a set of additional considerations for financiers seeking to play a role in capital mobilisation for regenerative agriculture, including regulatory changes and scope of impact.	70



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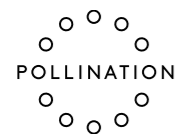
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DATA

In addition to conducting primary interviews, the report team relied heavily on publicly available secondary sources and is grateful for their data, insights, and contributions.

ORGANISATION	PUBLICATION
Croatan Institute, Meridian Institute	Finance for Resilience: An Overview of Risk Mitigation in Agricultural Systems for Farms, Lenders, and Governments (2024)
SLM Partners	Investing in Regenerative Agriculture: Reflections from the Past Decade (2024)
World Economic Forum, Bain & Company	100 Million Farmers: Breakthrough Models for Financing Sustainability Transition (2024)
Yale Center for Business and the Environment	Bridging the Regenerative Agriculture Financing Gap (2024)
Global Alliance for the Future of Food	Cultivating Change: Accelerating and Scaling Agroecology and Regenerative Approaches (2023)
OP2B, WBCSD, BCG	Cultivating Farmer Prosperity: Investing in Regenerative Agriculture (2023)
Planet Tracker	Finance Markets Roadmap for Transforming the Global Food System (2023)
Sustainable Markets Initiative	Scaling Regenerative Farming: Levers for Implementation (2023)
Field to Market	Financial Innovations to Accelerate Sustainable Agriculture: Blueprints for the Value Chain (2022)
Textile Exchange	Regenerative Agriculture Landscape Analysis (2022)
Environmental Defense Fund, The Nature Conservancy, Beck Ag	Banking on Soil Health: Farmer Interest in Transition Loan Products (2021)
U.S. Farmers & Ranchers in Action	Transformative Investment in Climate-Smart Agriculture (2021)

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ABOUT POLLINATION

Pollination is a global climate change investment and advisory firm dedicated to accelerating the transition to a net-zero, nature positive future. With more than 200 employees and advisors worldwide, the organisation has a presence in 13 countries across the Americas, Europe, Middle East, Africa, and Asia Pacific. The Pollination team includes global leaders in finance, technology, business, law, and policy. Harnessing the team's diverse expertise, Pollination helps government, business, and public and private capital to navigate the climate transition, designing and investing in breakthrough ideas that deliver financial returns.



ABOUT TIFS

Transformational Investing in Food Systems Initiative (TIFS) is building a movement of financial innovators working on food security, nutrition, dignified livelihoods for food producers, and healthy ecosystems. TIFS works with financial innovators creating landscape and community-based financial solutions to incentivise ecological, human health, and social values resulting from agroecological and regenerative approaches. TIFS is accelerating and growing the impact of these mission-driven investment funds, community banks, community development finance institutions, and other financial intermediaries.



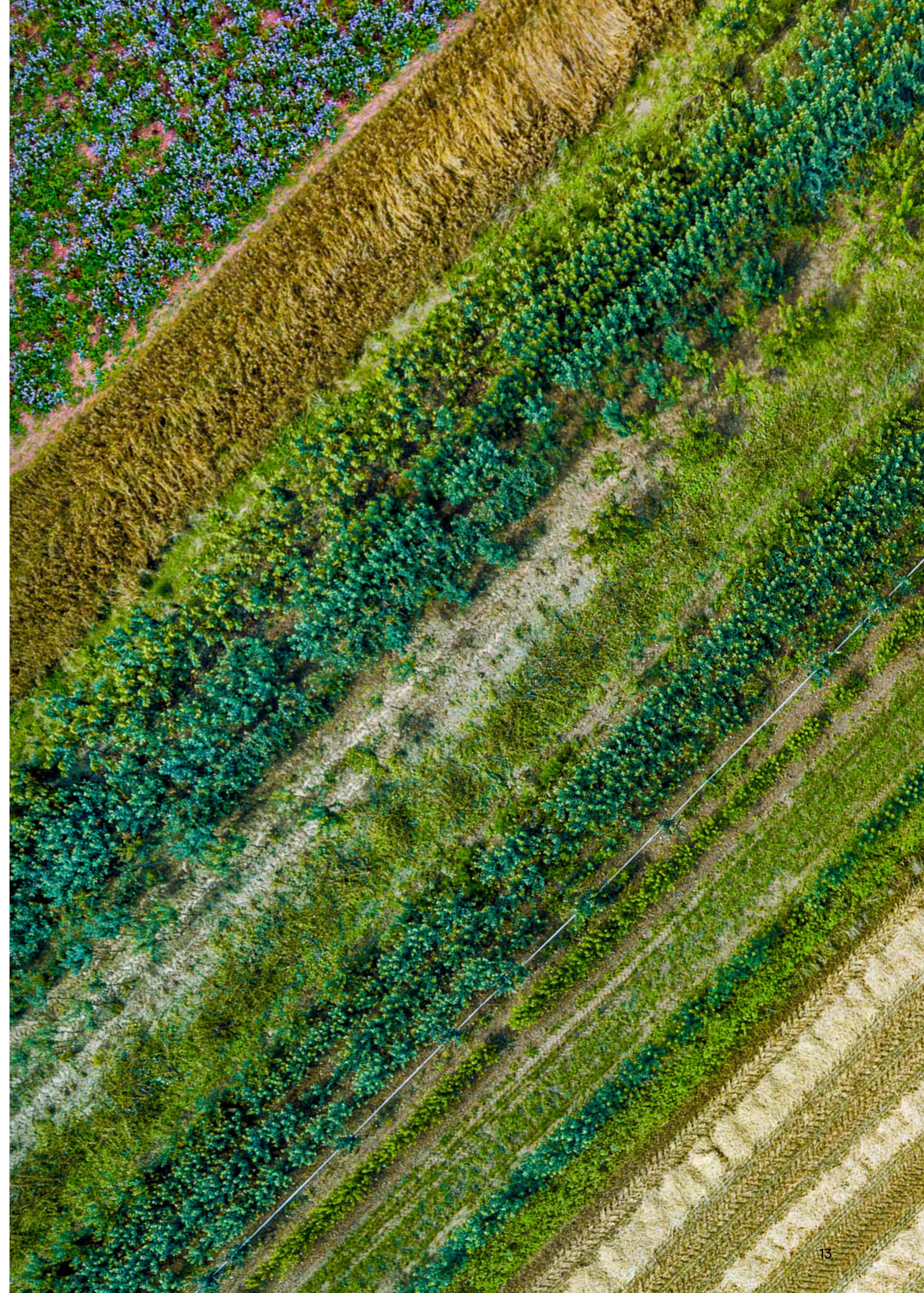
ABOUT THE ROCKEFELLER FOUNDATION

The Rockefeller Foundation's mission – unchanged since 1913 – is to promote the well-being of humanity throughout the world. Today the Foundation advances new frontiers of science, data, policy, and innovation to solve global challenges related to health, food, power, and economic mobility. As a science-driven philanthropy focused on building collaborative relationships with partners and grantees, The Rockefeller Foundation seeks to inspire and foster large-scale human impact that promotes the well-being of humanity by identifying and accelerating breakthrough solutions, ideas, and conversations.

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Context on Regenerative Agriculture

For regenerative agriculture to meaningfully transform food systems, it must be clearly differentiated from conventional, mainstream agricultural production. Today, there is no legal standard or universally accepted definition of regenerative agriculture. In the absence of a universal definition, dozens of NGOs, scientific research agencies, industry associations, and food and beverage corporates have set their own definitions.

Generally, regenerative agriculture can be described as a farming **philosophy** underpinned by certain **principles**, which manifest in the adoption of context-specific agronomic **practices** (sometimes referred to as **processes**) that lead to improved **outcomes**.⁸

Definitions place varying emphases on these core components, which partly contributes to definitional disagreement. Some practitioners operate under practice / process-based definitions, while others look to outcome-based definitions, or use a combination of both.⁹ The varying breadth of impact associated with potential outcomes further adds confusion. Some emphasise ecological benefits only – for example, improvements in soil health, water, biodiversity, and carbon; the amount of emphasis placed upon carbon is another frequent point of disagreement. Others emphasise the broad range of potential economic, social, human health, and animal welfare benefits in addition to ecological benefits, or extend the intended scope of impact beyond farm-level to community-level or landscape-level. Depth of engagement creates another point of divergence. Some definitions exclude practitioners earlier in their regenerative journey, who meet only a few process-based or outcome-based guidelines, in favour of advanced stage practitioners only.

Generally, the principles that underpin regenerative agriculture overlap with the foundational principles of several branches of agriculture, including agroecology, agroforestry, organic, biodynamic, permaculture, indigenous, conservation agriculture, sustainable agriculture, climate-smart agriculture, and holistic management among others.^{10,11} The principles of regenerative agriculture are not new, and neither is the term. Although the Rodale Institute is credited with introducing the concept of regenerative agriculture in the 1980s, the roots of regenerative approaches to food production extend back millennia and are still existent in the traditional ecological knowledge used by many Indigenous Peoples today.¹² Since 2016, however, the term has dramatically regained awareness as a proxy representative for many of the principles embraced by longstanding branches of agriculture with improved ecological and social outcomes.

We share these multidimensional considerations for the basis of definition because what is in-scope vs. out-of-scope definitionally affects barriers to entry and reputational risk for financiers. Narrower definitions have merit as a more approachable on-ramp for earlier stage practitioners but can carry a higher risk of greenwashing scrutiny. Furthermore, **what is in-scope vs. out-of-scope definitionally has practical implications for financiers in executional trade-offs, source-of-funds eligibility, and use-of-funds decisions.**

For this report, we embrace a broad definition of regenerative agriculture and illustrate financing and investment considerations for the widest possible set of financeable activities that may be considered regenerative on the spectrum of existing definitions. Importantly, we do not intend to prescribe a definition and acknowledge that the ringfencing for regenerative principles, practices, and outcomes will need to be tailored to each financier's market context.

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PHILOSOPHY

Farming and ranching in harmony with nature and communities.

PRINCIPLES

Versions of Regenerative Agriculture	Royal Agricultural Society of England	California State University Chico	Project Drawdown	IUCN	Rodale Institute
Limit Disturbance	X	X	X	X	X
Cover the Soil	X	X	X	X	X
Living Roots	X	X			X
Diversity	X	X	X	X	X
Integrate Animals	X	X		X	X
Social Fairness					X
RESTRICTIONS					
Limit Chemicals			X		X

PRACTICES

Cropland

- Minimum or no tillage
- Cover crops
- Retain crop residues on soil
- Compost, manure, or other biological soil amendments
- Longer, more diverse crop rotations
- Inter-cropping or polycultures
- Integrated pest management
- Improved nutrient management
- Reduce or eliminate synthetic chemicals
- Improved irrigation management
- Planting trees on cropland (agroforestry)
- Mulching old trees & pruning residues in orchards

Pastureland

- Raising livestock on pasture
- Adaptive multi-paddock grazing
- Stock density alteration
- Paddock configuration alteration
- Integrating grazing animals into crop rotations and orchard management
- Livestock species diversity
- Avoiding hormones and antibiotics
- Planting trees on pasture (silvopasture)

All Landscapes

- Hedgerows and shelterbelts
- Pollination strips
- Riparian zones
- Native species incorporation
- Water conservation through landscape design (e.g., keyline)
- Managing fallowed and non-productive areas for ecological goals
- Co-creating and sharing knowledge through participatory processes
- Supporting dignified livelihoods for all farm workers

OUTCOMES

Ecological Outcomes

- Improve soil health (e.g., structure, fertility, biology)
- Improve water health (e.g., infiltration, holding capacity, hydrology)
- Increase cultivated biodiversity and ecological integrity
- Increase above- and below-ground carbon sequestration
- Improve ecosystem health (including ecosystem services)
- Minimise greenhouse gas emissions
- Create a circular system and/or reduce waste

Economic Outcomes

- Improve economic wellbeing of farm workers and rural communities
- Increase farm profitability
- Maintain or improve farm productivity
- Maintain or increase yields

Social Outcomes

- Improve social wellbeing of farm workers and rural communities
- Improve nutritional quality and/or human health
- Improve food access and/or food security
- Improve animal welfare

STANDARDS AND CERTIFICATIONS

Practice Based Standards

- Bee Better Certified (Xerces Society)
- Bee Friendly Farming (Pollinator Partnership)
- Certified Regenerative by AGW (A Greener World)
- Climate Beneficial Verified (Fibershed)
- Regenerative Under Conversion, Regenerative Certified (Foodchain ID)
- ZQ Merino (New Zealand Merino)

Outcomes Based Standards

- Ecological Outcome Verification, Land to Market (Savory Institute)
- Ecosystem Services Procedure (Forest Stewardship Council)
- Ethos Regenerative Outcome Verification (Terra Genesis)
- Farmland Management Standard (Leading Harvest)
- Regenerating Together (SAI Platform)
- Regenerative Agriculture Outcome Framework (Textile Exchange)
- ZQRX Platform (New Zealand Merino)

Practice & Outcomes Based Standards

- Regenagri (Regenagri C.i.C)
- Regenerative Organic Certification (Regenerative Organic Alliance)
- Regenerative Verified, Regeneratively Grown (Soil Regen)
- Soil & Climate Health Initiative Verified (Soil & Climate Initiative)
- Wildlife Friendly Enterprise Network
- 6-4-3 Verification (Regenified)

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Why Should Financiers Care About Regenerative Agriculture?

Much has been written about the financial risk of climate change, with economists predicting global GDP to fall by 25% by 2100 if the world continues on its current greenhouse gas emissions ("GHG") trajectory.¹³

As an inherently climate-dependent industry, agriculture has been among the first to experience the destructive impacts of climate change through rising temperatures, changing hydrologic cycles, and extreme weather events. In the past 30 years, nearly USD \$4 trillion worth of crops and livestock production have been lost globally due to disaster events, corresponding to an average loss of 5% of annual global agricultural GDP.¹⁴ The increasing severity and frequency, from around 100 events per year in the 1970s to 400 events per year worldwide in the past 20 years, will only worsen under a "business as usual" scenario with perpetuation of conventional agricultural production methods.¹⁵

Production methods such as regenerative agriculture are associated with climate adaptation and resilience. Such methods offer the best path forward to preserving long-term viability of an industry that is foundational to basic societal needs. From a financier's perspective, **regenerative agriculture provides a way to maintain the commercial opportunity in agriculture via adaptation to changing climate conditions.** By investing in regenerative agriculture now, financiers can proactively adapt food and agricultural value chain investments to changing climate conditions and take advantage of potential opportunities in transition investing.

For asset managers who hold diversified assets, inclusion of regenerative agriculture investments can enhance portfolio strategy in several ways. A robust body of research has shown that actively considering ESG factors in addition to financial factors can deliver risk protection and enhanced returns, particularly over longer time horizons.^{16,17} From a regulatory perspective, investments with regenerative agriculture strategies usually satisfy the highest standards for sustainable investing, such as national green taxonomies or Article 9 of the Sustainable Finance Disclosure Regulation ("SFDR") in the EU.

Financiers who deploy capital directly to agricultural producers to support the transition from conventional to regenerative agriculture can additionally benefit from the value creation of regenerative practices. Increased commercial opportunity through regenerative agriculture has been discussed extensively in other reports.^{18,19,20} To summarise, they include:

Financial resilience	Studies on farm-level transition economics show ability for farms to build ecological resilience, which leads to downside protection during extreme weather events and enhanced long-term financial profitability.
Cost savings	Reduced reliance on inorganic inputs due to biological soil health improvements often results in operational cost savings for producers, thereby increasing long-term profitability.
Certification premiumisation	Producers have the potential to realise higher revenues through regenerative certification or regenerative and organic certification. For corporates to mitigate reputational risk and liability, third-party certification remains the most popular pathway for food corporates to reward producers with higher financial value for on-farm sustainability efforts. Corporates may, in turn, print third-party certified sustainability claims on product packaging and charge consumers a higher price premium.
Offtake premiumisation	Due to the rise of food corporates and retailers setting regenerative definitions and measurement protocols outside of third-party standards, producers increasingly can directly receive a price premium in exchange for adopting certain practices, without third-party certification. Compared to third-party certification, this pathway is generally cheaper, faster, and more flexible, though carries higher risk of greenwashing scrutiny if not thoughtfully implemented. The recent food corporate and retailer emphasis on insetting – undertaking activities that occur within a company's value chain to reduce or remove scope 3 GHG emissions – has elevated this pathway of offtake premiumisation. Most commonly, upstream producers in a corporate's supply chain receive premium payments in exchange for adopting regenerative practices associated with carbon sequestration in soils (e.g., minimum or no-till farming, planting of cover crops). Producers are compensated for on-farm reduction in GHG emissions because their actions allow downstream corporates and retailers to claim lower scope 3 GHG emissions.
Land value	Just as organic farmland commands higher real estate capitalisation rates, regenerative farmland may experience land value appreciation over time via reduced risk, increased resiliency, and higher productivity. Though not yet common for family farms or smallholders, institutional investors acquiring and restoring degraded land assets through regenerative agriculture are beginning to see financial returns from such a strategy.
Public finance	Specialised government grants, cost-share programs, subsidies, and tax incentives available to producers who undertake regenerative practices. Stacked on top of other value creation opportunities, the availability of public finance can help to reduce risk or increase return on capital for financiers.
Environmental markets	Access varies by jurisdiction, with carbon markets significantly more mature than other environmental markets (e.g., biodiversity markets, water authorities paying for positive watershed outcomes). To date, agriculture has mainly been included in voluntary rather than compliance markets. Permanence requirements and logistical challenges of measurement have created barriers to participation for small and midsize producers.

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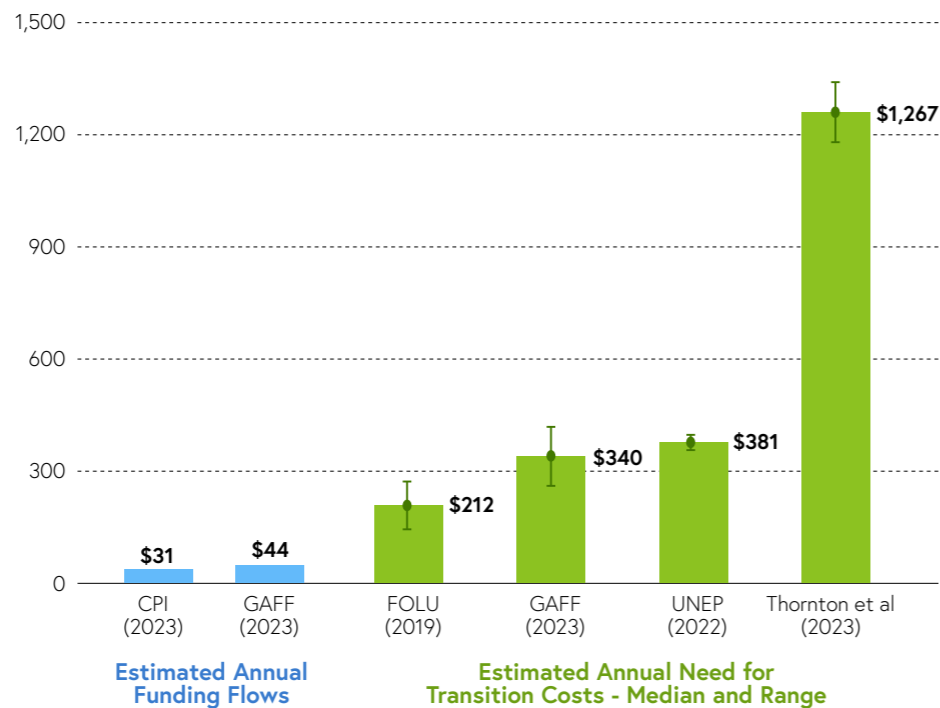
1. The Bankability Gap

Despite general recognition that regenerative approaches to food production have a critical role to play in climate change adaptation and resilience, financing for regenerative agriculture is often cited as a key adoption barrier.

The magnitude of the current financing gap to support widespread adoption of regenerative practices is massive. Several studies estimate the global annual need for transition costs to be USD \$200 billion - \$450 billion for at least the next decade, while funding flows today are approximately one-tenth of estimated annual need.

ANNUAL FUNDING FLOWS VS. ESTIMATED NEED FOR TRANSITION COSTS

Annual Investment in USD, \$ Billions



Sources:
 Climate Policy Initiative (2023). "Landscape of Climate Finance for Agrifood Systems."
 Global Alliance for the Future of Food (2023). "Cultivating Change: Accelerating and Scaling Agroecology and Regenerative Approaches."
 The Food and Land Use Coalition (2019). "Growing Better: Ten Critical Transitions to Transform Food and Land Use."
 United Nations Environment Programme (2022). "State of Finance for Nature 2022."
 Thornton et al (2023). "Perspective: What Might it Cost to Reconfigure Food Systems?". Global Food Security.

There is a systemic financing problem. Put simply, money is not flowing to the agricultural producers who can implement changes on-the-ground to effect food system transformation at the speed and scale needed to combat climate change. But on balance, the shortfall of financing for regenerative agriculture is not due to a lack of capital. While there are still jurisdictions with limited access to formal agricultural credit, particularly for smallholders in emerging market contexts, formal agricultural credit globally exceeds estimated needs for transition costs. Globally, formal agricultural credit is USD \$1.1 trillion, and aggregate capital flowing to agriculture has experienced double digit growth in the past decade, with particularly strong growth in emerging markets across Asia.²¹

Rather, **the primary barrier to increasing capital deployment for regenerative agriculture is missing confidence that the financing will fit financiers' current risk and reward standards.** This bankability gap is the primary challenge preventing increased capital deployment and can be broken down into two main areas:

(MACRO) SYSTEMIC BARRIERS TO ACCELERATING REGENERATIVE

- Endemic externalities: pricing failures
- Government failure: policies, protections, funding
- Data and evidence deficit

(MICRO) COMPLEXITIES OF FARM-LEVEL IMPLEMENTATION

- Transition finance availability
- Farm-level heterogeneity
- Financial sector constraints

The remainder of Section 1 describes each of these challenges in further detail.

Existing reports thoroughly assess the barriers to regenerative practice adoption from the perspective of farmers.^{22,23} **This report intentionally highlights frictions from the perspective of finance to help establish a common understanding for why capital isn't flowing to regenerative agriculture in larger amounts today.** Establishing a common understanding to the problem statement is a necessary prerequisite for financiers, policymakers, philanthropies, technical assistance providers, and corporates in the food and agriculture value chain to effectively formulate solutions. The financing structures illustrated in Section 3 of this report, for example, are strong examples of efforts that understand and have worked around relevant context-specific challenges. In detailing the macro and micro challenges that collectively make up the bankability gap, our intent is not to dissuade financial actors from deploying capital to regenerative practices. Rather, we seek to provide a realistic grounding for financial actors gaining familiarity with regenerative agriculture about the real and perceived challenges encountered by practitioners already deploying capital.

21. FAO (2023). "Credit to Agriculture: Global and Regional Trends 2013 – 2022."

22. Guidelight Strategies (2020). "Barriers for Farmers & Ranchers to Adopt Regenerative Ag Practices In The US."

23. McKinsey & Company (2024). "Voice of the US Farmer 2023–24: Farmers Seek Path to Scale Sustainably."

(Macro) Systemic Barriers to Accelerating Regenerative Agriculture

Despite significant value-at-risk under the conventional agricultural paradigm, perpetuation of the status quo is embedded into underlying market infrastructure across both developed and emerging markets and has proven difficult to dislodge.

ENDEMIC EXTERNALITIES: PRICING FAILURES

The strategic importance of food security and multiple potential forms of market failure in agriculture has led to an array of government pricing interventions aiming to correct volatility in agricultural input and output prices, supply of output, and producer income. Globally, public subsidies for agriculture total nearly USD \$700 billion per year, with most of this supporting harmful practices.^{24,25} While well-intended, market pricing interventions also distort incentives and create endemic externalities. Positive externalities from farming, such as community cohesion and the maintenance of rural livelihoods, are often undervalued. Meanwhile, negative externalities from farming, such as pollution of water from nitrate leaching requiring expensive water treatment, are costs externalised to third parties.²⁶

Studies have indicated that the true cost of food is three times higher than expenditure on food, primarily due to "hidden" externalised costs borne by society via health care (e.g., government spending on diet-related diseases) and environmental impacts (e.g., GHG emissions, water pollution, soil erosion, biodiversity loss).^{27,28,29} As long as producers are subsidised to maintain conventional agricultural practices and hidden costs remain unaccounted in economic decision-making, financiers have reduced incentive to redirect capital flows into regenerative agricultural production systems that diminish negative externalities.

GOVERNMENT FAILURE: POLICIES, PROTECTIONS, FUNDING

Beyond interventions that subsidise or smooth pricing, governments have historically also intervened in agricultural markets through controls on land use, production quotas, marketing quotas, output taxation, and border measures that directly tax, subsidise, or restrict international trade.³⁰

By design, these policies were established for the protection of conventional agriculture and artificially low consumer food prices. Over time, additional market infrastructure has built up around these policies. Notably, existing market infrastructure entrenches the status quo bias toward conventional agriculture because of mutually reinforcing dependencies that create structural lock-in.

For example, in the U.S., commodity price data, yield data, futures markets, and crop insurance form a self-reinforcing network that disincentivises sustainable practices. The Department of Agriculture sponsors technical assistance and houses research agencies with an annual budget of USD \$4 billion.³¹ Yield-based data collection reinforces yield-based crop insurance and yield-based subsidies in a positive feedback loop, entrenching safety nets that emphasise short-run over long-run and yield over resilience. The U.S. Farm Credit system is the nation's oldest government-sponsored enterprise and dominant agricultural lender. Annual operating loans are collateralised by federally subsidised crop insurance, which has primarily been designed around commodity row crops, discouraging diversification and other practices that improve resilience and reduce risk.

India serves as another example. Research estimates that for every USD \$1 invested in sustainable

agriculture, USD \$100 is provided in inorganic fertiliser subsidies by the central government of India. The central government currently provides USD \$18 billion in inorganic subsidies, dwarfing the USD \$170 million in subsidies for organic inputs.³² While the well-intended subsidy scheme was initiated to increase food production, asymmetry in the nationally controlled pricing and subsidy structure has resulted in decades of imbalanced application ratios of inorganic nitrogen ("N"), phosphorus ("P"), and potash ("K"). Lopsided NPK application suboptimal for local soil nutritional composition and crop demands has caused extensive soil degradation and water pollution throughout the country.³³

Despite adopting practices that can improve soil health and mitigate weather-related losses, regenerative producers are not offered the same degree of government support as their conventional peers. Without parity in government policies, protections, and funding for regenerative vs. conventional production systems, producers interested in transitioning to regenerative are effectively being asked to forego established safety nets – which is a risky proposition for anyone. Taken together, mutually reinforcing policy and financial infrastructure entrench the status quo bias toward conventional agriculture.

DATA AND EVIDENCE DEFICIT

Most agricultural financing is through formal credit lending from agricultural or commercial banks. Underwriting criteria for formal credit lending generally considers some combination of producer credit history, repayment capacity, collateral, and other conditions, including proposed use of funds. Often, use of funds is restricted to what has worked historically at the farm level, what current farm models rely on, and which agronomic inputs and operational practices have been supported by years of historic data relevant to the local jurisdiction.

Regenerative approaches are gaining traction, but the long-run benefits for a regenerative transition are not quantitatively defined enough across a range of contexts to compensate for the short-run costs

of transition and potential loss of income during the transition period. We characterise loss of income during the transition period as "potential loss of income" because this is not a universal attribute of transition. Consistent with existing studies on transitional farmer economics, interviewees note loss of income during the transition period for large, industrialised, and chemically dependent systems of conventional agriculture.³⁴ However, they also shared many examples of positive profitability uplift throughout the transition period in smallholder contexts when transition is supported by strong localised agro-economic and technical knowledge.

Conventional agriculture has a widely understood and accepted evidence base on risk-adjusted rate of return – even if narrowly focused on yield – as the result of government, academia, and industry research amassed over decades. Datasets that include regenerative practices are still new, and these datasets usually do not yet satisfy the necessary threshold for agricultural lenders to support deviation from the existing paradigm. Here, a perverse cycle emerges: a lack of data on performance in regenerative systems impedes lending, and the lack of finance for regenerative transition limits on-farm implementation that can be used to gather data on costs and performance.

There are two important nuances to highlight in this discussion on the comparative availability of data for conventional vs. regenerative systems. Firstly, one often overlooked element of the widely accepted evidence base for conventional agriculture is that it is historic. It looks backward on the inputs to and results of conventional practices during a period of climate stability, making the data less useful for our current era of climate instability. In other words, an over-reliance on historic data that is not as applicable for the context today or moving forward masks systemic risk in conventional agriculture. Secondly, while datasets with regenerative practices are comparatively sparse, there is a small and growing evidence base that shows positive proof points. Early movers in financing regenerative agriculture advocate for action based on directional data because there isn't the luxury of waiting to act on climate change.

24. Climate Policy Initiative (2023). "Landscape of Climate Finance for Agrifood Systems."

25. The World Bank (2023). "Detox Development: Repurposing Environmentally Harmful Subsidies."

26. Hussain (2020). "The True Costs of Food Systems and Why They Matter", interview with UNEP.

27. FAO (2023). "The State of Food and Agriculture 2023: Revealing the true cost of food to transform agrifood systems."

28. FAO (2022). "Gross Domestic Product and Agriculture Value Added 2012–2021", FAO Analytical Brief.

29. The Rockefeller Foundation (2021). "True Cost of Food: Measuring What Matters to Transform the U.S. Food System."

30. Rausser (2013). "Distortions to Global Agricultural and Food Markets", Agricultural and Resource Economics Update, University of California.

31. USDA (2023). "FY 2023 Budget Summary", U.S. Department of Agriculture.

32. Paul et al (2023). "Sustainability Transition for Indian Agriculture." Scientific Reports.

33. Ansari and Sheereen (2022). "An Analysis of Fertiliser Subsidies in India." Saudi Journal of Economics and Finance.

34. OP2B, WBCSD, BCG (2023). "Cultivating Farmer Prosperity: Investing in Regenerative Agriculture."

(Micro) Complexities of Farm-Level Implementation

TRANSITION FINANCE AVAILABILITY

Farming presents innate income and liquidity insecurities that are top of mind for producers. In this context, the limited availability of transition finance from more traditional agricultural financing sources, which may not have underwriting processes to accommodate regenerative production, puts added burden on farmers to construct an appropriate capital stack that makes transition a compelling business decision. The magnitude of the current financing gap – with annual funding flows today representing approximately one-tenth of estimated need – underscores the difficulty of finding transition finance. The limited amount of affordable, patient capital needed to accommodate potential additional expenses, income dips, and knowledge transfer during the transition period exacerbates slow adoption uptake.

Involvement from Food Corporates and Retailers

Because regenerative adoption by producers can reduce supply chain emissions and enhance supply chain climate resiliency for food corporates and retailers, it is reasonable to assume that food corporates and retailers have vested interests in expanding the uptake of regenerative practices. Indeed, in the last 5 years, there has been a surge of food corporates and retailers making climate commitments and advocating for regenerative agriculture. In just the period between 2022 – 2023, there was a 65% increase in the number of food corporates making some kind of climate commitment through the Science Based Targets initiative ("SBTi").³⁵ Recent analysis of 79 global food and retail giants, worth over USD \$3 trillion and representing almost a third of the sector, shows that nearly two-thirds of companies mention regenerative agriculture initiatives in their disclosures.³⁶ However, fewer than 10% of these corporates have allocated financial

budgets to support transition finance needs and incentivise uptake of regenerative practices among producers in their supply chain.³⁷

To date, corporate commitments are significantly ahead of resource mobilisation for implementation. Understandably, in developed countries, food corporates traditionally do not fund third-party suppliers except in cases of vertical integration. In emerging markets, food corporates may play a more active role in funding third-party suppliers due to greater formal credit access challenges for smallholders.

As explored in Section 3 of this report, there are nascent financing structures that leverage capital and capacity from food corporates to unlock affordable transition capital for farmers. It is an encouraging sign that food corporates increasingly participate in conversations with the finance community about how to increase transition finance availability. In these conversations, however, food corporates stress that there needs to be cost and risk sharing across a range of stakeholders (e.g., banks, insurance, philanthropy, development finance, asset managers, government) because transition finance cannot be their responsibility alone, if at all.³⁸

FARM-LEVEL HETEROGENEITY

The explosion of definition and practice frameworks for regenerative agriculture demonstrates the difficulty of balancing standardised guidelines (necessary for investors and banks to underwrite practices) with farm-level heterogeneity in practices and outcomes. Practitioners continue to debate whether practice- or outcome-based frameworks should be used as the basis for financing, with early movers advocating for use of practice-based frameworks in the near-term to accelerate practice uptake for medium-term outcomes data collection.

Heterogeneity in implementation creates ambiguity for financiers attempting to avoid accusations of greenwashing. Interviewees highlight the lack of investment-specific taxonomies as an obstacle to unlocking capital. This extends to investments targeting climate and nature objectives, given the prevalence of market-accepted guidance in other sectors. Guidance with standardised comparability of regenerative practices and outcomes that can be incorporated into screening and underwriting processes is key but may be difficult to establish.

Beyond implications for financing, place-based heterogeneity also affects implementation considerations for producers, who need to adopt practices relevant to their local context. The introduction of standardised market frameworks needs to be accompanied by producer-facing guidance that allows producers to reach for regenerative outcomes based on individualised baselines.

The role of technical assistance and knowledge transfer – coupled with patient transition capital deployed at the discretion of farmers – is foundational to successful regenerative transition. This is particularly true in the context of family and smallholder farm enterprises, which may have limited bandwidth to identify and implement optimal context-specific practices without external support. The crucial role of financing mechanisms that combine transition capital and technical assistance is demonstrated in several structures detailed in Section 3 of this report.

FINANCIAL SECTOR CONSTRAINTS

Lastly, existing financial sector capacity and design constraints are detrimental to the adoption of regenerative practices.

Narrow Focus and Mismatched Time Horizons

Interviewees consistently identify the rigid yield focus and short-term time horizons for agricultural production as being one of the deepest impediments to financing for regenerative agriculture. Several banks and insurers interviewed attribute the reliance on yield for underwriting to limited flexibility under their fiduciary obligations, particularly in the face of nascent local evidence on the dynamics of regenerative approaches.

The short time horizons and inflexible repayment schedules of most agricultural financing sources are fundamentally in tension with the intrinsic feature of regenerative transition: gradual realisation of environmental benefits aligned with the ecological timing of nature rather than the anthropocentric timing of finance. Farmland fund managers expressed that the typical 8- to 12-year time horizon characterising most funds is ill-suited to regenerative uptake due to upfront costs and initial yield depression that adversely affect internal rate of return, especially in the early years of a fund. Similarly, farm operating loans, often provided on an annual basis, currently have limited provisions for repayment deferral or discount during the period of transition. Progressive farmers contend with strict deadlines and requirements of government supported farm finance programs, which are often incompatible with the specific practices and harvest periods that regenerative approaches require.



A farmer cannot afford to miss qualifying for the national farm finance program. Therefore, he'll pull out the cover crop early and plant the cash crop by the cut-off date to qualify for finance, but the regenerative agriculture program is deemed null and void because it was not completed."

- INTERVIEWEE

35. Marston (2023). "New Climate Commitments From Food & Agriculture Corporates Have Ballooned." AgFunderNews.

36. FAIRR (2023). "The Four Labours of Regenerative Agriculture: Paving the Way Towards Meaningful Commitments."

37. Ibid.

38. Sustainable Markets Initiative (2023). "Scaling Regenerative Farming: Levers for Implementation."



Similar to the on-farm requirements for technical assistance and knowledge transfer, many in the financial sector also require additional education and support to better understand the benefits and risks of regenerative agriculture. While some financiers are well-informed, there are many more who remain unaware of what regenerative transition entails, increasing perceptions of risk and a sense of uncertainty.

Progressive funds and banking products discussed in Section 3 are attempting to broaden farm performance metrics and support the longer time horizons necessary to realise benefits from regenerative adoption. Such endeavours are contributing valuable lessons to a knowledge set from which additional financiers can build.

Private Funding in Food Systems Skews Midstream and Downstream

Agricultural producers receive a small amount of the total private sector funding provided to the global food system. Of total private funding in the food system, upstream producers and traders receive 17%, in contrast to the 60% received by midstream manufacturers / distributors and the 16% received by downstream retailers / food service.³⁹ Justifiably,

there are higher capital requirements of value-added processing and manufacturing steps in food production. But in part, midstream and downstream segments of the food system also benefit from structural advantages over upstream producers. These structural advantages include access to equity markets (which constitutes the largest portion of private sector funding), diversification of procurement, stability in revenues, and lower direct exposure to climate risks. These advantages create midstream and downstream financing opportunities that offer investors a range of choices for risk-return profiles.

In comparison, upstream agricultural production is often situated in emerging markets with higher perceived macro and social risks, has ticket sizes too small for many equity investors, and includes more acute exposure to volatility and seasonal risks than middle and downstream segments of the food system.

Incapacity in Emerging Markets

In emerging market contexts, interviewees highlight lack of availability and access to formal credit from local institutions – whether large agricultural lenders or microfinance institutions – as chronic barriers for smallholders and family farm enterprises.

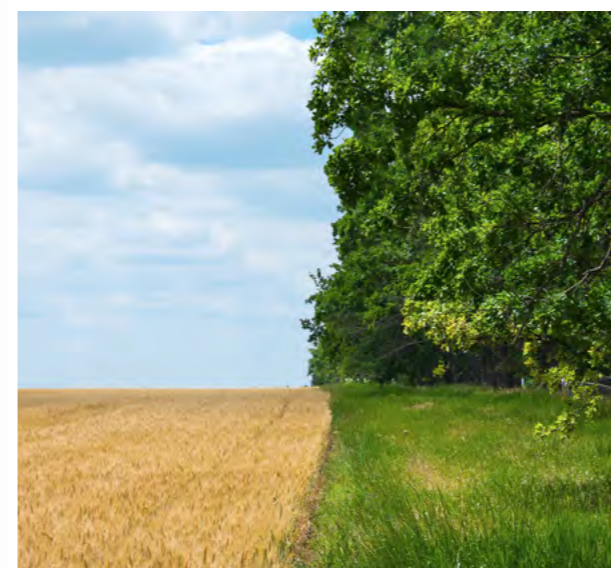
39. Planet Tracker (2023). "Financial Markets Roadmap for Transforming the Global Food System."

Across many emerging markets, there is still a funding gap in agriculture. Studies estimate that formal finance channels (e.g., local banks, non-bank financial institutions, state-owned development banks, social impact lenders) satisfy approximately 16% of financing demand in sub-Saharan African and 55% of financing demand in South Asia.⁴⁰ Formal lending is most commonly directed to more established agricultural small- and medium-sized enterprises ("SMEs"), such as local aggregators and processors (e.g., maize or rice millers), leaving out smallholder producers. Informal finance offers partial but incomplete coverage of the remaining funding gap in emerging markets. In the absence of formal credit, many producers rely on family, friends, and unregulated local lenders to finance their working capital needs.⁴¹

Taken together, persistently high interest rates, collateral requirements often in excess of asset holdings, high transaction and monitoring costs, and low supply of local currency financing are factors that collectively reduce financial access for smallholders and family farm enterprises. Those working to accelerate regenerative adoption in smallholder contexts report instances when small pools of

financing for agricultural production were entirely depleted due to heavy exposure to a few crops that fell behind anticipated timelines, leaving little finance available for the planting and harvest of other crops.

In addition to credit barriers, smallholders face disadvantages in access to production inputs and in access to markets for agricultural goods. The production of higher value crops typically requires improved access to quality inputs, technical knowledge, and market access to offtake value chains. Aggregation models in emerging markets, such as member-controlled producer organisations and cooperatives, enable improved smallholder commercialisation through enhancing input and market access. Individual smallholders, however, lose the ability to affect change without cooperative support. While aggregation in response to changing demand and improved economic opportunities is a key priority for newer smallholder aggregation models, more established aggregation models may not have the willingness, resources, or coordination necessary to shift away from the status quo bias of conventional production toward regenerative production.



Despite the environmental footprint of the global food system being heaviest for upstream producers, the majority of private sector funding is situated midstream and downstream, creating an urgent need to unlock pools of capital focused on transitioning upstream production.

40. ISF Advisors (2022). "The State of the Agri-SME Sector – Bridging the Finance Gap."

41. Mungiru and Njeru (2015). "Effects of Informal Finance on the Performance of Small and Medium Enterprises in Kiambu County". International Journal of Scientific and Research Publications.

2. Market Maturity and Impact Leverage

The financing of regenerative agriculture is nascent across most geographies. Growth in the market for regenerative agriculture financing requires continued development of the underlying commercial model, establishment of supporting markets, and entry of large institutional capital. Section 2 of this report assesses the current maturity of the market, regenerative agriculture's development pathway to mainstream financeability, and geographic complexities that interact with the pathway.

OVERVIEW OF FINANCE TOOLKIT

Prior reports cover the broad toolkit of financing instruments available for regenerative agriculture. In 2022, Field to Market, a nonprofit organisation comprising 150 members across the food and agriculture value chain, published a comprehensive overview of financing instruments that address key barriers for the adoption of regenerative agriculture.⁴² While their work was focused on financing instruments for U.S. commodity row crops, their work remains highly relevant to current market conditions. The table on the next page represents the subset of their findings that has greatest applicability in other jurisdictions.

Variations of some of these instruments appear in Section 3, with the market maturity, scale, and financing destination all affecting the transition-specific deployment of each instrument.

Notably, the overall development of financing for regeneration requires proper sequencing and combination of these instruments, which depends on context-specific market maturity. For financiers, matching the right sequence and combination of financing instruments to capital deployment opportunities based on market maturity stage is key to achieving targeted risk-return profiles for current financing opportunities.

A NOTE ON CONCESSIONAL CAPITAL

The key role of concessional capital is a consistent feature of early opportunities along the market maturity curve. Concessional capital, as defined by the World Bank, is "below market rate finance provided by major financial institutions, such as development banks and multilateral funds, to developing countries to accelerate development objectives."⁴³ Our conception of concessional capital is broader, based on its specific application in regenerative agriculture finance, including any finance that deviates from market terms in price, tenor, covenants, repayment flexibility, and concurrent access to grant capital. As detailed in the remainder of the report, the provision of concessional capital is primarily used to incentivise and support the transition to regenerative practices by allowing farmers to access more favourable terms and/or used to mobilise additional commercial capital resources by reducing risk exposure faced by commercial investors.

42. Field to Market (2022). "Financial innovations to accelerate sustainable agriculture: Blueprints for the value chain."

43. The World Bank (2021). "What You Need to Know About Concessional Finance for Climate Action."

FINANCIAL INCENTIVE	DESCRIPTION
Operating Loans	Agricultural lenders can create new products or adapt existing loan products to align with financial needs of farmers adopting sustainable practices. This could include lower interest rates, longer terms, more flexible repayment arrangements, or other adjustments. The benefit of this approach is that it generally reaches farmers through existing trusted financial partners.
Blended Finance	Use of catalytic capital from public or philanthropic sources to increase private sector investment in sustainable development. Blended finance offers a structuring approach that enables organizations with different objectives to invest alongside each other while achieving individual objectives, whether that is generating a financial return, driving social impact, improving environmental outcomes, or all the above.
Sustainable Flex Lease	For tenant occupied farmland, multi-year farmland flex leases have specifications requiring the use of regenerative soil health building management practices such as cover crops, conservation tillage, and nutrient management, while also offering shared risk and shared reward on farm income distributed equitably between tenant and landowner.
Supply Chain Finance (Payables Finance, Trade Finance)	Leverages corporations' resources and relationships with financial institutions to enable their suppliers to access better financing. Sustainable supply chain finance mechanisms offer more favourable payment terms to suppliers who can demonstrate ability to meet or exceed specific sustainability benchmarks. Can enable farmers to receive working capital to implement sustainability practices.
Sustainable Bonds and Loans	Sustainable or green bonds, loans, and linked bonds are financial instruments for corporations to raise funds to pay for projects that support their sustainability goals or allow them to access favourable financial terms if they meet sustainability benchmarks. The benefit of this approach is the ability to use traditional corporate finance approaches to directly support sustainability goals.
Sustainable Reference Price	Developed to reflect the true costs of a sustainable production system, a Sustainable Reference Price establishes a benchmark cost to cover either as a floor or premium to enhance farmers' ability to cover short-term costs and risks. By integrating a Sustainable Reference Price into procurement agreements, farmers can be supported in sharing in the risk and reward of adopting conservation practices.
Crop Warranty (Sustainability-Linked)	Agronomic plan that prescribes conservation practices, with products and services an agricultural retailer provides and advises the farmer on. Plans are backed by a warranty. The warranty payment is a fixed per hectare payment triggered when yields fall below historical production. Warranty costs can be shared between the retailer, farmer, and third parties such as conservation NGOs or food and beverage companies.
Crop Insurance Subsidy (Sustainability-Linked)	Per hectare subsidy payment from the private sector to offset a portion of the cost of a crop insurance "buy-up" that farmers would purchase as a hedge against potential yield loss associated with transition to sustainable practices. The crop insurance buy-up concept provides premium support for higher crop insurance coverage, thereby providing increased protection against yield loss through insurance and de-risking perceived yield loss for farmers.
Municipal / Landscape Ecosystem Service Partnerships	Municipalities, landscapes, and/or businesses like manufacturing facilities, that are regulated water dischargers gain approval from local regulatory agencies to invest in upstream on-farm interventions that contribute to regeneration or conservation of key ecosystem services, including water, biodiversity, and soil condition. In this model, farmers are compensated for adopting practices and interventions that contribute to the ecosystem service conservation and restoration, allowing for nature-positive uplift on farms that otherwise would be out of scope for traditional public land investment programs.
Revolving Ecosystem Outcomes-Based Private Fund	Structured as an investment vehicle, the revolving fund provides financial incentives to farmers to transition to on-farm conservation practices that yield positive ecosystem outcomes. The fund generates revenue through the sale of verified outcomes (water quality, GHG mitigation) to beneficiaries such as municipalities, government entities, and supply chain companies. Farmers are partially paid upfront to offset practice adoption costs and receive remaining payment amounts based on outcomes achieved.

Source: Field to Market (2022). "Financial Innovations to Accelerate Sustainable Agriculture: Blueprints for the Value Chain".

Market Maturity Curve

The bankability gap for an asset is bridged once the project-level and market-wide characteristics are aligned with the risk, return, and procedural requirements of investors. Sustainable finance interviewees note that an asset becomes bankable once there is significant supply of bankable projects and sufficient development of the market to support large volumes of finance (i.e., reaches a threshold

of market liquidity). Even with an ample pipeline of bankable projects, assets require scale and significant development of supporting infrastructure to increase market liquidity. What enables asset bankability? Interviewed experts in project and farmland financing suggest the following key drivers of bankability at a project level and market level:

Project-Level Bankability

Commercially Viable Revenue Stacks: Projects can cover financial obligations based on underlying cash flows generated by the project.

Counterparty Risk: The credit risk of the counterparty receiving finance is below the required threshold to ensure risk-adjusted returns are in line with a minimum hurdle rate or can be sufficiently mitigated through de-risking mechanisms (e.g., insurance, guarantees, or offtake agreements).

Project Quality: Robust forecasts and comprehensive, standardised loan or other financial documentation with enforceable legal rights.

Project Preparation Capacity: Building institutional capacity to support project preparation, including coordination of agricultural value chains, alignment of projects with regulatory and market standards required to unlock institutional capital, and grant funding available for necessary non-return generating activities (e.g., producer technical assistance).

Market-Level Development

Overcoming Evidence Risk: Clear, well-articulated, and broadly accepted science that attributes commercial, localised farm-level outcomes to specific regenerative practices.

Scale: Sufficient liquidity, regulation, market size, and presence of supporting markets, including futures and insurance markets.

Portfolio Diversification: Reducing aggregate risk through diversification improves the risk-adjusted rate of return to meet hurdle rates set by some investors. This requires a pipeline of investment-ready regenerative agriculture projects with low correlation of risk.

Replicability: Regenerative agriculture investment and financial structures that have been successfully executed are repeatable and scalable.



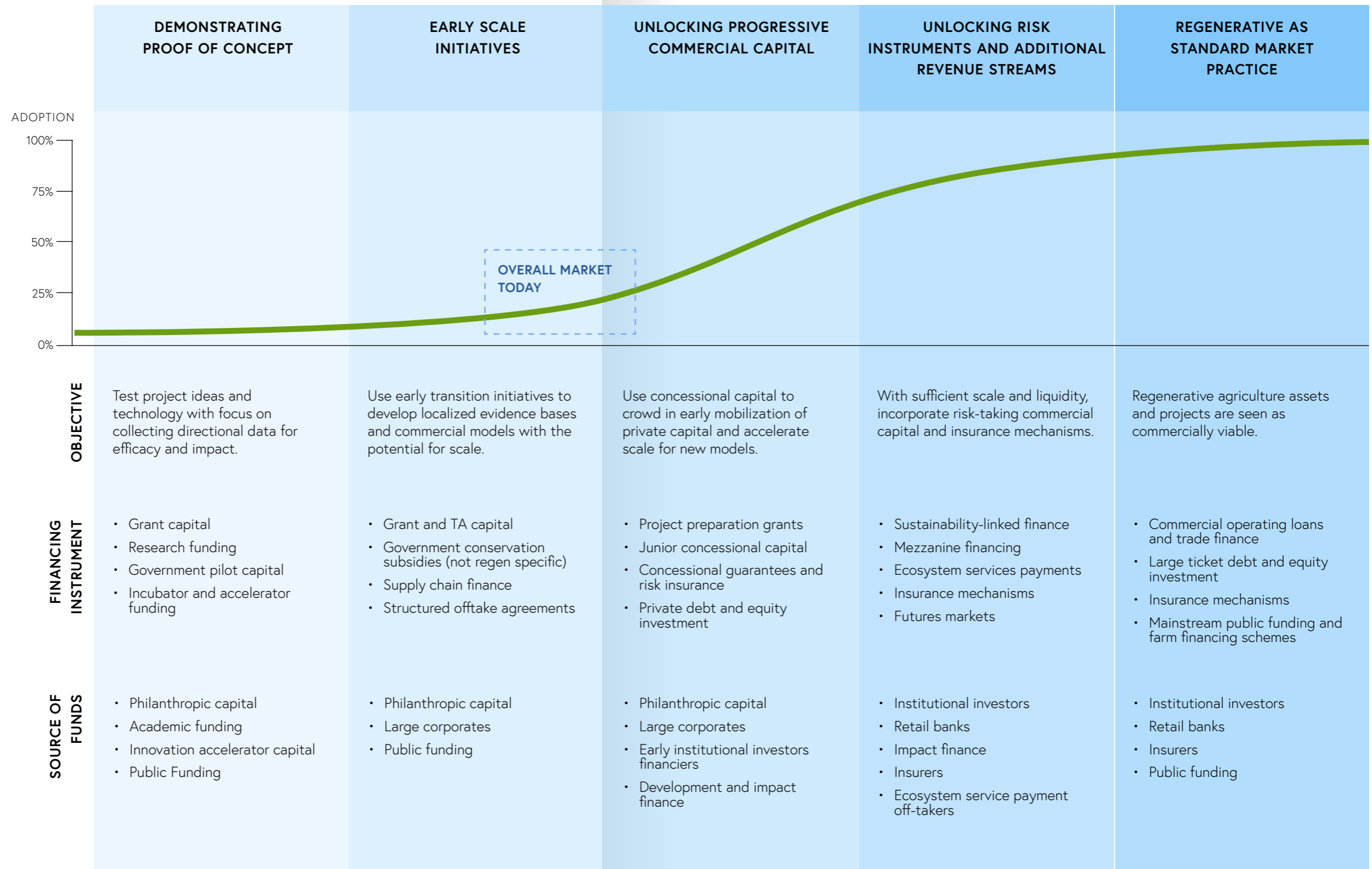
These key drivers of project-level and market-level bankability inform a development pathway for regenerative agriculture financing opportunities over time. Like the evolution of other sustainable investing thematic areas, financing for regenerative

agriculture will follow a market maturity curve over time with phases that have unique objectives, and consequently, different financing instruments and suitable source of funds. (Please see Market Maturity Curve diagram on next page).

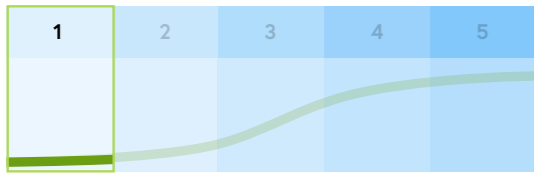
Market Maturity Curve

Interviews with a diverse range of practitioners currently involved in financing regenerative agriculture suggest that overall, the market today is between Phase 2 and Phase 3.

The market maturity curve presented here is an organising framework that allows practitioners to self-identify where they should play based on the relative position of their geographic focus. Naturally, there will be positional variation depending on attributes of the specific geography. The remainder of Section 2 describes the general characteristics of each phase as well as geography-specific attributes that can help accelerate or detract from a geography's relative market maturity position.



OVERALL MARKET TODAY



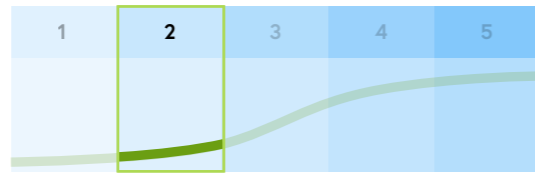
PHASE 1: DEMONSTRATING PROOF OF CONCEPT

The local specificity of regenerative practices requires incubation efforts and early-stage research and development funding to investigate the potential of impact performance, production capacity, and promise in the underlying commercial model. In this context, proof of concept pilots should be designed to test effective combinations of practices, production performance, ecological impact, project timelines, and estimated economic costs and benefits. These pilots should be financed by risk-taking catalytic capital – including philanthropic, government, and research capital – seeking to contribute to the forefront of knowledge about what is possible in regenerative production.

Basic project-level experimentation is a prerequisite to initiatives and models that investigate the implementation of the model at scale. Impact investors need to see potential prior to investing capital to catalyse market development. In most geographies, regenerative approaches have progressed beyond this stage by demonstrating impact, potential commercial upside, and models for implementation that can be tested at scale.

In India, Andhra Pradesh's initial Zero Budget Natural Farming pilot program, implemented by state-run research institute Rythu Sadhikara Samstha ("RySS"), was initially run as a pilot program with 40,000 smallholders in 2016. Catalysed by successful execution of the pilot, the number of participating farmers subsequently increased ten-fold in four years.⁴⁴ The program is an exemplar for early, replicable proof of concept pilots at an ambitious scale, as is evident in the graduation of the program to the Andhra Pradesh Community Natural Farming Initiative ("APCNF"). As of March 2023, the APCNF involved 900,000 farmers covering 400,000 hectares for transformation to agroecological practices. The APCNF program is present in 28% of the villages in the State and is recognized as the largest such program in India.

44. RySS (2019). "Andhra Pradesh Zero-Budget Natural Farming (AP ZBNF) A Systemwide Transformational Programme".



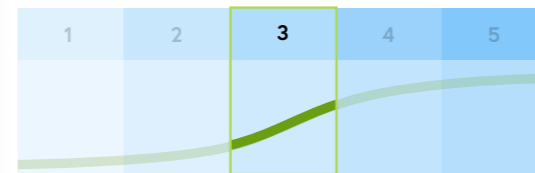
PHASE 2: EARLY SCALE INITIATIVES

After sufficient pilot indications of commercial and impact potential, it then becomes important to investigate implementation complexities and collect specific data points to develop models for scale.

Phase 2 focuses on deploying deeper pools of concessional capital to support wider initiatives with willing farmers, agribusinesses, and Consumer Packaged Goods companies ("CPGs") to pin down a viable model for transition. This phase allows for early adopters to navigate the complexities of implementation and develop additional learnings along the way. Early scale initiatives rely on pools of progressive grant capital, technical assistance facilities, supply chain finance, and structured offtake agreements to supply affordable transition finance, provide targeted technical support, and build the early infrastructure to support commercial viability of regenerative products.

Projects financed in this phase must have clear visibility of the path to commercial viability, with line-of-sight toward reduced reliance on grant and concessional capital over time. Early scale initiatives that do not focus on the ability of farms to generate cash flows sufficient to service debt and equity provided on concessional terms do very little to progress the scalability of regenerative projects. Conversations with catalytic and commercial investors active in Phase 2 highlight the importance of embedding project requirements that can meet institutional grade investing requirements of future phases. These requirements include impact measurement, alignment with international standards, alignment with the key drivers of project-level bankability previously described, and partnerships with intermediary organisations that reduce the cost of disbursing finance to farmers.

Most geographies and agricultural contexts surveyed for this report are currently in Phase 2. These geographies are seeing many early scale initiatives aiming to support farmers with transition finance and establish locally grounded regenerative agriculture models.



PHASE 3: UNLOCKING COMMERCIAL CAPITAL

The Responsible Commodities Fund (RCF), detailed in Section 3, is a clear example of an effective Phase 3 initiative demonstrating commercial viability, best-practice project structures, and alignment with institutional requirements. The first stage of the project (strong example of a Phase 2 early scale initiative) established a viable operating model for deforestation-free soy production through provision of low-interest loans backed by concessional capital from UK retailers. The fund has expanded since, crowding in impact and commercial investment, to create an exemplar Phase 3 facility. The concessional capital from UK retailers parallels structured offtake agreements from CPGs, providing this project with the price and cash flow certainty required for scale and mobilisation of private investment.

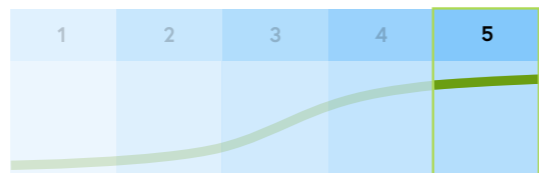
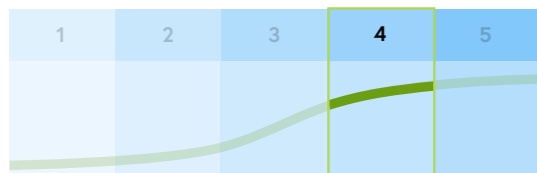
The RCF's expansion is an exemplar of progress up the maturity curve: strong early initiatives catalyse impact and concessional capital and draw strong interest from forward-looking commercial investors able to identify the long-run value embedded in regenerative approaches.

In Phase 3, deploying concessional and impact capital to realise scale is key. Pools of development finance, corporate supply chain finance, and philanthropic capital can combine to unlock project preparation grants, junior equity and debt capital, and concessional guarantees to de-risk private investment. Phase 3 projects scale replicable initiatives and leverage learnings across crops and contexts. Importantly, Phase 3 initiatives prioritise building out diverse financing opportunities for equity and debt investors. Cutting edge structures discussed in Section 3 create a range of future opportunities for commercial investors, insurers, and corporates targeting different risk-return profiles and segments of the regenerative value chain.

As these projects and initiatives begin to reach scale, supporting market actors become increasingly engaged. There is a convergence to emerging market taxonomies published by expert organisations, which can be used to provide guardrails for private

investment. Similarly, oversight institutions like credit rating agencies begin to holistically evaluate the idiosyncratic risks attached to regenerative agriculture, as has been observed with other climate and ESG aligned assets.

In this phase, divergent views exist on the incorporation of environmental markets and ecosystem service payments. While retail banks and impact investors express reservations about the cost and feasibility of incorporating environmental revenue streams, progressive natural capital and farmland managers aim to monetise carbon and biodiversity credit payments for regenerative farmland assets in Phase 3.



PHASE 4: UNLOCKING RISK MITIGATION INSTRUMENTS AND ADDITIONAL REVENUE STREAMS

As bankable, high-impact projects increase, sufficient market scale should facilitate the deployment of large pools of sustainability-linked finance, risk mitigation products, and commercial capital targeting higher risk-return profiles.

At this point in market development, there should be an increase in the number of operating instruments providing agricultural credit to facilitate the transition and ongoing adoption of regenerative practices. The expansion in operating finance availability is based on rising confidence of the cash flow generation and long-run production capacities of regenerative farms. Of note, interviewees predict it is unlikely that regenerative-specific operating products emerge; rather, it is more likely that existing operating instruments evolve to fit the needs of regenerative agriculture.

The expansion in operating finance is typically buttressed by the development of supporting markets, including the availability of longer-term insurance policies that are built to insulate regenerative production, as well as risk mitigating futures markets that enable investor certainty and price stability.

Beyond operating instruments, the expansion of the market should see an increase in sustainability-linked finance and capital tolerating higher risk for higher return. Today, only a small fraction of climate capital is directed toward the agricultural sector, reflecting market immaturity.⁴⁵ As the regenerative agriculture market matures, private investors should be substantially more willing to deploy climate finance for regenerative projects. In terms of higher return seeking private capital, interviewees specifically highlight the application of instruments such as mezzanine finance, blending equity and debt profiles through risk exposure reduction (e.g., by establishing rights to recover losses in instances of default).

In general, in Phase 4, the risk-adjusted rate of return for regenerative projects and products is perceived as sufficiently low to attract significant institutional interest.

PHASE 5: REGENERATIVE AS STANDARD MARKET PRACTICE

The end point of market development is when "regenerative agriculture" is seen by deployers of capital and farmers alike as just "agriculture." In Phase 5, investments in regenerative agriculture are standard market practice, and such investments generate commercially viable returns for a broad array of investors targeting the full spectrum of risk-return profiles. Commercial operating loans, debt and equity investments at all ticket sizes, standard premium insurance policies, and commercial guarantee mechanisms are all prevalent instruments and readily available in the market. Regenerative projects require little to no concessional capital based on fundamentals. Projects and products are established in equity indices and accessible through public markets to retail investors. Financial institutions price risks from conventional agricultural practices, as is currently being seen in emerging regulations and risk models for other climate and ESG related issues.

In terms of government support, regenerative practices are well-established within national agricultural credit schemes and receive public funding support (e.g., subsidies, tax incentives), combined with sunseting existing programs that support unsustainable production practices at the farm level.

With sufficient acceleration across geographies in the preceding phases, characteristics of the final phase should be observed, especially in jurisdictions that support progress in the market with strong regulation, taxonomies, and public finance initiatives.

45. Climate Policy Initiative (2023). "Landscape of Climate Finance for Agrifood Systems."





Geographical Maturity

WHAT ARE THE CHARACTERISTICS OF THE DIFFERENT STAGES OF THE MARKET MATURITY CURVE BY GEOGRAPHY?

- **Institutional Capacity**

In general, institutional capacity and public finance dedicated to agricultural finance varies significantly. Previous reports have described agricultural finance in emerging markets as a "policy orphan", with responsibility falling through the cracks due to policy portfolios with divergent interests, lack of coordination, and limited technical knowledge.⁴⁶ Countries with fewer constraints on fiscal policy expenditures and government agencies dedicated to agricultural finance have more capacity to support early projects and scaling initiatives. By contrast, geographies more likely to be in earlier stages of market maturity have tight budgetary constraints, often exacerbated by competing priorities, and stagnant institutional development for agricultural finance.

- **Financial Development**

Prior reports describe structural issues with financial sector regulations, namely, the International Financial Reporting Standards ("IFRS") requirements.⁴⁷ International reporting and bank regulations structurally disincentivise bank lending to agricultural production, differences in Capital Adequacy Ratios ("CAR") across countries drastically reduce availability of capital, and loan classification criteria that penalises repayment delay disproportionately affects agricultural loans that otherwise would not be classified as non-performing.⁴⁸ In regards to financing regenerative agriculture specifically, local financial institutions in geographies with lower levels of financial development often have limited expertise, data, and tools to support the provision of green lending products.⁴⁹ Interviewees also highlight the inaccessible collateral requirements imposed by constrained financial institutions in emerging markets as a key barrier to adoption, especially in low-income and smallholder contexts. The

46. GPFI & IFC (2011). "Scaling Up Access to Finance for Agricultural SMEs: Policy review and Recommendations."

47. Under IFRS 9, banks are obligated to predict and report on expected losses associated with loans, in contrast with the previous regime which required only reporting of realised losses, creating incentives to reduce lending to agriculture, which in expectation, is higher risk.

48. Aceli Africa (2022). "The Effect of Central Bank Policies on Lending to Agricultural SMEs in East Africa."

49. EIB (2022). "Finance in Africa: Navigating the financial landscape in turbulent times."

presence of insurance markets coupled with agricultural credit is also crucial for regenerative adoption. This is hindered by the prevalence of missing insurance markets, particularly in rural areas, due to acute information asymmetries and increased risks, with climate as a threat multiplier.⁵⁰

- **Level of Production Consolidation**

Settings with substantial consolidation of agricultural production (e.g., Brazil) require coordination among fewer parties to gain equivalent traction. Transaction costs of transition to regenerative practices are also materially lower when investors can screen fewer counterparties with standardised documentation. By contrast, in smallholder contexts, projects with scale often require interacting with many counterparties and create prohibitive transaction costs. Interviewees persistently note the exorbitant costs of providing finance at the smallholder level beyond country risk premium factors. For example, one transaction required the executing bank to conduct costly due diligence on every microfinance institution and farmer intermediary involved in a large organic smallholder production project with thousands of farmers. Importantly, production consolidation can trigger deleterious social effects for communities if not thoughtfully initiated. Landscape and farmer-cooperative led approaches, which are examined in Section 3, provide mechanisms to overcome smallholder financing barriers, while allowing for financing to balance a holistic set of social and environmental outcomes that have connectivity across smallholder farms.

- **Land Ownership and Tenure Systems**

The absence of secure land tenure rights, which often serve as collateral or recourse for loans, deters investor interest. This is a particular problem in some geographies. For example, over 90% of rural land in Africa is undocumented, making rural land highly vulnerable to land grabbing and expropriation with poor or no compensation.⁵¹ Lack of documentation and formal dispute processes have been significant drivers of underinvestment in farmland, especially in Asia and Africa. Complex land ownership structures act as barriers to establishing large scale investment

structures that rely on smallholder participation and can hamper willingness of smallholders to participate in programs that are perceived to place tenure rights at risk.

- **Macro Risks**

Conventional macro country risk premium factors that affect investment decisions in other contexts also affect the availability of finance and the market development for regenerative agriculture. Currency, policy and political stability, conflict, information, legal systems, sovereign credit, interest rate, inflation and hold-up risks all affect the development of projects and market infrastructure required for the transition to regenerative agriculture.

Geographies in which these fundamentals are stronger have the capacity to transition faster up the market maturity curve and require less localised evidence to mobilise commercial capital. Conversely, settings in which these characteristics are weaker have a higher evidence threshold to catalyse commercial capital at scale for regenerative practices. In the immediate term, these geographies require securing and deploying as much concessional capital as possible to demonstrate high-potential regenerative models.

INSTITUTIONAL CONSTRAINTS ACROSS GEOGRAPHIES

The characteristics outlined above are largely predictors of a geography's progress toward financing regenerative agriculture. However, additional institutional and economic features have evolved independently, which can constrain the transition to regenerative. Deliberate government support for existing agricultural systems is a major barrier to accelerating regenerative in countries with otherwise optimal characteristics for the transition.

Policies that seek to safeguard domestic consumption and food security, like export and commodity use restrictions, can inadvertently hurt the capacity of regenerative enterprises. For example, India places export restrictions on core crops to ensure that commodities are directed to

50. Grantham Institute on Climate Change and the Environment (2020). "Insurance and financial services across developing countries: an empirical study of coverage and demand."

51. Agence Française de Développement & the World Bank (2013). "Securing Africa's Land for Shared Prosperity: A Program to Scale Up Reforms and Investments."

the subsidised domestic market rather than higher priced global markets.⁵² This adversely affects domestic farmers who may otherwise secure offtake from international buyers and receive price premiums for regenerative production due to greater demand for sustainable products from consumers abroad. Interviewees in export-oriented economies note the importance of export promotion models in building regenerative enterprises: domestic producers greatly benefit from invoices made in stable, foreign currencies to hedge against local currency and interest rate volatility in emerging markets.

As detailed in Section 1, these institutional constraints are exacerbated by active government support through comparative protections and subsidy support for conventional practices – which often fail to account for the social and environmental costs of conventional agriculture.⁵³ Beyond direct subsidies, the structure and scope of government policies have unintentional effects on the adoption of regenerative practices. While existing farm financing systems with clear definitions and eligibility criteria are powerful centralised financial safety nets, the underlying rigidity of how these models are implemented makes change difficult. Narrow eligibility criteria, limitations on permitted practices and crops, short-time horizons, and standardised application processes are foundational to the scalability of these systems. At the same time, rigid standardisation makes it difficult to expand programs to include regenerative practices, and consequently disincentivise adoption, as attractive credit terms are contingent on perpetuation of conventional production.

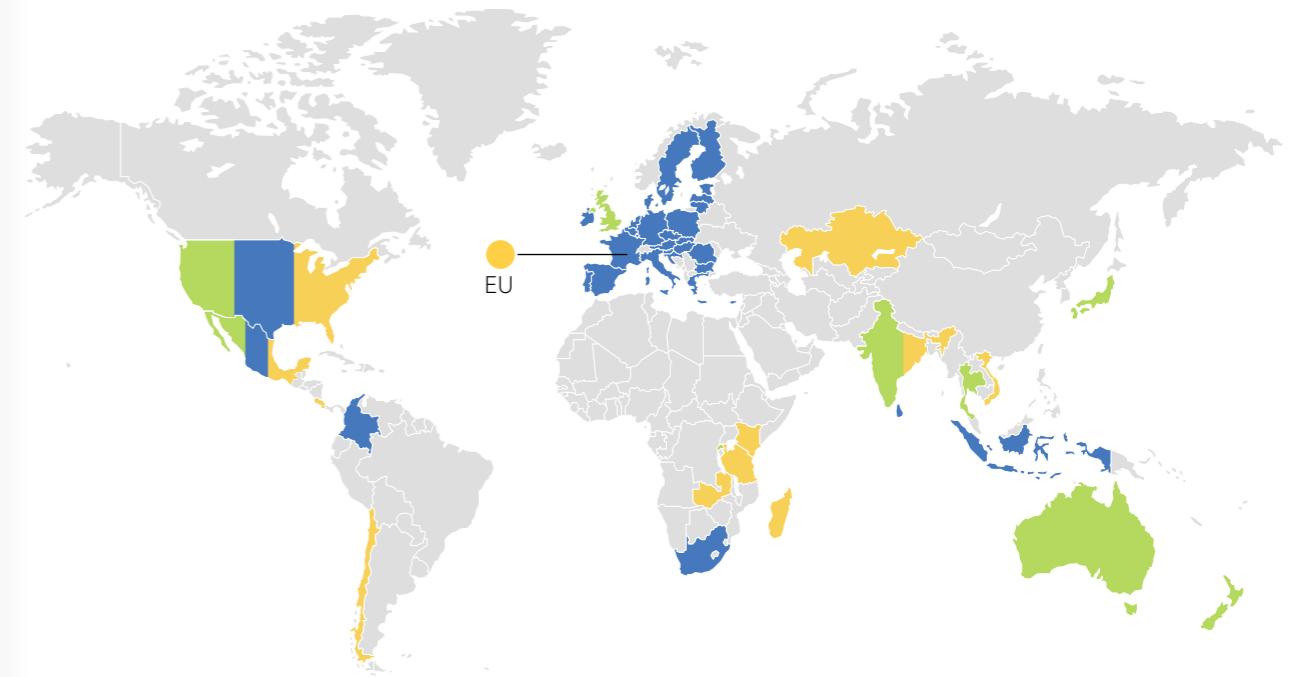
Finally, underdeveloped access to global agriculture commodities markets, regional supply chains, and logistics infrastructure are persistent barriers that adversely affect market development and project bankability – even in geographies with other features conducive to progress up the market maturity curve. In sub-Saharan Africa, for example, 37% of food produced is lost or wasted, primarily due to lack of appropriate handling and storage facilities.⁵⁴ An

analysis of agricultural supply chains in Nigeria, for example, found that almost half of farmers had no access to storage facilities, resulting in losses worth 15% of their post-harvest revenues.⁵⁵ Lack of storage also forces many farmers to sell commodities shortly after harvests, when they are likely to receive the lowest prices for their crops. The combination of high transaction costs and production inefficiencies creates restricted access to global markets for all except the most traded global commodities like coffee and cocoa.

As corollary to the constraints discussed above, there are specific national policy characteristics and institutional capacities that should allow for additional impact leverage and financing opportunity in jurisdictions that may otherwise have markers of less-developed market maturity.

State-backed green and agriculture banks aggressively pursuing sustainability and climate-aligned targets accelerate the development of the regenerative agriculture market. For example, Fideicomisos Instituidos en Relación con la Agricultura ("FIRA"), Mexico's National Agriculture Development Bank, has pioneered a green bond strategy with a coordinated national financing ecosystem for sustainable agriculture.⁵⁶ FIRA provides credit, guarantees, technical assistance, and technology transfer to support farmers, particularly in low-income rural areas. As of 2023, FIRA had issued its third green bond and the first Green Resilience Bond in Latin America to promote investment in sustainable and regenerative agriculture projects, aimed at protecting biodiversity and improving the adaptation and resilience of production to climate change.⁵⁷

National green taxonomies also accelerate institutional capital into regenerative agriculture, providing well-defined guidelines and requirements for eligible investment activities. In 2022, Colombia launched the first green taxonomy in Latin America, aligned with the Paris Agreement's 1.5°C trajectory. Their TVC Implementation Guidelines on Green Credit Management provide specific guidance to financial



- Has National Green Bank/ Agriculture Bank:** Mexico, India, Rwanda, UK, Australia, New Zealand, Japan, Thailand, US (on a state basis)
- Has Green/Sustainable Finance Taxonomy:** EU, Colombia, Indonesia, Sri Lanka, Mexico, South Africa
- Has National Agroecology/ Regenerative Roadmap, or is in the process of developing a National Agroecology strategy:** India, Tanzania, Zambia, Uganda, Kenya, Madagascar, EU, Mexico, US, Kazakhstan, Chile, Costa Rica, Vietnam

*This list is not exhaustive.

institutions on incorporating ESG and climate related risks and investing in sustainable assets.⁵⁸ This has created an organic impetus for the domestic financial market – including commercial investors and insurance providers – to pursue green opportunities across sectors, including in regenerative agriculture.

Government-led sustainable agriculture roadmaps centralise direction to develop regenerative initiatives aligned with broader national climate policies, agricultural credit, and public finance initiatives. These roadmaps increase generation of project pipeline, backed by technical and financial support

that move more projects toward bankability. For example, the Government of Andhra Pradesh in India has one of the most ambitious plans to expand community managed natural farming across millions of farmers in the state, creating a coordinated move toward regenerative agriculture and unlocking the financing opportunities that come with widespread adoption of broadly yield enhancing regenerative practices.^{59,60} Despite ongoing protest, the European Union has also indicated a regulatory direction that will see subsidies and support payments conditioned on environmental performance.⁶¹

58. Government of Colombia (2023). "Guía De Implementación de la Taxonomía Verde de Colombia en la gestión de créditos verdes".
 59. Defined as a reversal of the reliance on purchased inputs, with a range of eligible regenerative practices under the policy.
 60. Tufts University (2021). "Zero Budget Natural Farming in Andhra Pradesh: A Review of Evidence, Gaps, and Future Considerations."
 61. Chatham House (2019). "Subsidies and Sustainable Agriculture: Mapping the Policy Landscape. Hoffmann Centre for Sustainable Resource Economy, Chatham House."

52. Financial Times (2023). "India tightens control of agricultural commodities ahead of election."
 53. World Bank (2023). "Detox Development: Repurposing environmentally harmful subsidies."
 54. FAO (2011). "Global Food Losses and Food Waste."
 55. SB Morgen (2021). "Nigerians just want to eat: Analysis of Farmers & Food Transporters Challenges Likely To Impede National Food Security."
 56. The green bond program also supports initiatives and projects that increase the efficiency of water resources, renewable energy generation for agricultural production and energy efficiency programs.
 57. Fideicomisos Instituidos en Relación con la Agricultura (2023). "2023 Annual Green Bond Report (FEFA20V)".

3. Instruments and Structures for Regenerative Agriculture

EARLY STAGE DEPLOYMENT OF ALL FINANCING INSTRUMENTS AND STRUCTURES

The market for financing regenerative agriculture is still in early stages of development, and across global financial markets, the degree of infancy cannot be overemphasised. Within activity to date, however, there are examples of financing opportunities applicable to a range of capital deployers. Section 3 of this report illustrates the spectrum of current financing opportunities, spanning risk-return profiles and demonstrating potential for scalability. Some are standalone financing instruments, while others are more complicated financial structures that incorporate two or more individual instruments. Of note, some structures are not specific to the needs of regenerative agriculture but nonetheless can be used in the transition to regenerative agriculture.

Interviews with practitioners have informed categorisation of the models in Section 3 as either an "Early Model with Growing Traction" or a "Nascent Model with Potential." There is, to our knowledge, no comprehensive dataset of global regenerative agriculture financing by instrument / structure, but quantitative jurisdiction-specific analysis directionally supports this report's qualitative categorisation.⁶² Learnings from both early models with growing traction and nascent models with potential offer valuable insights to inform considerations for additional capital deployers to accelerate financing into regenerative agriculture.



62. Croatan Institute, Delta Institute, and OARS (2019). "Soil Wealth: Investing in Regenerative Agriculture across Asset Classes."

In addition to commentary on the explicit applications in developed and emerging markets, analysis for each structure includes characterisation of the following attributes:

LOCATION ON THE MARKET MATURITY CURVE

Structures detailed in Section 3 will be mapped against the market maturity curve outlined in Section 2. Some instruments and structures will play a key role in multiple phases of market development, scaling up over time as regenerative agriculture becomes standard market practice. Others will play a role in market development in earlier phases only but are a prerequisite to catalyse structures further down the curve.

SCALABILITY

Capacity to replicate, expand, and accelerate deployment of the structure. Implicitly, an assessment of scalability is based on transaction costs, amount of additional infrastructure required to deploy additional capital through the structure, coordination requirements, presence of required counterparty structures, and knowledge transfer generated by implementation.

CURRENT PREVALENCE

Extent of current uptake based on interviews and publicly available quantitative data.

CROSS-GEOGRAPHIC APPLICABILITY

Capacity to replicate the structure across geographies and dependence of the structure on context-specific infrastructure, policy, and enabling organisations.

CURRENT CONCESSIONALITY REQUIREMENT

Level of concessional capital required for projects to proceed given the current market maturity of financing for regenerative agriculture. Concessionality includes any finance that deviates from market terms in price, tenor, covenants, repayment flexibility, and concurrent access to grant capital. This is not an indication of the concessionality required going forward as the perceived and actual financial risks of investing in regenerative agriculture decrease over time. Rather, this is a proxy measure for how much concessional capital is required to meet the risk-return profile of commercial investors today.

FINANCIAL RISK PROFILE

Level of risk that is associated with the structure, including an analysis of the risk-adjusted rate of return when such information is in the public domain.

For each attribute, a qualitative rating is provided, based on relative comparability between structures, specific insights from expert interviews, and market data where available.⁶³

63. Market data was available for the first three structures detailed in Section 3. No market data was found for the remaining structures or approaches. This dynamic is characteristic of a nascent financing market, which has not yet developed consistency in data collection, classification, and reporting.

A NOTE ON ENVIRONMENTAL MARKETS FOR REGENERATIVE AGRICULTURE

In general, interest in environmental markets and ecosystem service payments is stronger in the financier community than among agricultural producers. Access varies by jurisdiction, and there exist significant barriers to participation for producers due to the high floor in costs to generate, register, and sell credits and to implement ongoing impact measurement.

Currently, only a select group implementing regenerative practices – including commercial farmland investors – can practically access environmental markets due to the scale of their holdings. Where incorporated, revenue streams from environmental markets and ecosystem service payments can substantively contribute to commercial return. For example, SLM Partners' holistic planned grazing strategy for grass-fed cattle in Australia supplements core revenue streams with carbon credits generated under the national carbon market, which can credibly add 1% - 2% to net internal rate of return.^{64,65} Still, farmland investors are wary of overpromising on the economic upside of environmental markets, noting participation in voluntary carbon markets or premiumisation through insetting models as the only revenue streams currently worth incorporating into financial return models today. In 2022, voluntary markets saw nearly 4 million MtCO₂e of agriculture-related carbon credits transacted at a value of USD \$42 million, with forestry and land use projects adding 113 MtCO₂e of credits at a value of USD \$1.2 billion.⁶⁶

Aside from carbon outcomes, emerging biodiversity, water, and reef credit payment mechanisms offer promise as additional revenue streams for regenerative farmers. The biodiversity net gain legislation in the UK, the New South Wales biodiversity offsets scheme in Australia, and a range of emerging private sector-led programs all provide blueprints to monetise biodiversity uplift. The ecological impacts of regenerative agriculture are intrinsically compatible with outcomes required to benefit from novel environmental payment schemes, creating potential for significant revenue stacking as environmental markets mature over the long run.

Where directly leveraged, the role of environmental markets is detailed for the structures analysed below. Depending on how environmental markets continue to develop across structures and geographies, there is potential for environmental revenues to play an important role in enabling bankability of regenerative agriculture.

64. McMahon (2024). "Investing in Regenerative Agriculture: Reflections from the Past Decade," SLM Partners.

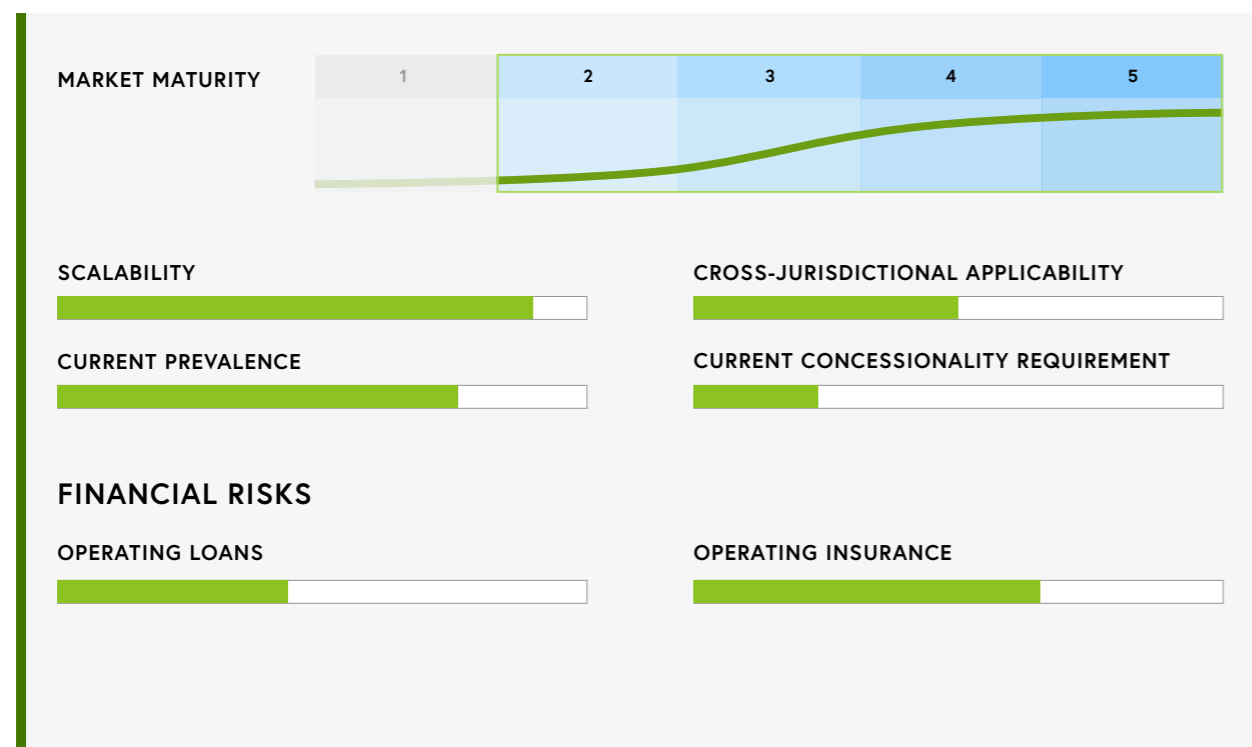
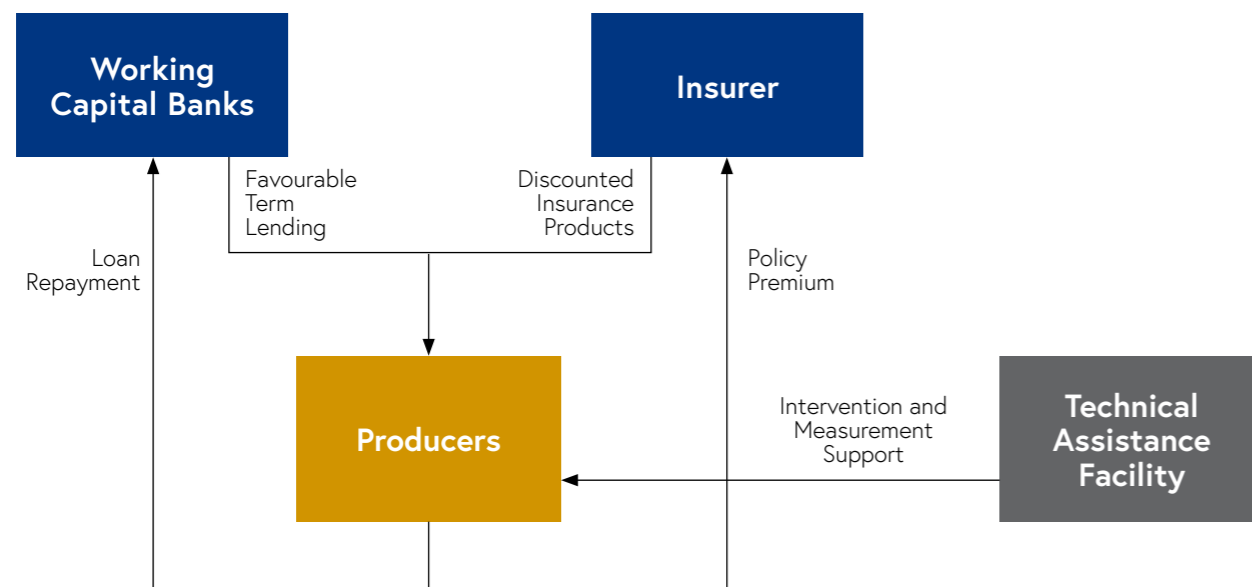
65. SLM Partners (2023). "Australia."

66. Forest Trends' Ecosystem Marketplace (2023). "State of the Voluntary Carbon Markets."



Early Models with Growing Traction

OPERATING INSTRUMENTS



Regenerative Operating Loans

ROLE IN THE REGENERATIVE AGRICULTURE FINANCE ECOSYSTEM

Operating loans most commonly finance farm expenses to enable production and allow producers to bridge seasonal illiquidity from preparation to harvest. In developed markets, farmers typically have access to a range of private and government-sponsored agricultural lending options. In emerging markets, intermediaries such as cooperatives and midstream agricultural value chain actors such as traders may play a role in on-lending agricultural credit to smallholders. In general, mainstream operating loan offerings are characterised by narrow use-of-proceeds, short tenors, and rarely incorporate sustainability-related adjustments in the cost of financing. Mass adoption of regenerative practices begins with building a strong ecosystem of operating loan products that align financial terms with incentives for practice adoption.

Interviewees leading innovation in this area cite urgency in the need to support transition because regenerative production presents opportunities for producers adversely affected by ongoing economic and political changes impacting the agricultural sector. While access to operating finance remains a problem in many smallholder contexts, in geographies with robust operating instrument products, regenerative-specific products are being rapidly developed and brought to market.

HOW DOES IT WORK?

New loan products and incremental revisions to established loan products are creating structures that support implementation of regenerative agriculture and incentivise sustainable land use interventions at the farm level. Such products include repayment grace periods, longer tenor of up to 10 years, and discounted upfront fees for access to operating loans. As banks increasingly understand the importance of matching time horizons between financing and economic gains from transition, the combination of repayment grace periods and longer tenor is being used to provide producers with security during the transition period. Loan book managers interviewed emphasise experimentation through incrementally revising established loan products and pulling small levers for which they have full discretion, such as discounting upfront and ongoing loan fees as an incentive for sustainable land use. The incremental approach reflects the regulatory and internal process difficulties of larger adjustments such as interest rate changes.

STRUCTURES AND OPPORTUNITIES

Notably, innovative operating loan products are adopting both practice and outcome-based frameworks to support farm transition. Some products provide basis point discounts of up to 10% off the market rate cost of capital based on metrics such as:

- Carbon Footprint: Incentivising interventions beyond regenerative agriculture, including adoption of energy efficient technologies, repurposing land for renewable energy generation, setting aside land for biodiversity, and increasing on-farm logistics capacity.
- Crop Composition: Including the adoption of cover crops and crop diversity.
- Soil and Water Health: Based on measures such as soil organic matter and nitrogen balances.

Practice-based products provide similar terms and are often accompanied by technical assistance and validation of optimal practices. This ensures financing accounts for context-specific implementation nuances. A number of practices mentioned in the "Context on Regenerative Agriculture" section of this report are being explicitly incorporated into practice taxonomies for operating loan products. For example, in the UK, Lloyds Bank has partnered with the nonprofit Soil Association to launch the Soil Association Exchange, providing technical assistance and discounted financing of up to 100 bps for projects that transition farms to more sustainable practices.⁶⁷

67. Lloyd's Banking Group (2022). "Lloyds Bank Launches Sustainability Support for Agriculture Sector."

STRUCTURES AND OPPORTUNITIES
(continued)

Notably, operating loan products are being combined in partnership with CPGs and Original Equipment Manufacturers ("OEMs") to lower transaction costs and further reduce cost of capital for producers. One loan product, launched in partnership with CPGs, offers producers a discount, better loan-to-value ratio, grace periods, and longer tenor provided the partner CPG adds their own incentives for producers on top of the preferential loan terms. Another loan product, launched in partnership with an agricultural technology OEM, uses the scale of the loan book to provide a discount on the cost of regenerative inputs and technologies.

Similarly, suppliers to large CPGs with guaranteed offtake agreements utilise supply chain financing structures whereby the bank fronts sustainability-linked finance to farmers and is then repaid by CPGs later in the season. This has been supported by the development of invoice platforms that allow for ease of verification and payment directly to farmers. CPGs are accelerating support by providing certifications and documented guarantees on offtake that farmers can use to secure finance.

RISKS AND IMPLEMENTATION COMPLEXITIES

Interviewees express concern over whether preferential loan terms linked to regenerative practices or outcomes is sufficient incentive for slower moving farm enterprises. If such preferential terms are insufficient to motivate most farm enterprises to act, discounted lending may only be cannibalising loan book margins. In this context, some discussed the possibility of explicitly accounting for sustainability characteristics as part of credit risk underwriting. This would involve assessing individual farms relative to jurisdiction-specific industry averages when determining cost of finance, and implicitly, imposing financial penalties in the long-run to farms making inadequate progress.

Those running loan books at large international banks expressed difficulties in incorporating ESG and sustainability criteria as explicit credit risk underwriting considerations. Reforming credit risk screening was articulated as a difficult ask in the context of risk-averse international banks with strict regulatory and fiduciary requirements. While this difficulty does not adversely affect the capacity of banks to create dedicated regenerative agriculture loan books, it does present difficulties for scale.

PRODUCER-SIDE IMPLICATIONS

Where there is strong existing access to formal agricultural credit, regenerative operating loans may be the most accessible pools of capital for regenerative transition. This is largely due to the strong existing relationships that agricultural lenders have with producers in their loan books. Interviews with loan book managers indicate that regenerative operating loans are likely to come in conjunction with technical assistance, which should allow producers to identify and prioritise which regenerative practices are applicable for their specific farm contexts. While the transition presents production risks at the farm level, the incorporation of favourable financial terms should mitigate risks faced by producers in the transition period.



Climate Risk-Adjusted Insurance

ROLE IN THE REGENERATIVE AGRICULTURE FINANCE ECOSYSTEM

The global crop insurance market is approximately USD \$40 billion, with North America as the dominating share and Asia as the largest driver of future market growth.⁶⁸ Because many producers rely on insurance to mitigate income volatility, aligning insurance with risk assessments that include regenerative practices is an effective financing lever.

HOW DOES IT WORK?

As a result of emerging science on the risks presented by perpetuation of conventional agriculture, sustainability-linked insurance products that account for long-run yield, price, and profitability risks are emerging. A clear line can be drawn between regenerative production and long-run mitigation of agricultural risks. Consequently, innovative insurers are beginning to take steps to incorporate climate and nature-related risks for agricultural production into premium pricing and adding period extensions for ESG and sustainability-aligned counterparties. This includes building in concessional terms that extend beyond the short policy periods applicable to most conventional crop insurance policies.

STRUCTURES AND OPPORTUNITIES

The biggest insurer in a large emerging market outlined plans to extend climate and ESG risk-adjusted premiums to agricultural production for its large base of farmers. This insurer has already executed a similar framework for construction insurance, partially crediting the strong national green taxonomy as impetus. The ambitious plans have been preceded by a program of free technical assistance, GHG baselining, and client advisory services on ESG and climate-related risks. For SME agribusinesses, additional advice is provided on weather and biophysical risks to crop production, including suggested risk mitigation measures. This infrastructure of built-in risk advisory, combined with incentives attached to the cost of premiums, is an insurance-led model that can accelerate regenerative adoption.

Interview participants also highlight that both their clients and their reinsurers are ramping up climate and nature ambitions. Such trends are positive long-term tailwinds for the increasing support of regenerative practices in agricultural insurance portfolios.

RISKS AND IMPLEMENTATION COMPLEXITIES

Interviewees expressed consistent concern over how farmer insurance premiums would be paid, especially in the regenerative transition period. This particular complexity is exacerbated as actuarial models face the data deficit discussed in Section 1 when calculating comparative risks from conventional vs. regenerative agriculture.

However, as leading organisations are demonstrating, the ability to adjust premiums in line with directional risk indications is a lever that can be pulled over multiple coverage periods. Realistically, reducing the cost of insurance for regenerative practices is unlikely to be a primary driver of adoption. But recognising the risk mitigating characteristics of regenerative agriculture through insurance can act as one less disincentive for farmers willing to make the transition.

The emergence of guidance and taxonomies on eligible green practices in the agricultural industry provides a framework for identifying regenerative practices that can be eligible for discounted policy pricing.

PRODUCER-SIDE IMPLICATIONS

Discounted insurance and additional coverage of transition-specific risk should provide producers with additional financial leeway and protection as regenerative practices are implemented on farm. The trajectory of insurance policies accounting for climate risk in determining pricing and policy coverage in a number of geographies creates a compelling incentive for producers to act on regenerative adoption before policy subsidisation is revoked.

⁶⁸. Spherical Insights (2022). "Global Crop Insurance Market Size, Share, and Trends."

Blended Approaches to Transition Finance

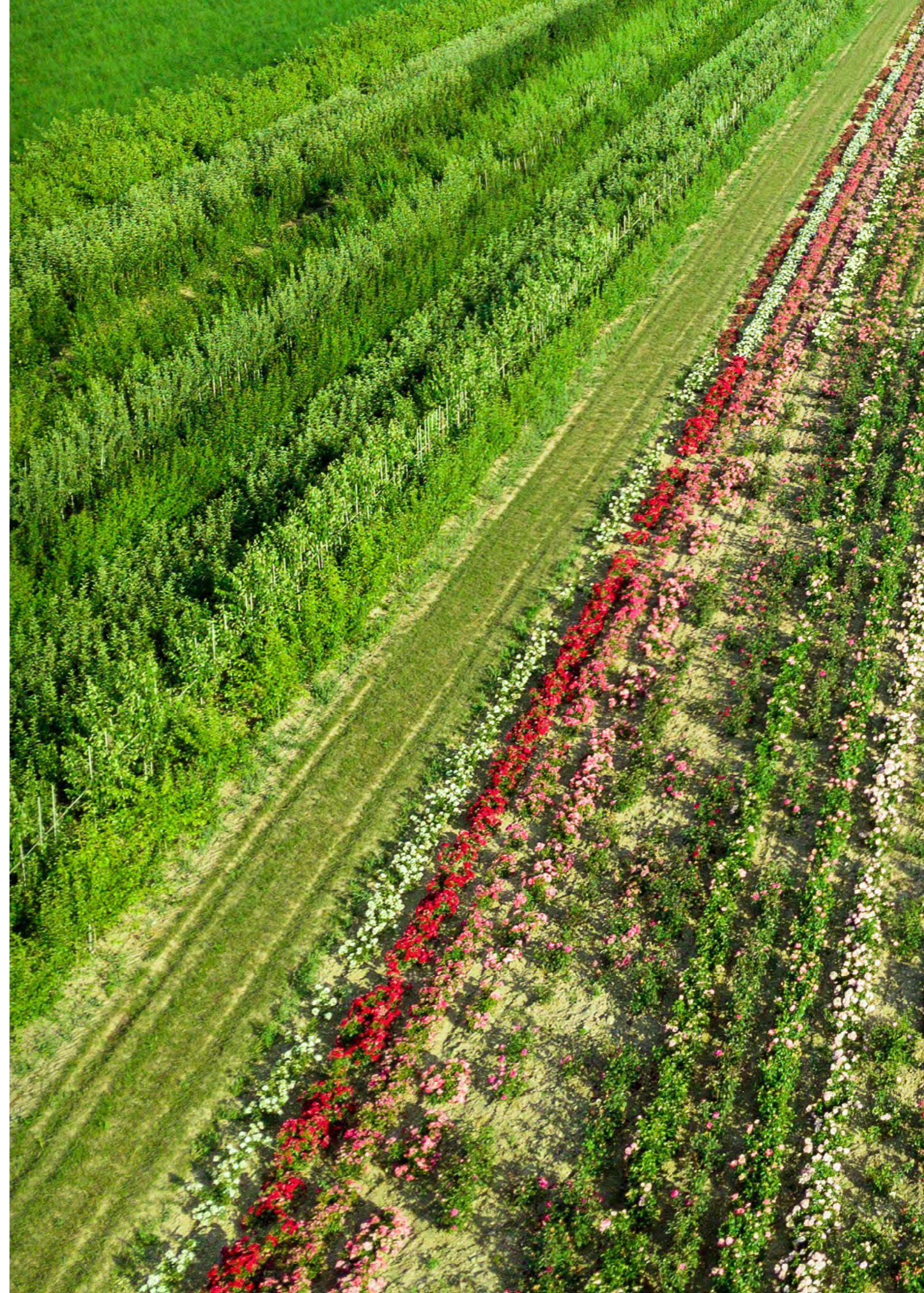
Blended finance for regenerative agriculture involves strategically combining concessional funds – typically offered on cheaper and more flexible terms than those available through the market – with private capital to finance regenerative projects. Concessional funds typically come from development finance institutions ("DFIs"), state-owned banks, philanthropic capital, and impact investors. The concessional finance serves to de-risk investments by providing a cushion against potential losses, thereby making projects more attractive to private investors who might otherwise be hesitant due to perceived risks and uncertainties. By reducing the financial risk, blended finance mechanisms can unlock significant amounts of private capital for regenerative agriculture. Additionally, this approach can facilitate lower interest rate financing for producers adopting regenerative practices, making it more financially viable for them to invest in the transition across longer time horizons. Blended approaches play a crucial role in the early stage of market maturity, leveraging the risk tolerance of concessional and impact capital to crowd-in private capital.

Blended funds, guarantee mechanisms, and outcomes-based payment mechanisms provide innovative examples of deploying transition financing to incentivise regenerative adoption over conventional agriculture. Globally, blended finance in agriculture has quadrupled in the past decade,

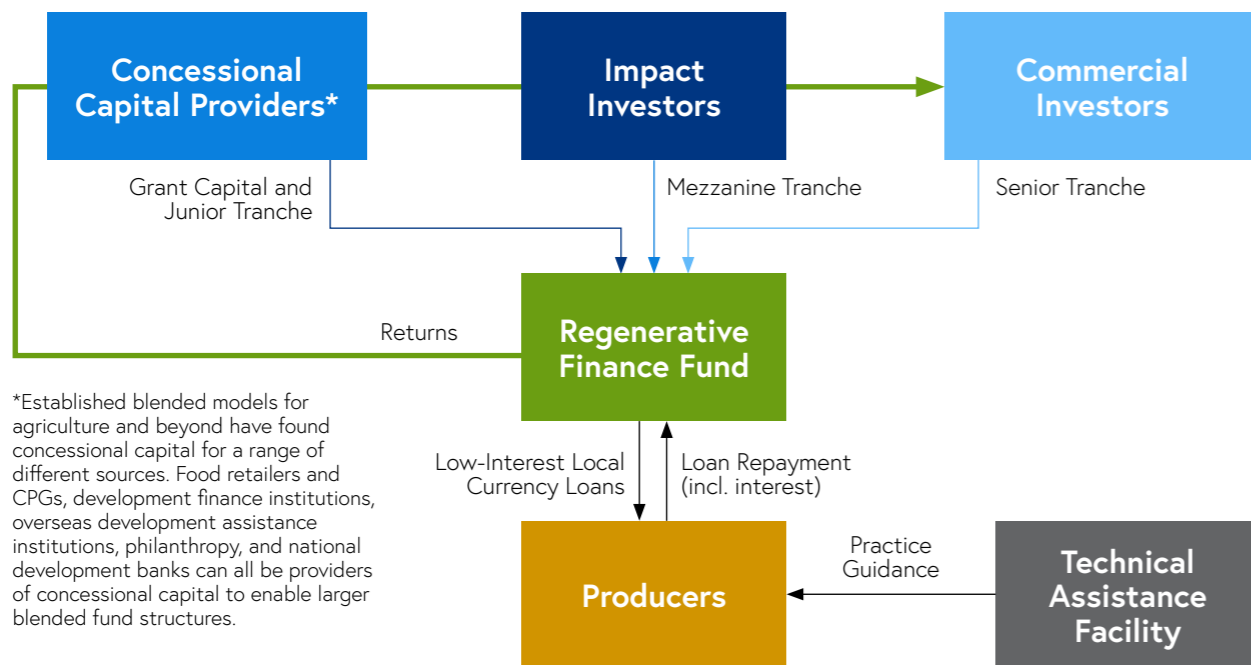
reaching USD \$13.8 billion worth of aggregate blended finance transactions, with 18% of transactions specific to climate-smart and sustainable agriculture.⁶⁹ Currently, the majority of blended finance in agriculture is deployed in emerging markets, but the structure has general applicability to both emerging and developed markets.

Based on perspectives shared by investment professionals executing blended strategies, the size and scale of current blended facilities, and the relatively new participation of commercial capital in blended strategies for regenerative agriculture, we observe that most blended approaches in market are used to build upon early scale initiatives. The underlying infrastructure of blended facilities in market typically entails significant financial modelling and technical assistance coordination, necessitating a reasonably robust investment thesis and quantitative business case to justify the high floor of set-up costs. Consequently, these efforts tend to concentrate in geographies where early initiatives have already demonstrated capacity for scale. As such, we categorise blended approaches to primarily be Phase 3 initiatives, aimed at de-risking commercial capital to demonstrate the commercial viability of larger scale regenerative agriculture projects.

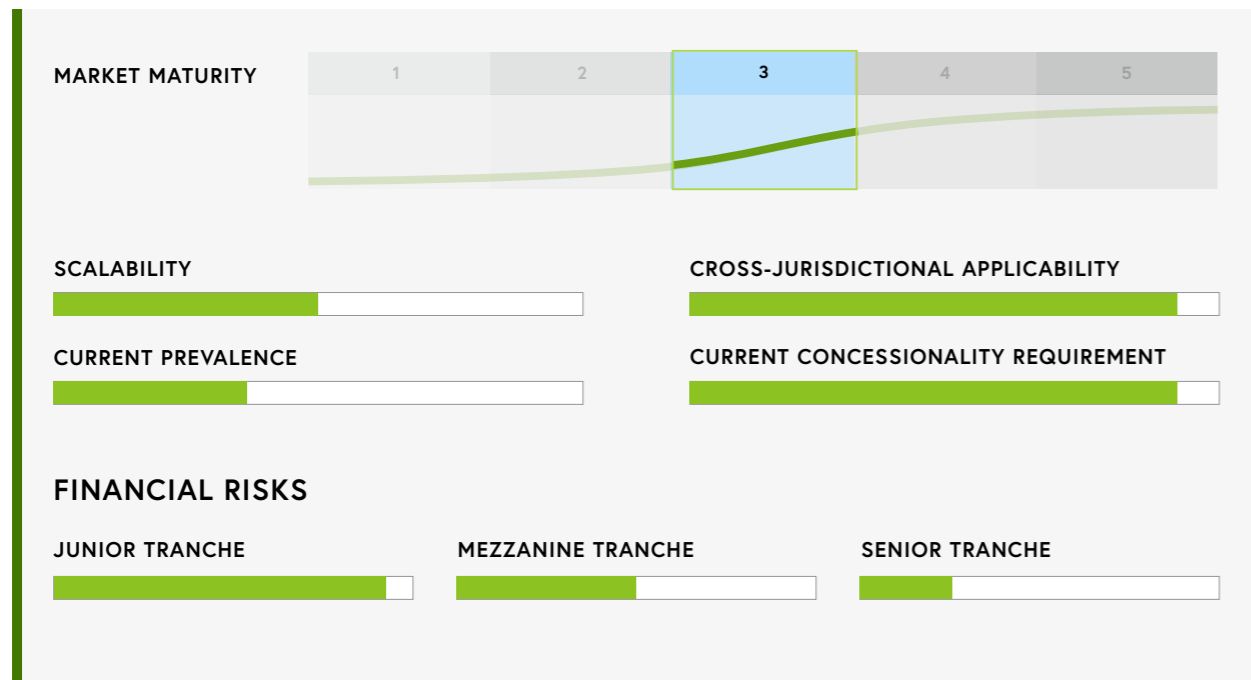
⁶⁹. Convergence (2021). "Blended Finance and Agriculture."



BLENDED FUNDS



*Established blended models for agriculture and beyond have found concessional capital for a range of different sources. Food retailers and CPGs, development finance institutions, overseas development assistance institutions, philanthropy, and national development banks can all be providers of concessional capital to enable larger blended fund structures.



Blended Funds

HOW DOES IT WORK?

Blended funds provide a mechanism to scale the availability of finance by leveraging private capital and portfolio diversification to reduce risks for private investors, catalysing large pools of institutional capital in emerging and developed markets. Typically, concessional capital providers look to catalyse market development and deliver impact, providing junior capital to unlock return-seeking private capital. Recipient projects will still typically have strong commercial fundamentals, but a combination of perceived evidence risk, possible transition risks, and traditional macro risks would prevent private capital flows to projects. Blended investment vehicles generally invest alongside technical assistance facilities, which work with project sponsors and recipients of finance to ensure investment readiness. These technical assistance facilities are often funded with concessional capital or grant capital and are approximately 5%-15% of the size of the blended fund.

STRUCTURES AND OPPORTUNITIES

The Responsible Commodity Facility ("RCF"), a USD \$47 million fund providing finance for deforestation-free soy production, has operationalised this model by blending concessional impact capital and private capital to provide low-interest rate financing for farmers, supported by technical assistance. The RCF Cerrado Programme Fund leverages USD \$11 million in commitments from UK retailers (Tesco, Sainsbury's, and Waitrose), USD \$11 million in the Mezzanine tranche from a leading sustainable agriculture impact investor (Agri3), and USD \$25 million from commercial banks (Santander Brazil and Rabobank). Mezzanine and commercial capital were crowded into the facility following a successful pilot stage in which all loans were repaid, and the facility assessed that no deforestation had been identified in pilot areas.

EXPECTED IMPACT ACROSS 4 YEARS:

- 150,000 HECTARES** of native vegetation conserved, with 20% of native vegetation otherwise eligible for legal deforestation
- 2 MILLION TONNES** of deforestation and conversion free soy produced
- 20 MILLION TONNES** of CO₂e stored in forests maintained by the program

The concessional commitment provided by retailers, combined with the de-risking position of Agri3, facilitated the mobilisation of private capital into RCF. Meanwhile, producers are incentivised to participate in the sustainable production program with below market interest rates and built-in technical assistance.

Similarly, the Huruma Fund, managed by GAWA Capital, has successfully combined €30 million of concessional capital with an additional €90 million of private investment for smallholder farmers, demonstrating applicability of blended fund models even in fragmented production contexts. The fund is supported by a first-loss tranche of €10 million provided by the EU and managed by Spain's Development Finance Institution, COFIDES, and an additional €20 million of subordinated debt funded by FONPRODE (Spain's Development Promotion Fund). Huruma provides debt and equity capital to local financial and microfinance institutions, agricultural SMEs, farmer cooperatives, and value chain businesses.⁷⁰ Supporting the investment fund is a sizeable €10 million technical assistance facility. Huruma's mission focuses on smallholder financial inclusion more broadly, but the underlying model is replicable in the regenerative context and provides lessons for how regenerative agriculture finance can simultaneously contribute to the transition and financial sector development in smallholder contexts.

RISKS AND IMPLEMENTATION COMPLEXITIES

Within the macro market maturity context for regenerative agriculture, the scalability of blended funding approaches is dependent upon availability of concessional capital to crowd-in private capital. This is simultaneously an opportunity for providers of concessional capital and a challenge for financial institutions seeking to scale this model. Additional costs emerge from the measurement, reporting, and verification requirements needed to monitor impact performance. Such costs should be built-in to fund operating expenses so that commercial returns for private investors are unaffected. As localised data points showing the economic and impact uplift of regenerative practices build over time, blended funds will require less concessional capital as private investors perceive fewer risks and uncertainties.

70. COFIDES (2018). "Huruma Fund."

Guarantee Mechanisms

HOW DOES IT WORK?

Guarantees are an additional de-risking lever that can be deployed to catalyse private capital as the economics of regenerative production become more established. Guarantee providers seek to mobilise private capital by insuring a proportion of investment losses in the case of default. Across a portfolio of guarantees, a limited number of counterparties are likely to default and affect the reserves of the guarantee facility, allowing guarantee providers to leverage in excess of capital reserves. In the case of regenerative, the long-run commercial viability of business models limits guarantee providers' risk exposure and allows for the provision of guarantees to reduce the cost and increase the tenor of finance.

STRUCTURES AND OPPORTUNITIES

The recent launch of the Green Guarantee Company on the London Stock Exchange reflects market demand for investor protection products for climate and nature investments. Supported by USAID, The Green Guarantee Company provides investment grade guarantees to improve the credit rating of borrowers in emerging markets, seeking to solve for developed market institutional capital being locked out of vulnerable markets in need of climate finance.⁷¹

In the area of regenerative agriculture, the Multilateral Investment Guarantee Agency ("MIGA"), an arm of the World Bank, is exploring a guarantee facility for a proposed USD \$800 million commercial lending facility to Banco do Brasil S.A. ("BdB") for no-till farming in Brazil.⁷² The loan facility is slated to be provided by JP Morgan Chase, Standard Chartered Bank, HSBC, and Credit Agricole CIB. The facility will provide up to USD \$2 million to no-till farmers with annual revenues below USD \$3 million in order to bridge the working capital funding gap. The coverage of the guarantee extends up to USD \$1.2 billion and has a tenor of up to 10 years, providing sufficient financial coverage across the longer time horizons of BdB's loans to farmers. MIGA's guarantee facility in partnership with BdB, a state-owned bank with the ability to distribute finance across fragmented agricultural value chain actors across Brazil, provides a model for institutional investment to support smallholders.

In terms of replicable structures for smaller ticket size transactions, Agri3's partial guarantee for Rabobank's USD \$20 million loan to Brazilian family agribusiness, Agro São José, has enabled 10-year loan tenor for a farm strategy focussed on restoration of soil health, orange tree planting, and commitments to achieve international sustainable agriculture certification.⁷³ The guarantee provides up to 40% protection for any losses faced by Rabobank, reducing risk exposure to non-repayment and allowing Rabobank to provide financing with uniquely long tenor.

Across traditional blended funds and the variations highlighted, blended funds are growing in prevalence and being widely applied across geographies, though the primary source of concessional capital differs by geography. In emerging markets, concessional funds are more likely to come from DFIs, state-owned banks, philanthropic capital, and impact investors, while public finance tends to play a larger role in concessional capital in developed markets.

VARIATION A: Blended Approach with Blended Funds and Guarantee Mechanism

Blended funds and guarantee mechanisms can be used in combination and serve as an effective structure when layered. The layering of a guarantee mechanism on top of blended funds helps to further distribute risk among additional counterparties, which reduces risk exposure for the concessional capital and commercial capital providing blended funds. There is flexibility in where guarantees can be inserted into the capital stack depending on whether the guarantee is intended to de-risk the commercial tranche alone or de-risk both the concessional and commercial tranches.

Because the scalability of blended approaches is dependent upon availability of concessional capital, adding a guarantee mechanism is one effective way to reduce reliance on concessional capital while still crowding-in private capital. Guarantees typically come from similar sources as concessional capital. However, because there generally is no immediate request for cash outlay from the guarantee provider, guarantees can be perceived to be an easier capital request to satisfy because they are lighter on the balance sheet.

Interviewees highlight one example of a blended approach that has commercial capital, concessional capital, and a guarantee mechanism in place. The lending facility provides financing to smallholders in commodity supply chains and allows participating smallholders, who otherwise do not have access to formal agricultural credit, to access growing season operating loans. Commercial capital is the dominant source of funds, while concessional capital provides a minority of funds and takes a first loss position. In addition, there is a 50/50 guarantee mechanism in place for the commercial tranche. In the event of losses incurred, the concessional tranche is first to absorb losses, and beyond the amount covered by the concessional tranche, half of additional losses are absorbed by the guarantee provider. Consequently, despite being the dominant source of funds, commercial capital is left with a minority of credit risk.

There are other notable risk mitigation measures in place associated with this lending facility. There is a separate technical assistance facility, supported by grant funding, that works to provide knowledge transfer to producers on regenerative practices. Financing is distributed through a payments provider, which restricts usage of funds to approved agronomic uses and reduces payment risk. Inputs are controlled through use of specific retailers that provide agricultural biologicals and fortified seeds. Lastly, partnerships with corporate offtakers codify guaranteed purchase of produced commodities and put a floor on purchase price. Smallholders who maintain participation over time are rewarded with basis point reductions in cost of capital as they build credit history with the lending facility and as they build soil health.

VARIATION B: Blended Approach with Outcomes-Based Payments

Outcomes-based payment mechanisms are another variation of blended approaches. Unlike models that fund practices, these models reward outcomes linked to quantifiable regenerative and biodiversity impact. This approach optimises the leverage of financial investment toward impact, ensuring every dollar spent has tangible impact on outcomes. There are successful examples of this approach in market, particularly for biodiversity impact in emerging markets, though it's a less common approach due to the large evidence base needed to forecast performance outcomes at the outset of financing.

Structures like the World Bank issued "Rhino Bond", formally known as the Wildlife Conservation Bond, illustrate how outcomes-based payments work. Typically, investors receive payment at maturity. At maturity, investors redeem both the principal of the bond and receive an additional success payment based on impact outcomes. This ensures there is sufficient upfront capital available to fund transition expenses.

Generally, these structures have participation by both impact-oriented investors and commercial investors, who are often fixed income investors looking for stable financial returns. Investor compensation varies depending on key impact outcomes achieved. When there is greater impact achieved, impact-oriented investors provide additional compensation to commercial investors. In effect, the level of concessional capital for impact-oriented investors scales with impact outcomes (i.e., higher concessional capital for higher impact).

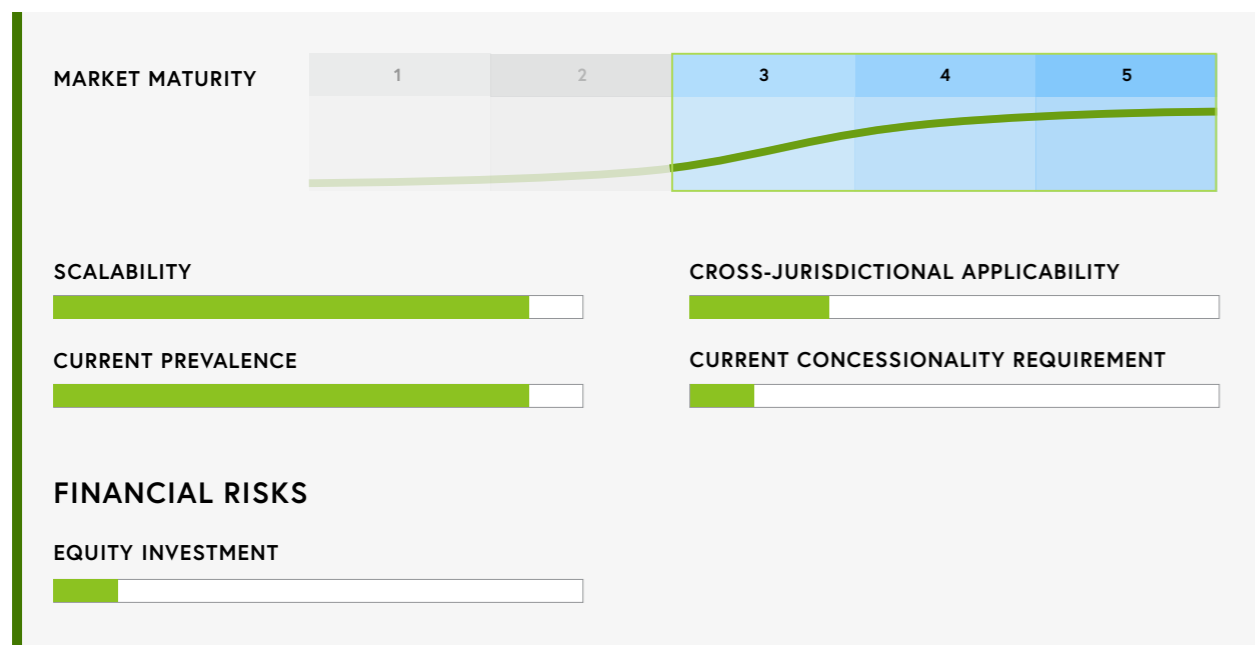
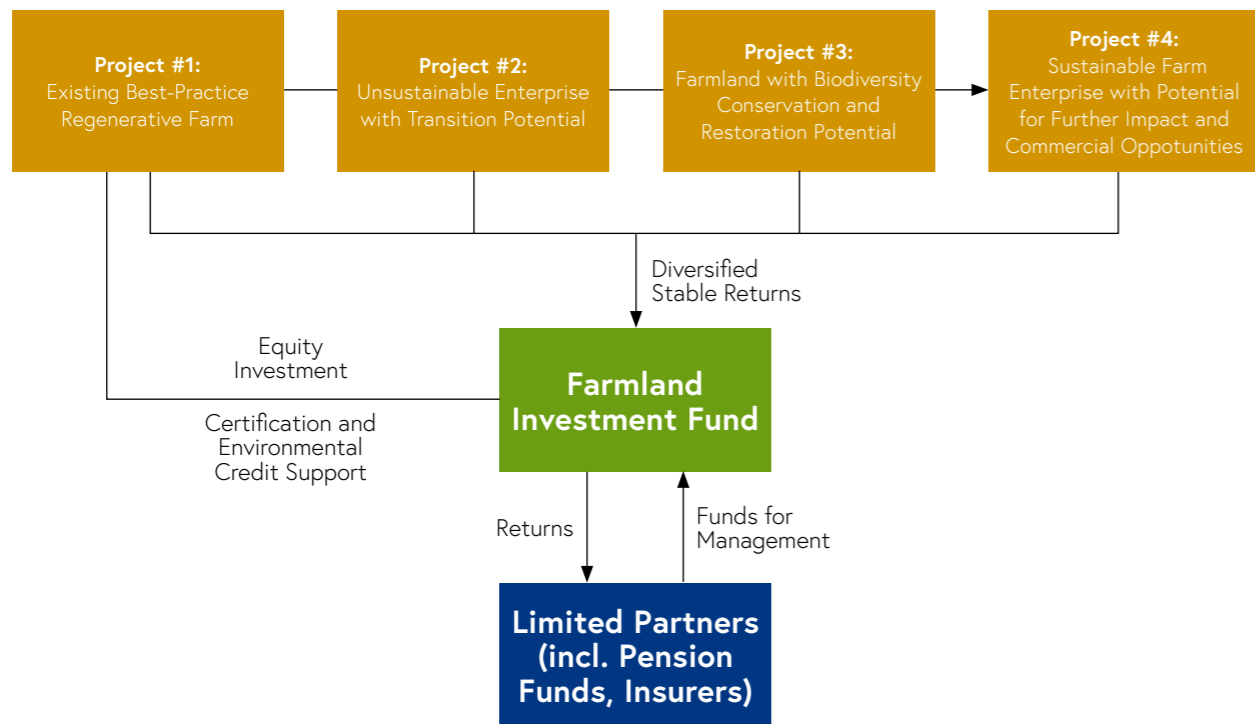
In the context of regenerative agriculture, interviewees point to outcomes-based structures under development that provide producers with below-market rate financing. Both concessional outcomes payers and commercial investors are involved, with commercial investors receiving market-rate fixed income returns based on changes in production economic yield and profitability, soil health, biodiversity conservation, water quality, and water quantity. The impact outcomes generated are backed by a strong commercial proposition. Producers are smallholders aggregated through cooperatives or other SME intermediaries, who receive the financing and on-lend to smallholders in local currency. The producer aggregators also submit impact measurement data to auditors for external verification and are counterparty to offtake agreements in place with corporate buyers.

71. Green Guarantee Company (2024). "The Problem We Solve."

72. MIGA (2024). "Banco do Brasil No-Till Farming."

73. AGRI3 (2024). "AGRI3 Fund ramps up its support for enabling regenerative agriculture in Brazil."

FARMLAND INVESTING



Farmland and Real Estate Investing

ROLE IN THE REGENERATIVE AGRICULTURE FINANCE ECOSYSTEM

Farmland investing presents a unique commercial and impact proposition for investors to generate stable returns while directly affecting land management. Inelastic demand for agricultural products, bolstered by tax incentives for investment in economic rural development, contribute to farmland's reputation as an asset class with low volatility and strong returns relative to inflation over time.

Commercial farmland investment has been particularly strong in developed markets in recent years. The value of U.S. farmland held by investment funds, for example, has doubled since 2021, hitting USD \$16.6 billion in 2023.⁷⁴ To date, farmland investing has had more limited traction in emerging markets given the complexities of land ownership systems, associated land ownership risks, and fragmentation of land markets in emerging markets.

HOW DOES IT WORK?

The potential upside from adding sustainability initiatives to farmland operations further strengthens the business case for farmland investing. Generation of on-farm renewable energy, monetisation of carbon credits, premiumisation of sustainably-produced agricultural products, and integration of nature-based solutions projects all present further opportunities for farmland investments to add sustainability-aligned revenue streams. Regenerative agriculture provides a strong value proposition to unlock both the core commercial value of farmland and the additional potential value derived from sustainability initiatives.

STRUCTURES AND OPPORTUNITIES

Many farmland asset managers still target brownfield investment strategies that implement measures for operational efficiency with sustainability co-benefits (e.g., water use efficiency, precision agriculture techniques). However, some of the more innovative farmland asset managers are developing greenfield investment strategies that convert degraded farms into regenerative farm enterprises to generate attractive, low-risk returns over the long term.

Traditionally, "brownfield" investing improves previously used farmland, while "greenfield" investing develops new projects that take more time and effort to materialise into commercial gain. In the context of regenerative agriculture, "brownfield" and "greenfield" labels used by some investors deviate from traditional definitions, referring instead to the extent of regenerative transition.

"Regenerative greenfield" opportunities were identified in medium-to-large sized farms traded off-market in private transactions. Commercial value for these assets is created by converting traditionally produced low-value crops to regeneratively produced high-value native crops. Often, multiple parcels of land are pieced together by the asset manager into a larger regenerative operating business at the farm level to increase economies of scale. For example, Climate Asset Management, a specialist natural capital investor, is in the process of transforming an 1,800 hectare former sugarcane farm into a regenerative macadamia orchard.⁷⁵ The investment transforms the land from high intensity monoculture production to a higher value native crop.

At a portfolio level, "regenerative brownfield" assets can supplement the scarcer pipeline of greenfield assets. "Regenerative brownfield" investments entail taking high potential existing farmland and gradually phasing in additional practices like cover cropping, silvopasture, and reduced tillage. From an operational perspective, farmland managers often look to incorporate certification, environmental markets payments, alignment to international standards, and inclusion in global supply chains to create added value. The combination of slightly less commercially attractive "regenerative brownfield" assets with the significantly more commercially attractive and impactful "regenerative greenfield" assets allows for a successful portfolio approach. Such an approach can deliver stable value for investors, especially in regulatory environments like Europe, where sustainability-aligned returns are a prerequisite.

74. National Council of Real Estate Investment Fiduciaries (2023). "NCREIF Total Farmland Index Posts Another Quarter of Record Value."
75. Climate Asset Management (2023). "Climate Asset Management completes c.1,800Ha Macadamia project acquisition in Queensland."

RISKS AND IMPLEMENTATION COMPLEXITIES

Across greenfield and brownfield assets, participants note the importance of developing bottom-up approaches to farmland management practices in conjunction with experienced on-the-ground production operating partners. Successful management practices reflect localised data for commodity potential, forward-looking agri-economic and climate projections, and infrastructure for ongoing monitoring of outcomes aligned with regional or international standards for investor reporting.

As a secondary consideration, practitioners highlight incorporating biodiversity enhancement potential of the land in investment and intervention decisions. For example, one asset manager outlined plans to set aside land to restore and conserve biodiversity, partially in preparation for monetisation through biodiversity credit markets and partially in response to demands from Limited Partners invested in the fund. As another example, Climate Asset Management's regenerative macadamia transformation project features specific plans to allocate approximately 10% of land area for the restoration of native habitat, reintroduction of endangered native plants, and establishment of a wildlife corridor between two national parks.

Importantly, for farmland investing in any market context, it is important to assess the community impact of land consolidation, the possible displacement of indigenous communities, and the possible impact on community land reparation efforts. There are examples in the carbon and conservation market of private investors leasing public lands for project development, but these have limited applications to regenerative agriculture. Where there is potential to introduce regenerative practices on these lands, impacts on local food production and local markets should also be assessed.

PRODUCER-SIDE IMPLICATIONS

For existing farm enterprises looking to transition toward regenerative practices, equity investment combined with strategic and technical support from regenerative agriculture investors can provide the capital and capacity to effectively transition the business model. This requires finding the "right" investment partner that can professionalise operating models, inject additional cash for capital and equipment expenses, support the development of any environmental market monetisation opportunities, and establish impact measurement and management protocols in line with investor requirements. The farmland model can also be valuable for producers who are looking to outsource the financing and management responsibilities of the business to focus on production.

SLM Partners' organic and regenerative farm strategy in the U.S. provides an example of a model that balances large scale transition with the inclusion of farmers. The strategy works with willing farmers to identify suitable land for acquisition and transition to organic and regenerative practices. SLM then provides farmers with long-term leases that have flexible terms to allow farmers to pay reduced rent during the transition period.

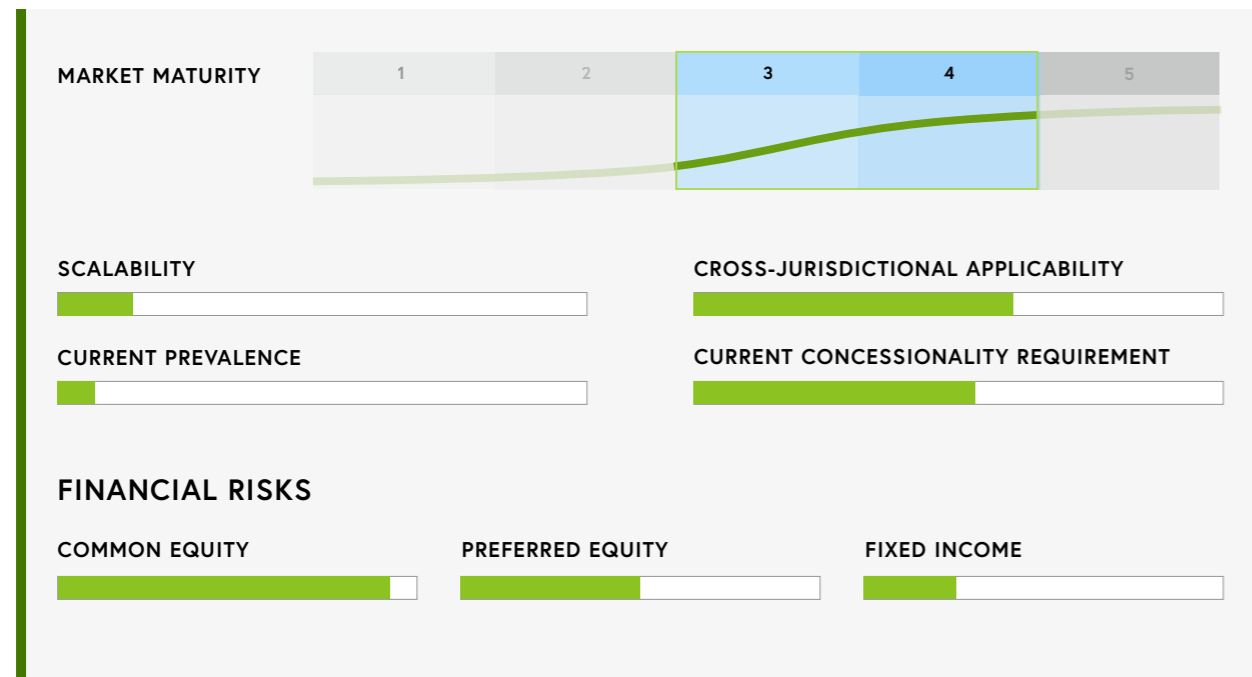
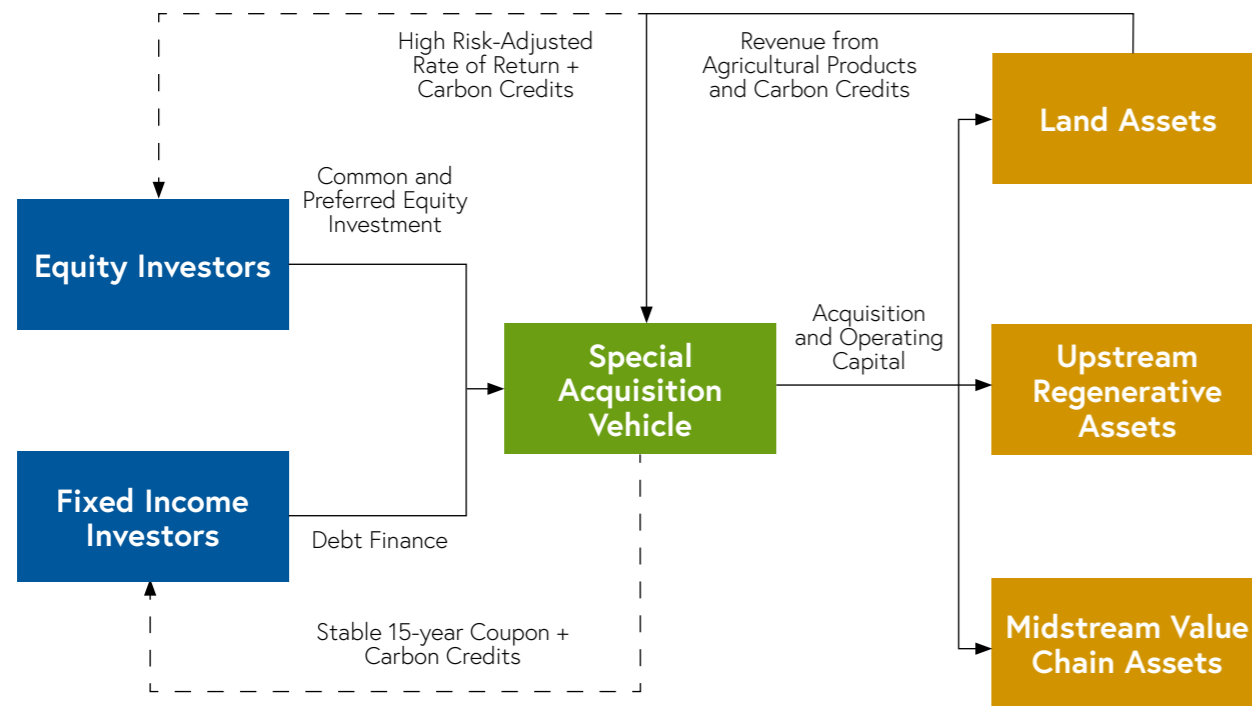
Moreover, given the trends in high land value appreciation but low income growth from farming, especially in developed markets across Europe and North America, farmland investors provide an opportunity for farmers with significant land assets but limited cash savings to access liquidity from land holdings.⁷⁶

76. SLM Partners (2024). "United States."



Nascent Models with Potential

REGENERATIVE PRIVATE EQUITY



Private Equity and Vertical Integration Approaches

ROLE IN THE REGENERATIVE AGRICULTURE FINANCE ECOSYSTEM

Private equity approaches to agricultural investment present opportunities to derive commercial value from regenerative agriculture in multiple parts of the value chain, allowing investors with different risk-return profiles to participate in the transition. This is because private equity investors have the flexibility to make a range of strategic and operational decisions about the degree of control they want to exert in the food production, processing, manufacturing, and distribution process.

The lack of processing and manufacturing infrastructure dedicated to regeneratively produced commodities is often cited as an impediment to growing the market for regenerative end products. Vertical integration is one way to circumvent this barrier by aligning midstream and downstream incentives, capacity, and scale to promote regenerative production upstream.

HOW DOES IT WORK?

In regenerative agriculture, private equity approaches use vertical consolidation across production, processing, manufacturing, and distribution. This setup allows for value stacking by bringing together input procurement, regenerative production, carbon credit generation, offtake agreement negotiation, certification of commodities, and organisation of post-production logistics. Vertical integration allows investors to generate returns from synergies between different segments of the value chain and creation of new enterprises that require tailored upstream and downstream infrastructure to function. Private equity approaches are capital intensive but can usually raise significant amounts of capital by tapping into financing sources with different risk-return profiles that participate at different points in time.

Interviewees note that the largest opportunities to deploy vertical integration approaches exist in emerging markets, where production and other segments of the value chain are often fragmented, and the ability for each segment to independently access finance is limited given credit constraints and availability of capital.

In emerging market contexts, this is essentially a formalisation of connecting producer and downstream supply chains, which are an extension of informal networks that support scaling up production. Smallholders who are using regenerative practices have been organising in new networks and selling their produce through a combination of markets, including short value chains (farm gate sales, farmers markets, cooperative shops, group sales), domestic market (supermarkets, wholesalers, school and other institutional buyers), long value chains (processors, exporters, other intermediaries), reproduction (own consumption, seed exchanges), and hospitality (restaurants, lodges/hotels). These relationships, like formal vertical integration, allow for favourable market prices, building reputations for quality, and knowledge transfer that further enables scale.

STRUCTURES AND OPPORTUNITIES

Private equity approaches to financing regenerative agriculture are relatively novel, and there are limited examples in market. One example of such a structure seeks to raise finance across risk-taking equity with higher returns and lower risk fixed income instruments, both issued by a special acquisition vehicle tasked with vertical integration. Risk-taking equity finances the riskier transition and integration period, which includes implementation of regenerative practices, preparation of carbon credits, and integration of businesses across the value chain to aggregate regeneratively produced commodities. In emerging markets, the equity tranche that absorbs the riskier capital requirements can be targeted to DFIs and philanthropies. In turn, this can catalyse additional investment in the fixed income tranche from commercial capital. This structure is notable because many commercial investors perceive DFIs and philanthropies as only providing catalytic grants and concessionary capital. In contrast to this perception, interviews with catalytic investors affirmed there is appetite for innovative, high-risk investments in equity structures that sufficiently catalyse opportunities for further private investment.

STRUCTURES AND OPPORTUNITIES
(continued)

The special acquisition vehicle complements equity capital with lower-risk corporate debt raised through bonds issued by the investment vehicle. Rated bonds issued by the vehicle have stable coupon returns and additional upside potential through the sale or transfer of carbon credits. Whether the equity tranche is financed by commercial or concessional capital, it unlocks the additional debt financing opportunity for fixed income investors seeking investment-grade returns. This creates an attractive risk-return profile for fixed income investors, with stable returns generated by diversified revenue streams from various agricultural products and supplemented by carbon credit revenue.

The private equity sponsor has the option to supplement financial returns to equity and fixed income investors with high-quality carbon credits from removals and avoidance credits generated across the integrated value chain. Given capacity for end-to-end planning of land assets to balance production and carbon, this approach can uniquely monetise the production of regenerative commodities and premium carbon credits to optimise the revenue stack. The model is a compelling solution for affiliated downstream traders and CPGs. By participating as an offtaker, CPGs can source directly from the portfolio and reduce scope 3 emissions. By participating as an investor, CPGs can also benefit from the return.

Paine Schwartz Partners is a private equity firm with a demonstrated track record of investment across the food value chain. Though the firm does not exclusively invest in regenerative ventures, one of the key pillars of the firm's investment strategy is to invest in businesses that enhance productivity in the food value chain while limiting resource consumption, including investment in sustainable agribusinesses involved in production.⁷⁷ To date, Paine Schwartz Partners has invested USD \$5.7 billion in food and agriculture through private equity strategies aimed at various parts of the value chain.⁷⁸

RISKS AND IMPLEMENTATION COMPLEXITIES

For vertical consolidation strategies to be executed effectively, strong localised agro-economic and technical knowledge is crucial. This ensures operational decisions across segments of the vertical chain allow for effective integration and are set up to exploit additional value creation opportunities. Analogous to the criticality of built-in technical assistance in blended finance models, private equity practitioners caution that the financial engineering elements of vertical consolidation and negotiated offtake agreements alone are insufficient to unlock commercial value in the absence of strong agro-economic and technical knowledge.

In developed markets, the scope for deploying vertical integration as an investment strategy is more limited, given established existing linkages among agricultural value chain actors.

In emerging markets, where potential for private equity approaches is greater, vertical consolidation should be pursued in an inclusive way. This means allowing for connectivity between local farmers and enterprises rather than displacing existing local industries that are unable to compete with foreign institutional capital. The ability to connect disparate elements of the supply chain and fragmented production with downstream enterprises also provides the capacity to develop the market writ large. Technology transfer, negotiated offtake agreements, and price stability are all features of establishing formal connections between production networks and downstream enterprises through vertical integration.

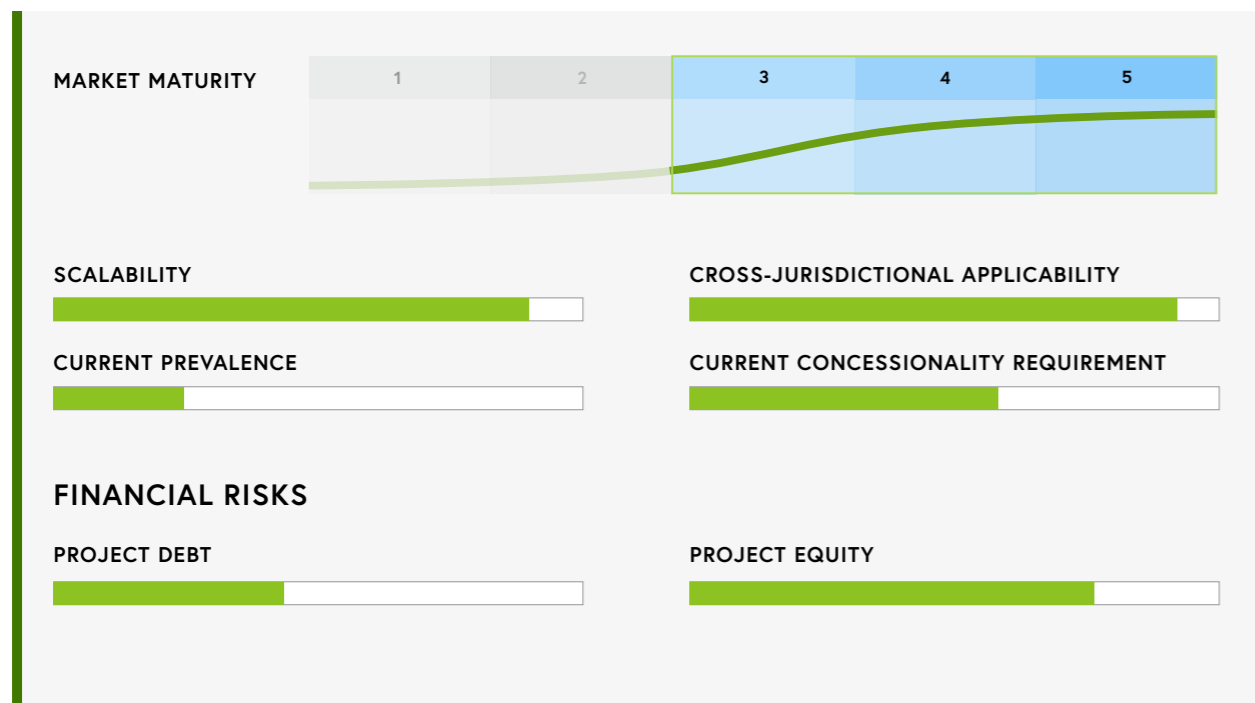
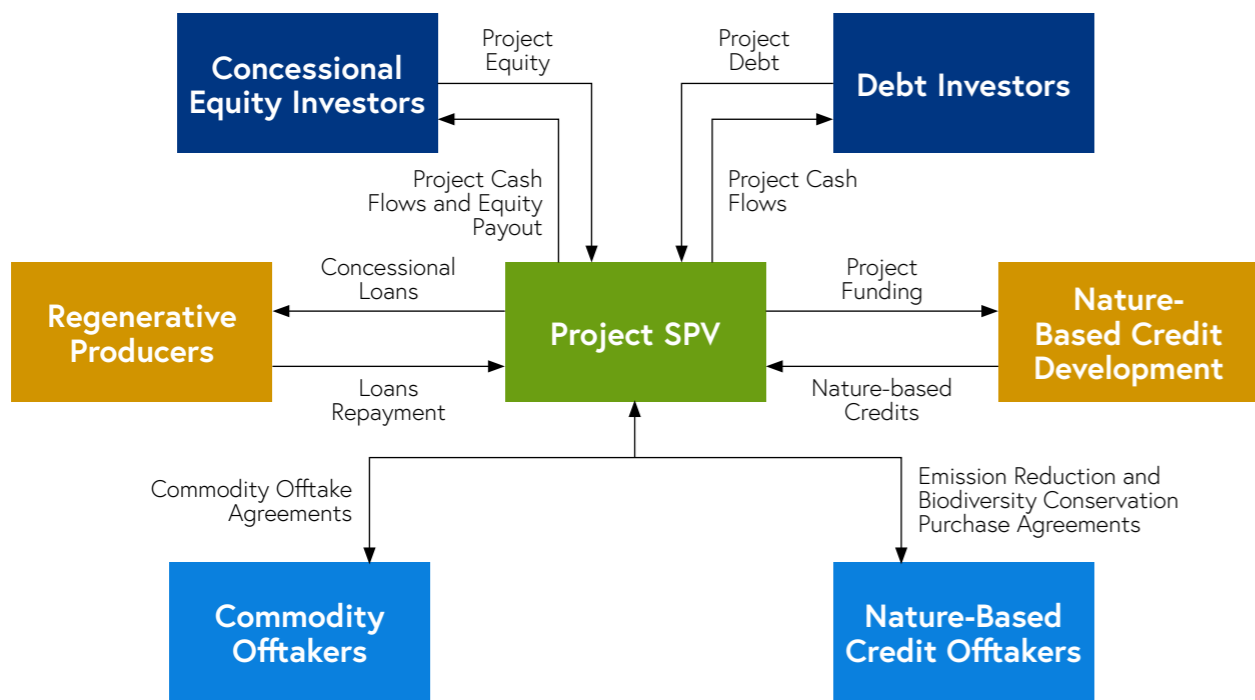
PRODUCER-SIDE IMPLICATIONS

Implications of vertical integration for producers will be contextual. In general, from a producer's perspective, vertical integration may create improved connectivity of producer networks further downstream. If executed successfully, these approaches may reduce frictions from farm gate to market and may unlock additional investment for farms in the vertically integrated supply chain.

77. Paine Schwartz Partners (2024). "Our Strategy."
78. Paine Schwartz Partners (2024). "Our Firm."



REGENERATIVE PROJECT FINANCE



Project Finance

ROLE IN THE REGENERATIVE AGRICULTURE FINANCE ECOSYSTEM

For project finance and infrastructure debt investors, regenerative transition initiatives provide an emerging set of opportunities. Project finance allows larger scale regenerative agriculture projects to receive capital for project development at the beginning of the project lifecycle based on long-term commercial viability.

HOW DOES IT WORK?

Typically, projects are insulated from the credit risk and balance sheet of the project sponsor. Debt and equity invested in the project is paid back with cash flows generated by the project's commodity and environmental market revenues. Some corporate interviewees point out the difficulties of taking on transition costs as liabilities on their balance sheet and view project finance solutions as a way to coordinate and finance regenerative transitions within supply chains without putting as much strain on balance sheets.

STRUCTURES AND OPPORTUNITIES

While there are few examples in market of regenerative project finance, the opportunities that are currently in market or in progress demonstrate significant potential for scale across geographies, given the focus on project-specific cash flows and the relatively developed project finance ecosystem across developed and emerging markets, including for agriculture.

One project finance fund has established a relationship with project developers who coordinate farmer adoption, provide technical assistance, validate carbon credits, and register for crop certification. The project finance capital is funnelled through a project-level special purpose vehicle and is used to fund on-farm transition to regenerative practices. To smooth out cash flow, land uses include agroforestry plantings that yield higher value cash crops in the medium-term and crops with shorter transition periods that can be sold into global commodities markets more immediately (e.g., cassavas, bananas).

In addition to deploying capital for regenerative production, the project developer is taking on debt financing to develop and measure carbon credits with a biodiversity co-benefit program design. The shorter timeline to generate positive cash flows through careful crop selection and monetisation of carbon benefits allows the project to be refinanced to a more affordable rate of interest after the first few harvests. Both carbon and commodity offtake agreements are agreed with willing buyers in advance of project finance. This provides certainty of cash flows to project financiers and allows for cost of capital to be negotiated based on feasibility and quality of project development plans.

RISKS AND IMPLEMENTATION COMPLEXITIES

There are higher risks associated with this model in early project preparation phases. Consequently, cost of capital is more expensive in the early project preparation phases. In regenerative transition, this is exacerbated by the higher short-run costs of transition and potential loss of income during the transition period.

Part of this risk can be reduced by government and donor grants, including from ecosystem services payments that are not specifically tailored to regeneration but intersect with the implementation of regenerative practices. This allows projects to move toward commercial viability without taking on higher interest rate finance that compensates for project set-up risks. For example, the UK has a series of woodland creation payment schemes, which provide immediate financial support to producers looking to transition to agroforestry-based regenerative models and can enable lower interest rate project financing for other regenerative practices.⁷⁹

PRODUCER-SIDE IMPLICATIONS

Project finance allows producers to receive finance based on forward-looking cash flows generated by the transition to regenerative practices and corresponding commodities produced. This is a significant departure from the approach taken by most agricultural lenders, who rely on historic producer data to determine financing eligibility. The tailored financing structures that investors in the market are using also allow financing to be built around the specific timelines, commodities, and environmental market dynamics observed at farm level. Some of these structures are being deployed in conjunction with project development partners that further provide technical assistance and practice guidance to support producers through project implementation and maintenance phases.

79. UK Forestry Commission (2024). "Woodland Grants and Incentives Overview Table."

Summary of Structures

	Operating Instruments	Blended Funds	Farmland Investing	Private Equity	Project Finance
MARKET MATURITY					
SCALABILITY					
CURRENT PREVALANCE					
CROSS-JURISDICTIONAL APPLICABILITY					
CURRENT CONCESSIONALITY REQUIREMENT					
FINANCIAL RISKS	OPERATING LOANS 	JUNIOR TRANCHE 	EQUITY INVESTMENT 	COMMON EQUITY 	PROJECT DEBT
	OPERATING INSURANCE 	MEZZANINE TRANCHE 		PREFERRED EQUITY 	PROJECT EQUITY
		SENIOR TRANCHE 		FIXED INCOME 	

Approaches to Deploying Regenerative Agriculture Finance

Prior content in this section of the report highlights financing instruments and structures used by commercial and concessional capital in the transition to regenerative agriculture. Below, we illustrate two approaches to deploying regenerative agriculture

finance – landscape approaches and corporate approaches – that cannot be contained by any one structure. These approaches are cross-cutting and can potentially intersect with multiple financing instruments and structures.

Landscape Approaches to Regenerative Agriculture Finance

ROLE IN THE REGENERATIVE AGRICULTURE FINANCE ECOSYSTEM

In fragmented production contexts, where wholesale management of land is often not feasible due to the prevalence of smallholder production and smaller farm sizes, there is a need for more indirect financing approaches. Such approaches should incentivise willing farmers to improve practices with technical assistance and reward mechanisms but often require a more holistic lens that integrates environmental and socioeconomic development considerations.

Resilient agroecological landscape approaches are a powerful enabler to accelerate adaptation in a way that addresses the food, water, nature, and energy nexus, while delivering a just transition. "Landscapes" are socio-ecological systems that consist of interconnected natural and human-modified land and water ecosystems, influenced by distinct ecological, historical, economic, and socio-cultural activities.⁸⁰

HOW DOES IT WORK?

Deploying a landscape approach requires local ownership. This means creating a central role for local landscape actors, enabling organisations, and governments to establish the enabling architecture to underpin effective investment. Multiple local institutions collaborate in a landscape approach to help anchor the human, social, and relationship capital necessary to deploy investments. Grant funding bolsters the capacity of trusted convening bodies ("landscape partnerships") that strengthen local farmer cooperatives, which aggregate farmer needs. Landscape partnerships seek to equip local financial institutions with the capability to efficiently distribute fit-for-purpose finance to large numbers of farmers in the landscape. Such partnerships also seek to ensure local technical assistance providers can support a critical mass of transitioning farmers. Often, the requirement for grant funding is underestimated, leading to private sector-focused projects that fail to build the local enabling ecosystem critical to local ownership and delivery of investment returns.

Landscape approaches are particularly effective for food corporates, for example, who often do not have comprehensive line of sight to upstream producers in their supply chains but have a general understanding of the region of origin for sourced agricultural commodities.

STRUCTURES AND OPPORTUNITIES

In practice, landscape financing requires the establishment of one or more commercial special purpose vehicle, or local partnerships with institutions like local banks that can help to identify landscape opportunities, to provide diverse financing across the landscape. This may include project finance loans for individual regenerative projects, debt and mezzanine financing for landscape agribusinesses looking to scale regenerative production, direct lending to farmer cooperatives to on-lend to smallholders, etc. To ensure that a viable commercial model can operate in the landscape approach, the commercial special purpose vehicle or landscape partnership often has a separate but affiliated mechanism that deploys grant funding to subsidise costs for capacity building and technical assistance.

The Landscape Resilience Fund is one such example of a blended landscape vehicle, investing grant capital into SME investments and landscape development initiatives to crowd-in commercial investment.⁸¹ Grant capital is provided to local landscape initiatives and ambitious SMEs that train local farmers and provide offtake insurances, which de-risks financing opportunities for return-seeking investments into the landscape.

Landscape financing is strengthened by robust fiscal, tax, and regulatory frameworks, which can harmonise investment incentives and establish governance structures necessary to drive private investment toward substantial improvements in ecological, social, and production outcomes across landscapes. Interviewees highlight specific government policies in countries like South Africa, where tax incentives and government grants are provided to promote biodiversity stewardship in key areas. These policies extend protection designations to private land holdings that demonstrate effective project plans and governance to enable the transition toward conservation agriculture. One notable global framework is the concept of Other Effective Area-Based Conservation Measures ("OECMs"), which formalises governance and management of biodiverse privately owned lands, indigenous territories, and community-managed forests. OECMs are designed to achieve enduring positive outcomes for biodiversity conservation, ecosystem services, and sociocultural values in line with standards set forth by organisations like the IUCN.⁸² By offering flexibility in intervention strategies and production activities while enforcing strong governance mechanisms, OECMs channel project incentives toward conservation goals, enabling landscape investment approaches to holistically impact a set of objectives.

Given landscape approaches feature a variety of investments across the landscape, the model inherently provides diversification of risk, allowing investors to reduce exposure to a single counterparty.

RISKS AND IMPLEMENTATION COMPLEXITIES

Landscape financing requires significant coordination among producers, agribusinesses, civil society organisations, and government actors to ensure that financing and technical assistance interventions are conducive to holistic transition. It also requires understanding the level of connectivity between recipients of finance. In contexts where production is scattered and value chains are fragmented, identifying opportunities that substantively contribute to the landscape transition can be difficult. However, in contexts where there is greater connectivity of producers and agricultural value chains, landscape approaches provide unique opportunity to make significant transition impact.

Landscape financing often requires identifying early anchor investments connected to the broader landscape that can act as an entry point. In emerging markets, agribusinesses, farmer cooperatives, and producer aggregators that seem like good anchor investment candidates may not yet be ready to receive commercial investment. Consequently, there is a crucial role for technical assistance and seed capital to help develop high potential investment opportunities to the point of bankability.

Landscape approaches are characterised by stakeholders in a landscape working together to reconcile competing social, economic, and environmental objectives, providing a unique mechanism to facilitate holistic regenerative transition.⁸³ Investors are able to use the scale and flexibility of landscape financing to coordinate interventions and financing opportunities that generate impact across multiple dimensions, while mitigating risk from the natural diversification of revenue streams within each landscape. Especially in smallholder contexts, landscape approaches are an effective way to deploy capital at scale while taking into account the additional coordination required to facilitate transition.

81. Landscape Resilience Fund (2024). "How it works."

82. BirdLife South Africa (2020). "Assessing the Extent of OECMs in South Africa: Final Project Report."

83. Ibid.

80. Commonland (2021). "The 4 Returns Framework for Landscape Restoration."

Corporate Approaches to Regenerative Agriculture Finance

ROLE IN THE REGENERATIVE AGRICULTURE FINANCE ECOSYSTEM

As food corporates increasingly recognise the benefits of regenerative agriculture – including supply chain resiliency, lower cost of capital, enhanced corporate reputation, and potential scope 3 GHG reduction – corporates are experimenting with ways to financially incentivise producer participation. The rising momentum of insourcing among corporates has brought greater attention to regenerative practice adoption as one of the few ways to feasibly reduce scope 3 emissions, which represent the majority of emissions for most corporates.

Corporate approaches vary based on position in the agricultural value chain, which affects visibility to upstream producers and scope of influence over producers, level of commitment to regenerative transition, and the degree of comfort internal procurement, finance, and treasury teams have with using balance sheet levers.

While interest in regenerative transition is still strongest in downstream CPGs and retailers, midstream value chain actors such as processors and traders are becoming increasingly active. This is a notable development for several reasons. Firstly, in indirect sourcing models where CPGs do not have direct line of sight to upstream producers in their supply chains, processors and traders who have greater visibility to upstream producers wield more influence over implementation of regenerative practices. Secondly, lack of capacity in processing is often cited as a barrier to regenerative adoption. Creation of dedicated tracking or processing lines for regenerative commodities – or lack thereof – can alter market access for regenerative producers and affect whether regenerative commodities meet the quantity, quality, and marketing claim process requirements of off-takers. Thirdly, processors and traders can sometimes play a role in on-lending agricultural credit to producers, particularly in emerging markets, to help producers bridge seasonal illiquidity from preparation to harvest. Midstream value chain actors serve critical market-making roles, and their growing participation is a positive advancement for increasing implementation of regenerative practices.

HOW DOES IT WORK?

This report has made numerous references to the importance of corporate offtake agreements for demand signalling and risk mitigation for producers undergoing regenerative transition. Offtake agreements are one of several corporate approaches to regenerative agriculture finance.

Corporate actions that may impact producer financing for regenerative transition include procurement levers such as directness of sourcing from producers, term of guaranteed offtake agreements, forward pricing arrangements, price premiums, timing of payments, etc. Corporation actions also include finance levers such as supply chain finance (e.g., payables finance, trade finance), sustainable bonds and loans (including sustainability-linked credit), producer cost-share programs, mobilising co-investment in the supply chain, investing in technical assistance capacity in-house, and incorporating ingredient sourcing considerations into new product development. In addition, corporates can take a range of actions to help build the enabling environment for regenerative agriculture, such as convening producers within their supply chains to share best practices, improving incentive alignment with midstream value chain actors to advance regenerative adoption, coordinating more standardised use of measurement tools across the value chain, and increasing collaboration with financier and investor communities to help facilitate two-way understanding of opportunities and constraints.

STRUCTURES AND OPPORTUNITIES

To date, the most common model is CPGs paying producers a price premium for practice adoption in line with the company's regenerative agriculture practice roadmap. Premiums are typically an extra 2%-5% above standard offtake prices, with up to a 10% premium above organic pricing in select circumstances. Corporates requiring third-party certification generally offer higher premiums to offset producer costs for verifiers and auditors. In some instances, the regenerative agriculture roadmap is a mix of practice-based guidelines and outcomes-based targets with price premiums based on producer outcomes achieved.

Most corporates paying a price premium for regenerative practices are funding such initiatives with millions in balance sheet investments. For example, Arla, one of the world's largest dairy companies, has developed an incentive scheme through which farmers are required to subject operations to a climate check tool, which determines the magnitude of financial premiums paid to farmers. Core to this incentive scheme has been the end-to-end development of a practice schedule, metric set, and technical assistance model, which supports implementation of the incentive scheme and measures performance with respect to holistic sustainability considerations. Corporate proceeds raised from sustainability-linked bonds and sustainability-linked revolving credit facilities help to fund the balance sheet investments.

Corporate financial support for producers undertaking regenerative transition is generally easier to implement for corporates who have more direct relationships with producers. Some CPGs with indirect sourcing models are taking supply shed approaches (e.g., PepsiCo, Nestle, General Mills), through which they are willing to make premium payments or transition cost-share arrangements for farmers in the same production area as what the company uses in their supply shed, regardless of whether the individual farmer's commodities were purchased by the corporate. Other CPGs with indirect sourcing models are relying on midstream value chain actors such as their primary processor to implement regenerative transition programs.

At the forefront of the industry, a small group of corporates are pursuing off-balance sheet approaches to identify external financing for farmer regenerative transition. This entails finding commercial capital partners willing to underwrite credit for transition operating costs, typically at an ecological discount, for farmers who have guaranteed offtake contracts with the food corporate. Commercial capital partners typically require incentive stacking from the food corporate. For example, the food corporate might be required to subsidise measurement costs, provide technical assistance, cost-share capital expenditure, provide a premium payment, or extend the term of guaranteed offtake.

As an example, Natwest, the largest business bank in the UK, has entered into partnerships with the frozen food business McCain Foods and the retailer Tesco. The Natwest / McCain program offers preferential payment terms and financial support to help potato growers in McCain's supply chain access regenerative farming equipment. In addition to providing growers with agronomic technical assistance, McCain offers a contribution toward the interest payable for assets.⁸⁴ The Natwest / Tesco program offers preferential rates on financing to beef, lamb, and dairy farmers in Tesco's supply chain who want to switch to sustainable farming methods and renewable energy sources.⁸⁵

For companies who source globally, the challenge in pursuing off-balance sheet approaches is in replicability across diverse geographic jurisdictions, each with unique market requirements and a different set of commercial capital partners.

84. NatWest Group (2023). "McCain Foods and Natwest Join Forces to Support Growers' Sustainable Practices with New Incentives." Press Release.

85. NatWest Group (2024). "Tesco and Natwest Join Forces to Help Farmers Reduce Costs and Decarbonise." Press Release.

4. Additional Considerations for Financiers

Evolving Enabling Environments

WHEN DOES "REGENERATIVE AGRICULTURE" BECOME JUST "AGRICULTURE"?

As set forth in the maturity curve in Section 2, the end point of development for regenerative agriculture is when it becomes recognised as simply "agriculture."

Although this transformation may be difficult to imagine, there is precedence in other sustainability arenas for similar evolutions over time. The Forest Stewardship Council ("FSC") offers an analogue. Founded in 1993 as a voluntary certification for sustainable forestry, there are now more than 200 million hectares of forest managed according to FSC standards. Over 30 years, FSC has certified tens of thousands of different products, ranging from books, to furniture, to timber used in the construction of venues for the 2016 Olympic Games.⁸⁶ As FSC certification has proliferated, downstream fibre companies have progressed from incentivising usage to mandating usage of FSC-certified materials. Furniture giant IKEA, for example, requires all suppliers to use FSC-certified or recycled wood and funds supply chain projects to further strengthen the reach of FSC. Bio Pappel, one of the largest recycled paper manufacturers in North and South America and supplier to brands including Amazon, Samsung, Xerox, Walmart, and Costco, is another company that requires 100% of raw material to be FSC certified.⁸⁷ It is conceivable for regenerative agriculture to follow a similar evolution over time, though the key question is how long such an evolution will take.

For regenerative agriculture to be widespread and standard, regenerative practices need to be integrated into all aspects of agricultural operations, financing, and the underlying market infrastructure that currently offers systemic protections to conventional agriculture. Arguably, **conventional agriculture is inherently more risky than regenerative agriculture – given its susceptibility and contribution to climate change – but it has systemic support inclusive of underlying financial, policy, data, and cultural infrastructure.** Currently, many of the initiatives undertaken by early movers in regenerative are efforts to create similar underlying infrastructure for regenerative agriculture, either from scratch or as modified offshoots to the existing system designed for conventional agriculture. As jurisdictions progress through phases of the financing maturity curve for regenerative agriculture, the underlying market infrastructure for regenerative will commensurately co-evolve, allowing regenerative to first become more competitive with conventional, and eventually to replace conventional as the status quo paradigm.

⁸⁶. Forest Stewardship Council (2024). "Our History: From Roots to Forest Canopy."

⁸⁷. Sustainable Brands (2023). "Consumer Product Brands Embrace Responsible Forestry."



CHANGING REGULATIONS AND TRANSITION RISKS

Although financial systems and market oversight actors such as credit rating agencies have historically ignored the need to include social and environmental costs into asset pricing, there is accelerating movement to increase economic consideration of these factors. The Task Force on Climate-Related Financial Disclosures ("TCFD") has informed mandatory climate disclosure legislation in some of the world's most influential economies, and the Task Force on Nature-Related Financial Disclosures ("TNFD") has followed suit to include reporting of dependencies and impacts of organisations on nature.

The bankability gap of regenerative agriculture can narrow as policies to internalise externalities take effect. In the past 50 years, there has been nearly a 40-fold increase in environmental laws globally, and environmental laws continue to expand in the face of climbing anthropogenic emissions.⁸⁸ In recent years, national policies introduced – including mandatory scope 3 carbon disclosures, TCFD, TNFD, carbon taxes, compliance carbon markets (e.g., EU Emissions Trading System), and nascent biodiversity targeted policies (e.g., UK mandatory biodiversity net gain) – place greater emphasis on integrating social and environmental costs into asset pricing and/or providing financiers with information material to capital allocation decisions. The EU Deforestation Regulation ("EUDR") requires any party trading common deforestation-linked commodities be able to prove that these commodities do not originate from recently deforested land and have not contributed to forest degradation.^{89,90} EUDR has set a precedent for future regulations that mandate parties to demonstrate sourced commodities do not adversely contribute to environmental degradation or climate change. In this regulatory context, investment in greater agricultural production visibility and proactive adoption of regenerative practices across supply chains will be crucial drivers of compliance.

Notably, regulation moves slowly through legislative processes but can require quick implementation timelines. Due to the timing of biological and ecological cycles, change inherently takes longer in agriculture than in many other industries. Because implementation of regulation targeting climate transition risks can take effect faster than changes made at farm level, regulatory compliance in the agricultural sector will be more challenging if financiers and asset owners do not make adequate preparations in advance.

HEADWINDS AND TAILWINDS FOR REGENERATIVE AGRICULTURE

Despite clear urgency of regenerative adoption, there are increasing external pressures that may create headwinds. In Europe, initial legislative actions to protect nature and limit pesticide usage have been pulled back in response to intense farmer protests across the continent.⁹¹ In the U.S., institutional investors and investment managers are contending with escalating backlash to ESG-based investment strategies, demonstrated by pension funds and insurers pulling money away from these strategies and investment managers backtracking on prior commitments.^{92,93}

However, these headwinds do not undermine the strong commercial proposition of financing regenerative agriculture across the range of structures outlined above. This is due to several contributing factors. Firstly, **regenerative agriculture offers a way to mitigate the long-term financial risks associated with agricultural production, particularly given the industry's susceptibility to the physical impacts of climate change.** Secondly, as discussed in detail in Section 1, there are inherent profitability drivers within regenerative production approaches that help to align the financing of such approaches with fiduciary responsibilities going forward. Consequently, on the production side, adoption of regenerative practices is likely to accelerate despite regulatory headwinds. Thirdly,

regulatory headwinds are mostly geographically concentrated. In comparison, regulatory commitment to sustainable investing is present in Europe, Asia, Oceania, and South America, creating robust global demand for investments that deliver nature and decarbonization impact.

Traction observed to date in the implementation and financing of regenerative approaches paints a positive future trajectory for regenerative agriculture. This is partly because, simultaneous to headwinds, there have been favourable tailwinds. Increasing public financing and public-private partnerships have helped to accelerate investment into climate change adaptation and mitigation activity.

Sovereign green bonds have historically been dominated by Europe, but 21 emerging markets have issued sovereign green bonds since 2016.⁹⁴ In 2023, for example, the Government of India entered the green sovereign debt market, issuing USD \$2 billion of green bonds to finance projects that contribute to environmental protection, resources and biodiversity conservation, net zero objectives, and climate change mitigation and adaptation. In addition to recently proposing rules for mandated climate-related financial risks, the Securities and Exchange Board of India has also altered rules for mutual funds (increasing the limit for mutual funds from one ESG fund to multiple ESG schemes with different strategies) and green debt securities (expanding allowable securities to include transition bonds, adaptation bonds, and blue bonds for sustainable water management) to improve capital flows for sustainability related initiatives.⁹⁵

In the U.S., public financing has been specifically directed toward incentivising value chain partnerships with private sector, university, and nonprofit actors through the Department of Agriculture's Partnerships for Climate-Smart Commodities program. These multi-stakeholder projects receive federal investment to support the production and marketing of climate-smart commodities and include plans to match, on average, 50% of the federal investment with private funds.⁹⁶ More recently, in 2024, a partnership between agriculture, environmental groups, and financial institutions secured USD \$7 billion of funding from the Inflation Reduction Act to de-risk and catalyse financial solutions to accelerate climate-smart agriculture implementation, serving as one of the country's first examples of an agricultural "green bank".⁹⁷

These tailwinds of increasing public financing and innovative public-private partnerships showcase positive developments in the enabling environment that help develop the underlying market infrastructure for regenerative agriculture and support jurisdictions in progressing through phases of the financing maturity curve.

88. United Nations Environment Programme (2019). "Environmental Rule of Law: First Global Report."

89. Including cattle, wood, cocoa, soy, palm oil, coffee, rubber, and some of their derived products, such as leather, chocolate, tyres, or furniture.

90. European Union (2023). "Regulation on Deforestation-Free Products." Energy, Climate Change and Environment.

91. Reuters (2024). "Europe's Restless Farmers are Forcing Policymakers to Act."

92. Bloomberg (2024). "JPMorgan, State Street Leave Biggest Climate-Investor Group."

93. Financial Times (2024). "US Investment Funds Pull \$13.3bn From BlackRock in Anti-ESG Campaign."

94. The World Bank (2023). "Green, Social, Sustainability, and Sustainability-Linked Bonds." Market Update – October 2023.

95. Nelson (2023). "India: A Case Study in Climate Mitigation and Adaptation." Global Association of Risk Professionals.

96. USDA (2022). "Partnerships for Climate-Smart Commodities: By the Numbers."

97. Environmental Defense Fund (2024). "New Agriculture Finance Sustainability Coalition Partners with Multi-Billion Dollar Awardee of the EPA's National Clean Investment Fund." Press Release.

Impact Scope for Regenerative

SOCIAL AND COMMUNITY IMPACT

As described in the Context on Regenerative Agriculture, there is varying breadth of impact included in definitions of regenerative agriculture. Many definitions emphasise only ecological benefits (e.g., soil health, water, biodiversity, carbon), while other definitions stress the range of potential socioeconomic and community impacts in addition to ecological benefits.

Regen10 is one such organisation that has a broader impact lens. Drawing from multiple existing regenerative frameworks developed globally, Regen10 is designed to support an inclusive, holistic, and equitable transition toward a regenerative food system. Target outcomes at farm and landscape level include, but are not limited to, reduced GHG emissions and improved soil health, water quality, biodiversity, livelihoods, socio-cultural issues, and

equity.⁹⁸ This type of holistic vision of regenerative food systems is termed "deep regenerative" by many in the impact investing community.

Transitioning to deep regenerative is a journey that will take time – and substantially more time than versions of regenerative agriculture that only emphasise and measure ecological benefits. Financing requirements to catalyse deep regenerative is not captured in this report due to limited existing capital mobilisation for deep regenerative beyond impact and philanthropic sources of capital. Ultimately, the individual goals and aspirations of each financier should be central to investment decisions, and there may be significant intangible considerations around the desired impact scope for regenerative agriculture that affect capital deployment beyond the economic considerations highlighted in this report.



98. Regen10 (2023). "Progress Report: Zero Draft Outcomes-Based Framework."



COLLECTIVE ACTION OPPORTUNITIES: BIODIVERSITY AND WATERSHEDS

Conventional agriculture continues to be the primary cause of biodiversity loss globally, with current practices identified as a threat to 86% of species at risk of extinction.⁹⁹

Regenerative agriculture is often associated with biodiversity enhancement as an ecological benefit, but in practice, biodiversity can be relegated in comparison to other ecological priorities. This is, in part, due to the difficulty of measuring and verifying biodiversity outcomes. Measurement of soil health, water quality and quantity, and carbon has seen increased digitisation in recent years due to strong venture capital and corporate investment in the agrifood technology space. In contrast, biodiversity quantification still relies on manual methodologies of counting species richness, evenness, and other indicators. The science on biodiversity further adds to measurement difficulty: undocumented species vastly exceed the number of documented species, and there are wide-ranging estimates for how many species exist.

Robust biodiversity conservation, with high standards for large contiguous landscapes, can consequently be underemphasised in regenerative transition. While most regenerative practices focus on the individual farm level, extending scope of impact to community-level or landscape-level has particular benefit for biodiversity. Setting aside permanent land for biodiversity habitat, creating conservation corridors, connecting key biodiversity areas, and adopting crop planning and chemical restrictions over larger contiguous landscapes that diversify pollinator forage are all effective strategies that can be coordinated at community or landscape levels to enhance biodiversity outcomes.

Like biodiversity, watershed health is another impact area that requires collective action to reap the most benefit. Emerging watershed focused projects that finance a group of producers to adopt regenerative agriculture practices to collectively benefit ecologically sensitive watersheds present interesting financing opportunities. This type of collective action opportunity requires more logistical coordination but also results in significantly more impact than focusing on a single farm in the water catchment.

99. Chatham House (2021). "Food System Impacts on Biodiversity Loss."

Conclusion

With only five harvests left before the end of the decade, the impetus to take action becomes more urgent with each passing year. The food and finance communities must work together to catalyse change in food systems, and change starts with mutual education and understanding. Too often, the food and finance communities are siloed and hold unrealistic expectations of one another. Transition to a healthier, more resilient food system will only come through working together to design solutions that distribute risk across the value chain such that no one actor is bearing the full cost of transition alone.

CONCESSIONAL CAPITAL: WHERE SHOULD IT PLAY?

The regenerative agriculture financing market will not accelerate toward maturity without significant pools of concessional capital deployed across a range of opportunities. The risk tolerance of concessional capital is required to mobilise additional private capital, catalyse origination of new regenerative projects, create best practice models, and build track record that demonstrates the commercial viability of regenerative agriculture. Development finance institutions, philanthropies, private foundations, impact investors, and state-owned banks provide a broad spectrum of concessional capital, ranging from grant capital to higher-risk debt finance. Often, however, there has been insufficient consideration of how participation in a particular opportunity contributes to the development of the market more broadly, as well as insufficient coordination among concessional capital providers in how their dollars can best be stacked or leveraged to maximise long-term impact.

As detailed throughout this report, the provision of grant capital to technical assistance facilities that support producers with implementation is crucial. Technical assistance funding is likely to be additional even as the market matures, with grant funded opportunities unlikely to displace private capital. In addition to technical assistance, the provision of concessional capital to de-risk individual transactions and structures plays a critical role in mobilising early private finance into projects otherwise perceived as too risky. Early successes made possible by concessional capital will generate important data points and exemplar structures that allow for a deepening of the regenerative agriculture financing pipeline.

However, providers of concessional capital should consider opportunities beyond technical assistance facilities and junior capital that crowds-in commercial investor participation. Concessional capital providers with higher risk tolerance should seek out innovative new structures that are yet to be established in the market but are likely to have significant impact leverage and contribute significantly to the development of the market. In some instances, deployers of concessional capital may have to hold majority positions in riskier structures or invest in projects that fail. But in the process of creating new structures that can feasibly scale to include commercial investors, deployers of such concessional capital will meaningfully contribute to the growth of the market to unlock greater future financing at scale.

Beyond provision of financing, concessional capital will of course also play a key role in market development through supporting the acceleration of regenerative agriculture data, policies, standards, and stakeholder coordination.



ASSET OWNERS: ON-RAMPS FOR DEPLOYMENT

The natural question for pension funds, insurance companies, endowments, and foundations with substantial capacity to direct large pools of capital toward regenerative agriculture is: where should I begin?

The most accessible on-ramp currently available is farmland investing, particularly in domestic and regional markets. However, this approach comes with important caveats that must be carefully considered to ensure ethical investment and sustainable impact.

- **Prudent Investment in Domestic and Regional Farmland:** Asset owners are advised to start with domestic farmland investing to avoid the complexities and criticisms often associated with international land acquisitions, such as dynamics of land grabbing or colonialism. In emerging markets, ensuring equitable ownership arrangements, possibly through public-private partnerships, allow for significant impact aligned with government priorities and can provide structured risk-sharing arrangements. Regardless of the location, it is critical that these investments prioritise community impact and social inclusion. Asset owners must conduct rigorous due diligence to ensure that principles of "do no significant harm" are core to capital deployment strategies.
- **Long-Term Strategic Patience and Market Observation:** Given the evolving nature of the regenerative agriculture financing market, asset owners should maintain a long-term perspective. They might find themselves competing for limited opportunities where concessional or grant capital – typically attached with fewer strings – is more advantageous. Asset owners should consider whether to engage actively in current market conditions or adopt a more observational stance, waiting for the market to mature into phases that offer more conducive conditions for traditional investment models.
- **Leveraging Blended Finance Structures:** European institutional investors are increasingly comfortable with blended finance structures that incorporate various layers of risk mitigation. These structures are particularly relevant for

investments in agricultural SMEs and farmer debt financing programs like the RCF that focus on regenerative practices. Asset owners can draw on these precedents to minimize risks and maximize impacts, extending support to initiatives like those conducted by Huruma, the RCF, &Green, and FarmFit.

- **Policy Engagement and Market Development:** Asset owners should also play a proactive role in shaping the policy environment for regenerative agriculture. This includes advocating for legislation and standards that promote sustainable farming practices and facilitate market acceptance. By proactively influencing policy, asset owners can help align financial incentives with ecological and social goals, ensuring a supportive framework for their investments. Additionally, asset owners should look to engage with food corporates in defining guardrails and standards for how the market should develop and in pushing corporates to be more ambitious on transitioning supply chains to regenerative agriculture.

By carefully selecting their investment on-ramps and considering these strategic points, asset owners can significantly influence development of the regenerative agriculture financing ecosystem. Their involvement can ensure not only financial returns but also the advancement of sustainable and equitable agricultural practices worldwide.

In the short run, asset owners may need to adjust expectations to anticipate slightly lower financial returns from investing in regenerative agriculture. In the long run, however, the advantages regenerative agriculture holds over conventional in climate change risk mitigation, resiliency, and profitability create a clear commercial impetus for investment. Given the time horizon required for transition, allocations of capital toward regenerative agriculture need to be accelerated now, regardless of the short-run return dynamics in some contexts.

INVESTMENT MANAGERS AND COMMERCIAL BANKS: EVOLVING PRODUCTS AND STRATEGY AS THE MARKET DEVELOPS

The transition to regenerative agriculture presents unique commercial and impact opportunities for investment managers and commercial banks. Whether it be developing innovative new structures and products, scaling existing structures detailed in Section 3, changing existing offerings to accommodate regenerative approaches, or simply advocating for regenerative agriculture market development, deployers of commercial capital are pivotal in accelerating the transition.

However, there are key considerations that should be front of mind for investment managers and commercial banks seeking to engage with regenerative agriculture:

- **Education and Capacity Building:** Investment managers should prioritise educating their teams and clients about the nuances of regenerative agriculture. This includes understanding the ecological and economic impacts of regenerative practices, the potential commercial opportunity, and the necessary longer-term time horizons to support regenerative transition. Similarly, commercial banks, especially those that function as agricultural lenders, need to focus on building relationships with farmers and other stakeholders. By fostering a network that supports knowledge exchange and capacity building, banks can enhance market readiness and receptiveness to new financial products tailored to regenerative practices.
- **Data Acquisition and Utilization:** Robust data collection and analyses are essential for investment managers to assess risks accurately and forecast potential returns from regenerative agriculture projects. As the sector is still developing, the availability of reliable data can significantly influence the design of investment products and strategies. Banks and investment managers alike must invest in and adopt tools that track the progress and impact of funded projects, ensuring informed decision-making of on-farm interventions and continuous improvement of financial models.
- **Impact Measurement:** Closely linked to data is the impact these investments have on soil health,

water, biodiversity, carbon, local economies, and social well-being. Investment managers must develop clear criteria and methodologies to measure the social and environmental impact of their investments in regenerative agriculture. This not only helps in reporting to stakeholders but also aligns with global sustainability targets, enhancing the appeal of these investments to a broader range of investors.

- **Navigating Regulation:** Regulatory environments can greatly affect the feasibility and profitability of investments in regenerative agriculture. Investment managers and commercial banks need to stay ahead of regulatory changes to adapt their strategies accordingly. This includes understanding subsidies, grants, and tax incentives, as well as complying with any new regulations aimed at promoting sustainable practices.
 - **Leveraging Concessional Capital:** For investment managers, leveraging relationships with outside sources of concessional capital to syndicate and mobilise co-investment from concessional capital providers into target investments can help offset initial risks associated with regenerative agriculture projects. This strategy should be used judiciously given the limited availability of concessional capital, and investment managers should have a clear roadmap for reduced reliance on concessional capital over time.
 - **Building and Leveraging Relationships:** Commercial banks have a unique position to influence the regenerative agriculture market through their extensive client networks. By developing strong relationships with farmers and participating in agricultural supply chains, banks can facilitate the transition to regenerative practices. These relationships can also provide banks with firsthand insights into the challenges and opportunities within the market, which can inform more targeted and effective financing products.
- Investment managers and commercial banks are at the forefront of shaping the financial landscape of regenerative agriculture. By focusing on education, data, impact, regulation, concessional capital, and relationships, they can not only foster growth of the regenerative agriculture market but also ensure its continued sustainability and resilience.

What's Next

Momentum for regenerative agriculture is rising. As illustrated throughout this report, a range of financiers are paving the way to accelerate mobilisation of capital into regenerative agriculture. Some are creating blueprints for lighthouse examples, while others are deploying capital to help initiatives scale as the market matures.

We recognise the complexity of navigating the transition from the current early stages toward greater market maturity for financing regenerative agriculture. Therefore, we created this report to showcase the growing body of evidence for regenerative agriculture approaches that create economic value and the financing mechanisms that support implementation at various stages of market maturity.

Philanthropies and development finance institutions are increasingly interested in engaging with private sector investors to advance regenerative and agroecological approaches to agriculture so that we can collectively secure not only financial returns but also positive returns for people and planet. We seek to engage private sector investors,

including family offices, asset managers, institutional investors, and food corporates to mobilise ten times the amount of current private capital invested in regenerative agriculture, increasing from USD \$11 billion to \$110 billion annually. This can be achieved by:

- Applying comprehensive approaches to risk assessment and capital allocation that account for the ecological, social, and financial values created in regenerative systems.
- Joining existing initiatives to learn from others, avoid past mistakes, and co-create financial mechanisms supporting regenerative agriculture.
- Leveraging blended finance and other structures that promote regenerative practices.
- Advocating for policies that support rather than penalise regenerative producers.

We encourage you to connect with us and the growing network of practitioners building the market for regenerative agriculture financing. Our organisations are part of a call to action launched at COP28 in December 2023 to catalyse a transition to 50% regenerative and agroecological systems by 2040, and to ensure all agriculture and food systems are transitioning by 2050. The philanthropic partners participating in this initiative are also calling on their peers to mobilise ten times the amount of current philanthropic capital committed to regenerative agriculture, increasing from USD \$700 million to \$7 billion annually. While these philanthropies address issues related to global food and agriculture at different scales, on diverse issues, and from a multitude of perspectives, they are linked in the belief that it is not only possible but necessary to restore ecological function, human health, and farmer well-being while feeding the planet.

WITH SUPPORT FROM



This report is intended to only provide inspiration and illustrative financing instruments, structures, and examples for project stakeholders and investors. Illustrative financing instruments, structures, and examples are not intended to be used in the format that is provided in this report. Stakeholders and investors may adapt these tools as they deem appropriate to the context of their projects, acknowledging that financial considerations and project impact considerations are context-dependent.

Also note that the examples provided in this report are not exhaustive lists of best practices in any form, but provide only illustrative examples of different financing instruments and structures in the market at this point in time.

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