



Mobilizing capital to scale responsible expansion of crop & livestock in Brazil

A path to secure rising food demand whilst reducing pressure on native vegetation

May 2024



Executive Summary

Brazil boasts over 100 million hectares of degraded pastures available for agricultural and livestock expansion. This is sufficient to meet the anticipated increase in production until 2040 without cutting a single tree. The strategic recovery and conversion of these pastures presents a significant opportunity to enhance agricultural productivity and to generate socio-environmental benefit at scale. By making more effective use of lands already cleared, this initiative crucially helps to alleviate the pressure on native vegetation areas.

While the environmental and economic advantages are clear, realizing these benefits fully requires bridging a considerable financing gap. To recover 40 million hectares, the official target of the Brazilian government, an estimated USD 120 billion is needed to scale these recovery efforts across Brazil's vast landscapes. The economic viability of this activity is already proven, but its financing at scale will require some innovative financing models and the construction of the associated track-record. Our immediate call to action is to mobilize USD 2 billion in catalytic capital to unlock the development of such mechanisms, complementary to other financing sources for the Low Carbon Agriculture Plan.

Creating a robust and conscientious framework to support this agenda is essential for sustainable long-term economic growth. By implementing a structured governance system with comprehensive socio-environmental risk mapping, we can foster other positive impacts related to biodiversity, water resources management, welfare of local communities, soil fertility or carbon capture. Supportive public policies in that sense will also be an essential component for achieving outcomes that combine financial return with social and environmental sustainability.

Brazil's unique position as an agricultural leader offers immense potential for creating socio-environmental benefits alongside economic returns. The mobilization of USD 2 billion in catalytic capital is key to accelerate the deployment of blended finance models in the early stages of the maturity curve of the sustainable land use investments. Brazil's pivotal role is not only crucial for ensuring global food security but also for leading the transition to sustainable agriculture at a global level.

Why

Brazil plays a crucial role in meeting the rising global food demand

50% growth in global food demand is expected by 2050

35% is the expected growth in demand for Brazilian beef over the next 2 decades

There is a need to reduce pressure on deforestation & conversion

17% of the Amazon's forest has been lost, nearing a tipping point

51% of the Cerrado is cleared

What



Increase productivity of land already in production

&



Recovering degraded lands for production



Sustainable cattle intensification

3-5x Potential increase in cattle yields

&



Responsible¹ soy expansion on already cleared land

2040 Enough lands available to meet demand until 2040

How



Effectively enforce the Forest Code, adapt regulations and public policies



Provide financial incentives for producers

&



Incentivize market demand for DCF² products

&



Finance the agenda

USD 120B³ Is needed for transition, with catalytic capital unlocking private funding

Today ————— 1

...so that in the long term ————— 3

The agenda can become self-sustaining for private capital

2

To unlock the transition, it is necessary to... Secure **catalytic capital for blended finance** to:

- De-risk and attract private investors
- Build track record & credibility
- Ensure scalability

Call to action: **USD 2 billion⁴ in catalytic capital by 2030 for the agricultural transition.** It is the first step to unlock the development of innovative financial products

1. Please see definition in chapter 3 2. Deforestation & Conversion-Free 3. Government estimates announced at COP28 consider the recovery of 40 Mha at an average cost of USD 3,000 per hectare over the next 10 years via the National Plan for the Conversion of Degraded Pastures 4. Until 2030, with a leverage of 1:2 to 1:4, where USD 1 of catalytic capital unlocks USD 2 to USD 4 of commercial finance, cumulatively reaching USD 6 to USD 10 billion.

1. Brazil is an agricultural powerhouse, playing a crucial role in meeting the rising global food demand

Key messages



The anticipated 47% rise in global crop demand from 2020 to 2050¹, coupled with an expected increase of a 1.5 billion people in the global population by 2050, underscores the need for a significant boost in food production. Brazil, with its expansive arable land, is a key player in addressing this challenge:

#1² Soy producer (154MM ton³) and exporter (98MM ton³), providing over 40%² of the global supply

#1² Beef exporter (2MM ton⁴), boasting the largest commercial herd (234M heads⁵)

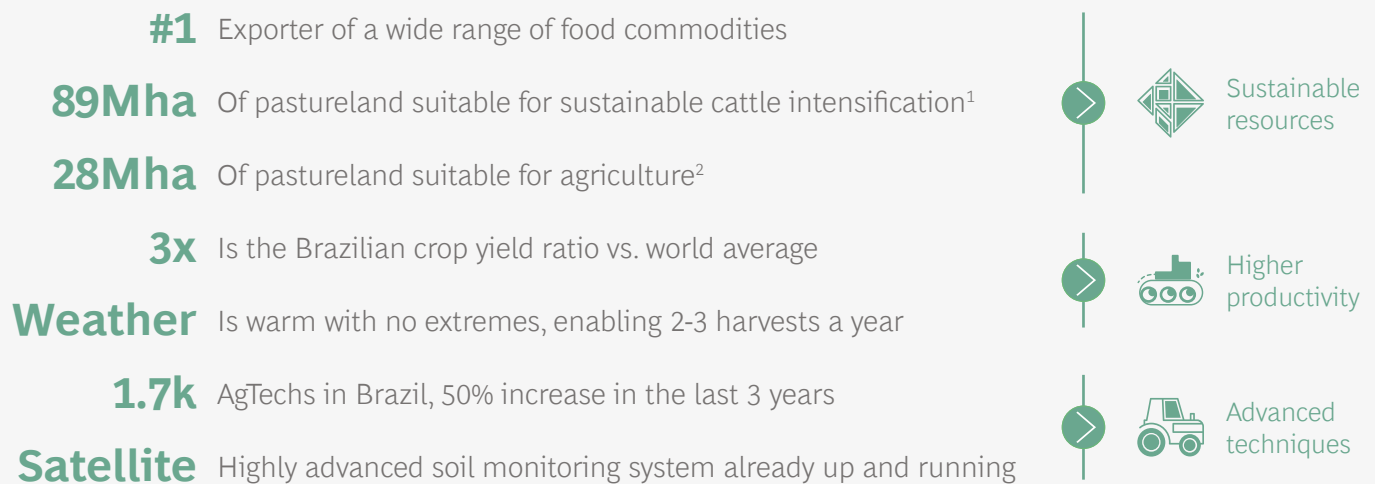
#2² Corn exporter (47MM ton³)

Global demand for animal protein is expected to increase by 35% over the next two decades, and Brazil could supply nearly half of this increased demand⁶

The agricultural sector accounts for approximately 25% of Brazil’s GDP, employs 20% of the total workforce, and contributes to nearly 50% of the country’s total exports.

1. Tian, X., Engel, B. A., Qian, H., Hua, E., Sun, S., & Wang, Y. (2021). Will reaching the maximum achievable yield potential meet future global food demand?. *Journal of Cleaner Production* 2. USDA 2023 3. Boletim safra 22/23 CONAB 4. Export Data Comex 2022 5. IBGE 2022 6. Environmental Framework for Lending and Investing in sustainable intensification of cattle ranching in the Amazon and Cerrado (2021) – TNC Report.

Furthermore, Brazil is well-positioned and has the potential to grow sustainable food at scale:



However, the path to augmenting food production is fraught with environmental concerns, primarily tied to the expansion into native vegetation areas. Beef consumption and the associated soy to feed the animals have seen a marked increase, and this rising demand requires enhanced production per hectare to prevent the expansion of pastures into untouched ecosystems.

Hence, to avert severe climate consequences and biodiversity loss, global agriculture must expand by 2050 without further habitat encroachment. Achieving this involves intensifying production models and optimizing the use of deforested lands.

2. Deforestation in Brazil is critical and tackling the issue on a large scale requires changes in farming and pasture production practices

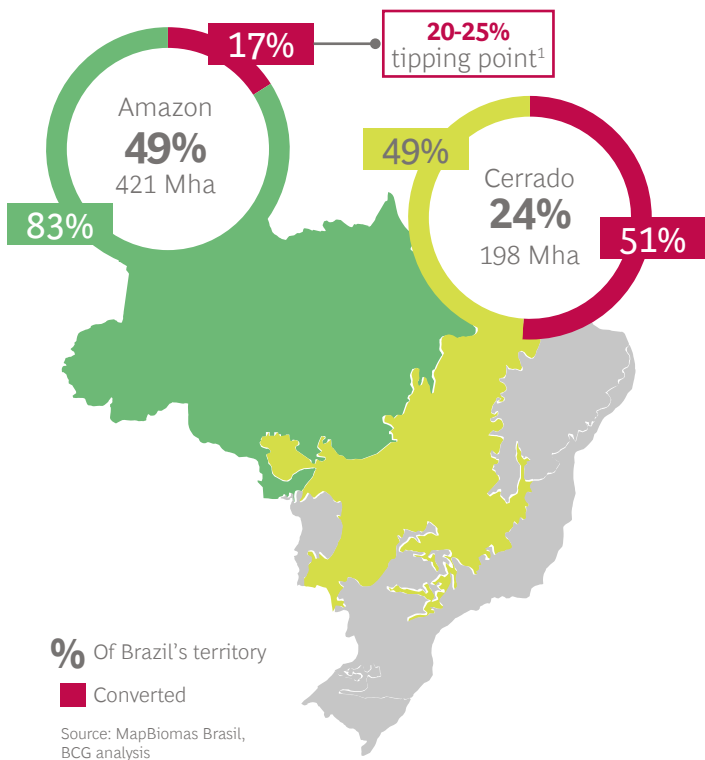
Key messages

- A** The Amazon is already 17% deforested and nearing a tipping point, beyond which it could irreversibly transform into a savannah
- B** The Cerrado, comparable in size to Western Europe and considered Brazil's water birthplace as well as a major carbon sink, is already 51% converted
- C** Deforestation is closely related to the global carbon emission agenda, involves severe violations of the human rights of indigenous peoples and local communities, and poses a threat to biodiversity
- D** Agriculture and pasture constitute the primary uses of converted lands and tackling deforestation at scale necessarily involves adapting the production practices of these sectors

¹ Environmental Framework for Lending and Investing in sustainable intensification of cattle ranching in the Amazon and Cerrado (2021) – TNC Report 2. Embrapa - Potential for agricultural expansion on degraded pasture lands in Brazil based on geospatial database.

Brazil's conversion situation is alarming: Amazon is reaching its tipping point and half of Cerrado has already been cleared

Land coverage status by biome
In Mha and % of Brazil's territory, 2022



The stark reality of conversion in Brazil is underscored by some facts:

95.4 Mha, a third of the total converted area, has been converted since **1985**



73% of Brazil's land is the Amazon and Cerrado, **with 27% converted**



The regulatory landscape in Brazil, particularly the Forest Code, plays a pivotal role in the ongoing deforestation narrative. This legislation mandates landowners to reserve...

80%
of the land in the Amazon

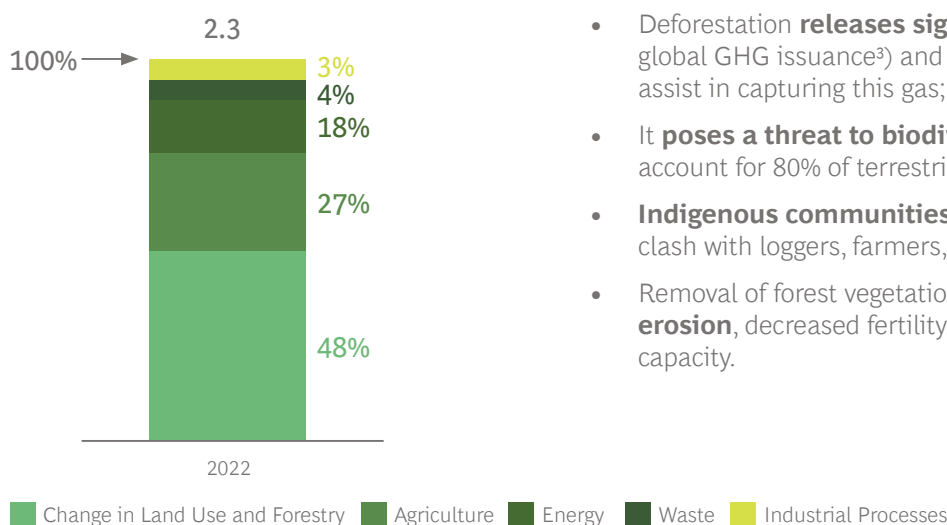
35-50%
of the land in the Cerrado region within the Legal Amazon

20%
for the rest of the Cerrado

...which renders the Cerrado particularly susceptible to positive incentive measures, given the less stringent legal restrictions.

Current deforestation levels affect both nature and society, and place Brazil as the 5th largest global GHG emitter

Brazil gross GHG emission
Share of total (in Gt CO₂e²)



Source: SEEG

The repercussions of deforestation are profound, affecting both the ecological balance and the global carbon emission agenda:

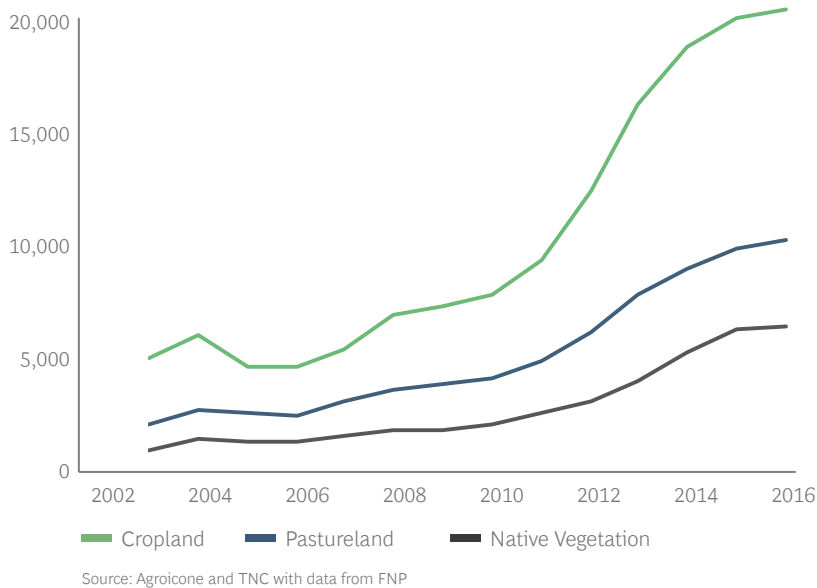
- Deforestation **releases significant amounts of CO₂** (11% of global GHG issuance³) and diminishes the forested areas that assist in capturing this gas;
- It **poses a threat to biodiversity**, as tropical forests globally account for 80% of terrestrial biodiversity;
- Indigenous communities frequently face conflicts** as they clash with loggers, farmers, and businesses exploiting the land;
- Removal of forest vegetation **exposes the soil, resulting in erosion**, decreased fertility, and diminished water retention capacity.

1. Moment from which the forest reaches a state of degradation and fragmentation that is unable to maintain its characteristics, being subject to savannization 2. Gigatons of CO₂ equivalent 3 . Crippa et al. (2020) - UN Emissions Gap report.

Agriculture and pastures constitute the primary use of this land, covering more than 90% of the total cleared area in Brazil

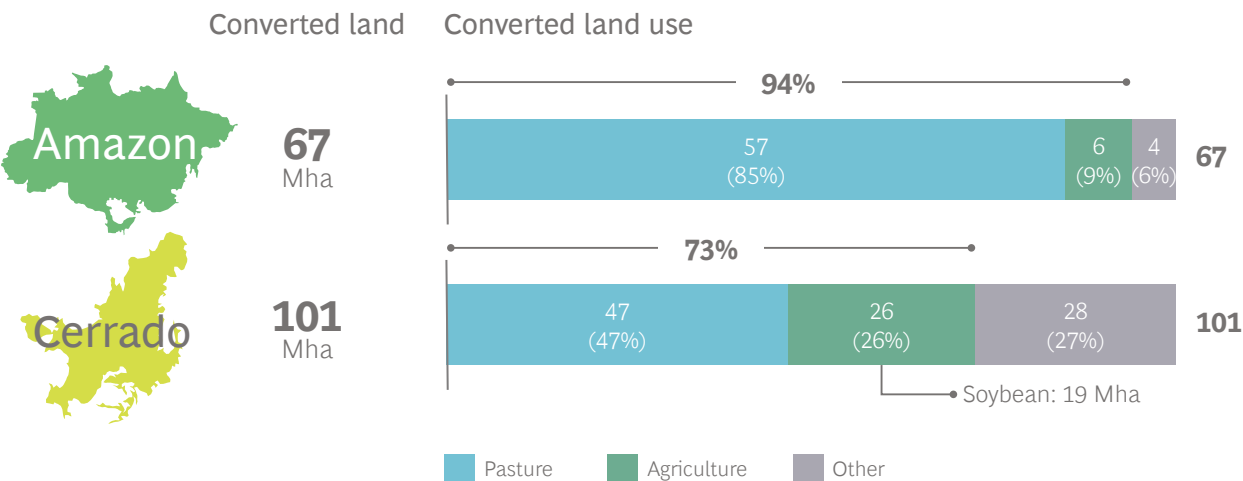
Deforestation in Brazil is propelled by a complex interplay of factors. It is strongly driven by land speculation, where converted land accrues higher value, encouraging further forest clearance. This issue intertwines with land tenure and property rights regularizations still to be completed throughout the territory. The situation is exacerbated by the legal entitlement for private property owners to convert portions of their land. Additionally, cultural habits rooted in expansion further fuel conversion, often bypassing regulatory checks.

Land prices in the Southern Cerrado by land use
Price in BRL/Ha, From 2003 to 2016



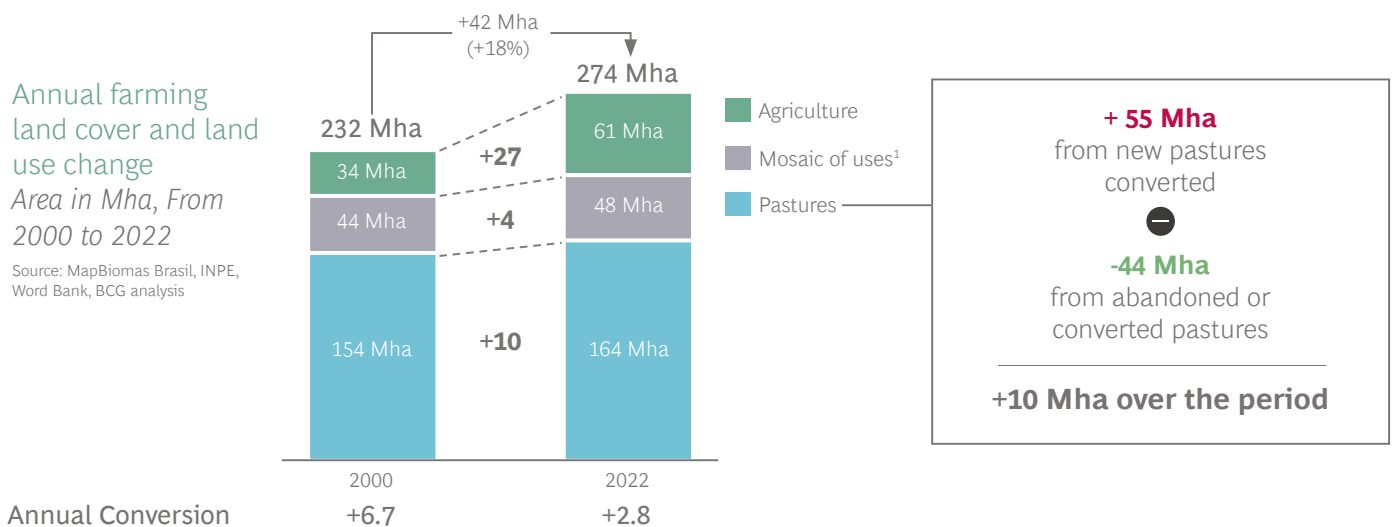
Agriculture and pastures constitute the primary uses of converted lands. A significant portion of soy already expands into previously cleared pastures, but the ultimate goal is to achieve DCF practices.

Land conversion and use in Brazil
Area in Mha, 2022



Source: MapBiomass Brasil, BCG analysis

The agricultural land has been growing, and the pasture areas for cattle, while showing a slight net expansion, have undergone substantial land use conversion.



Recovery of degraded pasture for productive purpose stands as a key component among various essential strategies needed to counteract deforestation

Addressing deforestation in Brazil requires a comprehensive strategy encompassing financial, legal, and market forces. A primary avenue towards mitigation lies in the better utilization of already available lands. Through the recovery of degraded lands, there is potential to expand agricultural and cattle ranching activities without encroaching on native vegetation.

Better use of already available lands: Contrary to the common belief that increased yields would escalate pressure on natural ecosystems, empirical studies in Brazil and other regions suggest the opposite. To reduce environmental impacts, one strategy is to boost food production on existing farmland, minimizing the need for additional farmland and preserving land for habitat conservation. In Brazil, productivity gains from agriculture modernization between 1960-2000 slowed deforestation, as farmers transitioned to practices with higher capital-to-land ratios, contributing to the preservation of natural resources. Better use of land also means that practices shall be adapted to each region depending on its socio-environmental specificities. Factors such as impact on biodiversity, water resources, social impact in the region and livelihood of local communities shall be the object of an in-depth analysis.

Financial incentives for producers: In this agenda, creating economically sustainable long-term opportunities, as well as incentives for producers, is crucial and urgent. Producers ought to see tangible financial benefits in preserving native vegetation on lands that they are legally entitled to clear, which could manifest in various forms such as attractive credit facilities or payments for environmental services. Such incentives could encourage them to preserve native vegetation they are legally entitled to convert, thus playing a pivotal role in reducing deforestation.

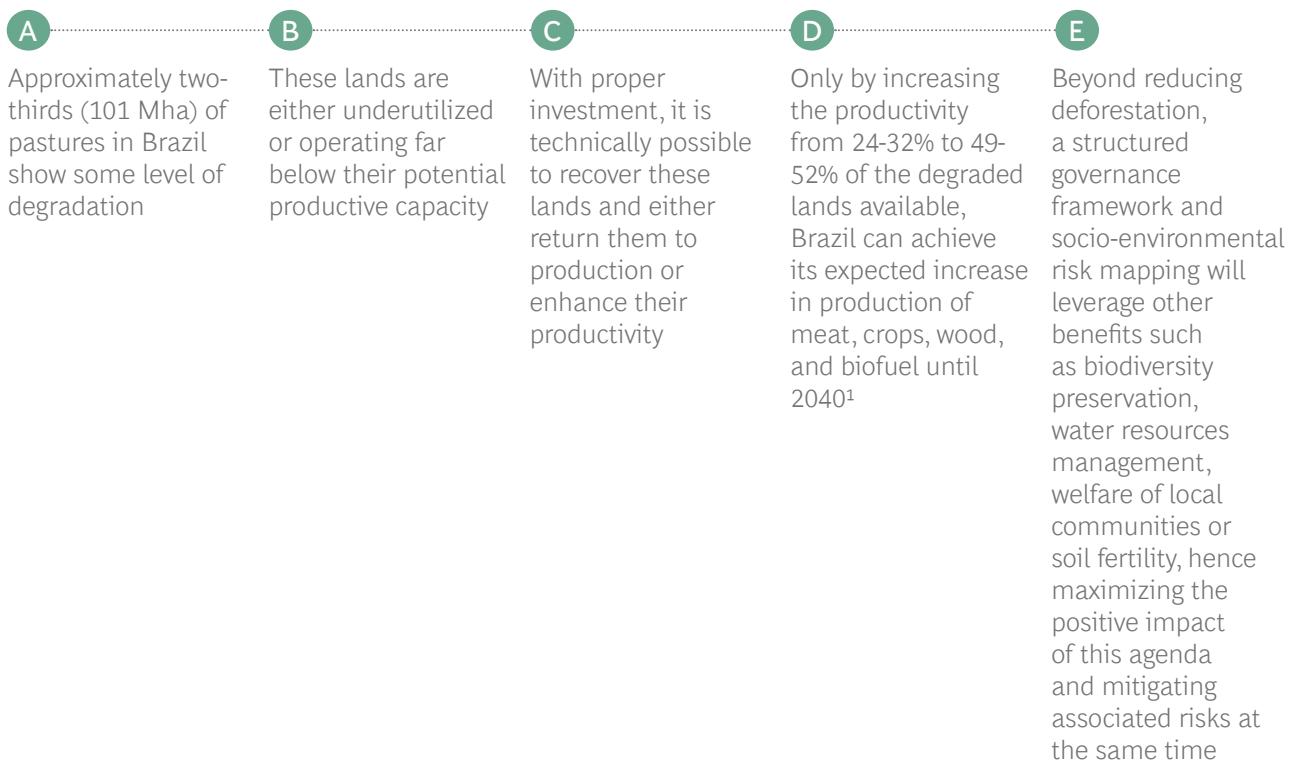
Market demand: Consumer markets and companies need to recognize the value of standing forests in commercial relationships, by incentivizing demand for DCF products within their value chains, and by providing additional incentives for conservation beyond legal requirements, known as surplus legal reserve.

Regulation & Law: Effective enforcement of applicable regulations is a key pillar in achieving DCF production.

1. Includes both pastures and agriculture land.

3. The responsible recovery of degraded pastures for intensified cattle ranching and expansion of soy production is a pathway to increase production without further deforestation while ensuring socio-environmental benefits

Key messages



1. When enough should be enough: Improving the use of current agricultural lands could meet production demands and spare natural habitats in Brazil – B.Strassburg,, A.Lataviec, L.G Barioni, C.N Nobre - 2014.

The recovery of degraded pastures for cattle intensification and soy expansion represents a major agenda in the transformative journey of agriculture



Optimise yields and profits, even at the expense of the environment

Maintain the environment at current levels while optimizing resource utilization, reducing environmental and climate impacts and increasing productivity

Restore ecosystems and biodiversity to reduce the footprints, build resilience, and improve productivity, while enhancing social inclusion, human health, and livelihoods

Examples



Minimal Tilling



Irrigated Systems



Focus of this report

Recovery of Degraded Pastures



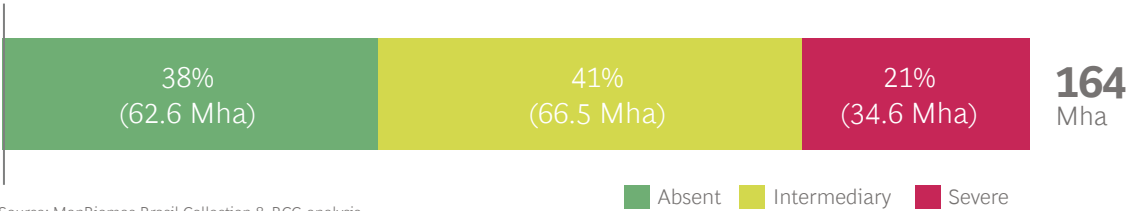
Agroforestry



Crop-Livestock-Forestry Integration Systems (CLFI)

~2/3 of pastures exhibit some form of degradation in Brazil

Pastureland by level of degradation (2022)



Recovering degraded pasture involves using agricultural techniques to restore soil health, enhancing food production, and increasing carbon storage. The revitalized areas are primarily utilized for sustainable cattle production intensification and the expansion of soy and agriculture on previously cleared land. Other potential models include the protection and restoration of native vegetation, as well as the promotion of agroforestry and non-timber forest products.

Cattle yields can be increased to three to five times their current levels, alleviating pressure on forested areas in the Amazon and Cerrado regions

Enhancing productivity in existing cattle ranching operations alleviates pressure on forested areas. By improving the management of existing pasturelands, ranchers could significantly boost productivity and meet growing demand. Despite its potential, Brazil's productivity lags behind compared to USA and many EU countries. Currently, 90% of Brazilian cattle operations underinvest in technology and management, causing new pastures to lose grazing productivity within three to four years. The combined use of different techniques can lead to an expressive increase in productivity, on top of promoting the "land sparing effect". This concept refers the fact that an increase of production in already opened areas reduces the need of expanding production on native vegetation, an essential component of sustainable agriculture, biodiversity protection, GHG issuance reduction, and guarantee of world food security in the long-run. Inclusion of smallholders in this agenda is crucial, as they are among the most vulnerable and those who could benefit the most from significant revenue increase stemming from this increase in productivity.

3-5x potential increase in cattle yields while maintaining a pasture-based system¹

180 kg/ha annual potential meat production in a well-managed pasture using proven techniques¹

400M mt CO₂ potential reduction in emissions per year vs the status quo (at the same production level)²

30 months for animals to be raised to maturity - requirement of the rapidly growing market in China¹

13-25x more nutrients compared to soil with low to moderate quality³

An opportunity exists to meet the agriculture demand without resorting to additional conversion by utilizing already cleared pastures in the Cerrado

In Brazil, the expansion of the crop and livestock production - soy being one of the relevant crops in expansion - should primarily target low productivity pasturelands in the Cerrado biome. Unlike the Amazon biome, the Cerrado is not covered by market agreements like the Soy Moratorium and has fewer protections under the Brazilian Forest Code regarding native vegetation area stipulations. Furthermore, in the Amazon, there is an elevated risk that expanding agriculture over pasturelands could push cattle herds into native vegetation zones, intensifying conversion pressures.

Below a few key figures:

28 Mha suitable degraded pasture for agriculture in Brazil⁴

4-5 years faster to achieve peak soy yields when expansion occurs on pastureland instead of on recently-cleared native vegetation areas⁵

1. Finance for a Forest-Positive Future, 2022 – IFACC Report 2. IFACC Impact Case - Investing in Agricultural Expansion Through Pasture Recovery and Yield Improvements in Brazil 2023 3. Agricultural Expansion in the Brazilian Cerrado: Increased Soil and Nutrient Losses and Decreased Agricultural Productivity 4 Embrapa - Potential for agricultural expansion on degraded pasture lands in Brazil based on geospatial database 5. Incentives for Sustainable Soy in the Cerrado, 2019 – TNC report.

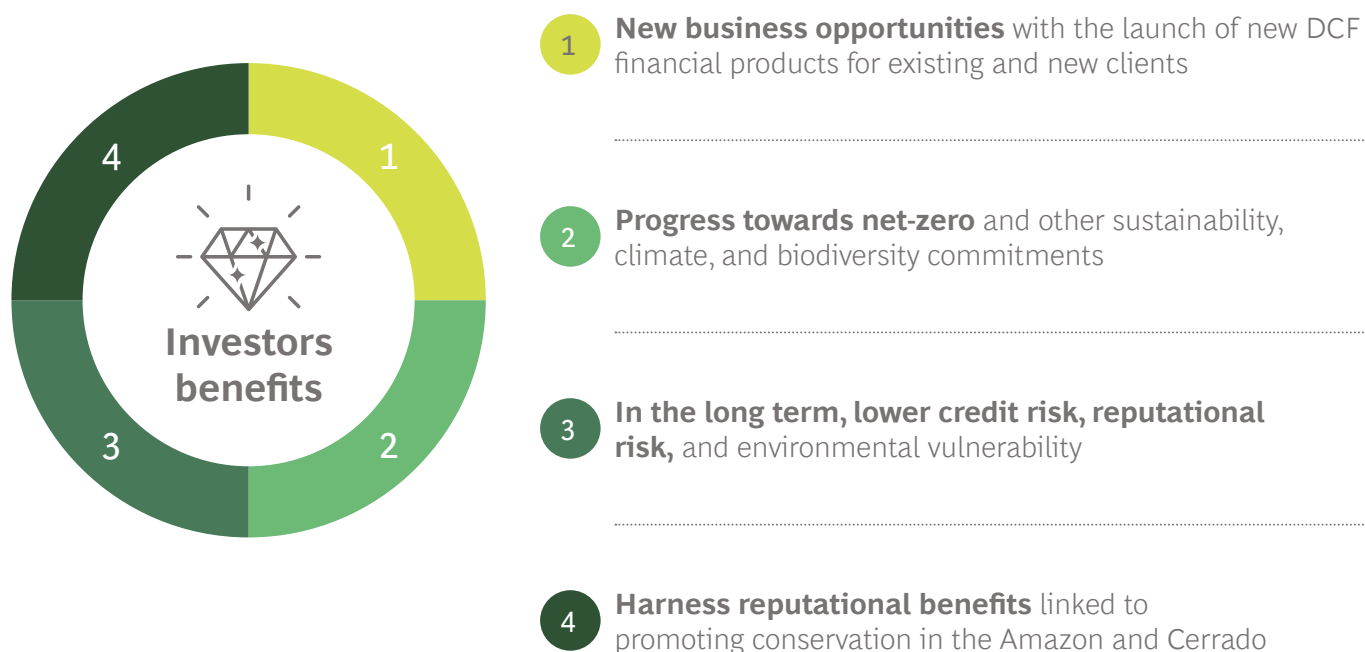
Sustainable agriculture offers clear benefits to producers, the environment, and investors

Sustainable agriculture generates vital benefits for producers and the environment that go beyond improved productivity and deforestation reduction.

A responsible expansion that includes (i) a thorough socio-environmental risk mapping, (ii) implementation of best agricultural practices, and (iii) a special care for Indigenous People and Local Communities, can further enhance benefits in terms of efficient water management, biodiversity preservation, carbon sequestration, and welfare of rural communities and smallholders.

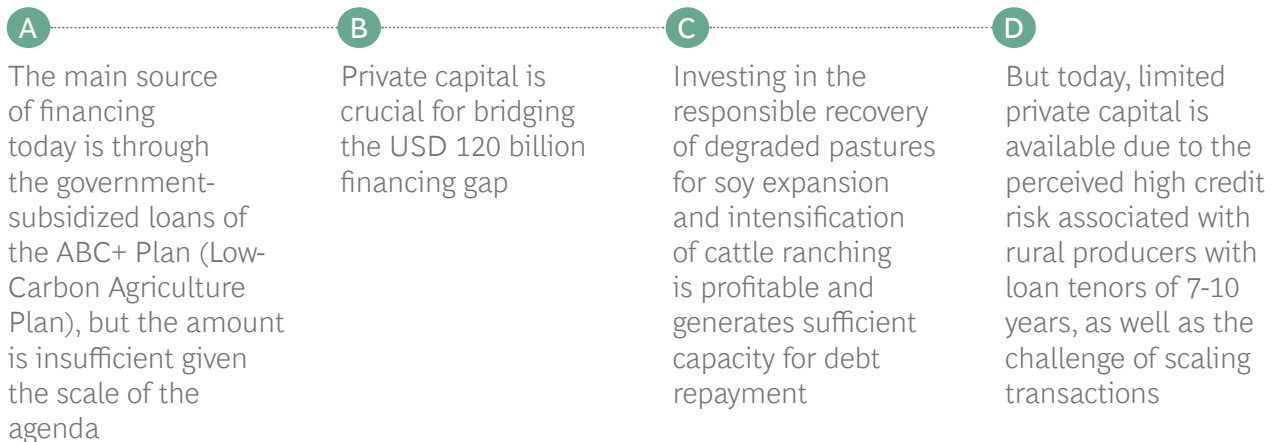
This integrated approach, which includes all aspects of the recovery of degraded pastures, is a powerful tool for mitigating socio-environmental unintended consequences and the associated reputational risk.

Investors also stand to gain significantly from the adoption of sustainable agriculture practices.



4. USD 120B is needed for transition, with the agenda gaining momentum among engaged stakeholders

Key messages



To promote the responsible recovery of degraded pastures, Brazil needs approximately USD 120 billion over the next 10+ years

Pasture restoration can be achieved through direct methods such as reform, recovery, or renovation, as well as indirect solutions. The appropriate solution should be determined based on multiple factors, including the level of degradation, geographic location, and the availability of financial resources. In Brazil, the Government launched in December 2023, an ambitious plan to recover and convert degraded pastures for agriculture and cattle intensification. The plan has the following target:

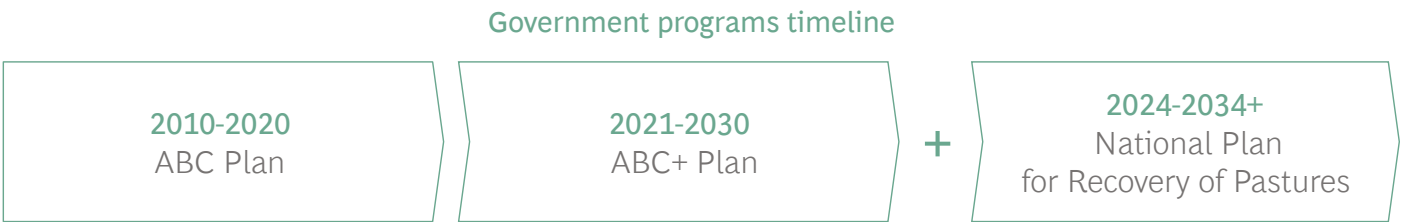
40 Mha of degraded pastures that the government is planning to recover and convert for agriculture – mostly soy – and cattle ranching intensification over the next 10 years¹

USD 3,000 as the average cost per hectare for recovery estimated by the government¹. This figure depends on the level of degradation, the biome, the level of technical assistance, among other factors

This results in an agenda requiring capital in the order of approximately **USD 120 billion** over the next 10 years. These numbers are an estimate and depends on various factors that are evolving through time. The projection of hectares is dependent on market demand and the cost of recovery is fluctuating depending on fertilizers prices, which for example have sharply increase in the last two years. In any case, the financing gap is of **several dozen USD billions**. The same is true about the time horizon of 10 years; it is an ambitious target that we should use as a guideline but that will depend on the speed of the development and adoption of new financing models by the market.

1. Government estimates announced at COP28.

The Brazilian government is notably increasing its ambition for the agenda through the ABC+ Plan and the recent National Plan for the Recovery and Conversion of Degraded Pastures



The ABC/ABC + Plan

Established in 2010, the National Program for Low Carbon Emission in Agriculture (ABC Plan) is an initiative by the Brazilian government to promote sustainable practices within the agriculture and livestock sectors. This program aims not only to reduce greenhouse gas (GHG) emissions but also to enhance the adaptability of these sectors to climate change. A significant allocation of the program’s funds is dedicated to the recovery of degraded pasturelands.

To incentivize producers, the ABC+ program has adapted credit facilities:

7 Financing credit lines for sustainable practices

Including one specifically for the recovery of degraded pastures

Below-market interest rates

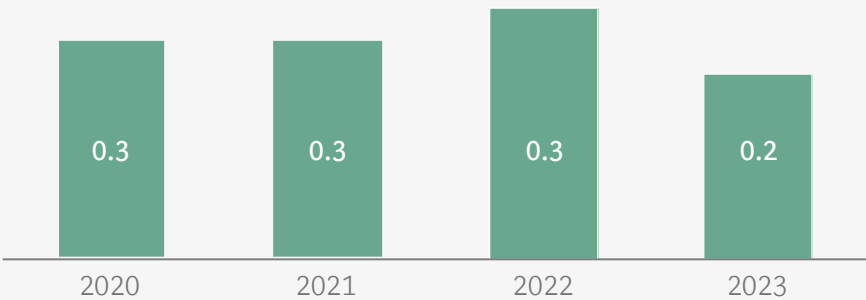
7% (vs CDI at 13%)

Extended repayment terms

up to 12 years with 5-year grace period

But in an insufficient amount for the size of the agenda:

Annual financing for the specific line of degraded pastures via ABC+ USD billion¹, from 2019 to 2023²



Source: Ministry of Agriculture and Livestock of Brazil

+USD 2 Billion
by 2030 if the level of financing remains the same

1. Banco Central do Brasil’s conversion rates from R\$ to \$ were: 0.19 in 2020, 0.18 in 2021, and are projected to be 0.19 in 2022 and 0.20 in 2023 2. Until November/2023.

The new government plan for the recovery of 40Mha of pastures (Dec.2023)

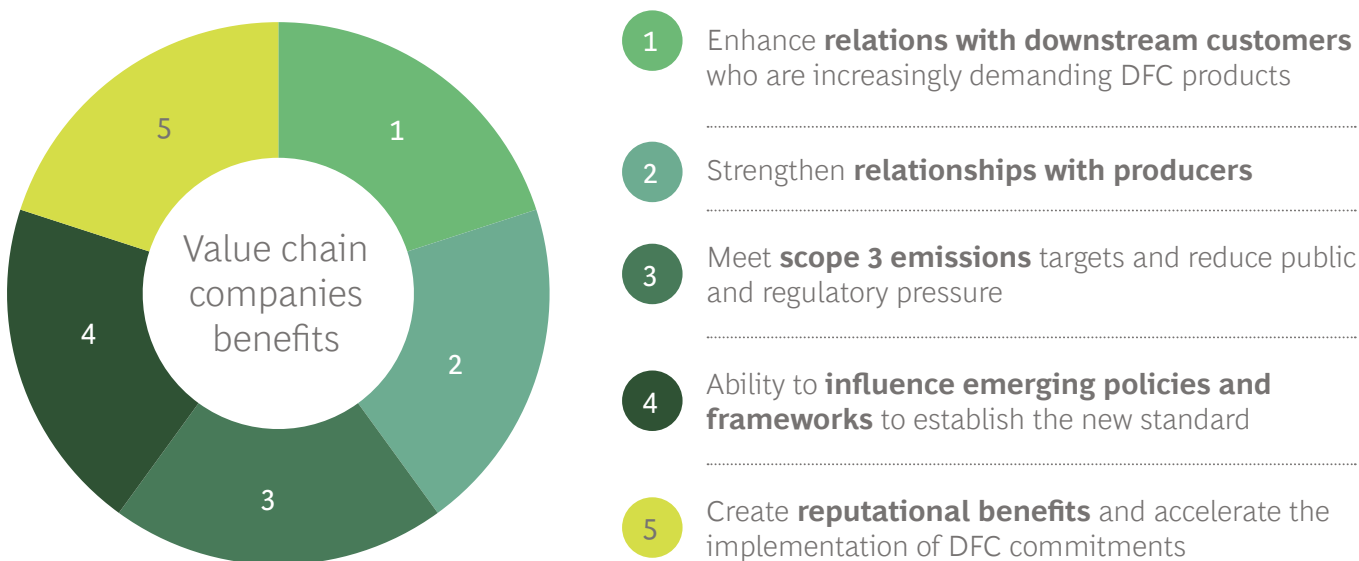
Complementing the ABC+, at the end of 2023, the Brazilian Federal Government presented an ambitious program of collaboration between public and private sectors, including international capital, aimed at revitalizing up to 40Mha of degraded pastures over the next 10 years. The associated cost is estimated by the government at USD 120B¹, with resources expected to come partly from international investors, including Development Financial Institutions (DFIs).

The technical details of the implementation of the plan are still under discussion, but a comprehensive approach that takes into consideration the full spectrum of the economic, social, and environmental aspects of the agenda will surely create a favorable investment ecosystem. The land use dynamics and specificities of each region should be considered, especially the interaction between soy and cattle production.

Other key stakeholders along the value chain can benefit from supporting this agenda and are already taking steps to collaborate

To effectively promote cattle intensification and soy expansion, collaboration from stakeholders across the value chain is essential. This includes input companies, food producers, traders, distributors, and retailers, all of whom stand to benefit from their involvement. The pressing nature of these objectives is driving concerted efforts and aligning the interests of these various parties.

Engaging in the agenda for the recovery of degraded pastures benefits stakeholders up and down the value chain:



To take advantage of the mentioned potential upsides, many leading companies in the value chain are taking steps to address deforestation issues and have started investing resources in this area. However, significant progress is still needed.

Regarding the financial sector, one of the key challenges in financing the transition towards sustainable and DCF agriculture lies in the absence of a solid track record. Indeed, this is a new agenda, and the market is still in the process of testing innovative models. That said, the economics of transitioning towards sustainable agriculture are robust, presenting the private sector with the potential to finance at scale:

1. Investments focus on enhancing pastures and livestock production, supporting grain cultivation in temporary crops or integrated systems like ILPF, and facilitating forest planting and agroforestry implementation.



Cattle intensification

The annual yield of cattle ranching could increase by 3-5x, resulting in an additional 130-150 kg/ha¹.

Average meat production (kg/ha/year):



Soy expansion²

For a typical soy producer, converting pastureland is nearly as profitable as clearing forest when acquiring new area.

Internal Rate of Return:

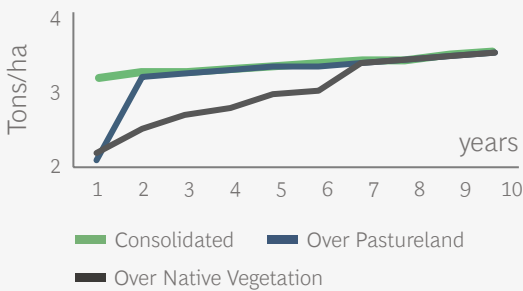
13.8%	14.3%	21.1%
Acquired pasture	Acquired native vegetation	Owned native vegetation

These figures do not consider the land increase valuation. The gain in each of the three scenarios above depends on each region's price dynamic and may favor one or the other options. In any case, there is an opportunity cost for not clearing area that needs to be addressed including by incentives for producers.



Estimated Soy Yields³

4+ years faster to achieve peak soy yield:



Note on carbon credits

The use of carbon credits for offsetting is not the most appropriate approach currently to make the recovery of degraded pastures financially viable, as robust methodologies for carbon accounting are still under development and not yet ready for adoption in this agenda.

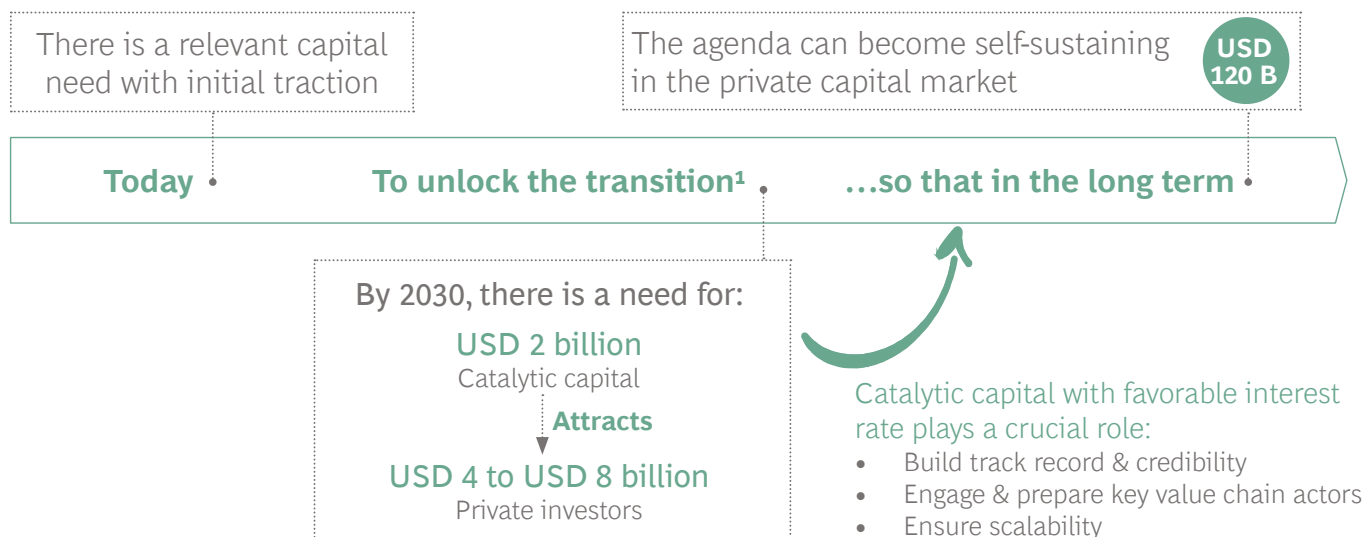
To overcome these challenges and enhance both financing availability and credit uptake for investments in this agenda, there is a critical need to establish a robust track record and develop a convincing proof of concept. These efforts will demonstrate the viability and benefits of such investments, potentially leading to increased engagement and support from various stakeholders.

An increase in catalytic financing is essential to bridge the gap in the short term and help establish a track record

The Brazilian Government's capacity to subsidize the ABC+ plan has its limitations, and other sources of financing are needed, including for small and medium producers.

It is imperative to foster deeper and more strategic collaboration among the private sector, governments, and DFIs (Development Financial Institutions) to amplify private investments and help bridge the substantial gap. Catalytic capital is particularly vital, playing a crucial role in steering the journey towards sustainable economic development.

1. Finance for a Forest-Positive Future, 2022 – IFACC Report 2. Integrated Crop-Livestock Systems 3. Incentives for sustainable soy in the Cerrado (2019) – TNC Report.



5. Catalytic capital will be crucial to build a track record and unlock private financing

Key messages

A

Blended finance emerges as a strategic solution, with catalytic capital being key to unlocking private finance at scale

B

This agenda requires patient capital for long tenors up to 10 years with extended grace periods

C

Catalytic capital will help establish a track record for innovative financial mechanisms scalable on a private basis, with tremendous impact potentially unlocking the needed USD 120B

D

DFIs play a crucial role in providing this catalytic capital and may share part of the risk by adapting their models to suit the local reality

New financial solutions are required to address new challenges

The complexity of local agricultural landscape creates intricate risk profiles. The unique characteristics of commercial relationships, combined with limited established track records for financing the recovery of degraded pastures, make scaling investment volumes challenging.

1. Finance for a Forest-Positive Future, 2022 – IFACC Report.

Financing recovery of degraded pastures requires innovative financial mechanisms appropriate to handle the following elements:

- Risk profile of producers, many of them being of small and medium size with low traceability, especially in the cattle sector;
- Time horizon of financing, typically between 7 and 10 years, unusual for borrowers with limited financial strength and based on spot commercial relations;
- Production performance risk for such a long tenor, due to potential climatic events and lack of technical knowledge of smaller producers to properly implement the recovery of the pastures;
- Forex risk, as a large amount of loans will need to be in BRL for the producers, which can add an additional layer of complexity for foreign lenders.

Blended finance models play a pivotal role in advancing this agenda by enabling co-investors to de-risk and incentivize investments. In that sense, catalytic capital with subordinated debt at affordable rates will be a must to establish a track record of innovative financings suitable for the agenda.

Considering the size of the agenda, the participation of DFIs in providing this catalytic capital is key, while also considering other providers such as companies from the supply chain, philanthropy and also private banks with a strong culture of innovation.

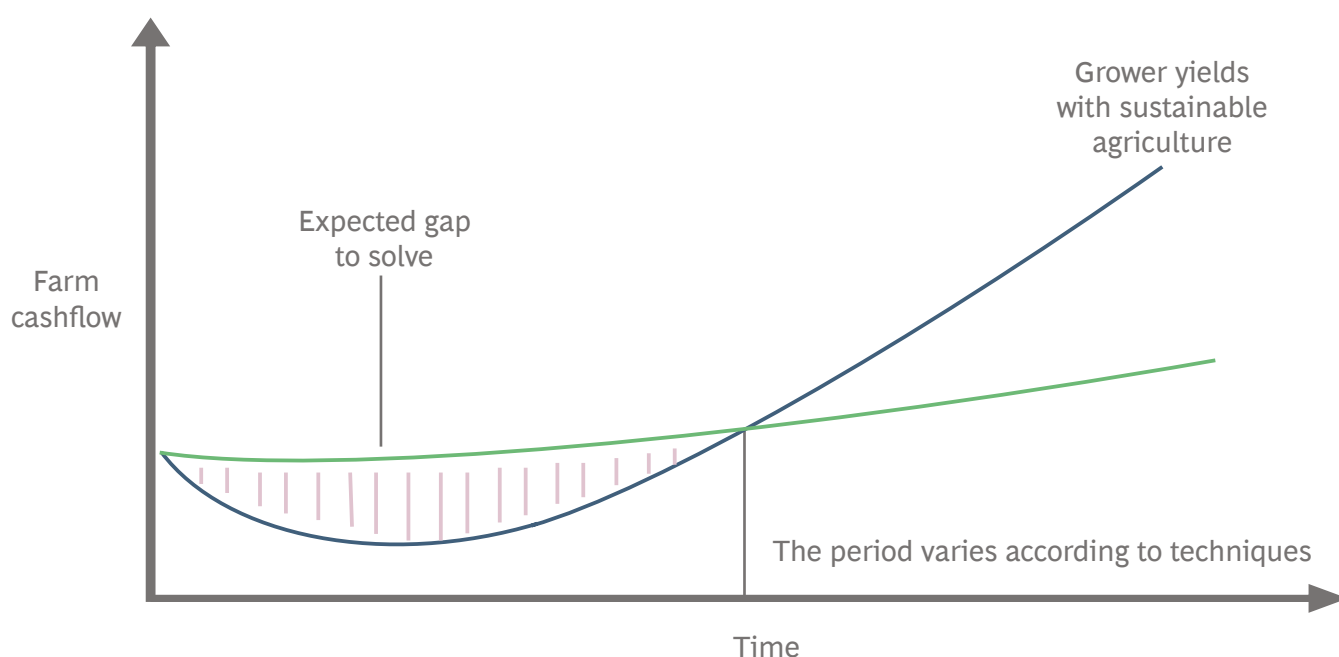
Similar to the renewable energy sector 15 to 20 years ago, we are currently in the initial stages of accelerating lending and investment for the transition towards low-carbon and DCF agriculture.

Lending tenor: A specificity of this agenda

This agenda calls for patient capital with extended grace periods as a drop in yield and cash flow is expected within the first 3 to 5 years of the transition with the application of various recovery techniques.

The payback periods depend on the commodities and other factors, but in general, the agenda requires financing of 7 to 10 years, including a 3-year grace period in order the land to generate relevant cash flows.

Illustrative average expected cash flows



Multiple factors can affect the payback period and the yield recovery for the producer:



Initial Condition
of the Pasture



Type of Recovery
Practices Used



Market Prices for
Products

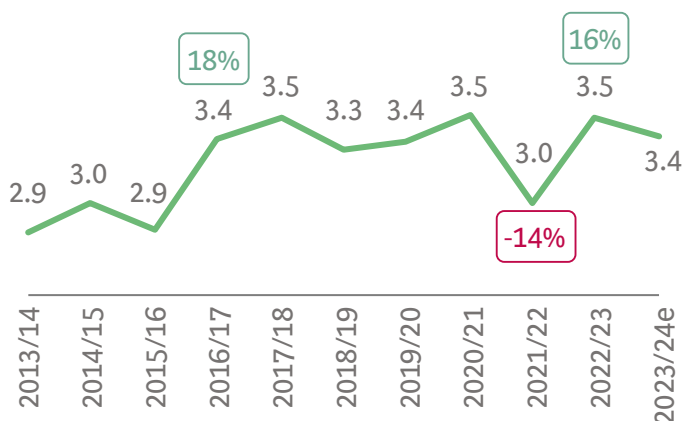


Climatic
Condition

Furthermore, there is a need for long-term results evaluation in agriculture, considering the inherent short-term variability deeply tied to climate risks.

Brazil Soybean Yields

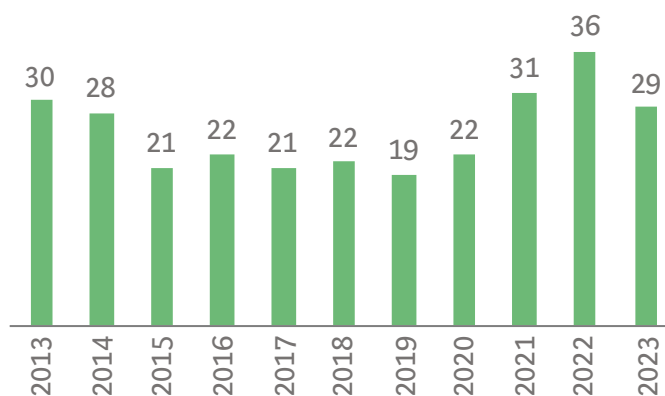
Brazil, ton/ha



Source: CONAB

Soybean Prices

Brazil, USD/sack (60 kg)



Source: CEPEA

The different financial structures and the key role of subordinated debt

Solutions may vary depending on the profile of the producer with items such as size, commodity, credit history, among other.

A large producer can be financed on a standard basis relying on its own cash flow generation, but small and medium producers may not be eligible for loans on a stand-alone basis for a long tenor. Therefore, a portfolio approach with diversification of risk – e.g with securitization mechanisms - will be necessary to mitigate the credit risk. Blended finance is well adapted for this kind of structure, hence the need for catalytic capital.



Securing catalytic capital is the paramount factor to de-risk and unlock private investments



- Build a proof of concept
- Enable the establishment of a track record
- Pave the way for scalability mobilizing value chain actors and technical assistance

Preferred: most effective to close the financing gap

Less effective options



Riskier resources via subordinated quotas aimed at building a track record



Standard financing at market rates for which only large producers will be eligible



Grants that yield no financial ROI and have a reduced likelihood of achieving the required scale

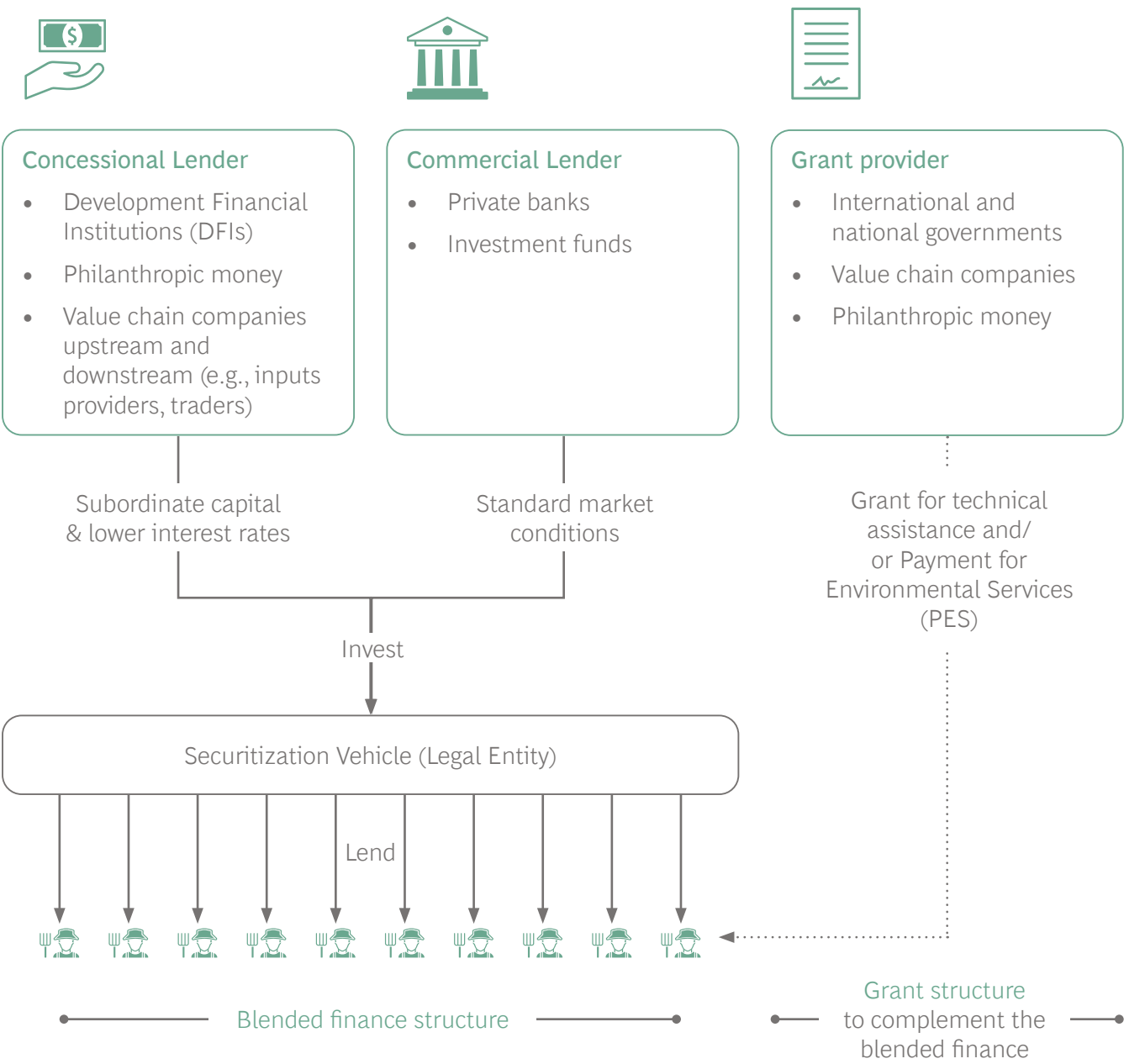
Recognizing the crucial role of development banks and multilateral institutions in the transition is essential for bolstering their role in providing access to affordable, subordinated and long-term financing.

It is clear, however, that this catalytic capital shall be used only during a limited period of time, until a sufficient and solid track record is established through blended finance, for further financing by private capital.

As mentioned earlier, several financial structures are possible to finance the recovery of degraded pastures but some key features are emerging in order to be able to finance at scale for small and medium producers with high perceived credit risk:

- Diversification of producers (borrowers) is necessary to mitigate credit risk. This is why we are focusing on a securitization-like structure.
- A portion in grant will be necessary to finance the technical assistance and/or some Payment for Environmental Services to compensate producers who are not deforesting lands they would be legally entitled to clear.

Below is the general kind of structure that the market is working on to meet the specificities of the agenda. Some variations can be made, such as a participation in guarantees for the concessional lender instead of direct investment, having the technical assistance financed with the loan instead of being fully paid, or using cooperatives of producers as a way to provide diversification.



To make catalytic capital efficient: Technical assistance, financial incentives, and adaptation of ESG frameworks to Brazilian reality

On top of the financings, success will require a deep understanding of agricultural conditions in Brazil and an adaptation and standardization of the ESG framework to suit local reality. This should be supported by regulatory and policy frameworks from lenders, whether DFIs or private players. This should be coupled with financial incentives for conservation for producers who are maintaining the native vegetation they are legally entitled to clear, along with robust technical support. To expedite deals and meet these targets within the desired timeframe, additional measures are crucial to ensure a transition that is both feasible and adapted to the producers' context.



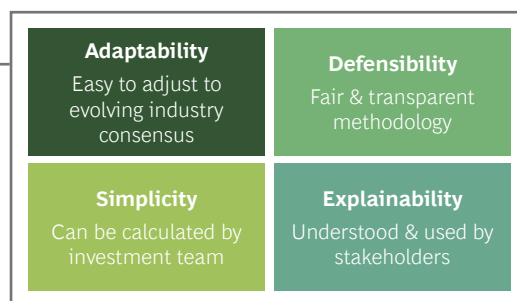
Producers should be provided with distinct incentives or compensation to encourage them to maintain areas they could legally clear or convert:

- More attractive fiscal and financial instruments for DCF activities required to incentivize behavior that exceeds legal requirements
- Payments for Environmental Services (PES) should also be considered
- Financial and administrative assistance to formalize land ownership as paperwork can be impractical



An approach must be adopted to develop a flexible, unified framework and KPIs adapted to the local reality. This framework should be shared among the multiple investors and lenders:

- A practical approach needs to be grounded in four key principles: Adaptability, Defensibility, Simplicity, and Explainability
- To foster buy-in and credibility, it is essential to refine the channels and formats used to share information with stakeholders and investors



Technical assistance for producers to recover degraded pastures and intensify cattle production:

- Technical assistance is crucial for producers to effectively transition. There is a critical need for scaled implementation support and specialized assistance for cattle intensification, as well as soy to a lesser extent
- Companies from the value chain (e.g. traders, input seller, meatpackers) that are in contact with the producers should participate in the agenda and actively disseminate and promote good practices
- Ideally, companies from the supply chain could also provide some catalytic capital to build a track record of new financing models

6. Brazil is well-positioned to offer relevant risk mitigation factors

Key messages

- A** Offering technical assistance and expertise, along with implementation support, plays a crucial role in mitigating the performance risks faced by producers and in scaling the agenda, as well as ensuring best practices adoption
- B** Improving the commercial conditions around production through market instruments and longer off-take agreements can provide less risky scenarios for investors and producers
- C** The maturity of Brazilian capital markets in agricultural financial instruments can mitigate the credit risk, especially through securitization mechanisms available to provide a high level of diversification
- D** The existing pioneering satellite monitoring system, combined with transparent rural credit data, can be leveraged to ensure proper credit and socio-environmental assessment and monitoring
- E** Brazil's vast size allows for geographical diversification, hence reducing climate-related risks

Key risks and mitigants for lenders

Risks	Mitigants
 Financial risk: small and medium producers do not have the financial structure to support a long-term loan	Large diversification through a securitization-like mechanism can switch the approach from a stand-alone risk approach toward a portfolio approach
 Climatic event risk	The size of Brazil with different climate dynamics enables a geographical diversification to mitigate climate risk. Insurance is also an option
 Performance risk due to improper implementation of new practices	The Brazilian agribusiness is among the most advanced in terms of technical knowledge. Leveraging this know-how to provide individualized technical assistance to producers will maximize the chances of a successful implementation of new agri-practices



Price risk

The long-tenors are not suitable for traditional commodity price hedging for the whole period of financing. The involvement of the whole supply chain to work on a long-term pricing agreement is unlikely in the short term but can be worked on. More realistically, including some buffer of commodity collateral in the economics of the transaction to absorb downward price variation can mitigate the risk



Unsold production risk

Long-term offtake contracts can mitigate this risk, even though in the commodity market the question is more about price rather than existence of a buyer. However, long-term offtake contracts can (i) foster a stronger commitment of the producer in repaying the loan as it involves a commercial partner, (ii) reduce operational risk as offtakers can repay directly the lenders, and (iii) provide a better overall visibility



Socio-environmental risk associated with the expansion on degraded pastures (biodiversity, water, soil, social impact on rural communities)

These risks can be measured, and mitigation actions can be adapted thanks to a thorough socio-environmental risk mapping prior to expansion of culture



Innovative financing with lack of track record

These specific long-term financings for small and medium producers may not be well-developed, but the Brazilian financial market is already highly experienced in financing agribusiness and managing the associated risk



Reputational risk in case of conflict with local communities

A thorough due diligence of land tenure is a must for this kind of financing. However, this risk is inherent to the Brazilian reality, and consultation with local civil society organizations can also be a mitigator



Non-compliance by producers of some zero-conversion commitment

Brazil has state-of-the-art satellite monitoring that allows for nearly daily follow-up. Producers should be clearly communicated about this system and the pre-established consequences in case of covenant breaches

Focus on the key role of supply chain companies: Meatpackers, traders, input suppliers

Throughout the value chain, there are many companies in close contact with producers, with high potential for partnerships. Input companies (seeds & agrochemicals) and traders could play a relevant role, not only in mitigating risk but also in supporting the origination of new transactions to scale the agenda:



Offer technical support: Provide expert assistance at scale and disseminate technical knowledge widely to ensure effective execution while reducing credit and agricultural risks



Monitor implementation progress: Consistently and closely track advancements in the implementation process, leveraging local expertise and technology



Originate credit: Initiate credit facilities tailored to specific needs leveraging the enhanced risk assessment capabilities gained through closer proximity to the producer



Partner: Reduce default risk by involving commercially relevant actors to producers

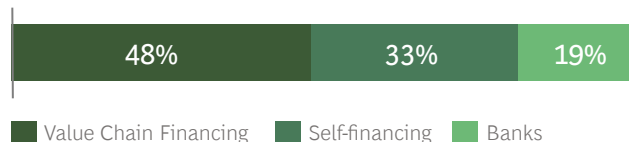


Offtake contracts: Long-term offtake contracts will reduce the credit risk for small and medium producers

Brazil boasts extensive experience and a robust financial sector capable of backing the agenda

Brazilian regulation and financial market are already mature enough and provide appropriate and secure frame for lenders and investors. Many producers and supply chain companies in Brazil are already familiar with obtaining credit to finance their operations, (especially for soy), through a variety of financial actors.

Distribution of financing sources for soy
Mato Grosso - Brazil, 2022/2023



Source: IMEA, BCG analysis

Brazil can leverage this significant experience in providing financial support to agriculture to develop innovative financings, whether through bank lending or public securities issuance for agribusiness, such as CRA and LCA, in addition to other general-purpose instruments like Investment Funds in Credit Rights (FIDCs) and Bonds (Debentures). Having a financial structure using a securitization vehicle is fundamental to diversifying risk and working with a portfolio approach, and well-established instruments can meet these needs:

CRA¹

CPRs⁴, CDCAs⁵, CDA/WA⁶, Duplicates, and Promissory Notes arising from the commercialization of agricultural products

LCA²

Loans backed by agribusiness credit between financial institutions and rural producers/cooperatives

FIDCs³

Combination of various investors pooling resources into an investment where over 50% of the net equity must be allocated to Credit Rights

1. Certificado de Recebíveis do Agronegócio - Agribusiness Receivables Certificate 2. Letra de Crédito do Agronegócio - Agribusiness Credit Bills
3. Fundo de Investimento em Direito Creditorio - Investment fund in Receivables 4. Rural Product Notes 5. Agricultural Credit Rights Certificates 6. Agribusiness Receivables Certificates/Warehouse Receipts.

Call to action: USD 2B of catalytic capital by 2030

The ambitious objective of investing USD 120 billion to restore degraded pastures calls for prompt and strategic intervention. The first step is to build a solid track record of financings through blended finance, paving the way for further purely-private financings.

Our call to action is to reach USD 2B of catalytic capital, with subordinated position at affordable rates, by 2030. Considering a leverage between 1:2 and 1:4, where USD 1 of catalytic capital mobilizes from USD 2 to USD 4 from other commercial financial sources, this strategy shall lead to USD 6 to USD 10 billion in innovative financial products, with the purpose of further unlocking the private flows to bridge the USD 120B gap.

To make this happen, a collective effort is required:

Producers: They are at the center of this agenda as they will be the ones implementing the agricultural transition in practice. Therefore, understanding their needs, capabilities, and asks is the foundation for a successful transition.

DFIs: They shall have an instrumental role in providing this catalytic capital, as they have the financial strength to provide it at this scale.

Companies of the supply chain: Engaging with producers to promote good practices and help build a pipeline of transactions. To a lesser extent, they can also take some limited participation in risk in some pilot financing.

Private banks: Participating as commercial capital in the new financial mechanisms. Their proximity and knowledge of the producers make them natural partners for this agenda. Taking some limited participations as well in subordinated tranches, as part of their innovation effort, will also be welcomed as it would stimulate other catalytic capital providers to enter.

Private investors in capital market: Their participation as commercial capital will be key to scaling the agenda to its full potential.

Indigenous People and Local Communities: People living in the areas of expansion on degraded pastures shall always be associated with the decision-making process.

Brazilian Government: The participation of the government will be an essential factor for the success of this agenda. It shall have a role in implementing public policies to support the agenda and conducting a thorough socio-environmental risk mapping at the scale of the Brazilian territory to orient and monitor the expansion in a responsible manner, hence maximizing all aspects of the socio-environmental benefits alongside economic development.

BCG