



# THE GREEN WAVE

Opportunities to undertake and invest with positive environmental impact in Brazil

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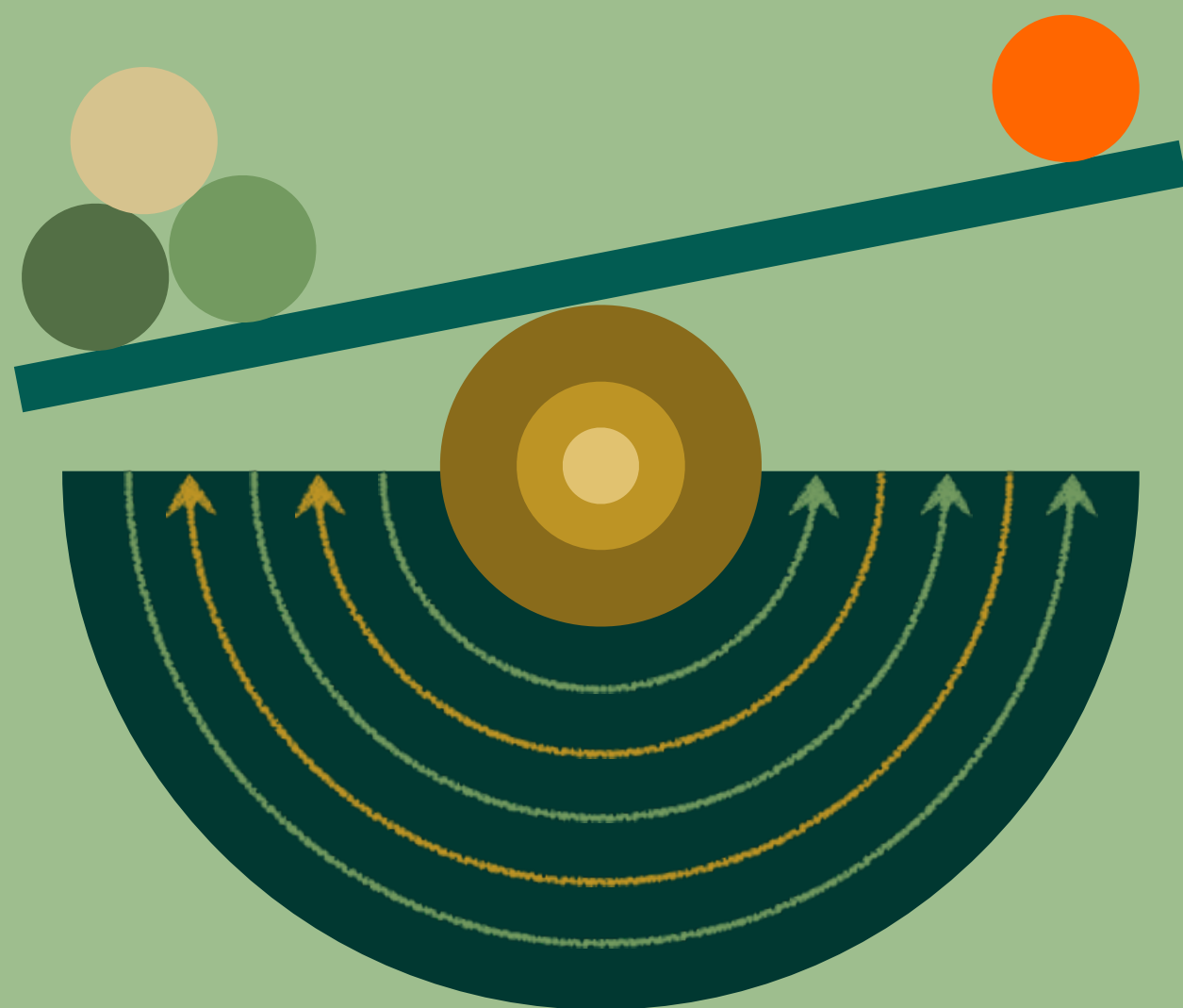
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The beginning of the 21st century presents a crossroads for humanity. The planetary limits are becoming increasingly clear. The decisions we make and fail to make will shape the future of the human species and many others on Earth.



We already know that the current economic model, which seeks perpetual growth based on the exploitation and extraction of natural resources, is leading us towards a civilizing collapse.

At the same time, we have never before had so much knowledge, technology and resources to make the changes that can bring us back towards a more just and sustainable future. But where to start? How to shape this new model? How to shape the business of the future?

By observing the signs of the planet, as a living organism, the message is clear. "It" is not asking us to evolve. It is something imposed.

We need to reinvent our way of doing business. Encourage the emergence of thousands of innovative business models, capable of solving some of the main environmental and social challenges we face.

Climate Ventures was born to contribute to the transition to a new economy, supporting

### **Daniel Contrucci and Ricardo Gravina**

Founders of Climate Ventures, a multisectoral innovation platform with the purpose of accelerating a regenerative and low-carbon economy.

entrepreneurs and regenerative, low-carbon businesses. When we started mapping good business by climate in Brazil, we asked ourselves: what are the main environmental challenges in Brazil that can be solved through innovative business models?

This study emerged as a first answer to that question. We believe that the issues and paths exposed here will increasingly be on the agendas of multiple organizations, from the public, private and civil society sectors, over the next decades.

Our intention with this study was by no means to exhaust the issue, but to create a space for qualified dialogue on the opportunities to undertake for the climate in Brazil. We hope it brings good thoughts.





## To the readers of the study,

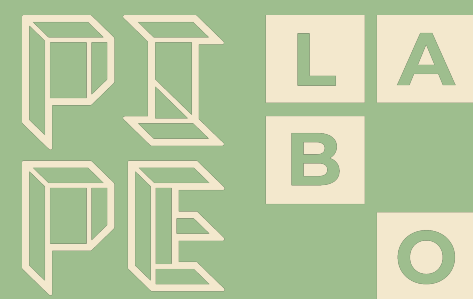
First of all, our thanks for the interest and dedication to look into this work that makes us proud and, on the other hand, points out to us a need to involve new and more actors in this rich conversation and, consequently, action in favor of the Positive Environmental Impact .

If the impact business market has been developing in Brazil - at an accelerated speed, when compared to the Latin American countries, as we have seen in the multiple studies of the Pipe.Labo team -, much is due to the joint efforts of the environmental market. Niche within a broad sector, but a universe of specific details, academic knowledge, technologies, solutions and challenges, as you will see in the following pages.

Aware of the Brazilian power in discussing the topic and leading solutions in the global sphere, we hope that the report will be an invitation to join forces, listen and co-create a sustainable future.

### Lívia Hollerbach and Mariana Fonseca

Co-founders of Pipe.Labo, think-tank specialized in market research and socio-environmental impact trends, and Pipe.Social, the largest impact business platform in Brazil, with more than 5,000 entries in the database.



As a result from the collective intelligence of specialists and key actors of the environmental agenda in Brazil, this study consolidates the main challenges that the country faces and calls for entrepreneurs, investors, governments, consumers, brands and actors in the Brazilian impact ecosystem to lead a systemic transformation in the relationship between business, people and the environment.



Summary

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Impact business and the  
consolidation of a new  
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## **2. EMERGING VISION**

*The economy  
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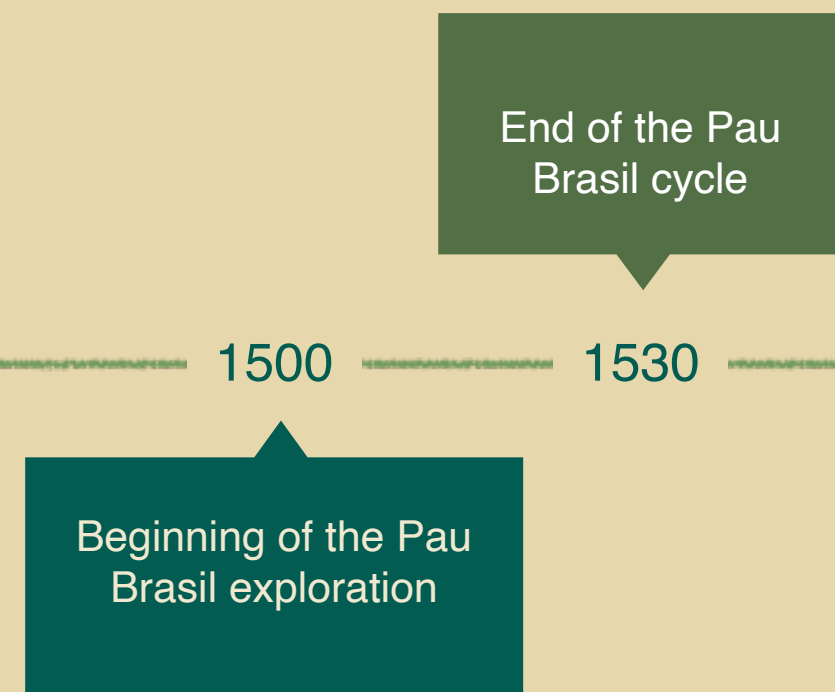




## TO UNDERSTAND THE PRESENT AND PREPARE FOR THE FUTURE, MANY TIMES, IT'S NECESSARY TO LOOK AT THE PAST.

That's why, before diving into the environmental challenges that Brazil faces today and envisioning its paths of action, let's understand how we got here and why talking about it now is so urgent and timely.

**AS WE ALL KNOW, THE CREATION OF BRAZIL AS WE KNOW IT HAPPENED WITHIN A LOGIC OF EXPLORING ITS NATURAL RESOURCES BY THE PORTUGUESE CROWN.**



THEREFORE, ALREADY IN ITS ORIGIN, THE RELATIONSHIP BETWEEN THE ENVIRONMENTAL AND ECONOMIC DIMENSIONS IN THE COUNTRY WERE AS FOLLOWS:





# SOCIO-HISTORICAL VISION OF THE ENVIRONMENT IN BRAZIL AND THE WORLD

Starting from the discovery of Brazil, we mapped the main historical facts and events in the social, political and economic spheres here and in the world that, directly or indirectly, shaped the way we perceive and relate to the environment.

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1800 – 1979

## THE ENVIRONMENT AT THE SERVICE OF THE ECONOMY

The historical extractive logic where the environment was perceived, almost exclusively, by its monetary value.

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1980 – 2000

## TRANSITION TO A GREEN ECONOMY

Population growth and the misuse of natural resources make the search for a more sustainable relationship with the planet urgent.

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2001 – 2020

## THE ECONOMY INTEGRATING, IN A SYSTEMATIC AND STRATEGIC WAY, THE ENVIRONMENT

The emerging and necessary logic of an economic system that works for the maintenance and recovery of environmental resources.

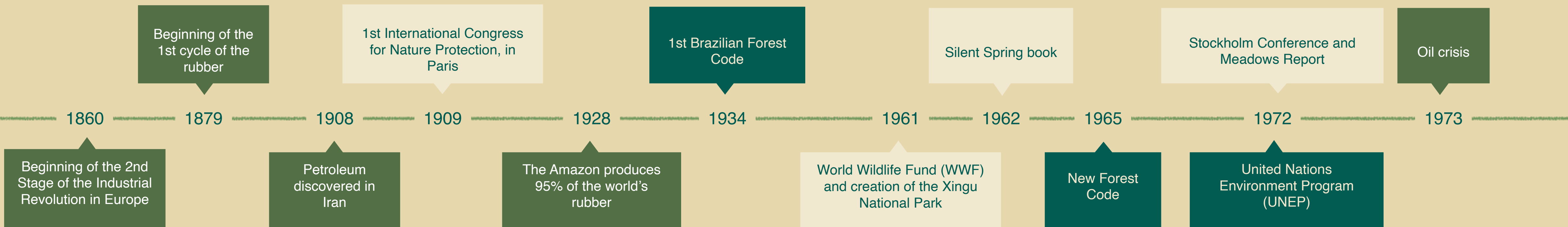
1800–1979

# THE ENVIRONMENT SERVING THE ECONOMY

The historical extractive logic where the environment was perceived, almost exclusively, by its monetary value.

- It has been centuries since the discovery of Brazil and the extractive logic remained dominant not only here but across the globe.
- In large companies, until the 1970s, there was a belief in the incompatibility between environmental responsibility and profit maximization. Its environmental policy was limited to avoiding local accidents and complying with pollution standards determined by governmental regulatory and control bodies.
- The first questions arise from civil society organizations with an environmental focus and their pressure reached the first legal limitations

## MAIN HISTORIC EVENTS



1980–2000

# TRANSITION TO A GREEN ECONOMY

Population growth and the misuse of natural resources made urgent the search for a more sustainable relationship with the planet.

- Between the 1980s and 1990s, the environmental agenda gained strength in Brazil and placed the country at the center of global discussions - and concerns.
- Technological innovations and new economic models to solve social and environmental problems question the dominant logic.
- Responding to pressure from governments and, especially from consumers, companies gradually began to view the environmental issue as a promising market and the “next step” to continue in the game.
- Since the 1990s, there has been an explosion of environmentally friendly products and programs, as a result of companies that began mapping the life cycle of their products and investing in clean technologies and sustainability programs.

## MAIN HISTORIC EVENTS





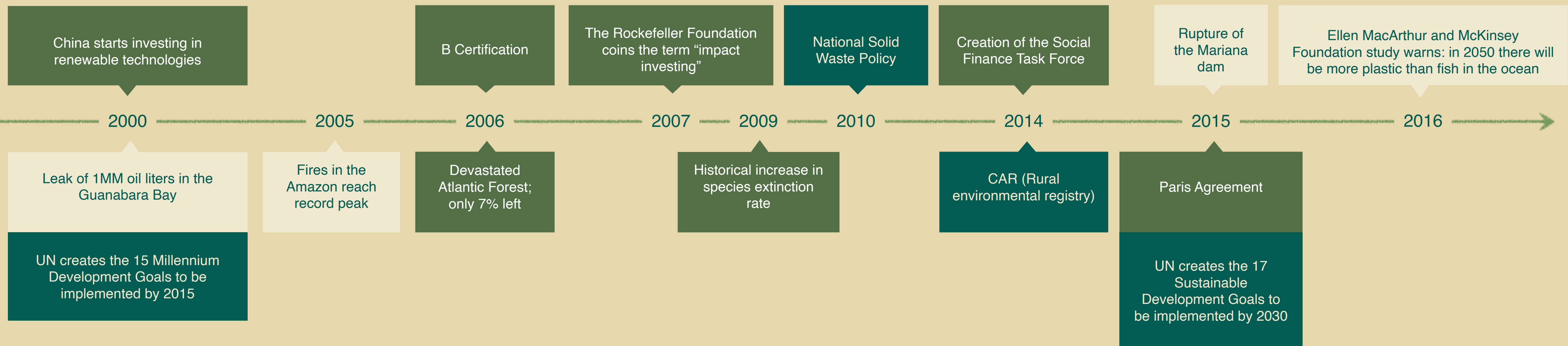
2001–2020

# THE ECONOMY INTEGRATING THE ENVIRONMENT IN A SYSTEMATIC AND STRATEGIC WAY

The emerging and necessary logic of an economic system that works for the maintenance and recovery of environmental resources.

- Years of unlimited use of natural resources have consequences. The last few decades have been marked by serious disasters and environmental liabilities and the urgency of change started coming out of the academy.
- Governments responding less quickly than the planet needed, but international agreements began generating commitments for emergency action.
- The economic sector responding to calls from civil society and governments and begins moving towards an emerging logic of functioning.

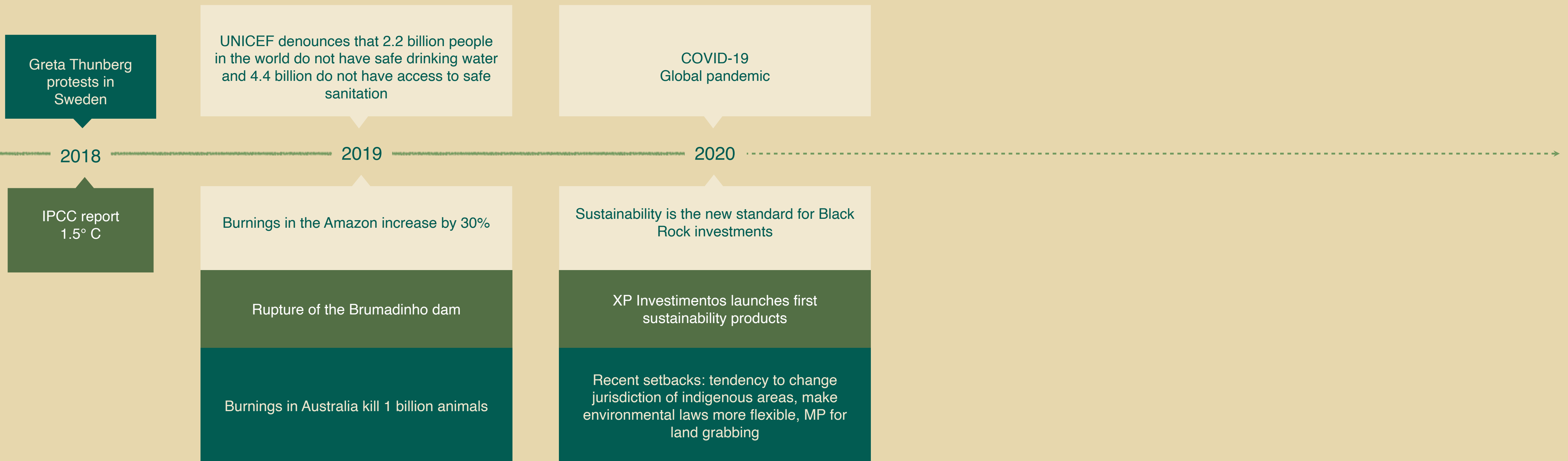
## MAIN HISTORIC EVENTS



2001–2020

# THE ECONOMY INTEGRATING THE ENVIRONMENT IN A SYSTEMATIC AND STRATEGIC WAY

## MAIN HISTORIC EVENTS



# THE RELATIONSHIP OF COMPANIES AND PRIVATE CAPITAL WITH THE ENVIRONMENT IS CHANGING.

## Transition logic

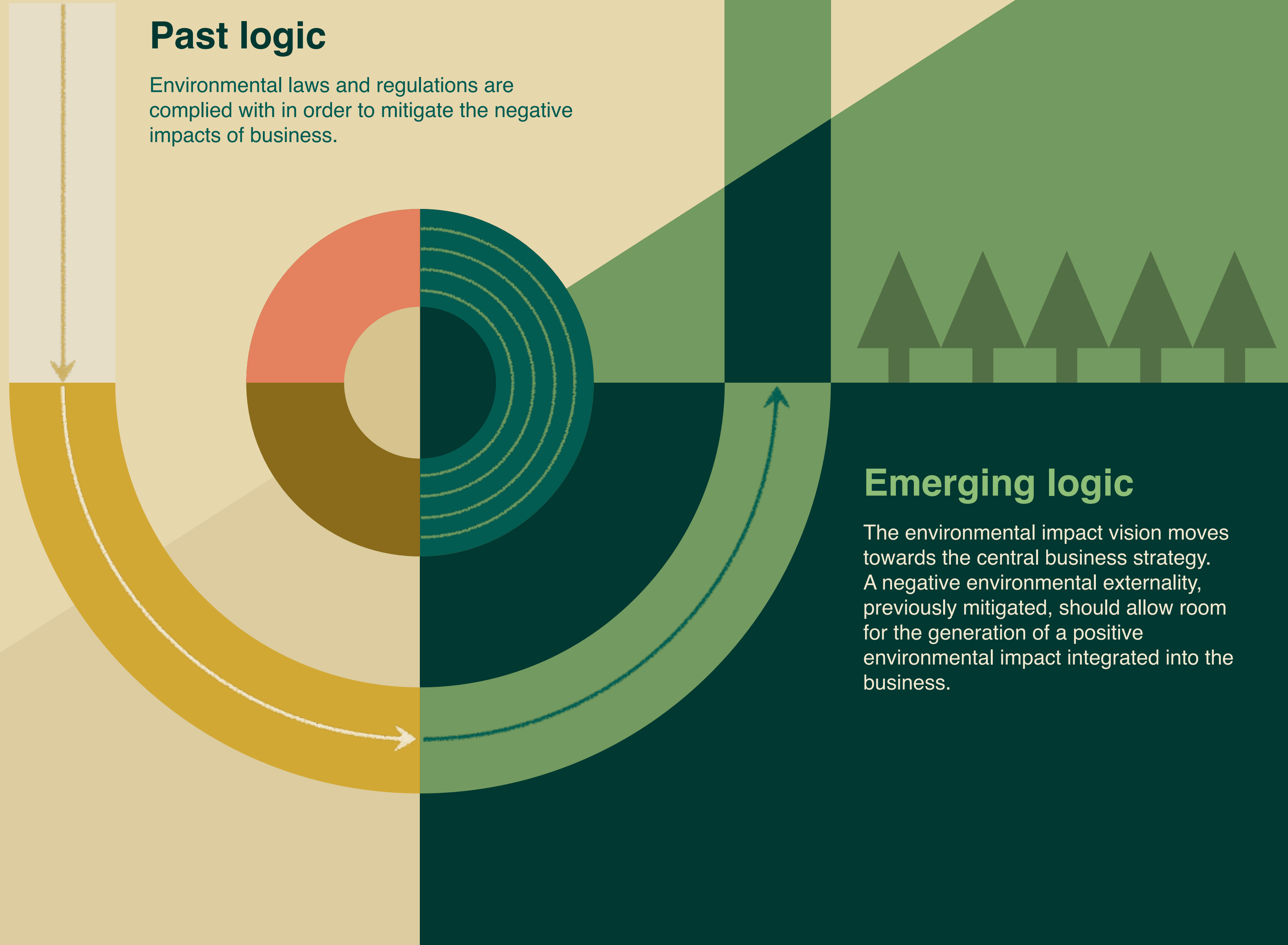
In addition to legal compliance, sustainability strategies aligned with the *core business* are incorporated, in order to reach new markets and strengthen the institutional image.

## Past logic

Environmental laws and regulations are complied with in order to mitigate the negative impacts of business.

## Emerging logic

The environmental impact vision moves towards the central business strategy. A negative environmental externality, previously mitigated, should allow room for the generation of a positive environmental impact integrated into the business.





EMERGING LOGIC POINTS TO A GLOBAL  
ECONOMIC SYSTEM THAT

*GENERATES VALUE  
FOR THE  
CONSERVATION  
AND  
REGENERATION OF  
THE  
ENVIRONMENT.*







Sustainability will be at the heart of BlackRock's investment strategy going forward, says CEO

[Valor Investe • Jan/2020](#)

CNI sees biodiversity as a new 'industrial revolution'

[Terra • Ago/2020](#)



XP will have an environmental, social and governance area, and wants to increase the number of women by 10%

[Estado SP • Jun/2020](#)

*For the first time, solar and wind represented the majority of the new generation of energy in the world*

[CPG • Set/2020](#)

**Blue Like an Orange raises \$200 million fund for impact in Latin America**

[Capital Reset • Jun/2020](#)

## *The environmental agenda becomes fundamental in the business strategy*

[IstoÉ • Ago/2020](#)

**Impact investments advance and move \$785 million in Brazil**

[Capital Reset • Set/2020](#)

Green resumption may avoid half of the global warming expected by 2050

[Época Negócios • Ago/2020](#)

*The post-pandemic green economy may add R\$2.8 billion to productive sectors*

[Agência Brasil • Ago/2020](#)





THAT MEANS THAT THE FUTURE IS

**THE  
ECONOMY**



INTEGRATING  
IN A  
SYSTEMATIC  
AND  
STRATEGIC  
WAY



**THE  
ENVIRONMENT**



***“Prices are the market's algorithms. They reflect supply, demand and future expectations. The momentum we see in technology assets and sustainable products, since the beginning of this year, is very positive, breaking records. This is the new market!”***



**Gustavo Pinheiro**  
ICS – Climate & Society Institute



***“Companies want to be attractive from the ESG (Environmental, Social and Governance) point of view, and, in this way, seek to reduce their negative impacts and expand the positive impacts they can generate for society and the planet. It’s a favorable moment to expand the impact investment in socio-environmental businesses and to have more capital available for this purpose.”***



**Juliana Vilhena**  
Vale Funding





**AND HOW HAS  
BRAZIL  
FOLLOWED  
THIS  
GLOBAL  
MOVEMENT?**



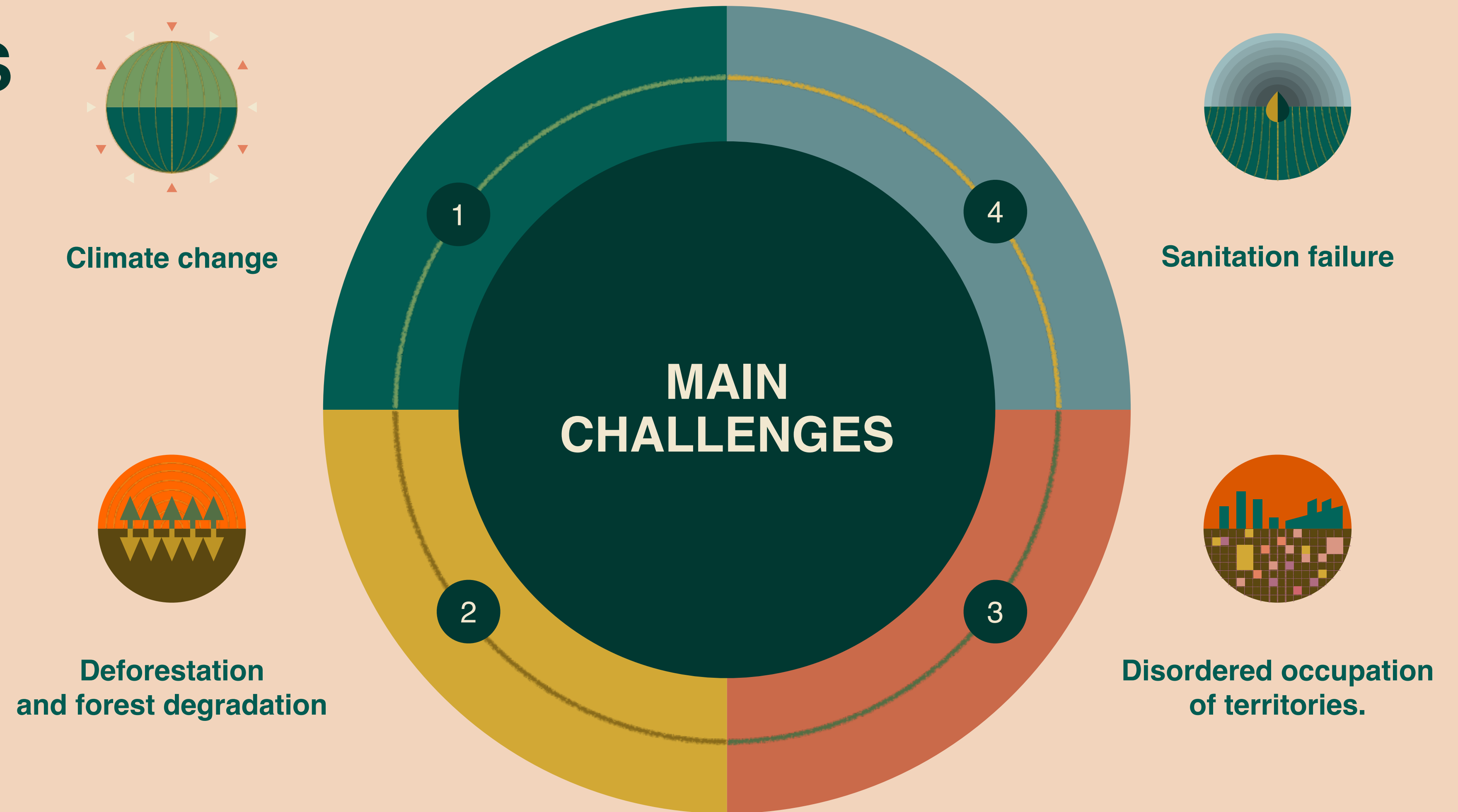
**THE POTENTIAL BRAZIL HAS TO GENERATE SOCIO-ECONOMIC DEVELOPMENT WITHIN THIS EMERGING ENVIRONMENTAL LOGIC IS EVIDENT.**

But it's necessary to innovate and adopt a systemic and multi-sectoral approach, where businesses relate to the environment as an asset, and not exclusively a liability.



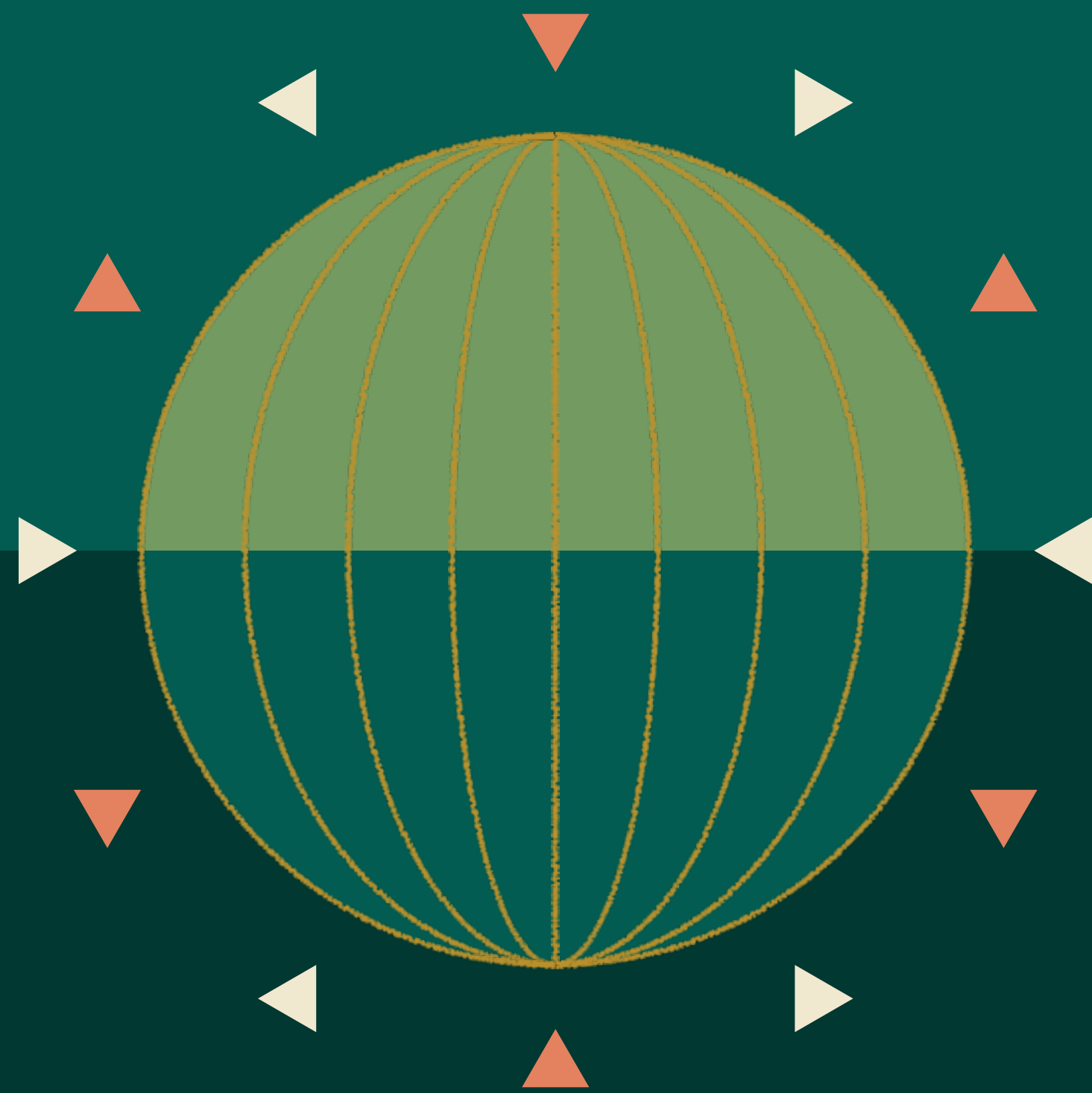
# MAIN CHALLENGES

The experts who contributed to this study highlighted the main Brazilian environmental challenges today as the following:



## CLIMATE CHANGE

Climate change is one of the biggest challenges to be faced by the global society in the 21st century. This is because it can generate devastating impacts on the development trajectories of countries and, consequently, on the lives of their populations and their productive systems.



To fight climate change, the global society must transition to a low-carbon economy which, in practice, means achieving net zero greenhouse gas (GHG) emissions by the middle of the 21st century. In fact, this will require efforts by their companies to develop products and services with less embodied GHG emissions or, in other words, less carbon footprint. This should be done, mainly, from the adoption of science-based targets by companies.

For this transition, the UN estimates that is necessary the annual investment of resources in the order of \$1.6 to \$3.8 trillion is necessary, until 2050, which should generate great business opportunities for the private sector.

On the other hand, even with the fight against the causes of climate change, the need for companies to invest in actions that increase their resilience is already evident, in the face of the impacts of

extreme weather events, mainly those related to the hydrological regime (periods of droughts or above normal rains and occasional storms).

These impacts are especially relevant for the private sector, since most productive systems depend on the availability of water for their operation. In 2017 alone, the impacts brought by these events generated losses of \$330 billion globally, with only \$136 billion being protected by some type of insurance.



# CLIMATE CHANGE



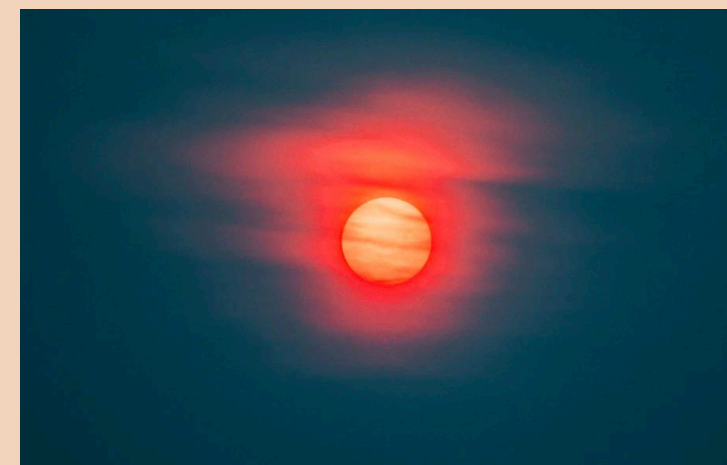
“The water issue has a lot to do with forests and springs. Water is planted. In the forests, whether to keep the aquifers or keeping the forest standing, these waters have an evaporation process that make clouds of water particles that remain in the atmosphere, which is, in good part, responsible for the balance of the climate. Deforestation compromises this atmospheric climate control. ”

Foundation/Institute



July 2020 was the 2nd hottest in the history of the planet.

[NOAA USA • Ago/2020](#)



Greenhouse gases reach new record in 2020, UN says

[Época Negócios • Set/2020](#)



Climate crisis will make at least 25 million people leave their homes

[Claudia • Set/2020](#)



The Arctic reaches 2nd lowest ice level in September of 2020

[EcoDebate • Set/2020](#)



Temperature rise and lack of rain can extinguish rainforest trees

[Dom Total • Set/2020](#)



## DEFORESTATION AND FOREST DEGRADATION

Illegal deforestation of the country's main biomes, such as the Amazon, Cerrado and Atlantic Forest generates losses much deeper and at more levels than we can imagine.

In addition to the immediate negative impacts in the region in which they occur, deforestation in the country has increasingly affected the productive sector's capacity of generate value, mainly for two reasons:

- a. commercial partners have signaled embargoes on products from deforested areas;
- b. the ability to exploit assets contained in forests that would generate financial resources for the region is lost, contributing to its development.

Added to this are the indirect environmental impacts that are already beginning to be felt by society, such as the decrease in rainfall in agribusiness productive regions in the North, Midwest and Southeast, increasing the production cost and the risks on the productivity of different cultures. In addition, we are perceiving the occurrence of gigantic clouds of smoke in urban centers in these regions due to the fires used to deforest forests.

According to IBGE data, between 2000 and 2018, Brazil lost 500 thousand km<sup>2</sup> of forests - which is equivalent to twice the area of the state of São Paulo.





# DEFORESTATION AND FOREST DEGRADATION

“Investors don't want to invest in a productive Amazon, they are afraid. We could be investing in the productive Amazon with local products, with communities... “

Foundation/Institute

“Deforestation erodes our internal image. It weakens Brazilian soft power in international relations, but it also leads to market risks for foreign trade. Several European countries are boycotting Brazilian products due to the high deforestation in the Amazon. “

Foundation/Institute



Banks and entrepreneurs recognize the impact of deforestation on the business flow

[Valor Econômico • Set/2020](#)

Banks pledge to cut funding for companies linked to illegal deforestation

[PEGN • Set/2020](#)



Europeans threaten to cut investment in Brazil due to deforestation

[UOL Economia • Jun/2020](#)

Funds with \$3.7 trillion warn Brazil about deforestation

[InfoMoney • Jun/2020](#)





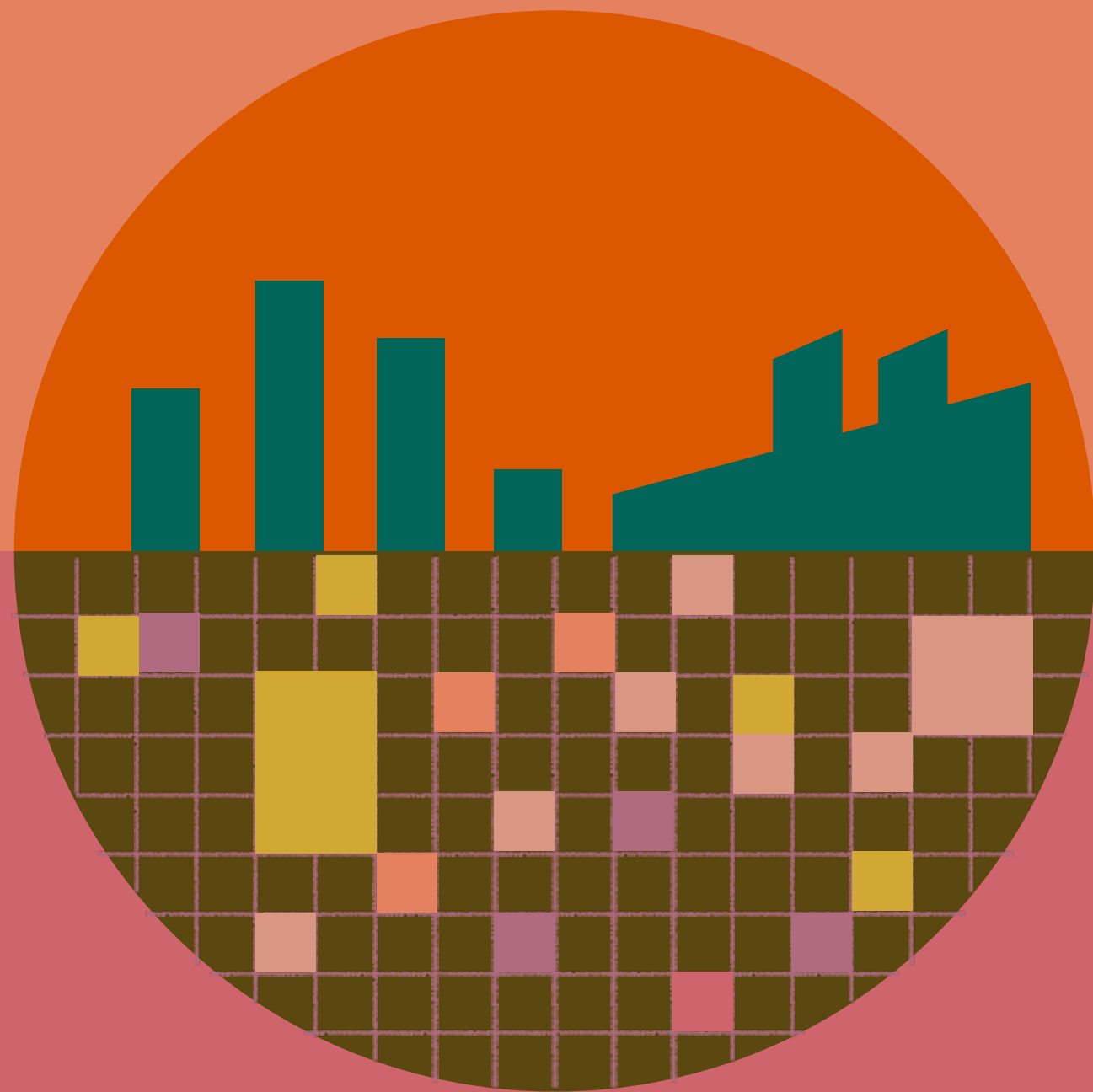
## DISORDERED OCCUPATION OF THE TERRITORY

In both rural and urban areas, territorial planning and infrastructure development in Brazil have presented several gaps. One of the most relevant is the low capacity to conciliate production models and conservation zones, underutilizing the strategic and sustainable use of natural resources.

The disordered occupation of the soil has historically prioritized capital built over natural capital in Brazil, suppressing the potential use of environmental assets - especially forestry - in the Brazilian economy.

On the other hand, in the urban environment, this process also generates losses for several sectors such as housing, transport and logistics, basic sanitation, among others. The concentration of population in large urban centers also increases the impacts in terms of pollution (mainly atmospheric and water resources pollution), decreasing the welfare of the population itself and forcing more vulnerable groups to live in precarious housing.

According to IBGE data, in 2019 Brazil had around 14 million inhabitants living in 5.12 million dwellings considered “subnormal”, a term that designates slums and other irregular dwellings on land with no urban pattern, with a lack of public services and located in areas with restrictions to occupation.



# DISORDERED OCCUPATION OF THE TERRITORY

"The disordered occupation of the landscape creates mobility problems, risks to the population, a decrease in the value of real estate assets and higher health expenses."

Foundation/Institute



Heavy rain isolates cities, causes flooding and landslides and leaves 12 dead in Greater São Paulo

[G1 • Mar/2020](#)

Deaths from air pollution increase by 14% in 10 years, says Ministry of Health

[G1 • Jun/2020](#)

At least 4 million people live in risk areas in Brazil

[R7 • Jul/2020](#)

Return of rains is a threat to residents of 41 risk areas in DF

[Correio Braziliense • Out/2020](#)



Mobility: 44% of São Paulo citizens say they suffered health problems due to pollution and time in traffic drops a little, but it is still high

[Diário do Transporte • Set/2020](#)



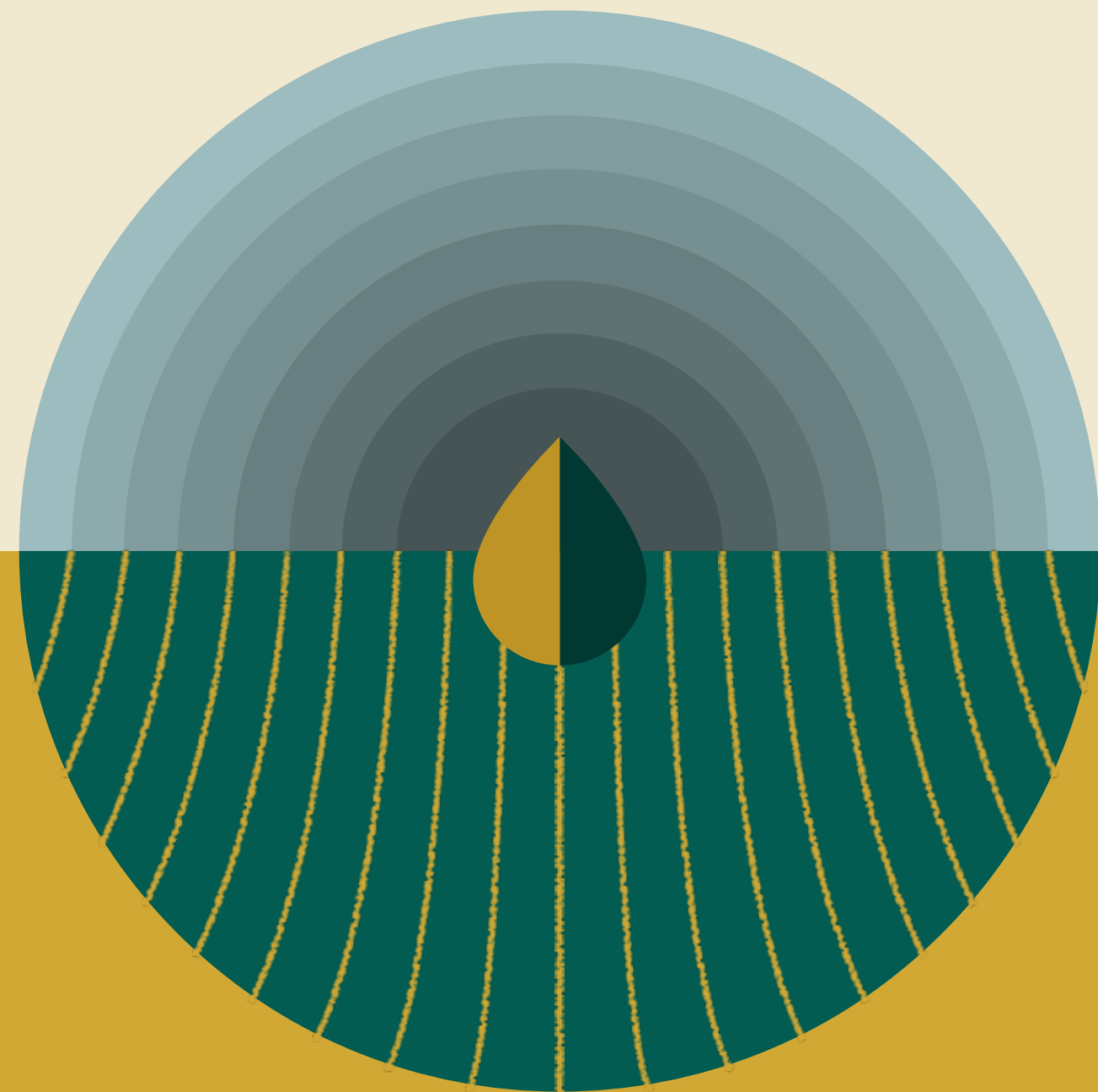
## BASIC SANITATION INSUFFICIENCY

The Brazilian population still suffers today with an insufficient sanitation infrastructure, having serious consequences in the national development.

The deficit in coverage and quality of basic sanitation affects almost half of the Brazilian population (both drinking water supply and sewage and solid waste collection and treatment). It has more clearly impact on the health of the population and on the environment, however, it also negatively impacts education and productivity in the country.

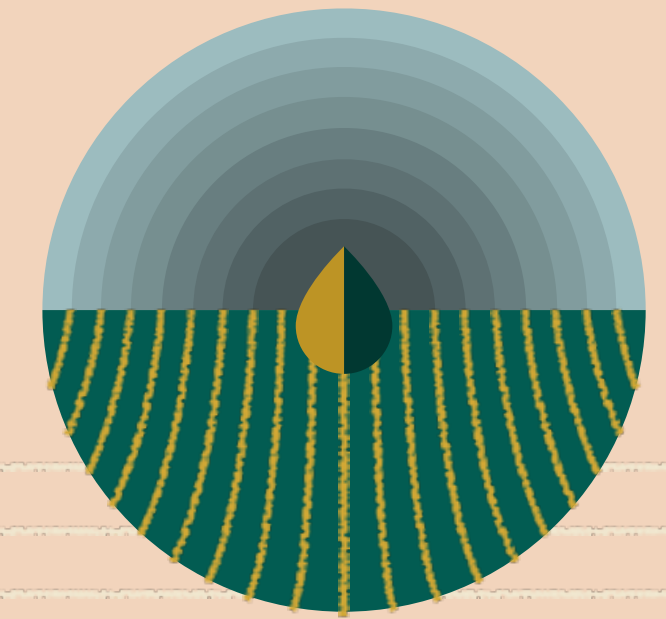
According to data from the World Health Organization, for each real invested in universal access to basic sanitation, they generate R\$ 8.9 in economic return for Brazil.

In this sense, the country's development opportunities end up being undermined both in the field of welfare and productivity, and in the field of degradation of the country's environmental assets, which could contribute to the development and generation of wealth in Brazil.



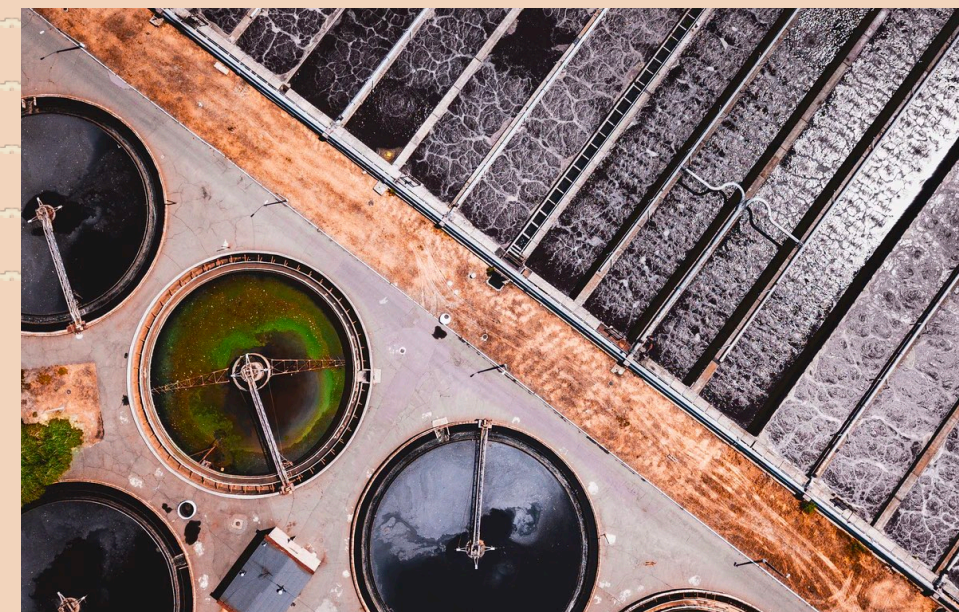


# BASIC SANITATION INSUFFICIENCY



“By having access to water and sewage treatment, I am minimizing a direct environmental impact, because, once untreated, they are thrown into rivers, at the same time I am talking about a totally social impact because a person who lives in an adequate condition sanitation is less sick, has less absence at school and/or work”.

Foundation/Institute



Lack of basic sanitation hinders pandemic control

[Jornal da USP • Mai/2020](#)



Deficit in basic sanitation aggravates pandemic in Brazil

[Claudia • Set/2020](#)



Pandemic aggravates frightening picture of basic sanitation in Brazil

[EcoDebate • Set/2020](#)

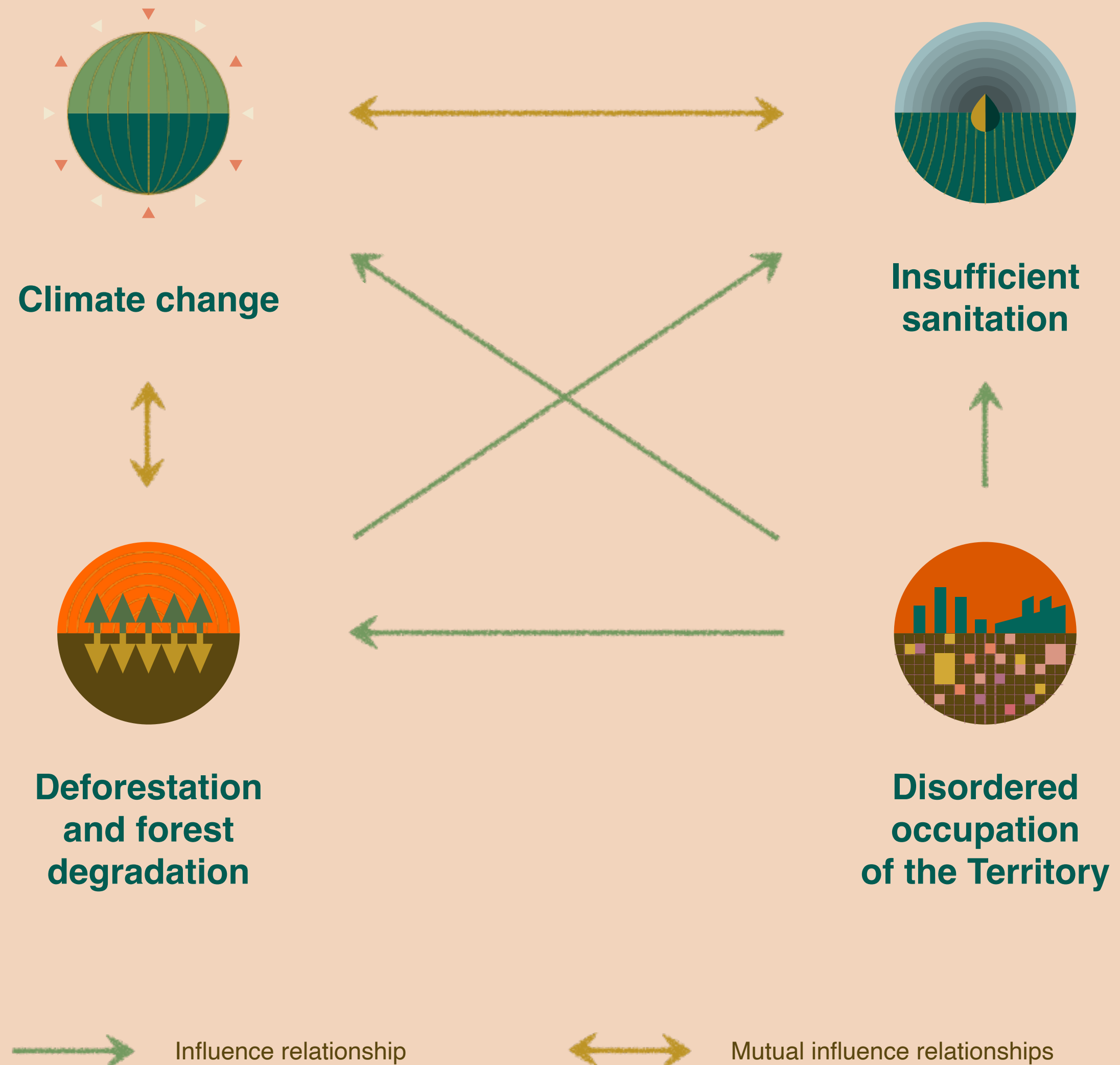


# RELATIONSHIP BETWEEN CHALLENGES

Even though their causes and consequences are very particular, the challenges mapped in the interviews have connections between them. This means that both the improvement and the deterioration of each aspect can affect the state of the other challenges.

"Deforestation contributes to climate change. Burns, transforms the carbon stored in carbon in the atmosphere. Absence of sanitation generates greenhouse gases, in addition to degrading the natural environment that fails to produce ecosystem services. Disordered occupation has a direct impact of climate on ecosystem services and indirect impacts with more emissions associated with the use of these areas."

Foundation/Institute





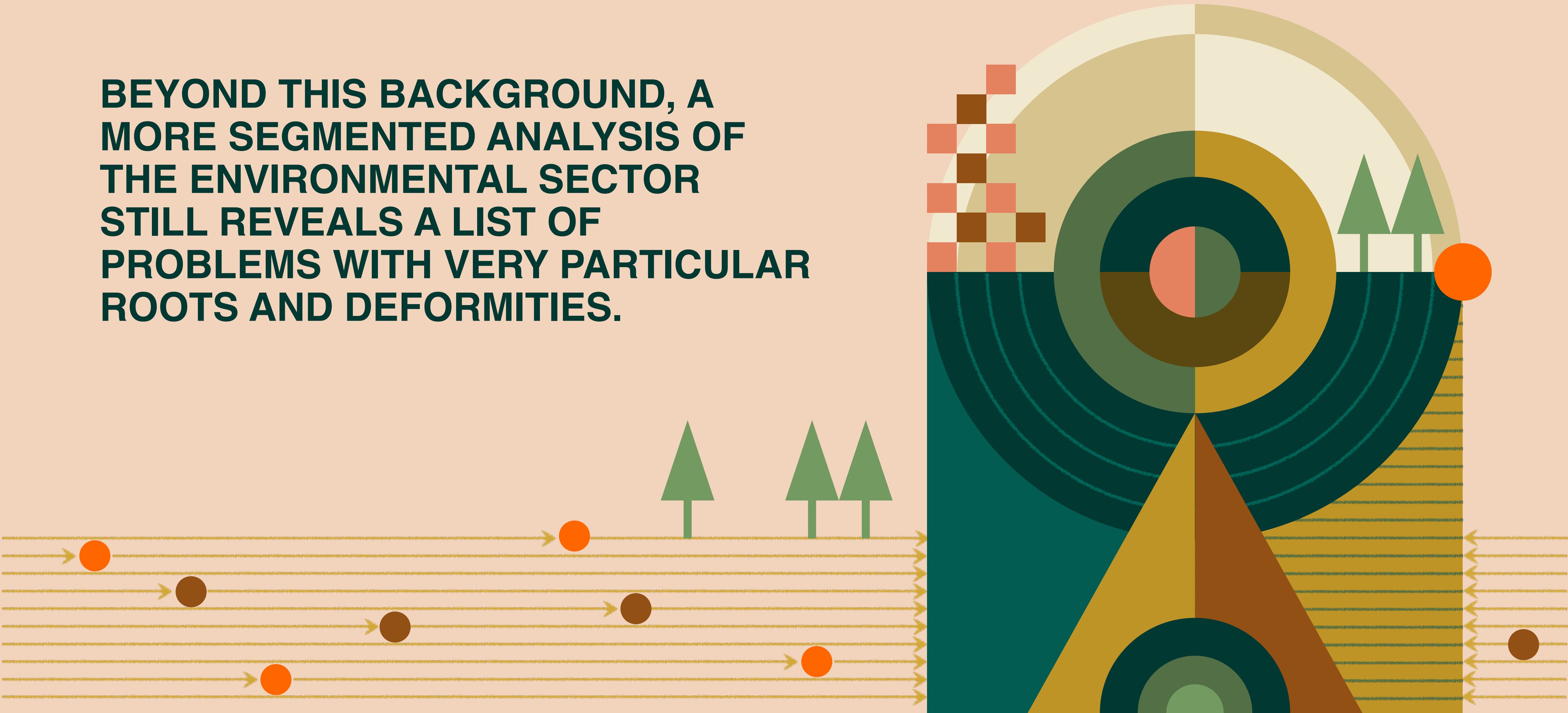
***“Tackling climate change is central to the development of Brazil in the coming decades. First, because the negative impacts of extreme weather events are already being felt, affecting the productive sector and, especially, the groups of socially most vulnerable individuals. Second, because these impacts, while intensifying the country's main socio-environmental problems, are also fed back by them (as in the case of deforestation and insufficient basic sanitation, which aggravate climate change). ”***



**George Magalhães**  
Gem Natural Capital



**BEYOND THIS BACKGROUND, A MORE SEGMENTED ANALYSIS OF THE ENVIRONMENTAL SECTOR STILL REVEALS A LIST OF PROBLEMS WITH VERY PARTICULAR ROOTS AND DEFORMITIES.**



# IN THIS STUDY, WE HAVE ANALYZED 7 KEY SECTORS FOR THE BRAZILIAN ENVIRONMENTAL AGENDA:

## Farming

It ranges from rural producers of grains, cattle, other crops and livestock (individual, family and companies), to suppliers of inputs (e.g seeds and pesticides) and agricultural traders (traders).

## Forests and Land Use

The forestry activity includes the production of wood and non-wood products (e.g fibers, food, extracts, etc.), as well as reforestation and maintenance of native forests for conservation purposes.

## Waste Management

The waste management sector consists mainly of companies that perform the treatment of solid waste, but it also includes companies that manage, collect, separate, reuse and recycle these.

## Industry

The industrial sector is characterized by carrying out transformation, which means converting raw material into tradable products, being classified into subsectors according to the goods or inputs that it sells, for example, chemicals, steel, cement and consumer goods.



## Water and Sanitation

The sanitation sector consists of companies responsible for the construction or management of infrastructures for water supply, urban drainage, collection and treatment of liquid effluents.

## Logistics and Mobility

The logistics and mobility sector comprises the movement of cargo and passengers and includes the various modes of transport (e.g, rail, water, air and road).

## Energy and Biofuels

The energy and biofuels sector ranges from companies that generate, transmit and distribute electric energy, to producers of biofuels (mainly ethanol and biodiesel), which depend on both an agricultural component and an industrial component for their production.

\* The typologies adopted in this study for the key sectors were obtained from interviews with experts and also from the content of the publication "Don't Miss This Bond - Assets and projects eligible to issue Green Bonds in key sectors of the economy Brazilian" (iCS & Sitawi).



# MAIN ENVIRONMENTAL CHALLENGES\*

## Farming

- Impacts of large-scale food production.
- Product traceability.
- Production losses along the value chains.
- Technical assistance to the producer.

## Forests and Land Usage

- Low use of forest bioactives.
- Business to recover degraded areas.
- Credit and financing for agroforestry businesses.

## Waste Management

- Proper collection and treatment of waste.
- Contamination by irregular waste disposal.
- Low product recycling rates.

## Industry

- Product traceability.
- integration of sustainability elements in product design.
- Low use of bioactive substances in industry.

## Water and sanitation

- Coverage and quality of basic sanitation.
- Low energy use of waste-to-energy treatment.
- Climatic vulnerability of sanitation systems.

## Energy and Biofuels

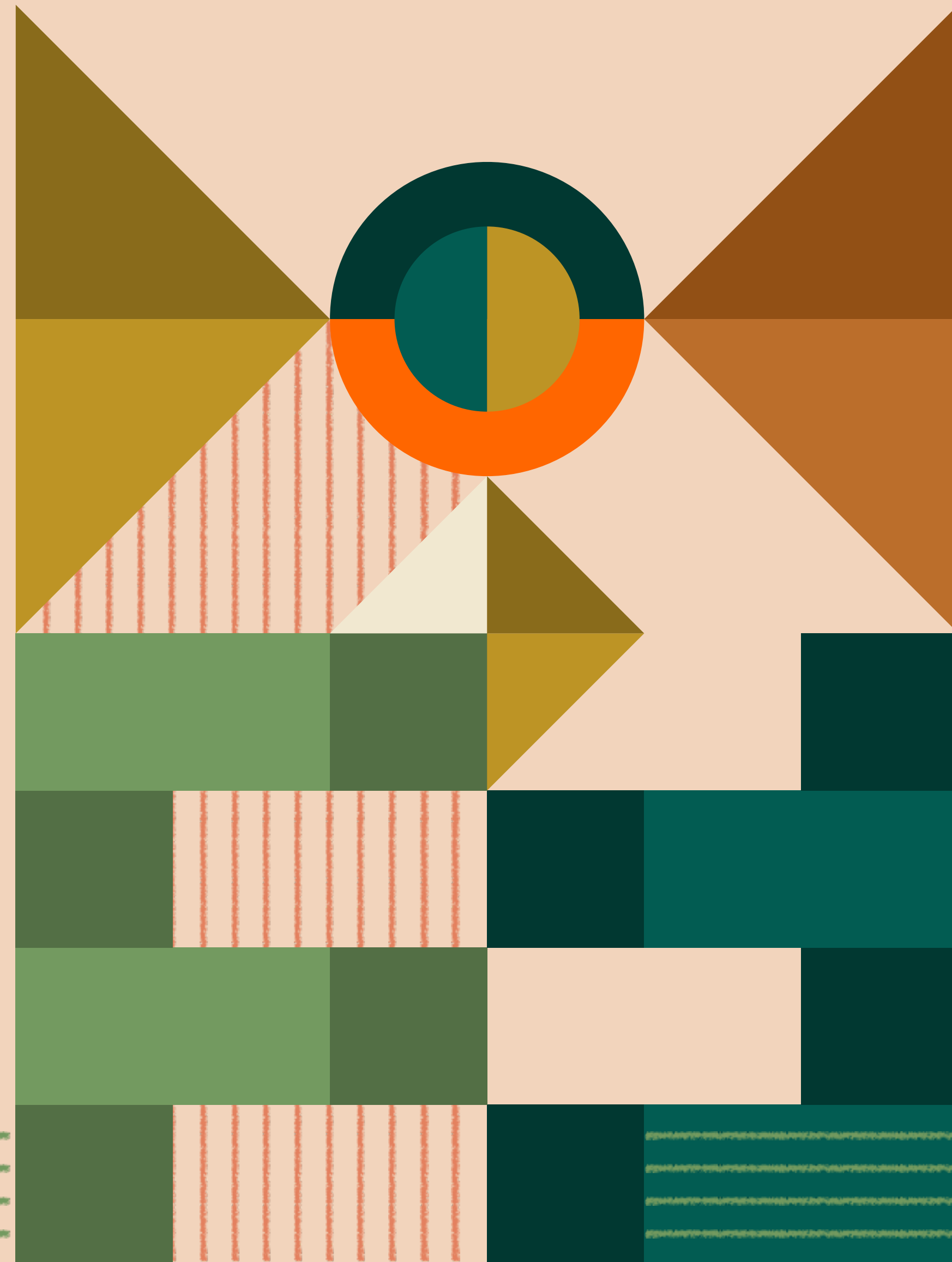
- Expansion of distributed generation.
- Costs related to renewable energy.
- Climatic vulnerability of the electricity and biofuels sector.

## Logistics and Mobility

- Pollutant and GHG emissions in cargo transportation.
- Urban mobility concentrated in combustion vehicles.
- Coverage and quality of public transport.



\* According to experts and organizations heard during the preparation of this study.



**AS IF IT WASN'T ENOUGH, THE ENVIRONMENTAL PROBLEMS IN BRAZIL ARE STILL AGGRAVATED BY STRUCTURAL CHALLENGES THAT BUILD THE CULTURE AND OPERATING LOGIC OF OUR COUNTRY AS A WHOLE.**



### 3. Current Challenges

## #BRAZILRISK

**“We have always had the structural challenges of meeting the demands of our own Laws. We have created the best laws in the world, but have no public structure to enforce the law. And then there’s this concept of “the law succeeded or the law didn’t succeed”. I don’t think I’ve ever seen this concept anywhere in the world. Then you have to go back and reform the law to get it into force. For foreigners, this is very strange. They do not understand.”**



**Daniela Mariuzzo**  
IDH Brasil



## #BRAZILRISK

“We have this tendency to prohibit instead of regulating. We prohibit, because we are unable to regulate it and then it generates corruption to release whichever is banned. This occurs in all areas of Brazil, not only in the environmental area.”

Foudation/Institute

“Regulatory bodies need to be more integrated. There are four systems to do the same thing, it doesn't make sense, there is a lack of systemic vision. This is Brazil cost that is not being computed. We keep on spending time and critical mass due to this lack of integration.”

Entrepreneur

“Today, the greatest demand in the world is for disintermediation, agility, giving value to things that already exist, making everything more efficient and with more impact.”

Entrepreneur



# CLIMATE JUSTICE AND BRAZILIAN ENVIRONMENTAL CHALLENGES

We cannot deal with the environmental challenges that lie ahead without taking into account their class, race and gender layers.

The negative effects of climate change, which present themselves in the form of extreme climatic events, are felt first, and most intensely, by the poorest and most peripheral populations, who notably have less resources to generate adaptive capacity and resilience and in turn, are the least responsible for this situation.

The environmental challenges mapped in this study have more drastic consequences for the most vulnerable groups.

Insufficient sanitation undermines opportunities for the development of peripheral populations - not by coincidence, the majority are black - making it difficult for them to access the educational system and the labor market.

The disordered occupation of the territory, at the same time that removes populations with less purchasing power from the central areas of the city, also precarious the housing and leisure of these individuals.

The productive models that are based on deforestation and the transformation of forest areas end up generating violence and disrespect for the rights of traditional peoples, such as indigenous and quilombola communities.

These are just a few examples of how climate justice can and should be adopted when reading this material.

“The environmental debate is still very restricted. There is little space for other people and organizations to enter. Neighborhood associations need and want to debate, because when something goes wrong, it’s the poor population that suffers. ”



**Mariana Belmont**  
Uneafro Brazil

“The perspective of environmental Racism is a very important one to be brought to the discussion. It is important to talk about how the climate crisis is affecting vulnerable people the most, how this crisis is already increasing the situation of inequality and how these people often do not understand this place because the language is elitesque. ”



**Amanda Cruz**  
Youth Climate Leaders

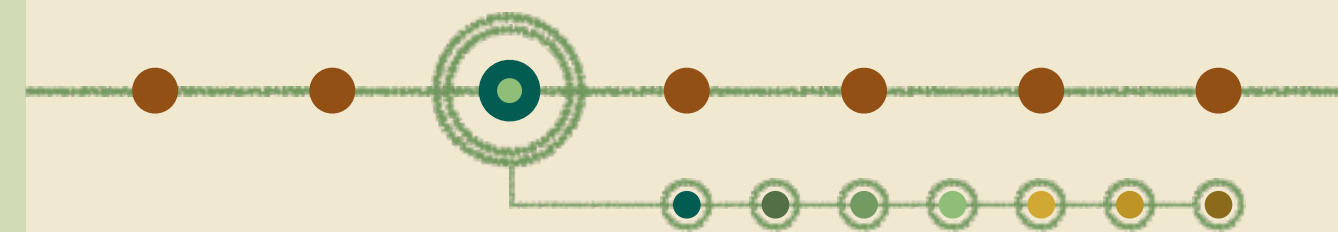
**AS PRESENTED HERE, THE SOCIO-ENVIRONMENTAL CHALLENGES ARE MANY, AND THEY ARE COMPLEX. THAT'S WHY IT REQUIRES INNOVATIVE SOLUTIONS AND APPROACHES.**



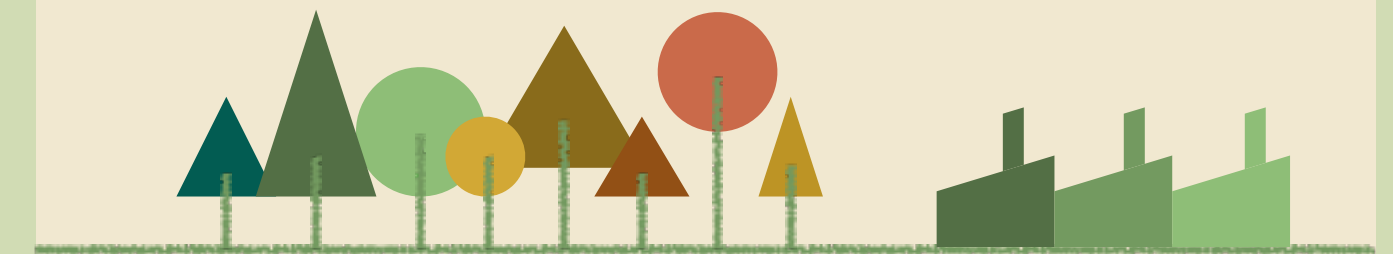


**IN TALKS WITH EXPERTS, WE IDENTIFIED MARKET TRENDS IN THE WORLD, THAT MAY GAIN HUGE SPACE HERE IN BRAZIL:**

### Product traceability



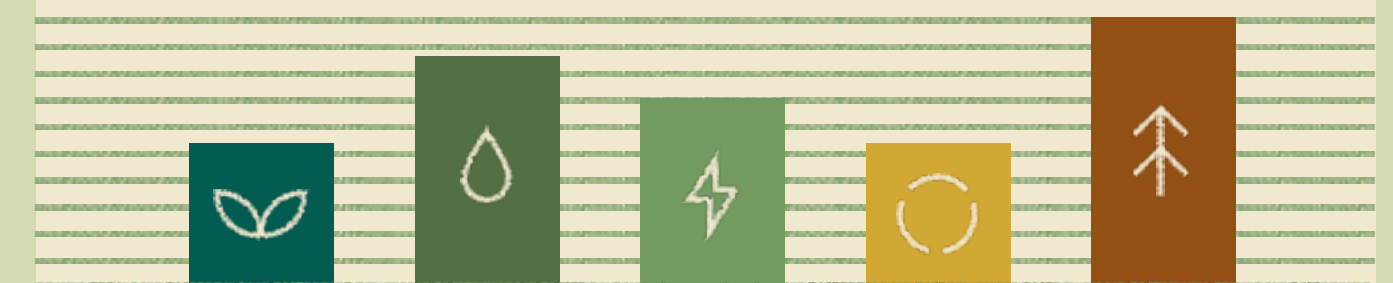
### Bioeconomy



### Regenerative businesses



### Markets for environmental assets





***“We need to transform the standing forest into a business that combines conservation and the activities of the new economy. This will only be possible through understanding the potential of the territory and the local socio-environmental development.”***



**David Canassa**  
Legado das Águas/Votorantim





***“There are opportunities that range from helping with the transparency of information, contributing to the traceability and origin of products, to efficient forms of business intermediation. It is important to have services that can help mitigate risks and allow the creation of bases that keep our forests standing.”***

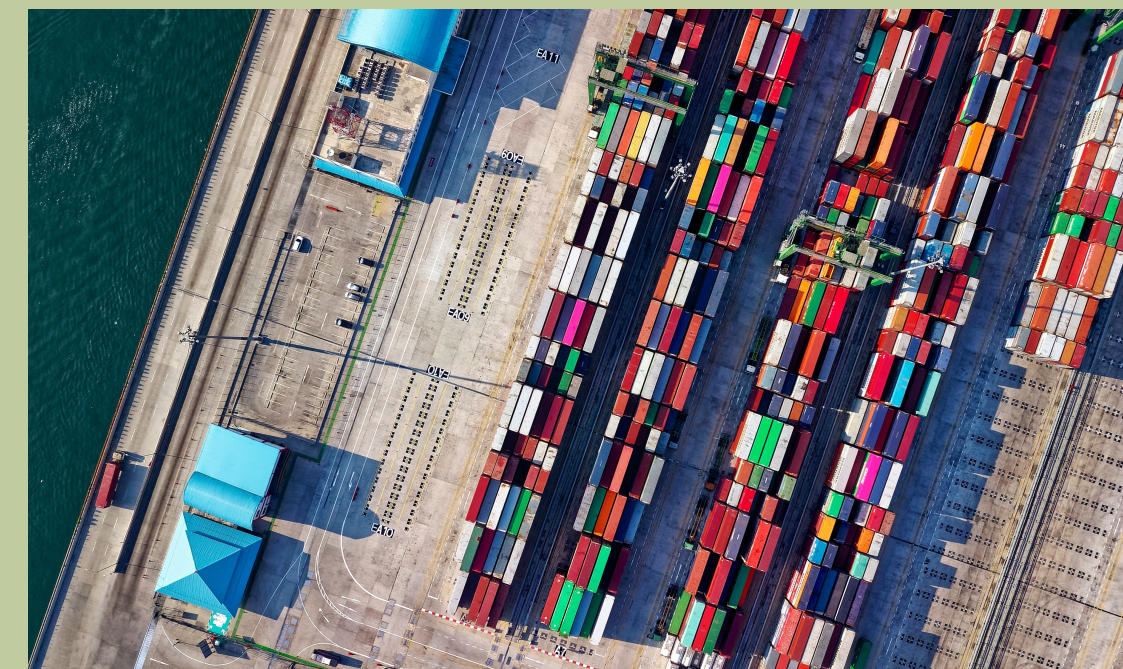
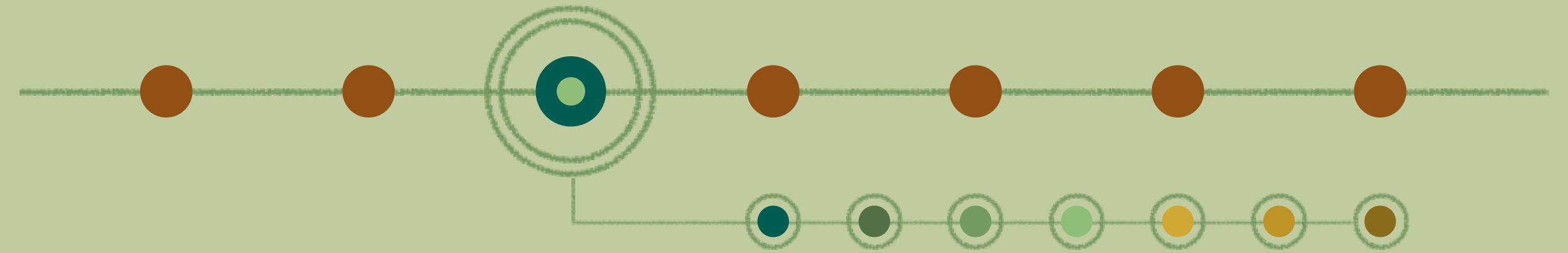


**Maria Eugênia Taborda**  
UNEP FI



# PRODUCT TRACEABILITY

Several sectors of the Brazilian economy have excellent sustainability indicators in their lifecycle (mainly because of the Brazilian electricity matrix with a large share of renewable energies and because these sectors use agricultural and/or renewable assets in their value chains). However, a huge challenge still lies in the ability of these companies to demonstrate the traceability of the sustainability attributes of their products, placing them as better alternatives in relation to their international competitors.



\$125 billion giant, Unilever will use blockchain to fight global warming

[CoinTelegraph • Jun/2020](#)



Warehouse certification avoids grain losses and adds value to agricultural production

[O Nortão • Set/2020](#)

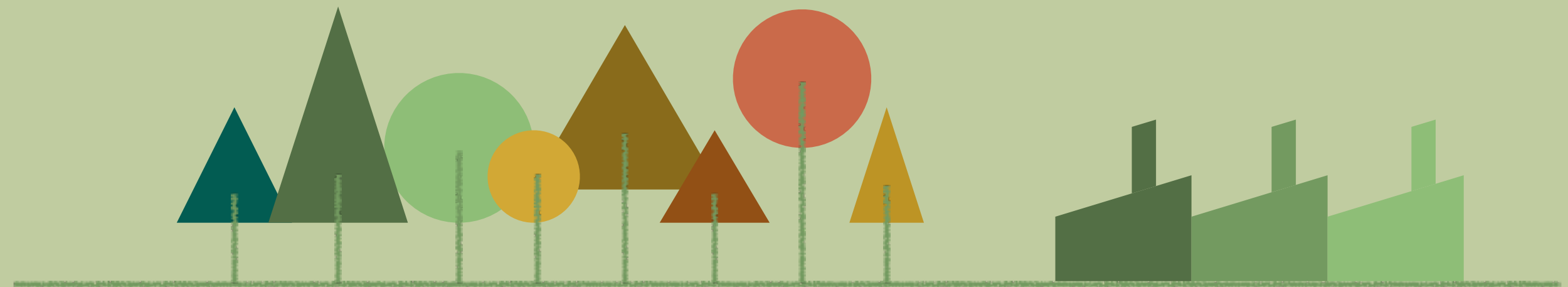
Blockchain helps neutralize CO2 emissions with renewable energy certificates

[CIO • Set/2012](#)



# BIOECONOMY

The potential for using Brazilian bioactives in the industry is still incredibly under-explored. Knowing and valuing biodiversity does not only involve protecting animal species, but also discovering (bioprospecting) new assets capable of enhancing sustainability in the national economy. From food to pharmaceuticals, from fibers to biomimetics, there is a multitude of possibilities for the industry to incorporate environmental assets into its production processes, delivering value to its customers while the conservation initiatives for these assets are valued and remunerated, mainly forest-based ones.



“For the bioeconomy to gain space in Brazil, it needs public policies and public investments in structures that allow this to happen. The wealth of the Amazon is already being processed by foreign companies (açaí, for example). Brazil always positions itself as an exporter of raw materials. We need Brazilian private investment.”

Expert



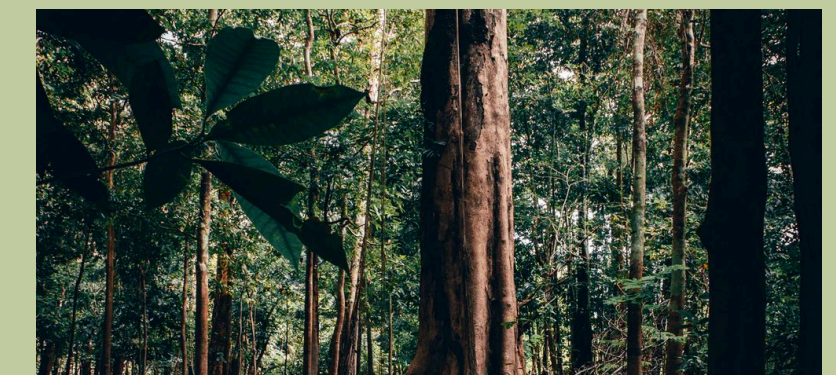
Bioprospecting can save the Amazon rainforest

[Tilt • Ago/2020](#)



Bioinspiration: the third wave of Brazilian agriculture

[Cana Rural • Jul/2020](#)



Rich in natural resources, the Amazon presents a chance of profit without jeopardizing preservation

[Correio do Povo • Dez/2019](#)



# REGENERATIVE BUSINESSES

Due to decades of economic development out of step with the notion of social and environmental sustainability of the production processes, many liabilities were generated as a result of this process. However, more recently, innovative business models increasingly demonstrate the feasibility of combining the generation of value and profitability with the regeneration of degraded ecosystems, eliminating such liabilities as goods and services are produced from more sustainable practices. However, the idea of a regenerative economy also raises questions about structural and profound changes in the current logic of business, abandoning the notion of a capitalism based on extraction and infinite growth and even rethinking the relations established by business in the social and environmental dimensions.



“We started talking about regeneration in recent years. In the latest IPCC reports, for example, talking about the importance of regenerating the planet. Our evolution in this field has been slow. The world already knew what it needed to do, but it took time to commit.”

Specialist

More than sustainability, regeneration will save the planet

[Beef Point • Set/2020](#)

Why more companies are betting on the circular economy

[Estado de SP • Set/2020](#)

Regenerative agriculture is a new weapon against climate change

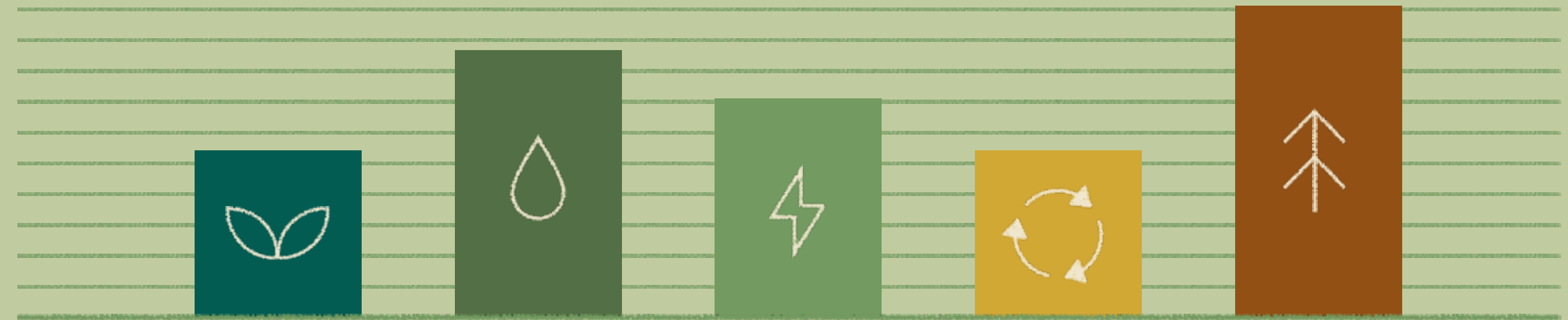
[UOL Economia • Ago/2020](#)

Restoring degraded forests recovers ecosystem services and stores carbon

[EcoDebate • Set/2020](#)



# ENVIRONMENTAL ASSETS MARKET



The potential for Brazilian bioactives usage in the industry is still incredibly under-explored. Knowing and valuing biodiversity does not only involve protecting animal species, but also discovering (bioprospecting) new assets capable of enhancing sustainability in the national economy. From food to pharmaceuticals, from fibers to biomimetics, there is a multitude of possibilities for the industry to incorporate environmental assets into its production processes, delivering value to its customers while the conservation initiatives for these assets are valued and remunerated, mainly forest-based ones.

This type of arrangement can also stimulate the conservation and sustainable use of environmental assets, especially forest-based ones, by remunerating the actors / companies that conserve these assets. The management and conservation of environmental assets has even been the service offered by companies that have developed innovative business models in this field.

In Brazil, the environmental asset markets have great potential to boost Payments for Environmental Services (PSA), reductions in greenhouse gas emissions, the conservation of forest areas through environmental reserve quotas (CRA), among other assets .

“Forests are the best technology ever invented. There is nothing cheaper than planting and conserving forest. ”

Entrepreneur

Carbon market is a priority in the Chamber's environmental agenda, says Rodrigo Maia

[EPBR • Set/2020](#)

Carbon credit market enters the crosshairs of companies

[Estado de SP • Set/2020](#)

Companies invest more to make environmental assets attractive to the market

[Money Times • Dez/2019](#)

IDB to launch transparency platform for green bonds in November

[Ideia Sustentável • Jun/2012](#)



**THERE IS ALSO A HEATED,  
TECHNOLOGICALLY BASED  
MARKET, WHICH PROMISES TO  
ACCELERATE IMPACT INNOVATIONS  
IN THE SECTOR.**





***“We are living in the Anthropocene, an era in which human activities are no longer compatible with planetary boundaries. Our carbon budget will be exhausted by 2030 (IPCC), leading to catastrophic climate change beyond 1.5°C. Meanwhile, one million species - one in eight - are facing short-term extinction (IPBES). Global warming and the collapse of biodiversity are two sides of the same coin: an existential threat to the life support systems on which we depend for food, drinking water and a stable climate. Only a quantum leap can reverse this trend! ”***

**The Frontiers of Impact Tech**





Good Tech Lab, June 2019



## FRENCH RESEARCHERS FROM *GOOD TECH LAB*, SPECIALIZED IN CLIMATE IMPACT TECHNOLOGIES, CROSSED THE 17 SUSTAINABLE DEVELOPMENT OBJECTIVES (SDGS) FROM UN'S 2030 AGENDA WITH THE NEW TECHNOLOGIES FOR THE SECTOR.

‘The Frontiers of Impact Tech’ project published in 2019, presents IMPACT TECHS as “the intentional use of science and technology to benefit people and the planet.”

Worldwide Impact Techs are growing, under the influence of several factors such as:

-  Convergence between technologies and the world of impact
-  The feeling of urgency in regards to global challenges
-  More economic incentives
-  The growing influence of new generations as more aware consumers, workers and investors
-  The possibilities offered by emerging technologies



## ANALYZING THE SDGS NEAREST TO THE UNIVERSE OF POSITIVE ENVIRONMENTAL IMPACT, THE STUDY POINTS CROSSINGS AS:

SOURCE: "The Frontiers of Impact Tech", by Good Tech Lab, in June 2019 (goodtechlab.io)

ODS 2

### FOME ZERO (ZERO HUNGER)



- AgTechs for sustainable agriculture: including precision agriculture, agro-ecological data platforms, small robotic farms and substitutes for synthetic fertilizers and pesticides.
- Digital technologies for small farmers that aim to improve their productivity and subsistence: analysis of soil and plant health, weather forecasts, dissemination of agricultural knowledge, networks and access to markets, credit and insurance.
- Post-harvest technologies to increase food preservation and reduce the waste that occurs between harvest and distribution.
- New sources of protein in order to sustainably feed 10 billion human beings, such as meat-like products (based on plants or cells) that attract omnivores and insect protein feed for aquaculture.
- Food science and genomics to develop food ingredients and crops with greater nutritional value.

ODS 6

### WATER AND SANITATION



- Pumps, collectors and generators that harvest fresh water from aquifers and atmospheric humidity.
- Water purification technologies for use, filtration, desalination, circular wastewater treatment with resource recovery and decentralized wastewater systems.
- Sanitary solutions, without water, that allow safe sanitation in urban areas that lack a sewage network, as well as solutions for the reuse of energy and nutrients generated from human waste.
- Efficient water management technologies, systems and processes for agriculture, industry and homes.
- Water supply management using remote sensing, satellite images and water tracking technologies.

ODS 7

### CLEAN AND ACCESSIBLE ENERGY



- Energy access solutions that sustainably improve the livelihoods of the world's poor in rural areas, such as solar pay-as-you-go, improved microwaves and cooking stoves.
- Advanced renewable energy: more photovoltaic cell efficiency, better wind and marine energy turbines, improved geothermal systems and sustainable fuel developments (eg hydrogen, bioenergy, sunlight for fuel).
- Advances in energy storage for electric vehicles and network balancing, including battery technologies, ultracapacitors, thermal and mechanical storage.
- Smart grids and cutting-edge technologies to increase energy efficiency and leverage decentralized energy resources.
- Fintech platforms to finance renewable energy infrastructure and unlock point-to-point energy trade.



## ANALYZING THE SDGS NEAREST TO THE UNIVERSE OF POSITIVE ENVIRONMENTAL IMPACT, THE STUDY POINTS CROSSINGS AS:

FONTE: "The Frontiers of Impact Tech", by Good Tech Lab, in June 2019 (goodtechlab.io)

ODS 9

### INDUSTRY, INNOVATION & INFRASTRUCTURE



- Innovative logistics for sustainable development, including clean container ships, cargo airships and medical supplies delivered by drones.
- Internet access technologies to bring the second half of humanity online in remote areas, such as airborne backhaul infrastructure and innovations for last-mile access.
- Advanced technologies for the sustainable industry: additive manufacturing, biofabrication, AI for new material discovery, short cycle recycling, circular and flexible factories.
- Data-based SME financing for developing markets.

ODS 11

### SUSTAINABLE CITIES & COMMUNITIES



- Sustainable transport systems that arise from the convergence between electrification, autonomy, signaling, innovation in less polluting vehicles and modes of public transport.
- Air pollution control and mitigation technologies, such as sensor networks that allow monitoring, as well as large-scale air purifiers.
- Various solutions that improve urban metabolism, through the cycle of organic resources, local food production, energy and water efficiency, advanced recycling and other circular economy mechanisms.
- Digital tools for urban planning, such as citizen participation, urban data management and advanced simulations.
- Infrastructure and basic services for rapidly growing urban areas, as well as their informal settlements.

ODS 12

### SUSTAINABLE CONSUMPTION & PRODUCTION



- Digital solutions to reduce food waste at retail, catering and consumption levels: optimized purchases, dynamic prices and redistribution platforms for unsold food.
- Reuse, repair and update of products using digital technologies, circular business models and modular projects.
- Sustainable materials and chemicals, using raw material derived from biological sources or recycled waste, as well as materials with superior longevity and robustness
- Responsible retail technologies such as online cooperatives, product sustainability ratings and blockchain to certify ethical supply chains
- Fintechs for sustainable consumption, such as ethical digital banks, investment platforms with an impact on retail, digitalization of local currencies and collective financing of businesses with a social and environmental impact.



# ANALYZING THE SDGS NEAREST TO THE UNIVERSE OF POSITIVE ENVIRONMENTAL IMPACT, THE STUDY POINTS CROSSINGS AS:

FONTE: "The Frontiers of Impact Tech", by Good Tech Lab, in June 2019 (goodtechlab.io)

## ODS 13

### CLIMATE ACTION



- Decarbonized energy: replacement of fossil fuels with clean energy fuels, adding storage and flexibility to the network and reducing emissions from existing fossil fuel plants.
- Decarbonized agriculture: reduction of food waste and the volume of participation of animal feed products and the adoption of regenerative farming methods.
- Decarbonized industry: expanding the circular economy, replacing fossil-based raw material with sustainable raw material, increasing production efficiency.
- Decarbonized transport: dimensioning of electric vehicles, low-emission fuels and mobility as a service, increasing logistical efficiency and reducing air travel emissions.
- Decarbonized buildings: increasing energy efficiency, improving construction competitiveness with low carbon materials and reducing the demand for new buildings.
- Carbon removal through engineering solutions, such as direct air capture, carbon capture and use (for example, building materials, fuels, chemicals, plastics, protein, carbon fiber and nanomaterials).
- Carbon removal through natural and hybrid solutions such as biochar and the restoration of natural ecosystems.
- Digital mitigation enablers, based on strategic data and blockchain carbon credit systems.
- Climate adaptation technologies, especially for the resilience of agriculture in urban areas.

## ODS 14

### LIFE IN WATER



- Marine cleaning technologies for removing pollution and plastics from oceans, lakes and streams.
- Prevention of oceanic plastic by means of marine biodegradable materials, digitalized recycling and other circular models.
- Protection of marine biodiversity, using satellites and artificial intelligence to monitor fisheries or drones and aquatic robots to detect threats to marine life.
- Restoration of the coastal ecosystem, including genetic engineering to strengthen coral reefs and drones to restore mangroves.
- Sustainable solutions for seafood, such as traceability via blockchains, improved aquaculture systems, with plant-based feeding, etc.

## ODS 15

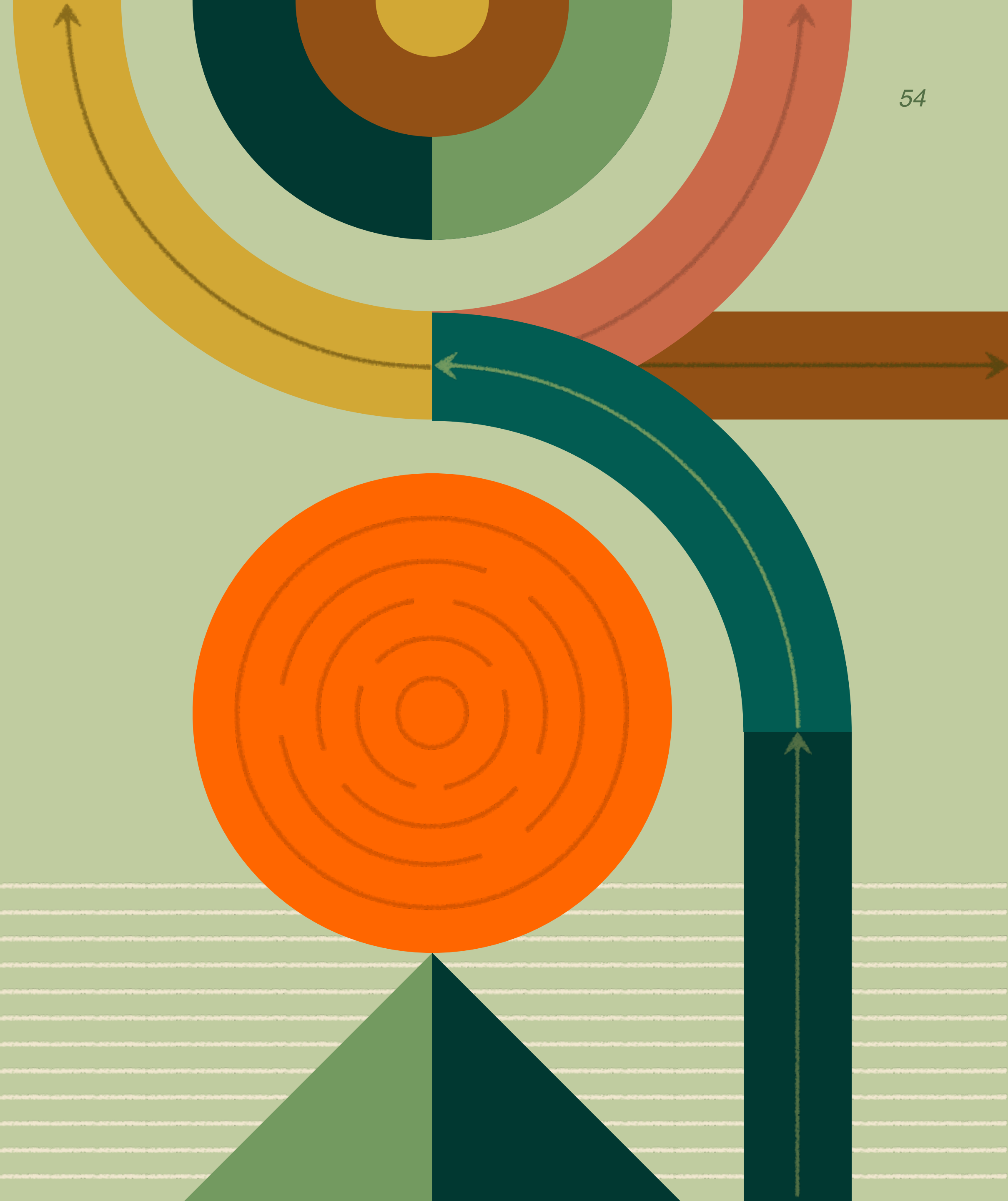
### TERRESTRIAL LIFE



- Terrestrial ecosystems and wildlife monitoring using satellite imagery, drones, remote sensing, machine learning, DNA analysis devices and citizen science applications.
- Computational conservation science, including soil modeling and analysis, geospatial data platforms and genomic biodiversity databases.
- Desert reforestation and greening technologies, ranging from low-tech innovations in agroecology to drones and algorithms used on an industrial scale for reforestation.
- Fintechs for ecosystem restoration, via impact investment platforms, crypto-tokens and more.



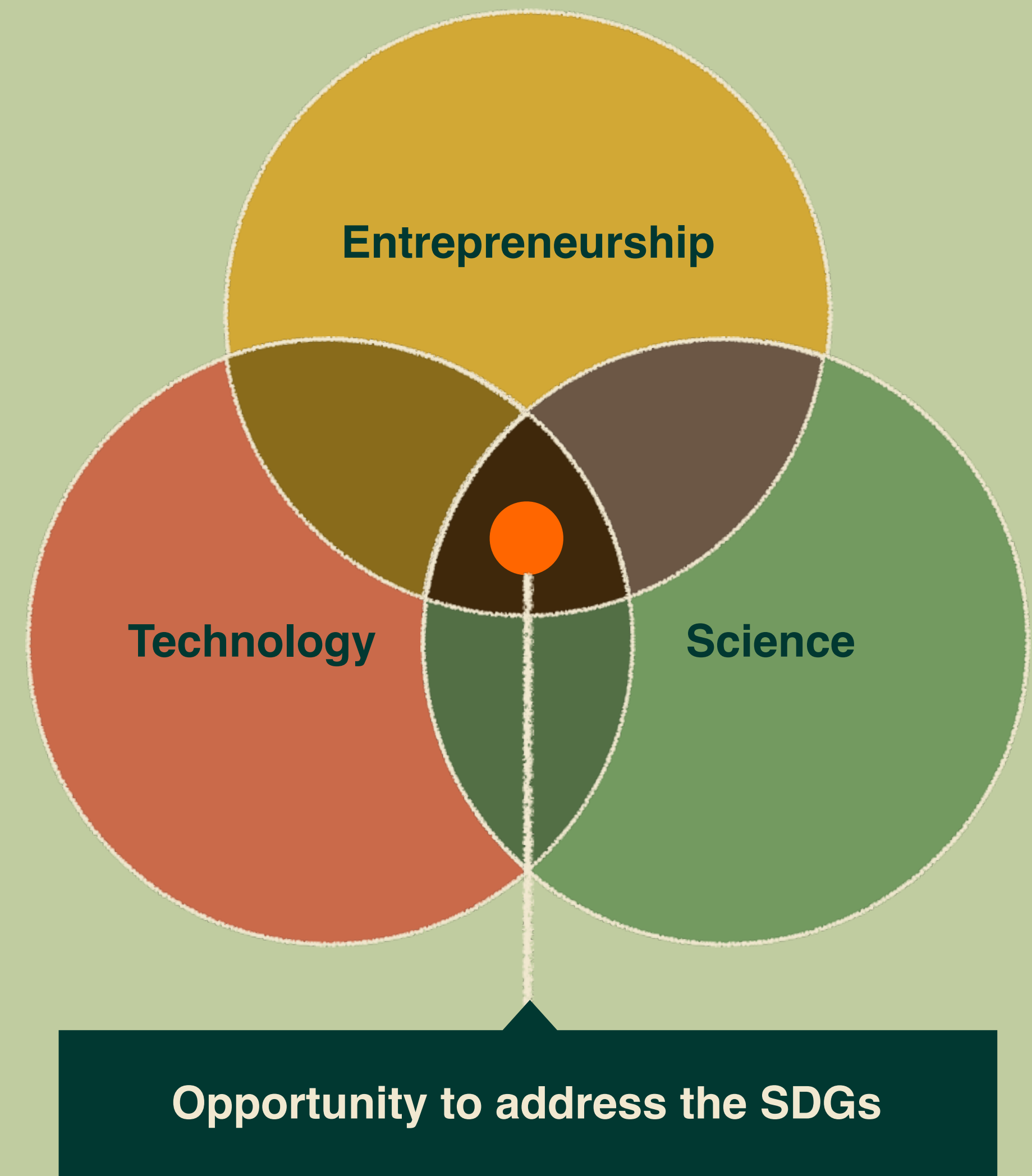
**THE DEVELOPMENT AND INVESTMENT IN THE IMPACT TECHS SECTOR CAN BE A WAY TO MITIGATE AND SOLVE PART OF THE ENVIRONMENTAL CHALLENGES APPOINTED BY THE UN.**





***“Science, technology and entrepreneurship can be our wildcards. Impact Tech is growing everywhere, providing leverage points to address almost each of the SDGs.”***

**Good Tech Labs**  
The Frontiers of Impact Tech





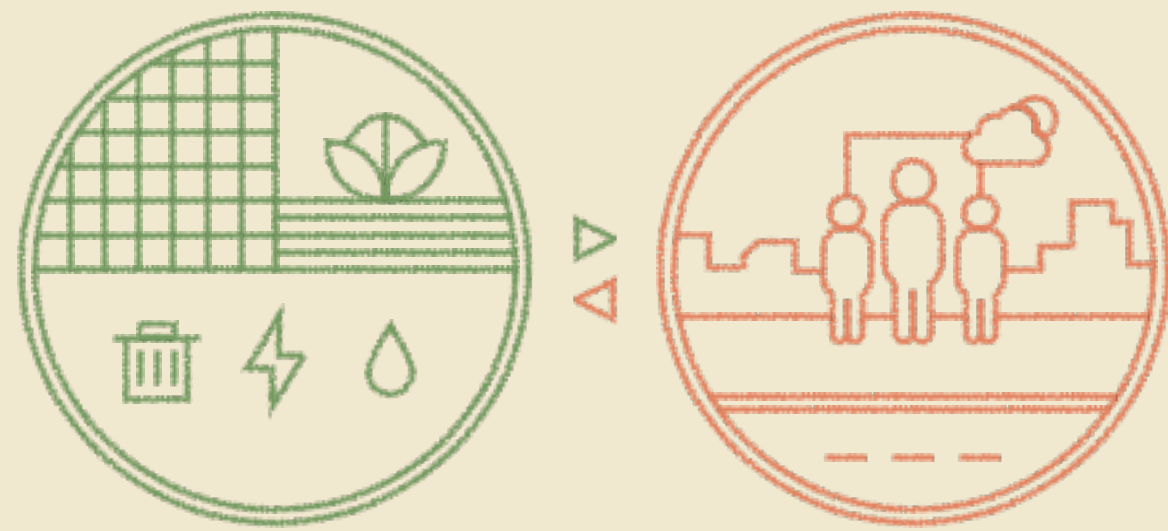
**IN LISTENING TO THIS RESEARCH FIELD, WE IDENTIFIED OPPORTUNITIES FOR NEW TECHNOLOGIES AND INNOVATIVE BUSINESS MODELS THAT CAN ADDRESS THE CHALLENGES MAPPED IN EACH KEY ENVIRONMENTAL SECTOR.**

Below, there's the heart of this work, a true guide for entrepreneurs and investors who want to leverage a new economy with a positive environmental impact for Brazil.





## TO NAVIGATE THE MATRIX OF OPPORTUNITIES, IT IS IMPORTANT TO UNDERSTAND THAT:



**1st Solutions that address environmental problems are also related to social problems.**



**2nd There are solutions that mitigate negative environmental impacts and others that promote positive environmental impact.**



**3rd Different actors in the impact ecosystem must read the matrix of opportunities in light of the role they play.**



***“Social and environmental impact are closely linked. You can’t remove one of them. We have \$550 billion that could be saved in health care spending using the circular economy, for example, which is considered, at first glance, to be an environmental impact.”***



**Victoria Almeida**  
Fundação Ellen MacArthur



# 1

## SOLUTIONS ADDRESSING ENVIRONMENTAL PROBLEMS ARE ALSO RELATED TO SOCIAL PROBLEMS



The present study sheds light, within a large field of business with a socio-environmental impact, on the challenges and opportunities for entrepreneurs who model their solutions to solve environmental problems and other actors who support it on this journey.

From the listening to the experts, it is clear that, even within the scope of SDGs or global challenges, environmental impact businesses have choices focused on the environmental cause first (as analogy to the term “impact first”), the impact is an undeniable positive social impact associated with the solutions.

“Although there are initiatives that are more focused on generating one or the other (environmental or social impact), due to a systemic view, there is no way to dissociate, you cannot find ways. The way is to treat things together. ”

Foundation/Institute

“One of the biggest problems in the world is healthy eating. We don't know how to produce food for the population in a sustainable way. How to mass produce cheap food for such a large population and generate a positive environmental impact? There is no way to disassociate that. ”

Foundation/Institute

“We don't want to regenerate the planet, make it totally sustainable to live on Mars. At the end of the day, any business with an environmental impact aims at the social impact and viability of human life on Earth. ”

Foundation/Institute



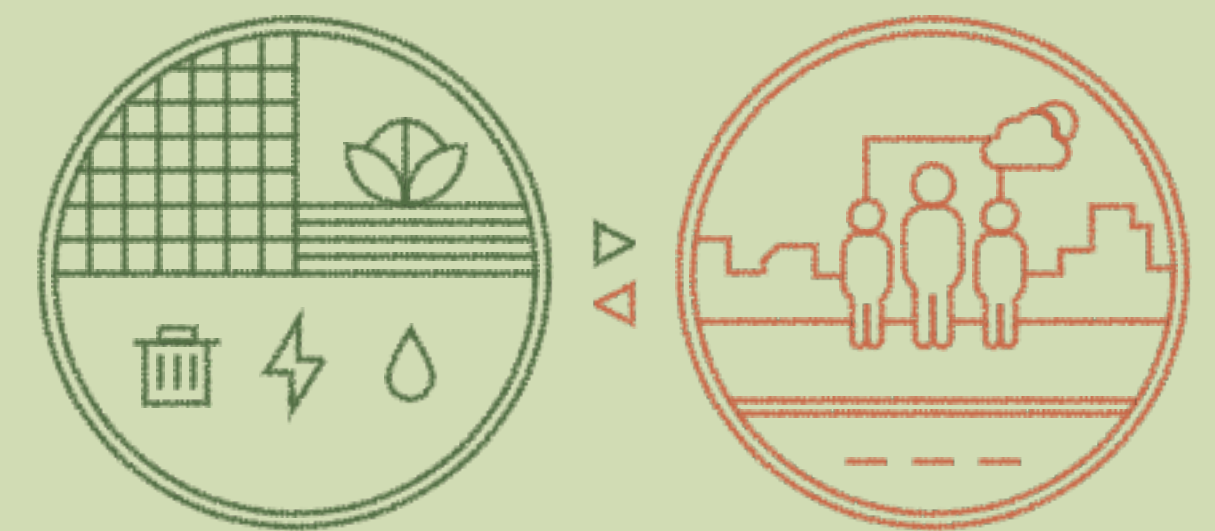
## The challenge of envisioning the sum of social + environmental impact is often due to the complexity of measuring impact.

There is a variation between what is possible to measure at the different stages of evolution of an impact business. If the solution mitigates or solves a very specific problem within an environmental cause - which does not clearly or directly involve a social problem - there is a view on environmental outputs, at a first level of assessment and, at a deeper level, the potential evaluation of socio-environmental outputs and outcomes.

For experts, even if this study or some impact businesses choose to shed light on specific environmental challenges, there is no reason to separate social impact from environmental impact. The complexity of the cause and effect relationship between it is systemic.

“There are areas where the social and environmental impact are clearly converging, in others it is not so clear. When working on climate, for example, some positive social impact is easy to measure. Each business has to choose what it focuses on and what it can promise at the moment it is. It's already difficult to do things, when you put this rule together, it gets more complicated.”

Entrepreneur





***“For every R\$1 invested in drinking water, R\$4 is saved on health. This is a fact, we saw it in communities. When people who had recurrent health problems started having access to drinking water, they stopped having them.”***



**Eduardo Moreno**  
Vitalux





# 2

## SOME SOLUTIONS MITIGATE NEGATIVE ENVIRONMENTAL IMPACTS AND OTHERS PROMOTE POSITIVE ENVIRONMENTAL IMPACT

For each stage of the business, ESG and impact investment strategies can generate different inputs for the performance and business performance, which can mitigate negative impacts or promote positive impacts on its operations.



### Solutions that mitigate negative environmental impacts

They undertake to minimize, mitigate or avoid the negative effects of an action, seeking ways to combat or reduce an identified problem.

The agent that executes the solution is the same one that causes the negative impact.



### Solutions that promote positive environmental impact

They act at the root of the identified problem, studying it in depth to propose a permanent way of transforming it.

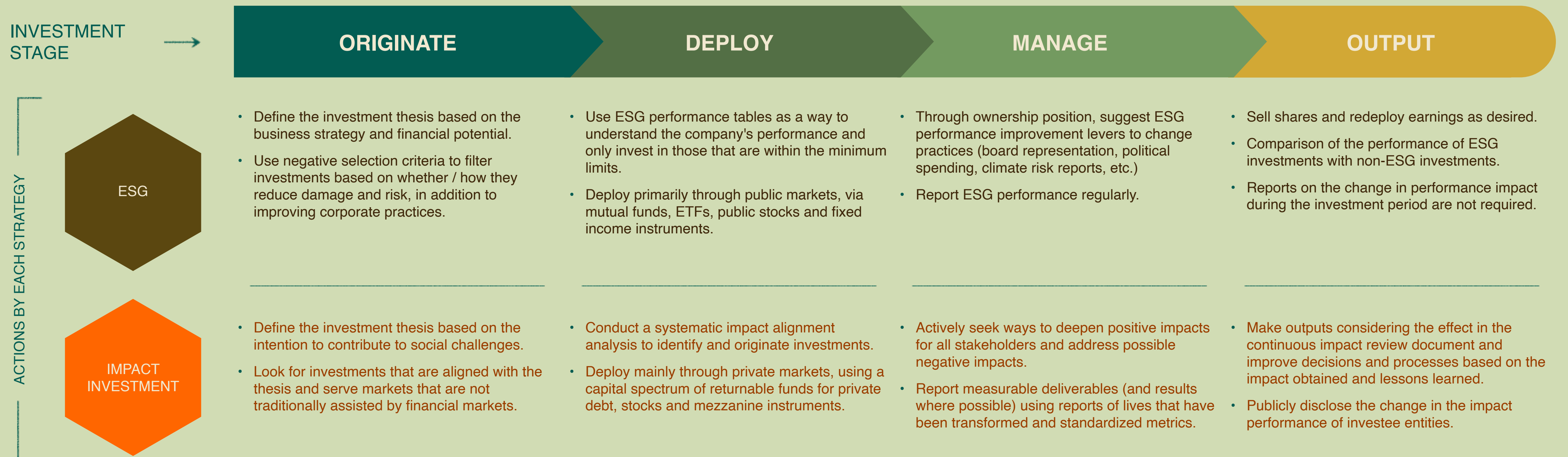
Here, the agent that performs the solution is not the same agent that causes the related environmental problem.



# ESG AND IMPACT INVESTMENT

The ESG agenda (ASG in portuguese), has gained strength in recent years, both in the international context and, more recently, the Brazilian context. JP Morgan's estimates point to a global amount of around \$45 trillion dedicated to investments of this nature. The ESG logic refers to the strategy adopted by companies to avoid (screen out) business decisions that generate risks to the company's own performance, through the management and mitigation of negative impacts in the environmental, social and governance (ESG) pillars of their operations.

A part of these actions includes impact investments, responsible for operations and business models that intentionally contribute to the solution of socio-environmental challenges, such as the Sustainable Development Goals (SDGs), for example, generating positive impact from business operations. A survey by the International Finance Corporation (IFC) shows that in 2020 impact investments reached \$2 trillion globally.



Source: "The difference between ESG and impact investing and why it matters" (Neil Gregory and Kusi Hornberger, 2020.)



# 3

## DIFFERENT ACTORS OF THE IMPACT ECOSYSTEM MUST READ THE OPPORTUNITIES MATRIX IN LIGHT OF THE ROLE THEY PERFORM

### Entrepreneurs

The matrix can be a true “road of stones” for those who want to undertake in the listed verticals and are mapping opportunities or, already own a business and want to understand themselves within the various possibilities and networks that exist.

### Investors

For those who are structuring their investment thesis or already have a defined strategy, the matrix delivers guidelines for the main environmental challenges in the country.

### Intermediary organizations

In order to develop an ecosystem of effective support for impact entrepreneurs and, throughout their journey, it is important to visualize the problems they face within a larger universe. This macro view also serves to connect with different actors and strengthen specific chains of impact.

### Business

Large companies that intend to connect and address priority environmental challenges in the country have here a guide to understand how their business can connect to this agenda.

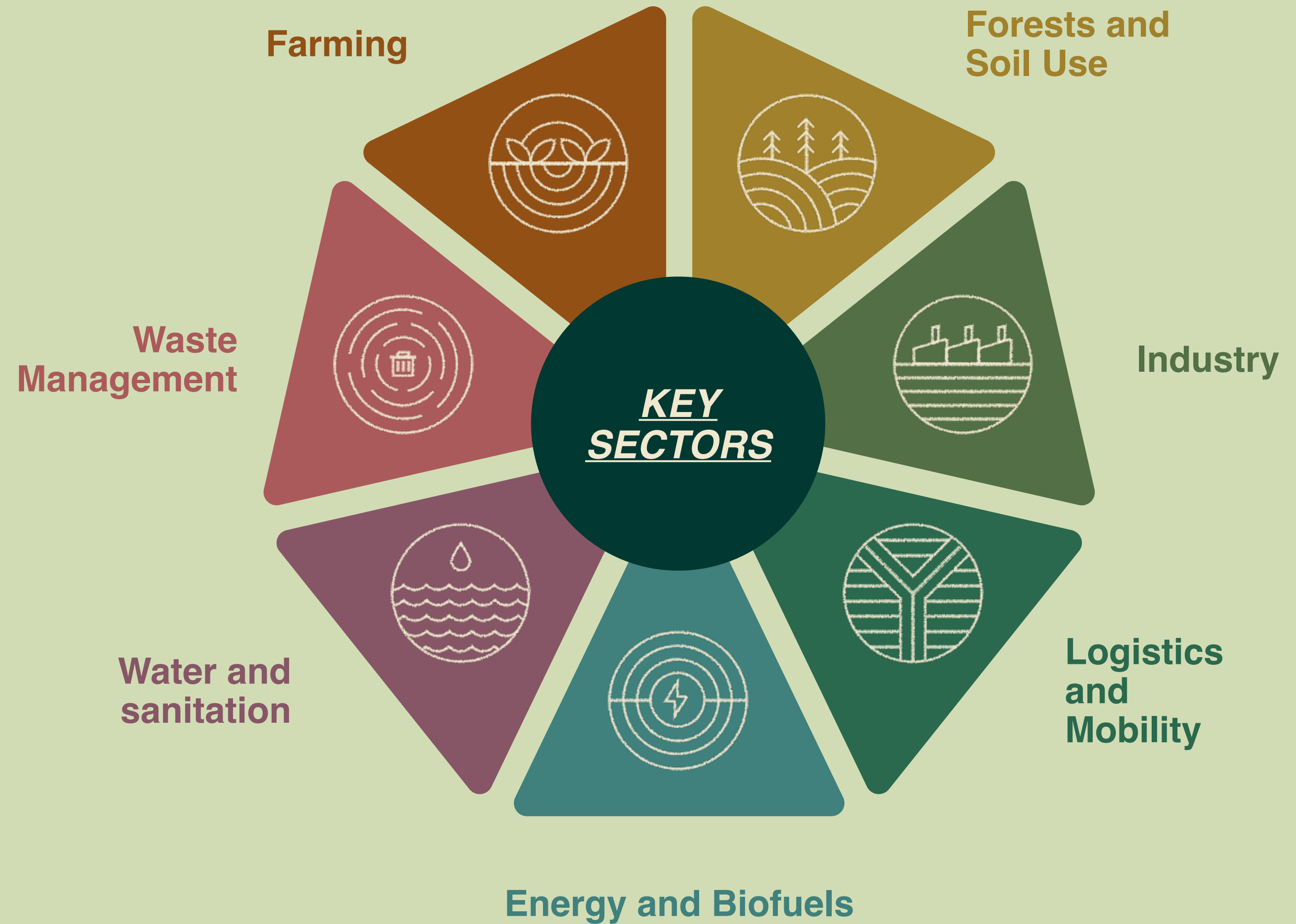
### Government

The solution of the country's environmental challenges is in the public interest, with the formulation and execution of public policies (at federal or local level) a central role for this. In the context of this study, public managers can use the opportunities presented here to create or strengthen favorable environments for business to play a leading role in solving such challenges.





# MATRIX OF OPPORTUNITIES BY KEY SECTOR





## OPPORTUNITY MATRIX BY VERTICAL ENVIRONMENTAL IMPACT

\* The classification of solutions in these two segments is based on the practices adopted by businesses in these areas. This does not prevent, however, the development of business arrangements that, from the combination of various elements of sustainability and innovation, can produce positive impacts from a solution here classified as capable of mitigating negative impacts.



### FARMING

Opportunities for the farming sector are relevant both for industrial and large-scale crops, as well as for smaller, local crops. These solutions can bring to management practices innovations in terms of carbon capture and storage in the soil and good practices for crop integration (as in the case of SAF and iLPF).

Another relevant component of these opportunities is the use of the green infrastructure (eg, forests, ecological corridors, species that contribute to the treatment of effluents, etc.) as a tool both to capture and store carbon and to increase the resilience of crops in the face of impacts climate change.

#### SOLUTIONS THAT MITIGATE NEGATIVE IMPACTS\*

- ✦ Technical assistance for rural and agroforestry producers (ex: agroecological techniques that encourage the reduction of chemical inputs such as pesticides or nitrogen fertilizers, low-carbon farming practices that increase carbon fixation in the soil).
- ✦ Expansion of agroforestry systems (SAF, in portuguese) and crop-livestock-forest integration (iLPF, in portuguese), mainly over degraded areas.
- ✦ Solutions for inclusion of small farmers or extractive producers in value chains of large companies.

#### SOLUTIONS THAT PROMOTE POSITIVE ENVIRONMENTAL IMPACT\*

- \* Businesses that increase the resilience of rural producers to the impacts of climate change (eg solutions based on nature - SbN, adaptation based on ecosystems - AbE, etc.).



## OPPORTUNITY MATRIX BY VERTICAL ENVIRONMENTAL IMPACT

\* The classification of solutions in these two segments is based on the practices adopted by businesses in these areas. This does not prevent, however, the development of business arrangements that, from the combination of various elements of sustainability and innovation, can produce positive impacts from a solution here classified as capable of mitigating negative impacts.



### FORESTS AND SOIL USE

The opportunities for the forestry sector show the importance of making feasible the management practices that promote conservation and, at the same time, are attractive from the financial point of view.

These opportunities include both technological solutions and solutions aimed at innovation in business management, pointing both to the need to strengthen forest production and to its integration with more structured markets and value chains.

#### SOLUTIONS THAT MITIGATE NEGATIVE IMPACTS \*

- ◆ Logistical integration solutions for the distribution of agroforestry products.
- ◆ Development of equipment and machinery adapted for agroforestry systems, especially small and medium scale.
- ◆ Business focused on traceability of forest products, highlighting their sustainability attributes (ex: blockchain tracking systems, internet of things - IoT, etc.).

#### SOLUTIONS THAT PROMOTE POSITIVE ENVIRONMENTAL IMPACTS\*

- \* Business models for sustainable use of forest areas, including solutions for Payment for Environmental Services (PES) projects.
- \* Forest conservation areas compensation businesses (eg, environmental reserve quotas - CRA).



## OPPORTUNITY MATRIX BY VERTICAL ENVIRONMENTAL IMPACT

\* The classification of solutions in these two segments is based on the practices adopted by businesses in these areas. This does not prevent, however, the development of business arrangements that, from the combination of various elements of sustainability and innovation, can produce positive impacts from a solution here classified as capable of mitigating negative impacts.



### INDUSTRY

The opportunities for the industrial sector are related to the improvement of processes, mainly from a more intense integration of the dimension of sustainability in the initial stages of production processes. In addition to this, there is a group of opportunities orbiting around the ability of companies to track sustainability attributes along product value chains, in order to provide more information to the consumer (B2C) and the buyer (B2B) so that they consider the socio-environmental performance of these products in their purchase decisions.

#### SOLUTIONS THAT MITIGATE NEGATIVE IMPACTS \*

- ◆ Solutions to expand research and development (R&D) and the use of forest assets in the industry (fibers, molecules, cosmetics, drugs, energy solutions, etc.).
- ◆ Solutions to increase the adoption of the principles of circular economy in the product design stages.
- ◆ Solutions that reduce waste disposal (ex: use of waste as raw material in new production cycles).
- ◆ Solutions to increase the traceability of products along their value chains (ex: traceability of sustainability attributes from blockchain, internet of things - IoT, etc.).
- ◆ Industrial solutions based on fair trade models along the value chains of large companies.

#### SOLUTIONS THAT PROMOTE POSITIVE ENVIRONMENTAL IMPACT\*



## OPPORTUNITY MATRIX BY VERTICAL ENVIRONMENTAL IMPACT

\* The classification of solutions in these two segments is based on the practices adopted by businesses in these areas. This does not prevent, however, the development of business arrangements that, from the combination of various elements of sustainability and innovation, can produce positive impacts from a solution here classified as capable of mitigating negative impacts.



## ENERGY AND BIOFUELS

The opportunities in the field of energy and biofuels point to two axes: energy efficiency and renewable energies. In this field, the strengthening of distributed generation and the financial dimension stand out as capable of increasing the competitiveness of renewable energy generation in the national market.

### SOLUTIONS THAT MITIGATE NEGATIVE IMPACTS\*

- ◆ Solutions to increase energy efficiency (ex: Energy Services Companies - ESCOs).
- ◆ Creation or strengthening of financial instruments for renewable energy projects (eg investment funds, green bonds, renewable energy bonds, etc.).
- ◆ Solutions for co-generation in industrial and agro-industrial systems, mainly from waste (waste-to-energy).

### SOLUTIONS THAT PROMOTE POSITIVE ENVIRONMENTAL IMPACT\*

- \* Solutions for innovation in the renewable energy and smart grids value chain (eg equipment, components, software, services, etc.).



## OPPORTUNITY MATRIX BY VERTICAL ENVIRONMENTAL IMPACT

\* The classification of solutions in these two segments is based on the practices adopted by businesses in these areas. This does not prevent, however, the development of business arrangements that, from the combination of various elements of sustainability and innovation, can produce positive impacts from a solution here classified as capable of mitigating negative impacts.



## LOGISTICS AND MOBILITY

The opportunities for the logistics and mobility sector have a particular characteristic: they lie at the intersection between the performance of the private sector and the public sector. This is because they are related to the offer and quality of transport systems. On the other hand, reverse logistics is also present as a major axis of business opportunity, in the light of the National Solid Waste Policy, having interaction with both the waste sector and the industrial sector.

### SOLUTIONS THAT MITIGATE NEGATIVE IMPACTS\*

- ◆ Solutions to strengthen reverse product logistics.
- ◆ Solutions for intermodal integration, especially between motorized and non-motorized modes (eg Mobility-as-a-Service).
- ◆ Solutions for supporting infrastructure for electric vehicles and fuel cells (eg charging stations, maintenance and replacement, etc.).
- ◆ Low carbon transport solutions, both for cargo and people.

### SOLUTIONS THAT PROMOTE POSITIVE ENVIRONMENTAL IMPACT\*

- \* Solutions to reduce the vulnerability of transport systems to the impacts of climate change.



## OPPORTUNITY MATRIX BY VERTICAL ENVIRONMENTAL IMPACT

\* The classification of solutions in these two segments is based on the practices adopted by businesses in these areas. This does not prevent, however, the development of business arrangements that, from the combination of various elements of sustainability and innovation, can produce positive impacts from a solution here classified as capable of mitigating negative impacts.



## WATER AND SANITATION

In the water and sanitation sector, opportunities point to efficient water use and the provision of sanitation services to low-income populations. As there is still a deficit in the coverage of sanitation systems in Brazil, and from the new regulatory framework for the sector (Law No. 14.026/2020), great opportunities will arise in the coming years for investments with an impact on the sector.

### SOLUTIONS THAT MITIGATE NEGATIVE IMPACTS\*

- ◆ Solutions to increase water reuse in industry, agriculture and housing.
- ◆ Solutions to increase the sustainability of aquaculture.

### SOLUTIONS THAT PROMOTE POSITIVE ENVIRONMENTAL IMPACT\*

- \* Solutions to reduce the vulnerability of businesses to the hydrological impacts of climate change (eg, events of "water stress" or excessive rainfall).
- \* Autonomous basic sanitation solutions for low-income regions, especially those with access to drinking water and sewage treatment.
- \* Effluent treatment systems developed from nature-based solutions (SbN).



## OPPORTUNITY MATRIX BY VERTICAL ENVIRONMENTAL IMPACT

\* The classification of solutions in these two segments is based on the practices adopted by businesses in these areas. This does not prevent, however, the development of business arrangements that, from the combination of various elements of sustainability and innovation, can produce positive impacts from a solution here classified as capable of mitigating negative impacts.



## WASTE MANAGEMENT

For the solid waste sector, the opportunities point to the post-consumption field, with reverse logistics as a major axis (at an intersection with the industrial sector). On the other hand, the extension of the useful life of post-consumer products will also generate great business opportunities, either by extending their useful life, preventing them from becoming waste (eg, single-use materials), or from their use as inputs for new production cycles (ex: reuse/recycling).

### SOLUTIONS THAT MITIGATE NEGATIVE IMPACTS\*

- ◆ Solutions to strengthen products reverse logistics.
- ◆ Solutions for replacing single-use (disposable) materials.
- ◆ Solutions to expand the offer and quality of the collection of recyclable / reusable waste.
- ◆ Solutions for zero-waste industrial processes.

### SOLUTIONS THAT PROMOTE POSITIVE ENVIRONMENTAL IMPACT\*


- \* Solutions for the production of biofertilizers and pest control from organic and agricultural waste.
- \* Solutions for autonomous waste treatment systems, especially low-cost solutions.



MITIGATE ENVIRONMENTAL IMPACTS



PROMOTE ENVIRONMENTAL IMPACT

<b>Farming</b>  <p>Productive models, technical assistance, value chains, climatic resilience of crops.</p>	<b>Forests and Soil Use</b>  <p>Sustainable use of conserved areas, equipment for agroforestry systems, payments for environmental services (PES), technical assistance.</p>	<b>Industry</b>  <p>Circular economy, product traceability, use of forest assets, fair trade.</p>	<b>Energy and Biofuels</b>  <p>Reverse logistics, low emissions transport, support infrastructure for electric vehicles.</p>	<b>Logistics and Mobility</b>  <p>Renewable energy, energy efficiency, smart grids and distributed generation.</p>	<b>Water and sanitation</b>  <p>Autonomous and low-cost solutions (water and sewage), water reuse in homes, industry and agriculture.</p>	<b>Waste Management</b>  <p>Reverse logistics, recycling and reuse of waste, durability of materials.</p>
<ul style="list-style-type: none"> <li>Businesses focused on technical assistance for rural and agroforestry producers (ex: low carbon farming practices - ABC).</li> <li>Expansion of agroforestry systems (SAF) and crop-livestock-forest integration (iLPF), mainly over degraded areas.</li> <li>Solutions for inclusion of small farmers or extractive producers in value chains of large companies.</li> </ul>	<ul style="list-style-type: none"> <li>Logistic integration solutions for the distribution of agroforestry products.</li> <li>Development of equipment and machinery adapted to agroforestry systems, especially small and medium scale.</li> <li>Businesses for traceability of forest products, highlighting their sustainability attributes (ex: blockchain tracking systems, internet of things - IoT, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>Solutions to expand research and development (R&amp;D) and the use of forest assets in the industry (fibers, molecules, cosmetics, drugs, energy solutions, etc.).</li> <li>Solutions to increase the adoption of the principles of circular economy in the product design stages.</li> <li>Solutions that reduce waste disposal (ex: use of waste as raw material in new production cycles).</li> <li>Solutions to increase the traceability of products along their value chains (ex: traceability of sustainability attributes from blockchain, internet of things - IoT, etc.).</li> <li>Industrial solutions based on fair trade models along the value chains of large companies.</li> </ul>	<ul style="list-style-type: none"> <li>Solutions to increase energy efficiency (ex: Energy Services Companies - ESCOs).</li> <li>Creation or strengthening of financial instruments for renewable energy projects (eg investment funds, green bonds, renewable energy bonds, etc.).</li> <li>Solutions for cogeneration in industrial and agro-industrial systems, mainly from waste (waste-to-energy).</li> </ul>	<ul style="list-style-type: none"> <li>Solutions to strengthen reverse product logistics.</li> <li>Solutions for intermodal integration, especially between motorized and non-motorized modes (eg Mobility-as-a-Service).</li> <li>Solutions for supporting infrastructure for electric vehicles and fuel cells (eg charging stations, maintenance and replacement, etc.).</li> <li>Low carbon transport solutions, both for cargo and people.</li> </ul>	<ul style="list-style-type: none"> <li>Solutions to increase water reuse in industry, agriculture and housing.</li> <li>Solutions to increase the sustainability of aquaculture.</li> </ul>	<ul style="list-style-type: none"> <li>Solutions to strengthen reverse product logistics.</li> <li>Solutions for replacing single-use (disposable) materials.</li> <li>Solutions to expand the offer and quality of the collection of recyclable / reusable waste.</li> <li>Solutions for zero-waste industrial processes.</li> </ul>
<ul style="list-style-type: none"> <li>Businesses that increase the resilience of rural producers to the impacts of climate change (eg solutions based on nature - SbN, adaptation based on ecosystems - AbE, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>Business models for sustainable use of forest areas, including solutions for Payment for Environmental Services (PES) projects.</li> <li>Forest conservation areas compensation businesses (eg, environmental reserve quotas - CRA).</li> </ul>		<ul style="list-style-type: none"> <li>Solutions for innovation in the renewable energy and smart grids value chain (eg equipment, components, software, services, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>Solutions to reduce the vulnerability of transport systems to the impacts of climate change.</li> </ul>	<ul style="list-style-type: none"> <li>Solutions to reduce the vulnerability of businesses to the hydrological impacts of climate change (eg, events of "water stress" or excessive rainfall).</li> <li>Autonomous basic sanitation solutions for low-income regions, especially those with access to drinking water and sewage treatment.</li> <li>Effluent treatment systems developed from nature-based solutions (SbN).</li> </ul>	<ul style="list-style-type: none"> <li>Solutions for the production of biofertilizers and pest control from organic and agricultural waste.</li> <li>Solutions for autonomous waste treatment systems, especially low-cost solutions.</li> </ul>

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# CONNECTED TO THESE 7 KEY SECTORS, THERE'S ANOTHER, A CROSS-SECTORIAL ONE, RESPONSIBLE FOR MATURING SOLUTIONS THROUGHOUT THE FIELD: THE FINANCIAL SECTOR.

The financial sector has a central role in making the opportunities presented in this study viable, acting as a catalyst for the business models and operations in each key sector and contributing for Brazil to realize the potential that has to be a global leader in terms of sustainable development.



Business valuation metrics (including their profitability) need to integrate the negative environmental externalities generated by their operations, after all, these environmental risks tend to undermine business profitability in the long run.

When the cost of negative externalities is not absorbed by the companies that produce them, society as a whole bears that cost (eg, the whole of society - and not just the largest emitters of greenhouse gases - has borne the costs of prevention) and response to extreme weather events).



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## OPPORTUNITY MATRIX BY ENVIRONMENTAL VERTICAL IMPACT

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### SOLUTIONS FOR THE FINANCIAL SECTOR

The integration of the sustainability agenda into the financial sector is intensified based on the evermore accurate understanding by institutions, that environmental and social risks have the potential to undermine performance and business returns. This movement has brought the ESG agenda to the center of the financial system, opening a wide field for organizations to update their investment and financing portfolios.

#### SOLUTIONS FOR THE FINANCIAL SECTOR

- \* Expansion of financing for projects focused on reducing vulnerability in the productive sectors in the face of the impacts of climate change.
- \* Solutions for assessing the socio-environmental impacts promoted by the business.
- \* Solutions for training entrepreneurs in relation to the impact business pipeline.
- \* Development of financial instruments adapted for impact businesses (e.g, dedicated financing lines, investment funds, venture capital, etc.).
- \* Solutions for the expansion and capillarization of credit / microcredit for producers of agroforestry systems.



	Farming 	Forests and Soil Use 	Industry 	Energy and Biofuels 	Logistics and Mobility 	Water and sanitation 	Waste Management 
	Financial Sector 						
MITIGATE ENVIRONMENTAL IMPACTS	<ul style="list-style-type: none"> <li>Businesses focused on technical assistance for rural and agroforestry producers (ex: low carbon farming practices - ABC).</li> <li>Expansion of agroforestry systems (SAF) and crop-livestock-forest integration (iLPF), mainly over degraded areas.</li> <li>Solutions for inclusion of small farmers or extractive producers in value chains of large companies.</li> </ul>	<ul style="list-style-type: none"> <li>Logistic integration solutions for the disposal of agroforestry products.</li> <li>Development of equipment and machinery adapted to agroforestry systems, especially small and medium scale.</li> <li>Businesses for traceability of forest products, highlighting their sustainability attributes (ex: blockchain tracking systems, internet of things - IoT, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>Solutions to expand research and development (R&amp;D) and the use of forest assets in the industry (fibers, molecules, cosmetics, drugs, energy solutions, etc.).</li> <li>Solutions to increase the adoption of the principles of circular economy in the product design stages.</li> <li>Solutions that reduce waste disposal (ex: use of waste as raw material in new production cycles).</li> <li>Solutions to increase the traceability of products along their value chains (ex: traceability of sustainability attributes from blockchain, internet of things - IoT, etc.).</li> <li>Industrial solutions based on fair trade models along the value chains of large companies.</li> </ul>	<ul style="list-style-type: none"> <li>Solutions to increase energy efficiency (ex: Energy Services Companies - ESCOs).</li> <li>Creation or strengthening of financial instruments for renewable energy projects (eg investment funds, green bonds, renewable energy bonds, etc.).</li> <li>Solutions for cogeneration in industrial and agro-industrial systems, mainly from waste (waste-to-energy).</li> </ul>	<ul style="list-style-type: none"> <li>Solutions to strengthen reverse product logistics.</li> <li>Solutions for intermodal integration, especially between motorized and non-motorized modes (eg Mobility-as-a-Service).</li> <li>Solutions for supporting infrastructure for electric vehicles and fuel cells (eg charging stations, maintenance and replacement, etc.).</li> <li>Low carbon transport solutions, both for cargo and people.</li> </ul>	<ul style="list-style-type: none"> <li>Solutions to increase water reuse in industry, agriculture and housing.</li> <li>Solutions to increase the sustainability of aquaculture.</li> </ul>	<ul style="list-style-type: none"> <li>Solutions to strengthen reverse product logistics.</li> <li>Solutions for replacing single-use (disposable) materials.</li> <li>Solutions to expand the offer and quality of the collection of recyclable / reusable waste.</li> <li>Solutions for zero-waste industrial processes.</li> </ul>
PROMOTE ENVIRONMENTAL IMPACT	<ul style="list-style-type: none"> <li>Businesses that increase the resilience of rural producers to the impacts of climate change (eg solutions based on nature - SbN, adaptation based on ecosystems - AbE, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>Business models for sustainable use of forest areas, including solutions for Payment for Environmental Services (PSA) projects.</li> <li>Forest conservation areas compensation businesses (eg, environmental reserve quotas - CRA).</li> </ul>		<ul style="list-style-type: none"> <li>Solutions for innovation in the renewable energy and smart grids value chain (eg equipment, components, software, services, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>Solutions to reduce the vulnerability of transport systems to the impacts of climate change.</li> </ul>	<ul style="list-style-type: none"> <li>Solutions to reduce the vulnerability of businesses to the hydrological impacts of climate change (eg, events of "water stress" or excessive rainfall).</li> <li>Autonomous basic sanitation solutions for low-income regions, especially those with access to drinking water and sewage treatment.</li> <li>Effluent treatment systems developed from nature-based solutions (SbN).</li> </ul>	<ul style="list-style-type: none"> <li>Solutions for the production of biofertilizers and pest control from organic and agricultural waste.</li> <li>Solutions for autonomous waste treatment systems, especially low-cost solutions.</li> </ul>

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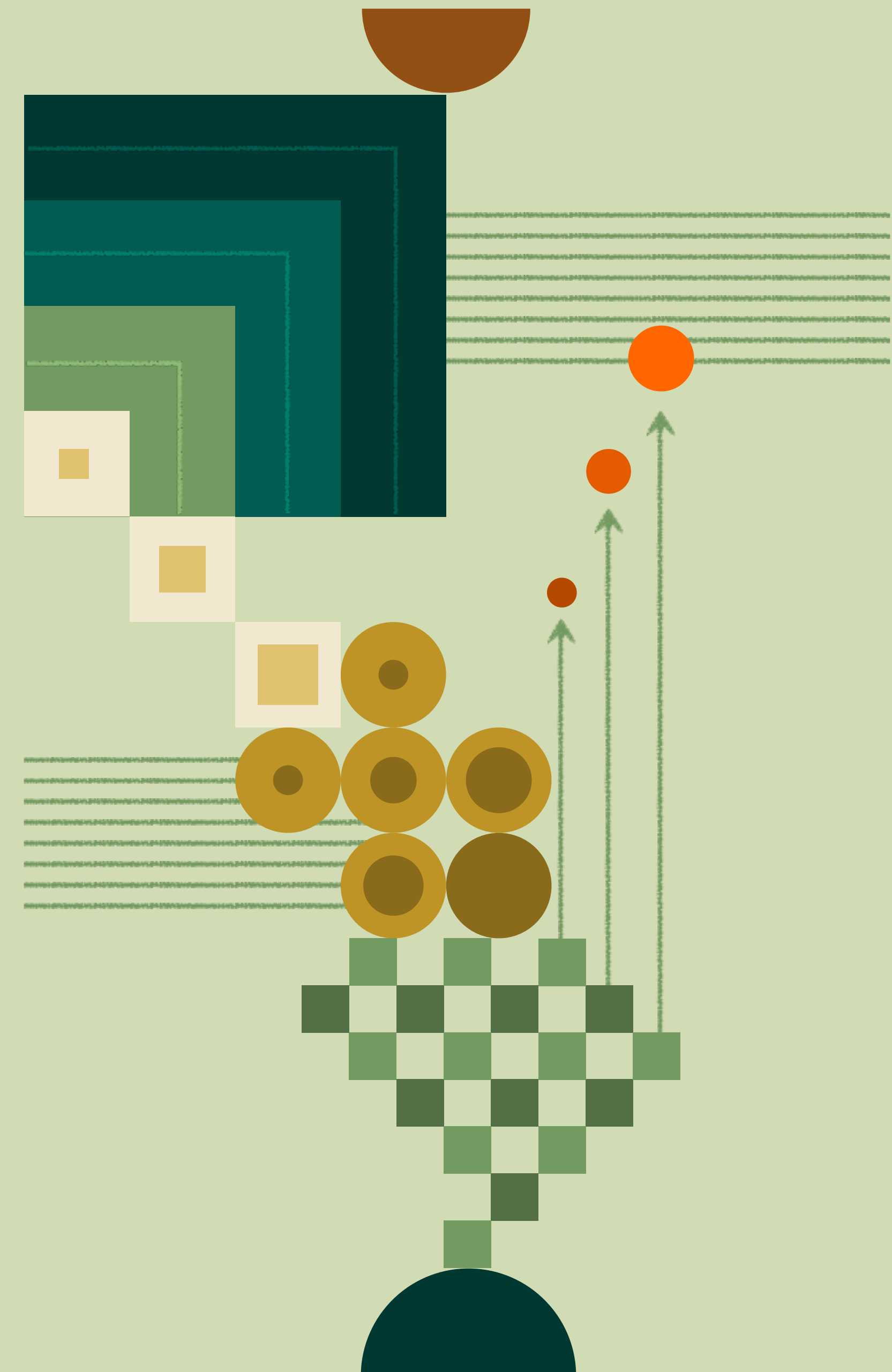


The impact subject in the business world is commonly linked to externalities and negative interventions. And the appropriate verbs are corrective ones: mitigate, compensate, unlink etc. That is why it is so important to organize new repertoires to talk about a positive impact, especially in the socio-environmental dimension. What are the intentional interventions that effectively improve the conditions of conservation, use and living with nature, while improving the welfare of the populations? For these practices, a positive lens is more suitable: scale, replicate, monetize, etc.

This study is urgent in order to reposition conversations with the market and the Brazilian entrepreneurial ecosystem on new theses of possible socio-environmental impact. And also to help investors allocate capital in these business models, creating a market with many investment options in favor of mitigating negative impacts and boosting positive socio-environmental impacts.

### Alliance for Impact Investments and Businesses

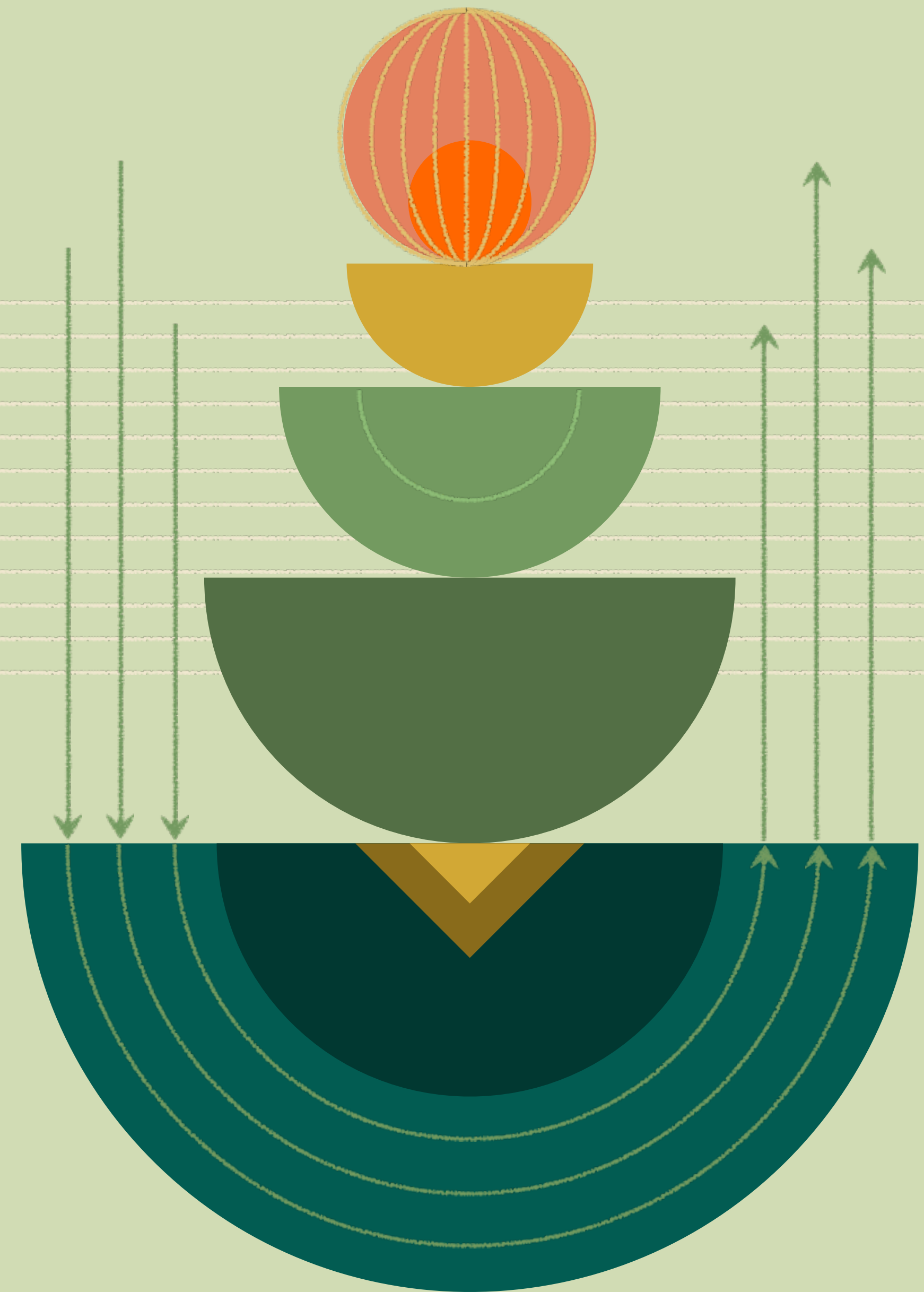
The Alliance for Investments and Impact Business is an initiative created in 2014 with the objective of supporting the strengthening of an ecosystem for the investment and impact business agenda in Brazil, mainly through two strategies: (1) production and dissemination of content and (2) articulation with strategic actors.





**IN THIS OPPORTUNITY ARENA,  
IMPACT BUSINESSES ARE KEY  
ACTORS FOR CHANGE, PROPOSING  
MARKET LOGIC TO SOLVE  
SCALABLE AND REPLICABLE  
SOCIAL ENVIRONMENTAL  
PROBLEMS!**

Next, find out about cases that are already connecting with industry opportunities!







# FARMING



Headquarters: Patos de Minas - MG  
Journey stage: Pre-scale  
Website: [inocas.com.br](http://inocas.com.br)

**Challenge they address:** The Macaúba Project aims to generate a sustainable alternative to mineral and vegetable oils, meeting the growing demand for oils for food, cosmetics, chemicals and fuels without deforestation or changing land use, contributing to the mitigation of climate change and social inclusion.

**Solution:** The Project aims to leverage the macauba production chain by promoting its extraction, developing seeds in a germination laboratory, planting Macaúba in an agro-silvopastoral system in partnership with family farmers and through agroindustry to guarantee the flow of the extractivism and planting fruits.



Headquarters: São Paulo - SP  
Journey stage: Traction  
Website: [rizoma-agro.com](http://rizoma-agro.com)

**Challenge they address:** We develop and operate agricultural systems that are capable of regenerating the soil, increasing i) fixing carbon dioxide in the soil; ii) biodiversity; and iii) water supply. With that, we believe we have a powerful offer in the fight against climate change.

**Solution:** Rizoma Agro is a producer and developer of organic regenerative technology. We seek to accelerate the conversion of agricultural land, building an efficient, large-scale and positive supply network for the planet.



Headquarters: São Paulo - SP  
Journey stage: Scale  
Website: [agrottools.com.br](http://agrottools.com.br)

**Challenge they address:** In practice, tools allow large companies to understand everything that happens to suppliers and customers spread across rural territory, something that has always been very difficult to monitor quickly.

**Solution:** Agro tools makes available to corporations that relate to the agro (financial institutions, trading companies, industries, banks, insurance companies, reinsurers, cooperatives and retailers), digital solutions for the day-to-day of these organizations, bringing them ever closer more of its relations with the field.



Headquarters: Caseara - TO  
Journey stage: Business Organization  
Website: [fazendadofuturo.com](http://fazendadofuturo.com)

**Challenge they address:** Regenerate an Ecosystem of Human Coexistence and Agroecological Production through the synergy between systems: (a) Integrated production (Agroforestry and ILPF), (b) Collaborative and multichannel marketing and (c) Network entrepreneurship.

**Solution: 1.** Agroecological production farm that integrates forest, community, farming and livestock. **2.** Rural and Natural Store, owned and cooperated by local families. **3.** Regenerative AgroTourism in RPPN-Private Reserve of Natural Heritage.





## FORESTS AND SOIL USE



Headquarters: Joinville - SC  
 Journey stage: Business organization  
 Website: [yaktractors.com](http://yaktractors.com)

**Challenge they address:** Combustion tractors, in addition to low efficiency and high diesel consumption, are large emitters of CO<sub>2</sub>, releasing thousands of tons of carbon dioxide into the environment every year.

**Solution:** YAK tractors are 100% electric, up to 95% efficient, use renewable energy to work and have zero emissions during use. This way, we offer more environmentally friendly and more profitable equipment for the customer.



Headquarters: Florianópolis - SC  
 Journey stage: Business organization  
 Website: [manejobem.com.br](http://manejobem.com.br)

**Challenge they address:** Family farming is responsible for more than 70% of food production in the world. Despite all its importance, this sector suffers from a lack of agricultural assistance, underdevelopment and the consequent rural exodus.

**Solution:** ManejeChat is an application that optimizes agricultural assistance. It guarantees the structuring of production chains, through the promotion of intelligence for decision making and the generation of profitable products with social responsibility.



seringo

Headquarters: Castanhal - PA  
 Journey stage: Traction  
 Website: [poloprobio.org.br](http://poloprobio.org.br)

**Challenge they address:** Organic extractive rubber, the way of life of rubber and the protection of the Amazon rainforest: the best forester paid based on the quantity of his main extractive product.

**Solution:** Recognition of environmental services promoted by the rubber tappers' lifestyle in symbiosis with the native Amazonian forest, measured and remunerated by the amount of rubber sold.



## FORESTS AND SOIL USE



Headquarters: Manaus - AM  
Journey stage: Scale  
Website: [idesam.org](http://idesam.org)

**Challenge they address:** Deforestation in the Amazon and the expansion of the agricultural frontier is a serious environmental and economic problem for Brazil, in addition to being the main source of GHG emissions in the country.

**Solution:** The production of Café Agroflorestal de Apuí represents a great opportunity to reconcile local social and economic development - in the municipality of Apuí / AM - based on the recovery of degraded areas and the conservation of forests.



Headquarters: São Paulo - SP  
Journey stage: Pre-stop  
Website: [biofilica.com.br](http://biofilica.com.br)

**Challenge they address:** Deforestation, forest degradation and changes in land use contribute about 25% of all anthropogenic emissions of greenhouse gases (GHG) in the world.

**Solution:** Founded in 2008, Biofílica is a Brazilian company focused on the conservation of native forests through the sale of environmental services. Our business contributes to the creation and development of a solid and reliable market for forest carbon credits and we have become a national reference in the legal reserve compensation market, with solutions in all modalities, states and biomes.



Headquarters: Manaus - AM  
Journey stage: Traction  
Website: [nakau.com.br](http://nakau.com.br)

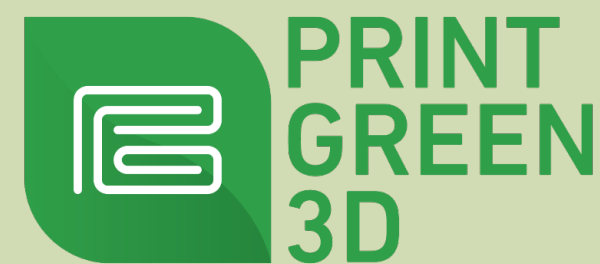
**Challenge they address:** Chocolate Na'kau was born to structure the production chain of native cocoa in Amazonas, avoiding the over-devaluation of these products, the abandonment of their plantations and mitigating the illegal exploitation of other natural resources by cocoa farmers.

**Solution:** Chocolate Na'kau, through fair payment and ethical relations with their suppliers, still offer rural technical assistance focused on the agroecological transition with the aim of structuring a sustainable man and woman model of the forest and above all, a happy one.





## INDUSTRY



Headquarters: São Bernardo do Campo - SP  
 Journey stage: Business organization  
 Website: [printgreen3d.com.br](http://printgreen3d.com.br)

**Challenge they address:** We remove the plastic discarded by industry and the environment after consumption. Making a recovery of its characteristics and enabling UpCycle.

**Solution:** PrintGreen3D develops sustainable solutions using chemical additives for the recovery of polymers (plastics), with this we can offer a sustainable product of recycled origin with the same characteristics as virgin material. We currently have the filament for 3D printer and ABS granules.



Headquarters: Rio de Janeiro - RJ  
 Round of the journey: Pilot  
 Website: [genecoin.co](http://genecoin.co)

**Challenge they address:** Traceability of raw materials, transparency of production chains and monitoring of sustainability standards.

**Solution:** Platform for monitoring and compliance of biodiversity production chains in real time. Virtual audits on demand in a transparent manner and guaranteeing the confidentiality of each company's data.



Headquarters: Hortolândia - SP  
 Journey stage: Traction  
 Website: [ecopanplas.com.br](http://ecopanplas.com.br)

**Challenge they address:** In Brazil alone, 1 billion plastic bottles of lubricating oil are discarded every year. The oil contained in only one of them, is enough to contaminate 2 thousand liters of water.

**Solution:** ECO PANPLAS is an innovative industry for recycling contaminated plastic packaging, which performs this process without using water, without producing waste and with a high reduction of CO2 emissions, resulting in a recycled raw material of excellent quality, which makes it possible to manufacture a new packaging without using virgin material and with cost reduction.



# LOGISTICS AND MOBILITY



Headquarters: São Paulo - SP  
 Journey stage: MVP  
 Website: [waste2go.com.br](http://waste2go.com.br)

**Challenge they address:** We solved the lack of visibility of containers in the field, allowing us to reduce the frequency of collection, without impact on service, with dynamic, efficient and more sustainable routes.

**Solution:** PaaS for remote management of containers, culverts and buckets using IoT sensors, with integrated logistics planning tool, digital transport documentation and operational mobile application.

Headquarters: São Paulo - SP  
 Journey stage: Business Organizing  
 Website: [mileniobus.com.br](http://mileniobus.com.br)

**Challenge they address:** Milênio Bus solves the problem of urban bus lines with poor vehicle distribution, which mostly have fixed operation, regardless of the flow of passengers.

**Solution:** Through Smartflow, it is possible to know in real time the capacity of vehicles in public transport. Companies make decisions so that the flow of vehicles is proportional to the flow of people.

Headquarters: São Paulo - SP  
 Journey stage: Traction  
 Website: [pedivela.com](http://pedivela.com)

**Challenge they address:** The lastmile of e-commerce is chaotic, polluting, expensive and socially unfair to couriers.

**Solution:** A cyclological Network that includes urban microhubs, a network of autonomous cyclists that uses special cargo bikes and dynamic routing that uses artificial intelligence.





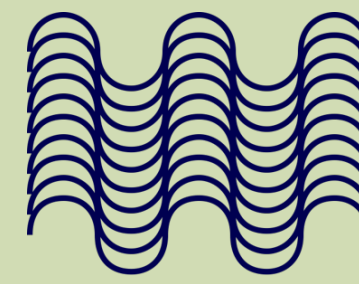
# ENERGY AND BIOFUELS



Headquarters: Belo Horizonte - MG  
Journey stage: Scale  
Website: [sunew.com.br](http://sunew.com.br)

**Challenge they address:** The moment is one of energetic transition in the world. Sunew developed and introduced the OPV, a sustainable and innovative solution, applicable on surfaces unreachable by traditional technologies.

**Solution:** Light, flexible, semi-transparent with blocking UV and IR light, Sunew's organic photovoltaic film allows power generation on any surface, from glass facades to vehicles and furniture.



**SUN MOBI**  
A energia sem limites.

Headquarters: Mogi das Cruzes - SP  
Journey stage: Traction  
Website: [sunmobi.com.br](http://sunmobi.com.br)

**Challenge they address:** Ibope research indicates that 90% of the Brazilian population would like to generate their own energy, however technical and economic requirements end up restricting access to clean energy.

**Solution:** Sun Mobi offers access to clean energy in a democratized way, through the shared generation modality, for individuals and companies in the state of São Paulo.



# WATER AND SANITATION



Headquarters: Salvador - BA  
Journey stage: Business organization  
Website: [sdwforall.com](http://sdwforall.com)

**Challenge they address:** Our focus is to meet the Sustainable Development Goal (SDG) number 6 from Water and Sanitation, which aims to “Ensure the availability and sustainable management of water and sanitation for all”.

**Solution:** Aqualuz, technology that treats water using the sun, considering social aspects of rural families: uses cisterns as a source of water, difficulty in carrying out maintenance, low purchasing power.



Headquarters: Salesópolis - SP  
Journey stage: Pre-stop  
Website: [ekonowater.com.br](http://ekonowater.com.br)

**Challenge you address:** In addition to reducing water and sewage costs for our customers, we have solved the problem of wasting water in showers, washbasins and washing machines, reusing this water in the toilet.

**Solution:** The EkonoFlush System filters the water from showers, washbasins and washing machines and accumulates in a compact cistern with a filtration system, for reuse in the toilet.

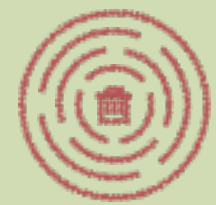


Headquarters: Florianópolis - SC  
Journey stage: Scale  
Website: [wier.com.br](http://wier.com.br)

**Challenge it addresses:** Problem of the absence of quality and low-cost drinking water for poor communities and problem regarding the presence of chemical and biological contaminants in water for human consumption, which cause illness and death.

**Solution:** A product with award-winning technology, green and environmentally friendly, to treat water for human consumption, which combats, with efficiency and low cost, chemical and microbiological contaminants.





# WASTE MANAGEMENT



Headquarters: São Paulo - SP  
 Journey stage: Traction  
 Website: [moradadafloresta.eco.br](http://moradadafloresta.eco.br)

Headquarters: São Paulo - SP  
 Journey stage: Pre-stop  
 Website: [greenmining.com.br](http://greenmining.com.br)

Headquarters: São Paulo - SP  
 Journey stage: Traction  
 Website: [molecoola.eco](http://molecoola.eco)

Headquarters: São Paulo - SP  
 Journey stage: Scale  
 Website: [boomera.com.br](http://boomera.com.br)

**Challenge they address:** Organic waste corresponds to more than half of the “garbage” produced in Brazil. Of these, 99.6% are deposited in dumps or landfills, generating economic, social and environmental costs.

**Solution:** Residential and business composting systems to transform organic waste into fertilizer at the generation site. Our solutions prevent the transport and waste of this waste.

**Challenge they address:** About 75% of Brazilians do not separate recyclables and most municipalities do not have selective collection. Brazil recycles only 3% of the waste and most of the collection is based on informal labor.

**Solution:** Green Mining has developed a Smart Reverse Logistics technology to recover post-consumer packaging efficiently, with a traceability system that ensures that all collected material goes for recycling.

**Challenge they address:** Post-consumer waste is one of the biggest problems we have to solve as Humanity. In Brazil, around 80 MM of tons / year are generated, of which 20 MM are recyclable which we waste.

**Solution:** Molécoola is a loyalty program that encourages consumers to return post-consumer material and reintroduces materials into the production chain, enabling circular economy.

**Challenge they address:** A company specialized in Circular Economy, Boomera exists to value and give new life to waste that would end up in landfills, especially materials considered difficult to recycle, contributing to the social and economic inclusion of waste pickers throughout Brazil.

**Solution:** We are catalysts for a new way of doing things within the Circular Economy, combining engineering and real connections between the links in the chain. With the proprietary CircularPack methodology, we work the circular economy from end to end, making science with great conscience in our materials laboratory, going through reverse logistics in partnership with more than 8,000 members and transforming waste into circular products with cause through a lot of research, development and innovation.



## FINANCIAL SECTOR



Headquarters: Manaus - AM  
Journey stage: Traction  
Website: [aceleracao.ppa.org.br](http://aceleracao.ppa.org.br)

**Problem:** The Amazon occupies 60% of the Brazilian territory, but generates only 8% of the national GDP and has already lost 20% of its forests, due to the unsustainable exploitation of natural resources. Impact / sustainable businesses are the key to the new economy for the region, but they need support to be attractive and viable.

**Solution:** The PPA Acceleration Program supports entrepreneurs and impact businesses that operate in the Amazon, through a process of acceleration, investment, cooperation, networking and the creation of an interconnected sustainable business community, respecting regional realities. To attract capital for entrepreneurs, PPA activates its network of contacts and internal contact networks of Idesam, which were built over the institute's 15 years of operation and recognition. The attraction of capital

occurs as detailed analyzes of the situation of the undertakings are made, which are open to investors so that they can make the best decisions about the movements they prefer to make.

**Results:** 30 projects have already been selected and monitored, and participated in the acceleration process. Out of these 30, 13 received investments through investment rounds: 4 in 2018 and 9 in 2019.

**Volume of hectares preserved by the portfolio's businesses:** more than 1 million.

**Focus for the next 5 years:** invest and accelerate at least another 30 projects that operate in the legal Amazon; reach 5 million preserved hectares of forest; positively impact 10,000 families; and invest R \$25 million during this process.

**The PPA portfolio comprises:** Manioca, Peabiru, Ração Mais, Seringô, Coex Carajás, Prátika Engenharia, Oka, Tucum, Academia Amazônia Teaches, Navigate, In the Forest, Amazon Food and Onisafra.

**How much was invested:** R \$5.9 million.



Headquarters: Rio de Janeiro - RJ  
Journey stage: Pre-Scale  
Website: [conexsus.org](http://conexsus.org)

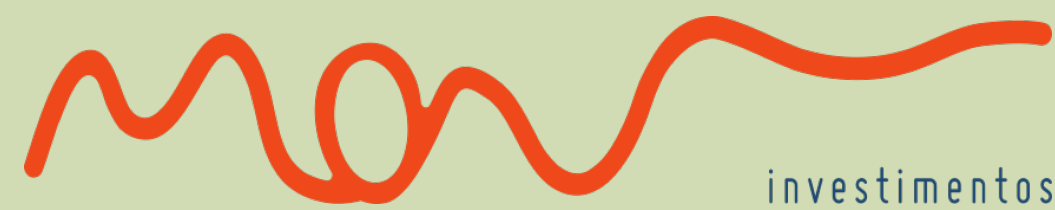
**Challenge they address:** PRONAF allocates R \$33 billion in subsidized credit per year, but only 2.5% of the total is allocated to community businesses that use sustainable production methods that protect standing forests.

**Solution:** FSCX is the only investment vehicle dedicated to greening PRONAF, providing loans and guarantees for community businesses combined with management advice in preparation for rural credit.





## FINANCIAL SECTOR



Headquarters: São Paulo-SP  
Website: [movinvestimentos.com.br](http://movinvestimentos.com.br)

Headquarters: São Paulo, London, Paris  
Website: [mirova.com](http://mirova.com)

**Challenge they address:** Great social inequalities and environmental degradation. Difficulty in aligning financial return with generating a positive socio-environmental impact. Lack of investments, management, impact assessment and reporting of results on the impact agenda.

**Solution:** MOV Investimentos is an impact investment manager. They seek entrepreneurs and invest in innovative companies to reduce social inequalities and reverse environmental degradation in three main areas: cities, forests and education.

**Case:** FIP MOV Fund 1. The FIP MOV 1 portfolio comprises: Audsat, Biofíllica, Órigo, Sollar, Terra Nova, TriCiclos and Tuneduc. Audsat and Sollar. At the end of 2018, the portfolio's consolidated net revenue reached R \$104 million, an annual compound growth of 98.8% since the beginning of the fund. Together, they also created 447 direct jobs.

**Investment Thesis:** FIP MOV 1 is a fund that contributes to the resolution of socio-environmental problems, signaling that impact is important, fostering the growth and development of new and poorly served markets and providing, even through partners, flexible capital to the investees.

**How much invested:** R\$56.4 million until 2019.

**Problem:** There is a major misalignment between biodiversity protection in the Amazon and financial returns, resulting in deforestation, climate change, degradation of biodiversity and inequality for communities living in the forest.

**Solution:** Mirova Natural Capital (MNC) is an experienced and recognized asset manager with an investment approach 100% focused on impact in the area of natural capital, aligning financial returns with measurable environmental and social impact. In 2019, MNC set up a new fund dedicated to the conservation of biodiversity in the Legal Amazon.

**Case:** Althelia Biodiversity Fund Brazil (ABF) FIP. It is part of the ABF portfolio: the fund is in the investment phase.

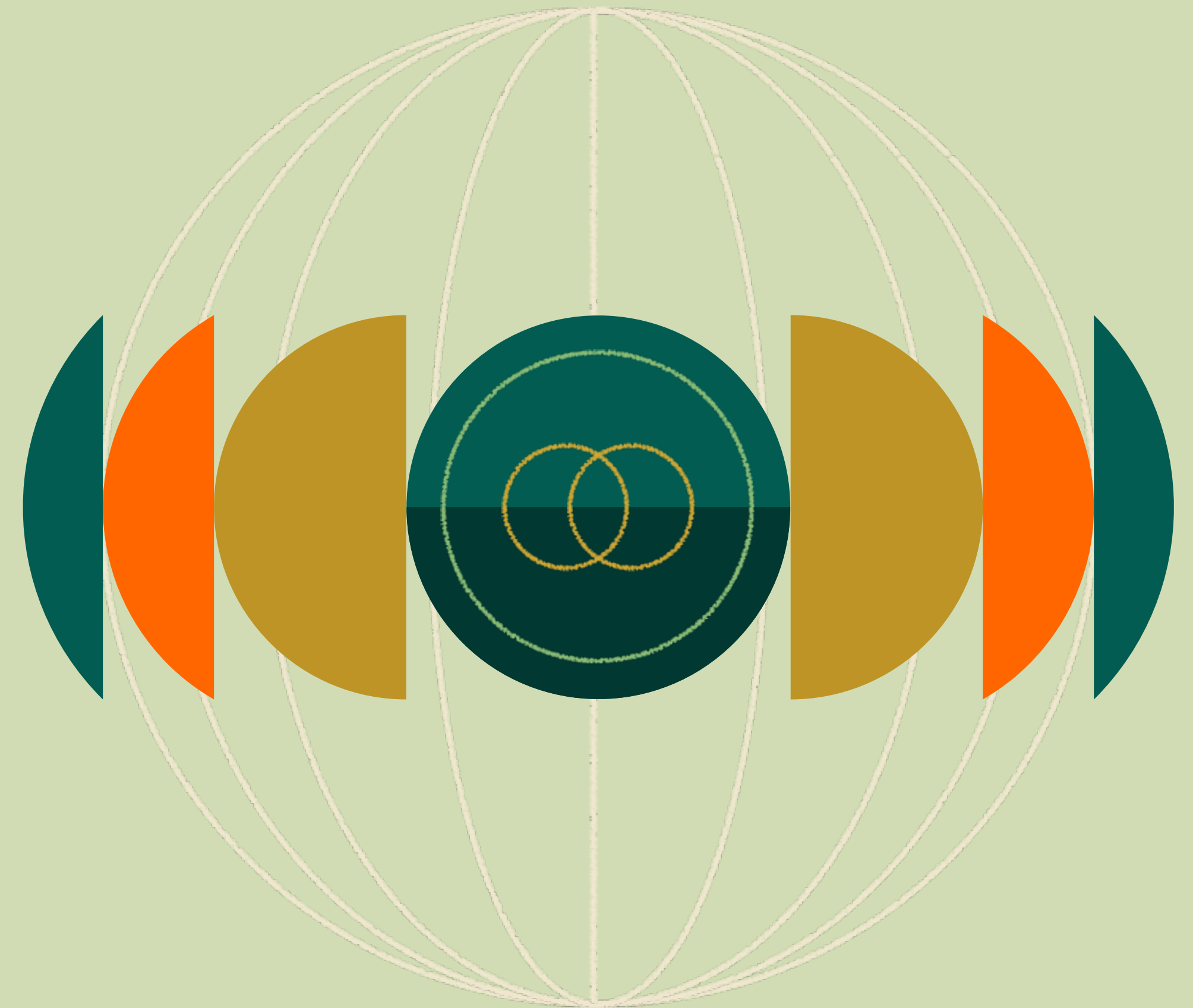
**Investment Thesis:** ABF offers venture and growth financing to companies that have a positive impact on biodiversity and communities in the Brazilian Amazon. The fund invests in several sectors, covering conservation, livelihoods, small producers, sustainable agriculture, services, finance and technology for biodiversity.

**Financial instruments:** Equity, convertible loan, carbon credits and venture debts.

**How much invested:** It is in the investment phase.

# **AFTER NAVIGATING THE SECTOR OPPORTUNITIES AND INSPIRING CASES, IT'S TIME TO JOIN THIS NEW IMPACT ECONOMY!**

To support the connection of different actors with the mapped solutions and lines of action, we organized the Opportunity Matrix by different ANALYSIS LENSES.

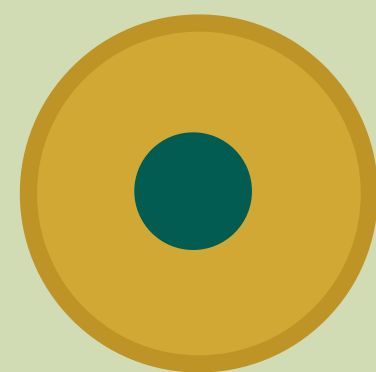




# ANALYSIS LENSES FOR READING THE OPPORTUNITY MATRIX

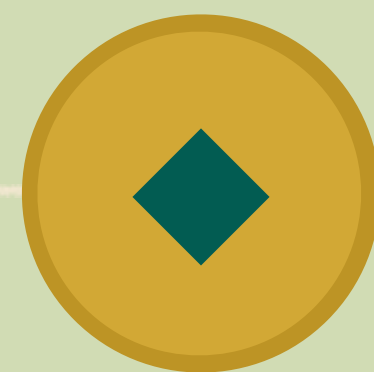
The lenses proposed for reading the matrix are an invitation to evaluate business and investment opportunities based on central elements for the consolidation of a new economy that integrates environmental assets in a systemic way in the value generation models.

These lenses have been adopted, more and more, by companies in Brazil and worldwide, bringing natural and social capital to the center of business strategies.



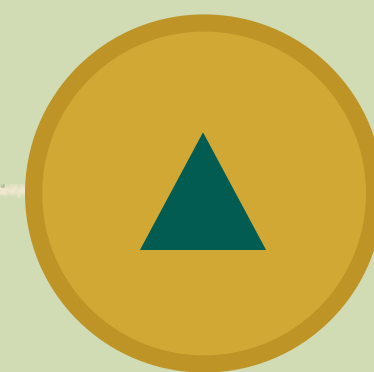
## *Regenerative Economy*

A regenerative economy is able, while providing goods and services to individuals, to restore soils, increase biodiversity, absorb carbon and improve water availability. (Savory Institute, 2020)



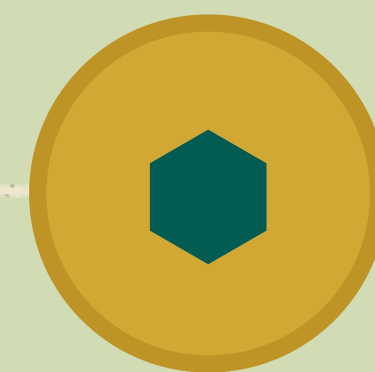
## *Bioeconomy*

Bioeconomy comprises the various economic sectors that use ecosystem services and renewable biological resources from land and sea - such as agricultural crops, forests, fish, animals and microorganisms - to produce food, material technology and energy. To this end, it requires an intensive research and development component on environmental assets, and may even create new value chains based on bioactives. (BUGGE, HANSEN, KILTKOU, 2016)



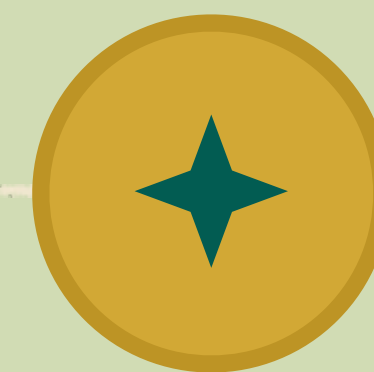
## *Climate*

Climate change tends to dramatically and permanently alter the planet's social and economic systems. And in addition to actions to reduce greenhouse gas emissions (mitigation), companies must understand the climatic risks they are already exposed to, through adaptation actions, to increase resilience or reduce the vulnerability of workers. Business.




## *Water*

The management of water resources has become increasingly relevant in the business context. This is because, while several operations are highly dependent on water, climate change represent potential impacts for both water availability and quality in different regions, making the management of this resource strategic for many value chains. .



## *Circular Economy*

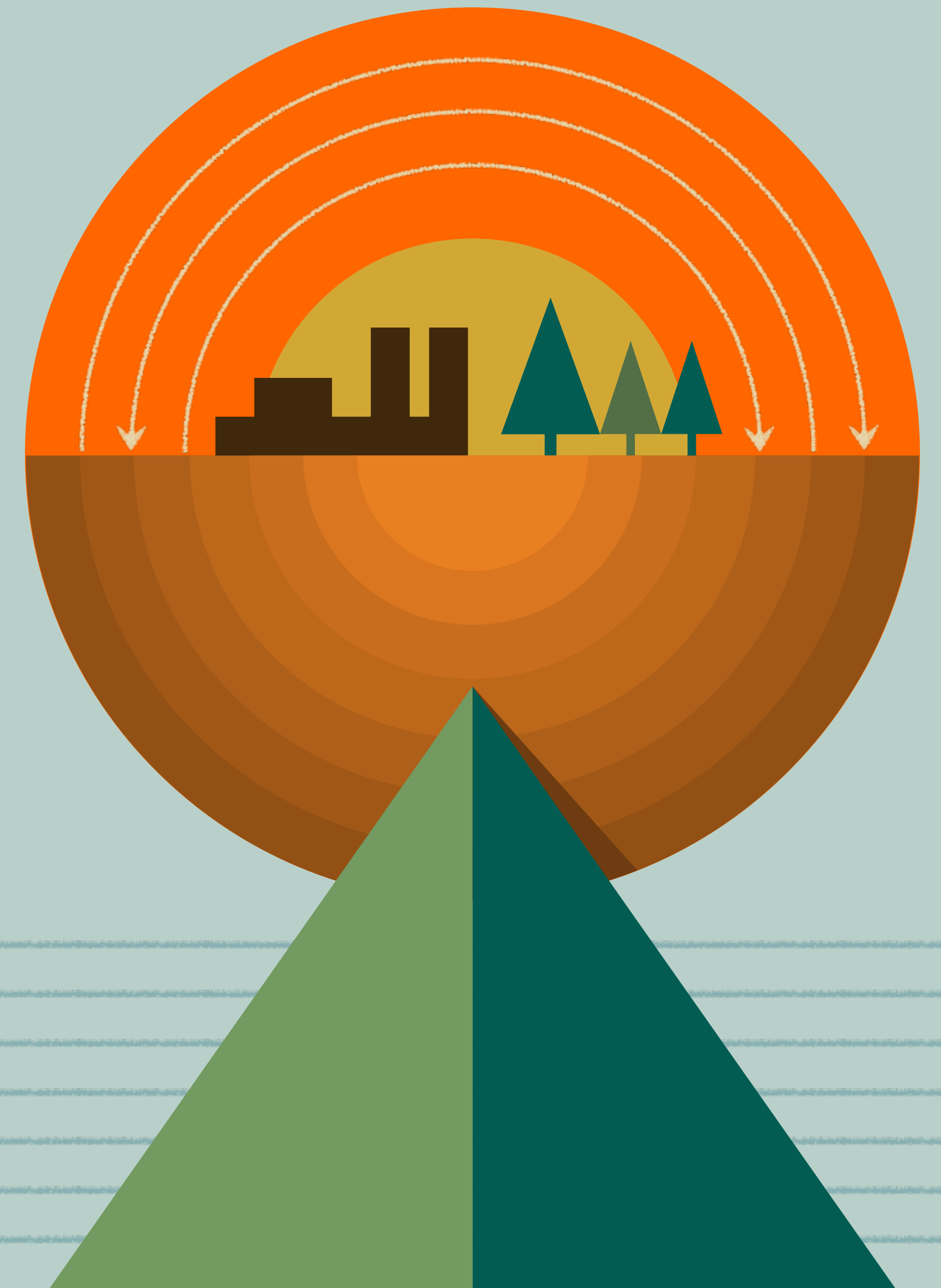
A circular economy is based on the principles of eliminating waste and pollution from design, keeping products and materials in use and regenerating natural systems. (Ellen MacArthur Foundation, 2020)

<b>Farming</b>  <p>Productive models, technical assistance, value chains, climatic resilience of crops.</p>	<b>Forests and Soil Use</b>  <p>Sustainable use of conserved areas, equipment for agroforestry systems, payments for environmental services (PES), technical assistance.</p>	<b>Industry</b>  <p>Circular economy, product traceability, use of forest assets, fair trade.</p>	<b>Energy and Biofuels</b>  <p>Reverse logistics, low emissions transport, support infrastructure for electric vehicles.</p>	<b>Logistics And Mobility</b>  <p>Renewable energy, energy efficiency, smart grids and distributed generation.</p>	<b>Water and Sanitation</b>  <p>Autonomous and low-cost solutions (water and sewage), water reuse in homes, industry and agriculture.</p>	<b>Waste Management</b>  <p>Reverse logistics, recycling and reuse of waste, durability of materials.</p>
<ul style="list-style-type: none"> <li>◆ Businesses focused on technical assistance for rural and agroforestry producers (ex: low carbon farming practices - ABC).</li> <li>◆ Expansion of agroforestry systems (SAF) and crop-livestock-forest integration (iLPF), mainly over degraded areas.</li> <li>◆ Solutions for the inclusion of small farmers or extractive producers in value chains of large companies.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Logistic integration of solutions for the disposal of agroforestry products.</li> <li>◆ Development of equipment and machinery adapted to agroforestry systems, especially small and medium scale.</li> <li>◆ Businesses for the traceability of forest products, highlighting their sustainability attributes (ex: blockchain tracking systems, internet of things - IoT, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>◆ Solutions for expanding research and development (R&amp;D) and the use of forest assets in the industry (fibers, molecules, cosmetics, drugs, energy solutions, etc.).</li> <li>◆ Solutions to increase the adoption of the principles of circular economy in the product design stages.</li> <li>◆ Solutions that reduce waste disposal (ex: use of waste as raw material in new production cycles).</li> <li>◆ Solutions to increase the traceability of products along their value chains (ex: traceability of sustainability attributes from blockchain, internet of things - IoT, etc.).</li> <li>◆ Industrial solutions based on fair trade models along the value chains of large companies.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Solutions to increase energy efficiency (ex: Energy Services Companies - ESCOs).</li> <li>◆ Creation or strengthening of financial instruments for renewable energy projects (eg investment funds, green bonds, renewable energy bonds, etc.).</li> <li>◆ Solutions for cogeneration in industrial and agro-industrial systems, mainly from waste (waste-to-energy).</li> </ul>	<ul style="list-style-type: none"> <li>◆ Solutions to strengthen reverse product logistics.</li> <li>◆ Solutions for intermodal integration, especially between motorized and non-motorized modes (eg Mobility-as-a-Service).</li> <li>◆ Solutions for supporting infrastructure for electric vehicles and fuel cells (eg charging stations, maintenance and replacement, etc.).</li> <li>◆ Low carbon transport solutions, both for cargo and people.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Solutions to increase water reuse in industry, agriculture and housing.</li> <li>◆ Solutions to increase the sustainability of aquaculture.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Solutions to strengthen reverse product logistics.</li> <li>◆ Solutions for replacing single-use (disposable) materials.</li> <li>◆ Solutions to expand the offer and quality of the collection of recyclable / reusable waste.</li> <li>◆ Solutions for zero-waste industrial processes.</li> </ul>
<ul style="list-style-type: none"> <li>◆ Businesses that increase the resilience of rural producers to the impacts of climate change (eg solutions based on nature - SbN, adaptation based on ecosystems - AbE, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>◆ Business models for sustainable use of forest areas, including solutions for Payment for Environmental Services (PSA) projects.</li> <li>◆ Forest conservation areas compensation businesses (eg, environmental reserve quotas - CRA).</li> </ul>		<ul style="list-style-type: none"> <li>◆ Solutions for innovation in the renewable energy and smart grids value chain (eg equipment, components, software, services, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>◆ Solutions to reduce the vulnerability of transport systems to the impacts of climate change.</li> </ul>	<ul style="list-style-type: none"> <li>◆ Solutions to reduce the vulnerability of businesses to the hydrological impacts of climate change (eg, events of "water stress" or excessive rainfall).</li> <li>◆ Autonomous basic sanitation solutions for low-income regions, especially those with access to drinking water and sewage treatment.</li> <li>◆ Effluent treatment systems developed from nature-based solutions (SbN).</li> </ul>	<ul style="list-style-type: none"> <li>◆ Solutions for the production of biofertilizers and pest control from organic and agricultural waste.</li> <li>◆ Solutions for autonomous waste treatment systems, especially low-cost solutions.</li> </ul>

\* The classification of solutions in these two segments is based on the practices adopted by businesses in these areas. This does not prevent, however, the development of business arrangements that, from the combination of various elements of sustainability and innovation, can produce positive impacts from a solution here classified as capable of mitigating negative impacts.



**A NEW SOCIO-ENVIRONMENTAL IMPACT ECONOMY IS EMERGING ACROSS THE GLOBE AND WILL DEMAND DEEP CHANGES IN OUR SOCIETY AND THE WAY WE LIVE.**



The integration of sustainability into the private sector, mainly based on ESG criteria, represents a major advance in recent years.

**HOWEVER, THAT'S  
JUST THE TIP OF THE  
ICEBERG.**





In the medium term, business models need to take a look at the ESG dimensions for a change in their relationship with the environment and, mainly, their stakeholders. This has already been seen in businesses that, since its inception, integrate the generation of positive socio-environmental impact to its core business.

**THIS IS CRUCIAL TO DEVELOP BUSINESS MODELS THAT ARE ABLE TO GENERATE VALUE WHILE PROMOTING POSITIVE IMPACT ON THE ENVIRONMENT AND SOCIETY.**



However, in order to guarantee a truly sustainable development, it is necessary to rethink production and consumption patterns in a new economy, ensuring that they are aligned with planetary limits.

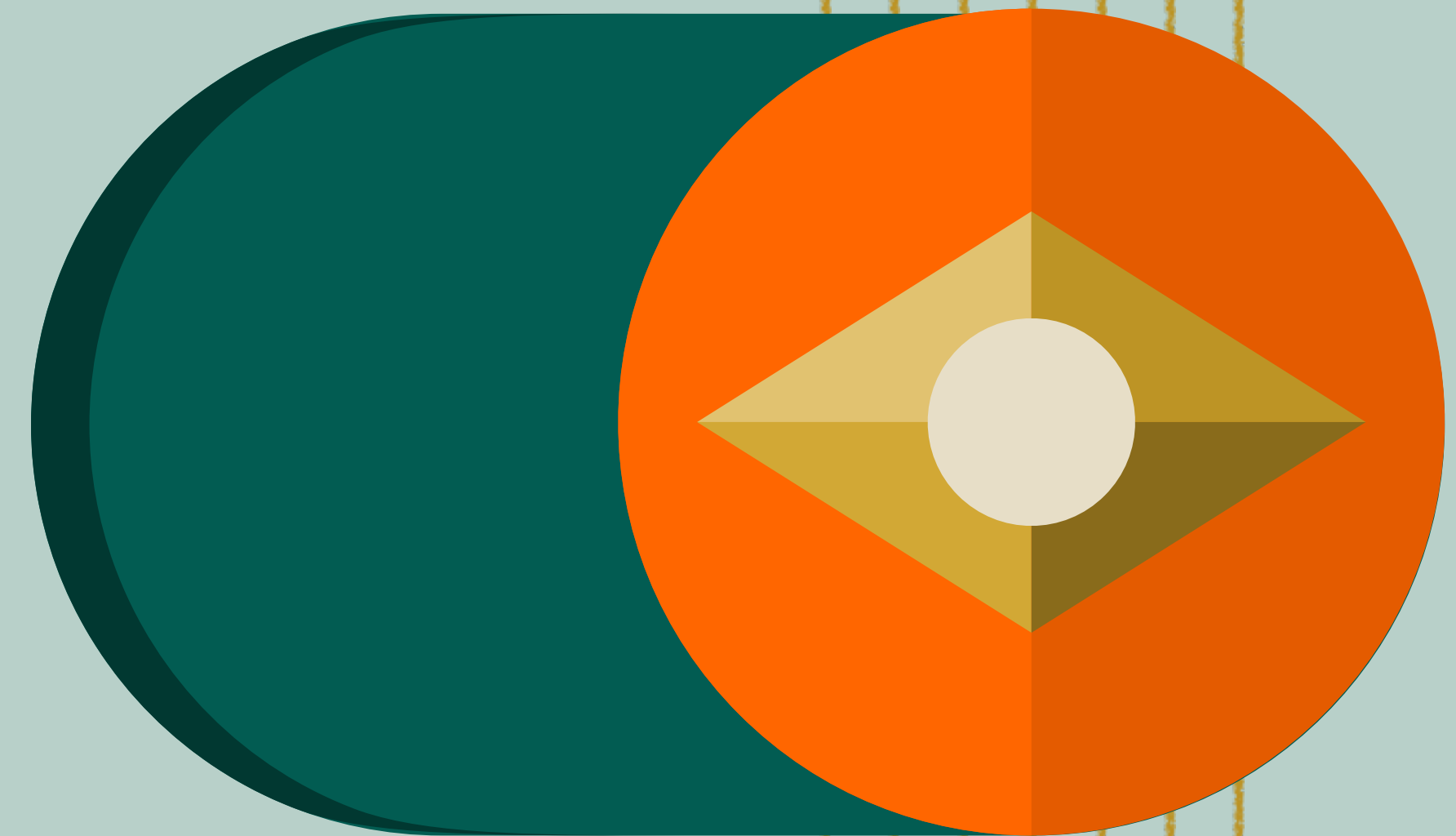
This means incorporating into the business models, more and more, the principles of circular economy, regenerative economy and impact business, eliminating waste and pollution from production processes, keeping products and materials in use for as long as possible and regenerating natural systems.

**OUR FUTURE AS HUMANITY DEPENDS ON A NEW ECONOMIC MODEL, FOCUSED ON THE REGENERATION AND REHABILITATION OF THE PLANET. INTEGRATING ESG ASPECTS TO THE BUSINESS STRATEGY IS JUST THE FIRST STEP TO GETTING THERE.**





**AND HOW CAN BRAZIL  
UNLOCK ITS POTENTIAL TO  
LEAD THE TRANSITION TO  
THIS NEW ECONOMY?**





***“Today, whoever is entering the sector is bringing a much more pragmatic vision. Before, there was a vision in agriculture that fell to the ideological side and that only brought more conflict and division. There is a new discussion that is much more conciliatory, which is to say: I want to do organic regenerative agriculture, I'm open to technology, I don't have all the answers and I'm pragmatic. As long as it gets better, I'm open to considering. The combination of these ideas and actors is creating very interesting things.”***



**Fábio Sakamoto**  
Rizoma Agro





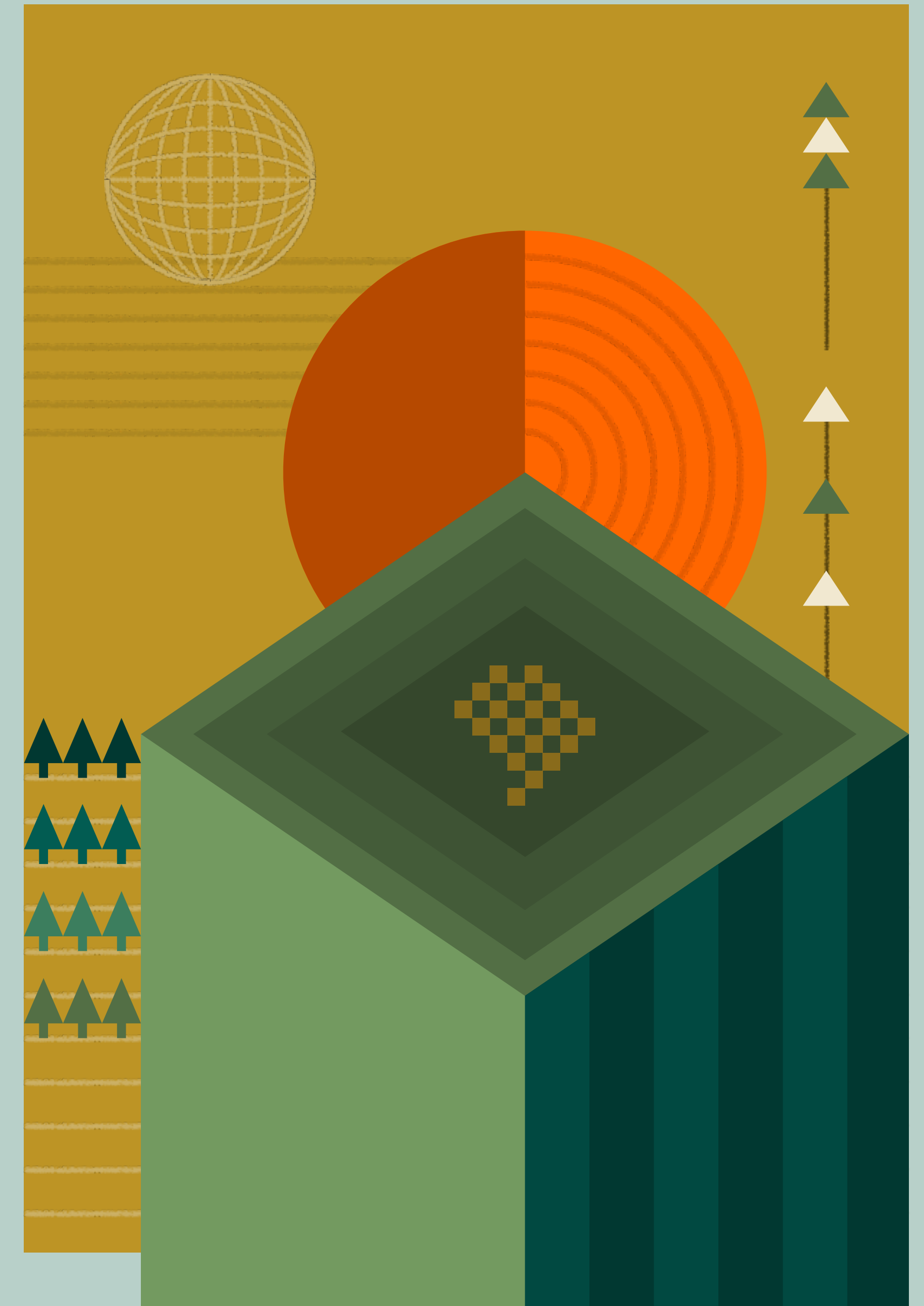
# CHANGE THE “OR” FOR AN “AND”: AN INVITATION TO CONCILIATION

The socio-environmental challenges that Brazil and the world face in the 21st century are complex and require a change in the mental models of people and organizations.

We need, more than ever, collective action uniting governments, the private sector and civil society in building this emerging economy that is systemic, inclusive, is the “AND”, where economic development, social justice and environmental conservation are balanced in the same equation.

It's time to stop seeing the environment and traditional peoples as enemies or barriers in the way of development. With new perspectives and an entrepreneurial spirit, we have the chance to rediscover our country, finding new ways to generate value and wealth from our living nature and culture!

Global markets are reinventing themselves and Brazil has a unique competitive advantage, being the country with the greatest biodiversity, one of the largest arable areas and one of the most enterprising societies in the world. We have all the ingredients to build a prosperous and sustainable future, generating jobs and development for tens of millions of families.





***“There is a lack of systemic vision in Brazil. Work to make it work. Of course, it depends on smart legislation and having a more open entrepreneur. It relies on joining forces and convincing outsiders to invest.”***

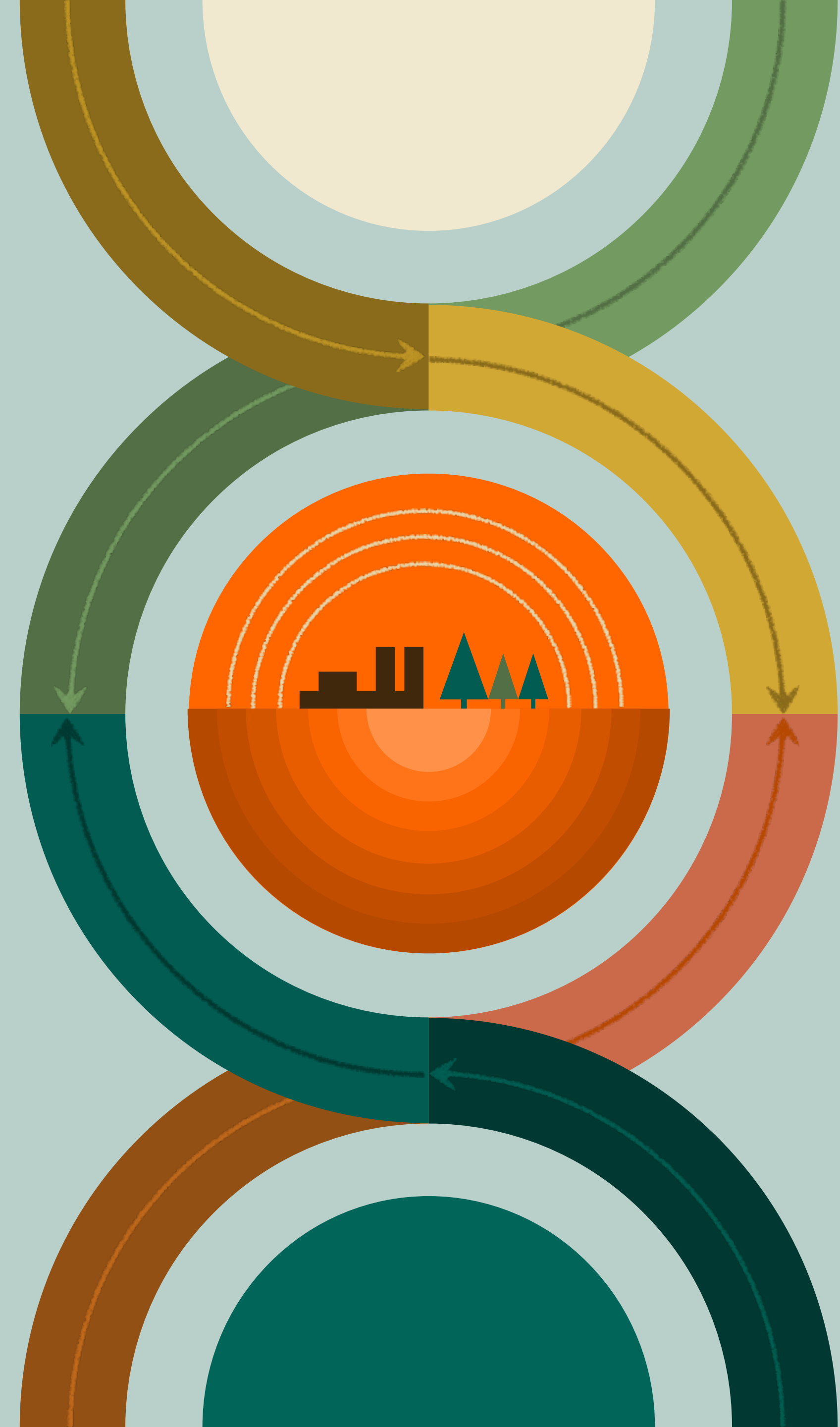


**André Ferreira**  
IEMA



**THE INVITATION IS FOR MORE COMPANIES, SCIENTISTS, ENTREPRENEURS, MEDIA, INSTITUTES AND FOUNDATIONS AND THE BRAZILIAN GOVERNMENT TO RECOGNIZE THE COMPLEXITY OF THE VALUE CHAINS THAT GENERATE ENERGY, FOOD, WATER, PURE AIR AND QUALITY OF LIFE FOR THE POPULATION.**

And, by understanding the role of each one in this link, they can articulate themselves to face the environmental challenges mapped in this study and leverage the opportunities of this new economy.





***“We all converge on the need for an economy that keeps the forest standing, in this sense, entrepreneurship can be a driving force to provide dynamism and creativity, adding value to traditional peoples. I believe that an excellent use of philanthropy and government resources is to encourage and subsidize community-based environmental impact entrepreneurship. Business models that are sustainable and inclusive in the long term.”***



**Tatiana Botelho**  
CLUA



“Communication and the media have an important role in confusing more and generating separations. Glad you're vegan, but not all livestock is what you saw in the documentary. You can do livestock with carbon sequestration, well done. In all sectors, you can do this if there are good practices and impact measurement. ”

Entrepreneur

“Brazil has everything to be a producer of wealth and food security, much of that potential is here. There is a positive and aligned agenda. This is good, as long as it doesn't turn into greenwashing. It's no longer fighting another model, banging our heads on a brick wall. It is not speaking ill of others, it is reconciling. If it were aligned with public policy, cleaning up this image and inspecting the forest, is a very big opportunity for the sector. “

Entrepreneur



***“We need to increase the value of our product (Branding). Our great branding asset is a production combined with the best environmental practices, which preserves forests and is a producer of environmental services.”***



**Plínio Ribeiro**  
Biofílica

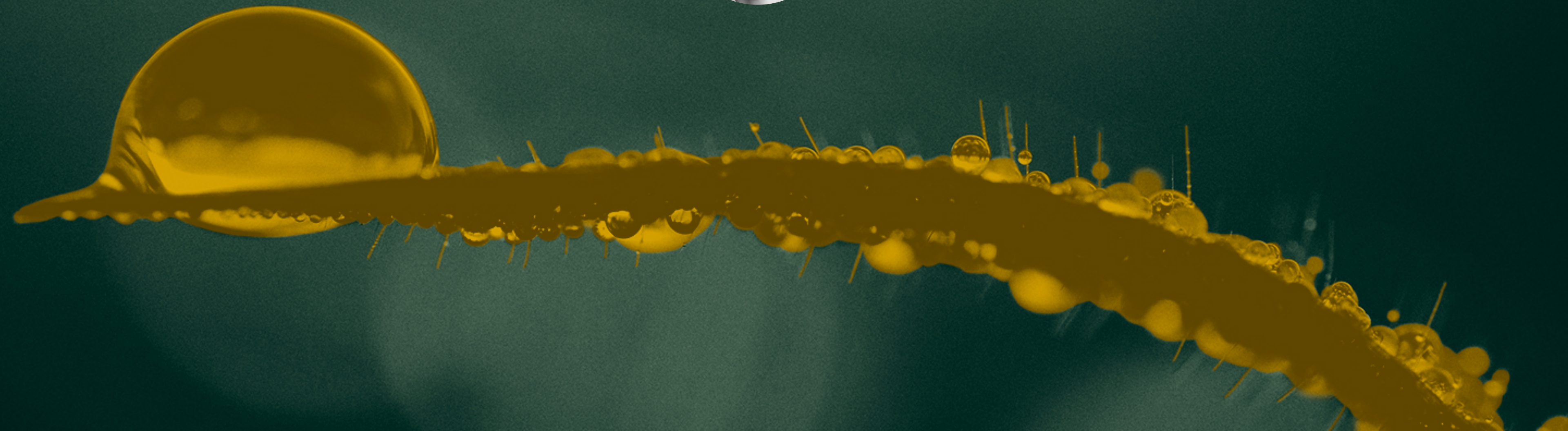


*“A regenerative business goes beyond what we understood today as an impact business, it's 'beyond impact business'. It presupposes rethinking the company's function, work practices, results, financial performance. It implies restoration, rehabilitation, renovation, collaboration, resilience, integration, it is much deeper and more complex.”*



**Florence Laloë**

Founder and Director of Ybyra´ Solutions in Europe and  
Climate Ventures Consultant





## ABOUT THIS STUDY

# GLOSSARY & TERMINOLOGIES

Below, we detail the concepts and expressions used in this report and also in several sources in the sector that need a better understanding.

## SYNTROPIC AGRICULTURE

Syntropic Agriculture is constituted by a theoretical and practical set of an agricultural model developed by Ernst Götsch, in which natural processes are translated into agricultural practices both in form, function and dynamics.

Source: Ernst Götsch Foundation

## AMAZON 4.0

Initiative created by Carlos Nobre that proposes a new development paradigm that combines deep knowledge of Amazonian biodiversity with the wide possibilities of Industry 4.0.

Source: Ismael Nobre and Carlos Nobre

## BIOECONOMY

Industrial production model based on the use of biological resources. The objective is to offer solutions for the sustainability of production systems with a view to replacing fossil and non-renewable resources.

Source: Embrapa

## RURAL ENVIRONMENTAL REGISTRATION (RER)

National electronic public register, mandatory for all rural properties, with the purpose of integrating environmental information on rural properties and possessions regarding the situation of Permanent Preservation Areas - APP, Legal Reserve areas, forests and remnants of native vegetation, Restricted Use Areas and consolidated areas, composing a database for control, monitoring, environmental and economic planning and combating deforestation.

Source: Ministry of Agriculture, Livestock and Supply



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## GLOSSARY & TERMINOLOGIES

### ENVIRONMENTAL AND BIODIVERSITY CONSERVATION

Ecological use of natural resources; exploitation of the wealth produced by nature without harming the environment - as opposed to “environmental preservation”, which does not allow the use of natural resources.

Source: Ministry of the Environment

### CIRCULAR ECONOMY

The economic model 'extract, produce, waste' today is reaching its physical limits. The circular economy is an attractive alternative that seeks to redefine the notion of growth, with a focus on benefits for the entire society. This involves decoupling economic activity from the consumption of finite resources, and eliminating waste from the system on principle. Supported by a transition to renewable energy sources, the circular model builds economic, natural and social capital. It is based on three principles: eliminating waste and pollution from the beginning, keeping products and materials in use and regenerating natural systems.

Source: Ellen Macarthur Foundation

### FOREST ECONOMY

Forest economy brings a development perspective combined with the conservation of standing forests and the physical and cultural security of indigenous peoples, quilombolas, extractivists and other traditional communities.

Source: Instituto Socioambiental - ISA

### LOW CARBON ECONOMY

Low carbon is the expression of order for the 21st century economy and means innovating production processes and technological solutions that result in less impact on the planet's climate, with emphasis on the search for efficiency and energy alternatives, reduction of emissions and management in sustainability .

Source: FGVces

### REGENERATIVE ECONOMY

The regenerative economy is a theoretical proposal in line with the current capitalist system, but which suggests changes in the way things are valued. What sets it apart from the standard economy is that, while in standard economic theory one can regenerate goods or consume them to their point of scarcity, in regenerative economy, by taking into account the economic value of the original capitals, the Earth and the access to these original capital goods can be restricted so that their scarcity is avoided. It is divided into eight key principles: relationship; holistic wealth; innovation, adaptation, sensitivity; participation; honor, community and location; plenty of edge effect; robust circulatory flow and balance.

Source: Capital Institute

### EXTERNALITIES

Resulting effect of one economic agent on the welfare of another, that is, there is an externality when the costs or benefits of an activity affect other people, not directly involved in those activities, without those people being paid or paying for that cost or benefit . Externalities can be positive or negative.

Source: Eduardo Sá Silva

### SOCIO-ENVIRONMENTAL IMPACT BUSINESS

Enterprises that have the clear intention of addressing a socio-environmental problem through their main activity (be it their product / service and / or form of operation). They operate according to market logic, with a business model that seeks financial returns and is committed to measuring the impact they generate.

Source: Alliance for Investments and Impact Business and Pipe.Social

### CLIMATE JUSTICE

Climate justice links human rights and development to achieve a human-centered approach, safeguarding the rights of the most vulnerable people and sharing the burdens and benefits of climate change and its equitable and just impacts. Climate justice is informed by science, responds to science and recognizes the need for equitable management of global resources.



ABOUT THIS STUDY

# METHODOLOGY & EXECUTION

This study was based on a robust and collaborative work between the teams of Climate Ventures and Pipe.Social, with support from the Alliance for Investments and Impact Business, Innovation in Corporate Citizenship (ICE), Instituto Clima e Sociedade (iCS), Instituto Humanize, Fundo Vale and Cargill.

Between April and October 2020, we studied the history of the environmental sector in Brazil and in the world, went to the field to listen to the main experts on this agenda in the country, validated the main challenges and solutions within 7 key sectors with organizations in this ecosystem and carefully analyzed the entire content raised to deliver this report.

The details of this methodology are as follow.



# MAPPING OF THE MAIN CHALLENGES OF THE COUNTRY'S ENVIRONMENTAL AGENDA AND POSSIBLE LINES OF ACTION

1

## Socio-historical analysis of the environmental agenda in Brazil and worldwide

Mapping of main facts and historical events in the social, political and economic spheres that influenced the environmental agenda in Brazil and in the world.

2

## Desk Research of publications, data and content on the environmental agenda in Brazil and worldwide

Search for materials, publications, studies and relevant content currently on the global environmental agenda.

3

## Qualitative listening with industry experts in Brazil

17 individual in-depth interviews, via call, with environmental experts in the country working in the sectors of farming, forestry and land use, industry, logistics and mobility, energy and biofuels, water and sanitation, and waste management.



# VALIDATION AND PRIORITIZATION OF CHALLENGES AND MAPPED SOLUTIONS AND DESIGNING THE OPPORTUNITIES MATRIX FOR THE FIELD

4

## Open online consultation to the environmental ecosystem

Semi-structured online questionnaire for open consultation with organizations working on the environmental agenda in the country. This consultation had 84 complete responses.

5

## Analysis of the Opportunity Matrix and writing of the final report

Compilation of data and insights, design of the Opportunity Matrix and final publication.



## PROJECT TEAM

### PROJECT TEAM

Daniel Contrucci  
Daniela Opice  
Livia Hollerbach

### ANALYSIS

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George Magalhães  
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Mariana Fonseca  
Rafael Carvalho

### DESK RESEARCH AND SOCIAL HISTORICAL ANALYSIS

Arianny Dias

### FIELD RECRUITMENT

Arianny Dias

### CASE STUDY

Lucas Nieto

### GRAPHIC DESIGN AND ILLUSTRATIONS

Fabio Issao

## THANKS TO

All the professionals and organizations that collaborated with this field of research:

### INTERVIEWED

Amanda Costa – Youth Climate Leaders e Engajamundo

André Ferreira – Instituto de Meio Ambiente e Recursos Hídricos (IEMA)

Arthur Ferreira - Global Forest Bond

Daniela Mariuzzo – IDH Brasil

David Canassa – Legado das Águas/Votorantim

Eduardo Moreno – Vitalux Ecoativa

Fábio Sakamoto – Rizoma Agro

Florence Laloe – Ybyra´Solutions

George Magalhães – Gema Capital Natural

Gustavo Pinheiro – Instituto Clima e Sociedade

Juliana Magalhães – Fundo Vale

Maria Eugênia Taborda – UNDP

Mariana Belmont – Uneafro Brasil

Plínio Ribeiro – Biofílica

Renata Ruggiero – Instituto Iguá

Tasso Azevedo – MapBiomias

Tatiana Botelho – Clua

Victoria Almeida –Ellen MacArthur Foundation

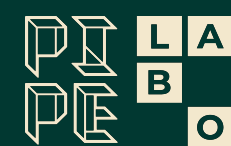
### ORGANIZATIONS PARTICIPATING IN OPEN CONSULTATION

- ▶ AJE Pará
- ▶ Aceti Advocacia
- ▶ Amachains
- ▶ Amitis
- ▶ Arca Multincubadora
- ▶ Arueira Ambiental
- ▶ Badu Design
- ▶ Biofibra Maranhão
- ▶ Biohelp
- ▶ Biosolvit
- ▶ Bloom - Agência de Mudança para o oceano
- ▶ COOHABRAS
- ▶ Caminha Rio
- ▶ Canteiro S/S Ltda
- ▶ Carbono Zero
- ▶ Conprol construções e projetos Ltda.
- ▶ DISPOR Energia
- ▶ Empatia Criativa Arquitetura
- ▶ FARFARM
- ▶ FORMALASER
- ▶ Ferrero
- ▶ Foreign Trade Consultant
- ▶ Fundação CERTI
- ▶ Fundo Vale
- ▶ GERA
- ▶ Grupo Associado de Agricultura Sustentável
- ▶ Helder Silva dos Santos
- ▶ IPTC
- ▶ Instituto Aromeiazero
- ▶ Instituto Sabin
- ▶ Kalt Labs
- ▶ Ku'erã Projetos Sustentáveis
- ▶ Legado Circular
- ▶ Limpp.com.vc
- ▶ Loa Terra
- ▶ MFM
- ▶ Manioca Brasil
- ▶ NEAS
- ▶ Niltex
- ▶ NovoAgro Ventures
- ▶ Paiche
- ▶ PegMed
- ▶ Plantio Brasil World
- ▶ Protagon
- ▶ Quipo Tecnologia
- ▶ Radix Investimentos Florestais
- ▶ ReciGreen
- ▶ RecircuLAR
- ▶ Revolusolar
- ▶ SITIMI Labs
- ▶ SUNFLEX
- ▶ Senac
- ▶ Sense-Lab
- ▶ Sintecsys 1.5°C
- ▶ Status4
- ▶ Sítio Santo Antônio
- ▶ Transforme Serviços Verde Consultoria em Sustentabilidade
- ▶ Transporte Ativo
- ▶ UFPA
- ▶ Universidade Federal do Rio Grande do Sul
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