

# **CLIMATE FINANCE IN BRAZIL**

### POLICY PAPER

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# **KEY MESSAGES**

- Despite the growing volume of green and sustainable investments, total amounts are still far from necessary to promote a transition to a sustainable and low carbon economy.
- The financial sector is important for mobilizing and channelling the financial resources to lowcarbon, resilient and sustainable investments. Public resources alone will not be sufficient.
- It is important to adjust and propose new financial policies and regulations to facilitate investments in low carbon projects.

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# **CLIMATE FINANCE IN BRAZIL**

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# 1. INTRODUCTION AND COUNTRY CONTEXT

In September 2016, Brazil handed it's NDC (Nationally Determined Contribution) over to the United Nations, aiming to reduce  $CO_2$  emissions by 37% in 2025 and by 43% in 2030, compared to 2005 emissions. Later, in December 2020, the Brazilian Government submitted to the UNFCCC its "new first NDC". In this document, the GHG emissions amount in 2005 was increased to 2.8 GtCO<sub>2</sub>e, according to a methodological update on the Third National Inventory. This change also affected the absolute cap for economy-wide GHG emissions in 2025 (from 1.3 to 1.8 GtCO<sub>2</sub>e) and 2030 (from 1.2 to 1.6 GtCO<sub>2</sub>e). On the other hand, an indicative target of climate neutrality by 2060 was also announced (Brazil, 2020).

More recently, in November 2021, the country submitted a new revision, promising a new goal of 50% CO2 emissions reduction in 2030, compared to 2005 Fourth National Inventory standards. In total numbers, that means a cap of 1.3 GtCO2e, close to the first absolute number target.

A deep transformation of socioeconomic behaviour, structures and norms are necessary to guarantee the stability and resilience of our means of subsistence. The profound consequences of climate change pose new challenges for the global community.

However, the lack of effective financial means for its implementations presents a challenge for most signatory countries to the Paris Agreement. In the case of Brazil, this is aggravated by the current context of the country's budget crisis and fiscal constraint. In this scenario, international financing mechanisms gain importance for the achievement of climate goals and may be quite economically attractive, given the global panorama of zero (or even negative) interest rates and the acceleration of actions to combat climate change.

Unprecedented financial resources and an environmentally concerned public and private finance sector are needed to achieve the objectives of the Paris Agreement and the Sustainable Development Goals (SDGs). Public resources alone will not be sufficient. The financial sector is important for mobilizing and channelling the financial resources to low-carbon, resilient and sustainable investments. Increasingly, asset owners, investment managers and banks see this transition as a business opportunity and align their strategies to this end.

Despite the growing volume of green and sustainable investments, total amounts are still far from necessary to a sustainable and low carbon economy. The resolution of climate change and sustainable growth issues is complex and requires coordinated actions among many actors.

In developing countries, overcoming the structural barriers is key for the development of a sustainable finance sector. These issues are particularly relevant for Brazil.

# 2. METHOD

The identification of mitigation measures, barriers, and policy instruments aimed at environmental commitments covered four phases: (i) literature review; (ii) sector description; (iii) stakeholders' interviews; and (iv) results.

Phases 1 and 2 established a conceptual basis for the study, through a literature review of ongoing Brazilian programs, and identified the main stakeholders who can contribute to the scope of the study. Scientific articles, as well as technical reports and policy instruments, were analysed, and the stakeholders were mapped according to their areas of influence in the finance sector, such as (i) fossil fuel subsidies; (ii) green bonds; (iii) carbon pricing; and (iv) policies and regulations. From this process, a wide range of governmental strategies are addressed and possible barriers and how to overcome them.

Phase 3 consisted of performing structured and semi-structured interviews with the identified stakeholders, who were conducted to structure and refine the mitigation options, barriers and policy instruments collected in Phase 1, given their areas of influence. Possible policy instruments to overcome barriers and success cases in Brazil and other countries were also discussed. Suggestions for the next steps from the viewpoint of each stakeholder group were also collected.



### 3. LITERATURE REVIEW

For the finance sector, we focused our efforts on four pillars that are key for unleashing low-carbon investments in Brazil:

- i. Reducing progressively and eliminating fossil fuels subsidies;
- ii. Finance Instruments;
- iii. Carbon Pricing; and
- iv. Finance Policies and Regulations.

Those pillars were identified after an extensive literature review on this theme (IDB, 2013; INESC, 2018; INESC, 2020; SITAWI, 2019; World Bank, 2018; May and Lupke, 2020).

### 3.1. Fossil Fuel Subsidies

The burning of oil, gas, and coal accounts for more than 80% of the world's primary energy and is the main source of GHG emissions. Thus, reforming subsidies should be a strategic path to discourage the growth of production and consumption of fossil fuels and detach GHG emissions from economic growth.

A subsidy is a financial contribution by a government or public agency within a "government" territory. The OECD divides fossil fuel subsidies into:

- → Tax expenses: Provide benefits or preferences (waivers, deductions, exemptions, deferrals, change of rates, modification of the calculation basis) for the production or consumption of fossil fuels, both in absolute and relative terms.
- → Direct Spending: Budgetary expenses that benefit the sector, whether in the form of economic subsidies, expenses on R&D, infrastructure, maintenance, among others along the production chain.

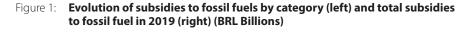
→ Subsidies granted in the form of investments and financing.

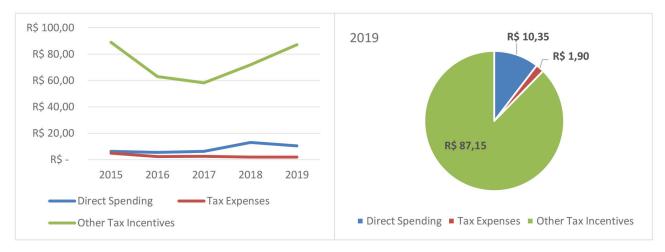
In the G20, Brazil undertook the commitment to reform its fossil fuel subsidies to respond to climate change. The Brazilian scenario of a strong fiscal crisis, freezing social spending and a lot of pressure to approve the fiscal reform is another key element in favour of the review and reduction of these subsidies.

According to the OECD and the International Energy Agency (IEA), in 2019, combined subsidies for the consumption and production of fossil fuels totalled USD 478 billion. As presented in Figure 1 (INESC 2020), in Brazil the subsidies to fossil fuels totalled almost BRL 100 billion, corresponding to approximately 1.4% of the country's GDP. Most of these subsidies are due to tax incentives and tax rebates (88%).

The total amount of subsidies was equal to 3 times the "Bolsa Familia" program, which transfers resources to extremely poor families in Brazil, and was equivalent to 29 times the total resources of the Ministry of Environment of Brazil in 2019. The biggest part of the subsidies was directed to consumption (63%), by reducing the base for calculating taxes and contributions levied on the consumption of gasoline and diesel oil, while production got 37% of those resources.

There was a reduction from 2015 to 2017, but in 2018 and 2019 other tax incentives started to play a major role and contributed to an increase in fossil fuel subsidies in Brazil. It is important to mention that ODI's methodology<sup>1</sup> (ODI, 2015) does not capture this increase in total subsidies as most of this increase was in consumption, and ODI's methodology only captures subsidies for consumption in OECD countries.





Source: INESC (2020)

Policy Paper

<sup>1</sup> https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9989.pdf

According to INESC (2020), the challenge of measuring and reforming incentives to fossil fuels cannot be neglected and is a strategic pathway to achieve the reduction of fossil fuel production and consumption on the G20. However, from a national and geopolitical point of view, dealing with incentives and subsidies is a huge challenge, of different orders. In addition to the methodological difficulties, the technical content, and the lack of transparency by governments, it is indeed a political debate about the direction of development.

Due to such representative amounts of subsidies, and the urgency of this challenge, INESC (2020) raises three central topics that should guide future studies and the debate on incentives and subsidies in the Brazilian context:

- → The conceptual and normative challenges of interpreting fossil fuel incentives and subsidies;
- → The lack of data transparency;
- → The necessary connections between reform of waivers and subsidies, tax reform and the energy transition.

# 3.2. Financial Instruments – Green Bonds and other mechanisms

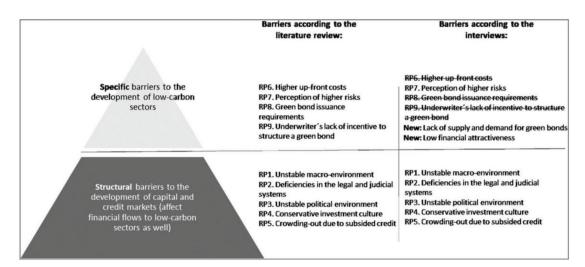
Green debentures or green bonds are fixed income securities used to raise funds to implement or refinance long-term projects and purchase environmentally concerned assets. They end up attracting institutional investors, such as pension funds and insurance companies. Developing countries face challenges in advancing their green bond markets, largely because these nations have less developed economies and capital markets. These challenges can be related to structural barriers that jeopardize the development of the bond market, and to specific obstacles to increase financial flows into low-carbon sectors.

Yahamahaki et al (2020) interviewed representatives from nine organisations in Brazil to investigate the perception of the professional and the institution regarding the barriers presented before. Figure 2 presents the results of the interviews, and which barriers that emerged from the literature are not considered important in the case of Brazil.

Concerning structural barriers, overall, the study concludes that the conditions that foster the development of a conventional bond market also contribute to the development of a green bond market and thus, should be pursued by the country. Concerning specific barriers, the study concludes that many of the specific barriers that are mentioned in the literature do not apply to Brazil.

In 2017, several important institutional investors (with combined assets of BRL 1.8 trillion) have signed the 'Brazil Green Bonds Statement'<sup>2</sup>. The statement highlights the signatory's desire to see the growth of a strong Brazilian green bonds market, sets out specific actions conducive to achieving this goal and aims to foster discussion and future issuance of these bonds in the local market, with inputs from market participants.

Sustainable credit operations in Brazil have grown rapidly in recent years. The chart below shows the annual disbursements for these types of operations.



#### Figure 2: Barriers to the development of a green bond market in Brazil

Source: Yamahaki et al (2020)

Policy Paper

<sup>&</sup>lt;sup>2</sup> https://www.climatebonds.net/files/files/Brazil\_Green\_Bond\_Statement\_EN.pdf

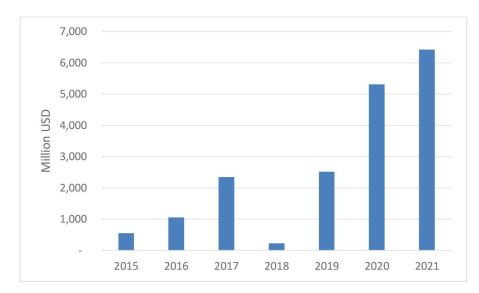


Figure 3: Sustainable Credit operations in Brazil by year

Source: Authors based on SITAWI (2021)

### 3.3. Carbon Pricing Instruments

Pollution is a typical case of negative externalities, that is, a market failure to price a cost that affects third parties. The balance between the level of acceptable pollution and the costs of controlling this pollution is an economic problem and the socially desired quantity is estimated by equalizing the marginal costs of control (mitigation) with the marginal costs of damage from non-control. Marginal costs of mitigation represent how much it is worth to reduce emissions, whether due to the costs of emission reduction technologies and the loss of surplus resulting from the respective loss of production or consumption.

The internalization of externalities related to GHG emissions can be achieved with control or pricing instruments. Control instruments establish common emission or technological standards for all emitters of a source of pollution. With carbon pricing, whether a tax or a market, the decision to reduce emissions or pay the price of CO2e emitted is made by the economic agent, who compares the price of the pollutant being priced with its marginal mitigation cost. Therefore, the agent chooses the cheapest way to comply with the regulation, either by:

- → reduction of emissions through the adoption of low carbon production or consumption practices;
- → absolute reduction in consumption or production; and
- → no reduction in GHG emissions and payment of the price.

This last option is what characterizes the pricing instrument and differs it from the command-and-control instruments. Because of this difference, it is possible to achieve a reduction target in a socially cheaper way, given the control costs (related to the available technology), and production and expansion targets for each polluting agent. What is expected is that economic agents

with a lower cost of control reduce more, because it is cheaper to control than to pay the price. In other words, pricing instruments minimize the aggregate cost of the same mitigation target by equalizing marginal abatement costs and, therefore, are more economically efficient than command and control instruments.

The carbon pricing instrument sets a price per issuance of the unit to achieve an aggregate amount of control and, thus, each regulated agent determines the quantity to be issued, which together leads to the desired level of control, compatible with the price determined. The carbon market instrument, on the other hand, fixes the aggregate amount of emissions and distributes it among regulated agents in the form of emission rights (or permissions), which can be negotiated among themselves and, consequently, the transactions between them determine a balanced price.

If these two types of instruments aim at the same quantity to be controlled, both generate the same price signal in the absence of uncertainty and transaction costs. The marginal abatement cost curve of each regulated entity will be the marker for the individual decision to control and not pay the price or not to control and pay the price. Thus, given these circumstances, both instruments are equivalent in terms of efficiency. Therefore, when they generate the same price, they also generate the same social cost to achieve a certain environmental control goal.

In Brazil, the World Bank's Partnership for Market Readiness discussed, simulated and analysed many carbon pricing options. CentroClima/COPPE/UFRJ was the research centre responsible for the modelling component and simulated 8 different scenarios, 6 of them with carbon pricing (Wills et al, 2021). According to the results obtained from the simulations, an ideal pricing scenario in Brazil should have the following characteristics:

- → Carbon pricing should start at a low level and gradually increase to allow time for adjustment to the different sectors of the Brazilian economy – it is a more efficient instrument in the medium and long term;
- → To have the widest possible scope, covering the maximum sectors of the Brazilian economy, and thus allowing a lower carbon price, for the same objective of emissions reduction;
- → Border adjustment appears to be more efficient to protect the competitiveness of Brazilian industry, especially carbonintensive industry;
- → The use of native forest reforestation offsets proved to be crucial for controlling the price of carbon;
- → Using part of the carbon revenues to reduce labour charges and part to improve income distribution and reduce poverty can produce win-win results for the country.

# 3.4. Financial Policies and Regulations – The Role of BNDES

Financial policies and regulations are key to unleashing sustainable investments and fostering climate finance in Brazil. The National Bank for Economic and Social Development (BNDES) is the main source of reimbursable resources for climate finance in Brazil. It operates through important funds linked to sustainability, such as the Climate Fund (National Fund on Climate Change) and the Environment Line.

Regarding reimbursable resources, the **National Fund on Climate Change** (FNMC) has BNDES as its financial agent. Public financial agents can act in financing operations with resources from the FNMC, in which case it will continue to bear the risks with the Fund. All lines of the Climate Fund existing in BNDES are eligible for financing.

BNDES receives the fund's repayable resources and grants credits for climate projects in two different ways: directly to the project's executor through the modality called FINEM, whose financial amount is greater than R\$ 20 million; or indirectly through other financial institutions, called onlending agents that finance operations whose financial amount is less than R\$ 20 million. In the case of the onlending agent, the eligibility follows the criteria established by the FNMC to the BNDES, however, the credit criteria are of the onlending agent.

In the case of indirect operations, the client requests financing from the accredited transfer agent who is a financial agent, assume the risk of these financing operations and has their policies and rules for granting credit. Assessments and approvals follow the standards of the accredited financial agent. It is the accredited institutions that also define the guarantees of the operation. Through the resources of the Climate Fund, BNDES supports the implementation of projects, the acquisition of machinery and equipment and technological development for mitigation and adaptation to climate change. The composition of the interest rates varies according to the form of support. It can include the financial cost, the BNDES remuneration, the financial intermediation rate, the rate of the financial agent, and the credit risk rate.

In 2020, the bank used around R\$ 120 million to finance climate projects, most of which were used for "sustainable production and disposal" (45%) and Energy efficiency and energy transition" (32%). The transport sector received 19% of those resources, while projects for "reduction of deforestation and reforestation", and "adaptation", received only 2% and 1%, respectively.

The **Environment Line** (BNDES Finem Meio Ambiente) seeks to finance investments in sustainability, which can be used for projects with the following purposes:

- → Reduced use of natural and material resources
- → Recovery and conservation of ecosystems and biodiversity
- → Environmental planning and management
- → Recovery of environmental liabilities
- → Energy efficiency
- → Sustainable products or processes
- → Acquisition of efficient vehicles, machines and equipment

As with financing linked to the Climate Fund, in Finem Meio Ambiente, BNDES finances projects both directly and indirectly, through intermediary financial institutions. In both cases, the financing is repayable and long-term. Finem Meio Ambiente exclusively finances climate projects, with companies based in the country, foundations, associations, cooperatives, and public entities and bodies being eligible. Finem Meio Ambiente does not require the impact assessment of projects to grant credit. Within the financing operations, guarantees are required which, in the case of the BNDES, are categorized as follows:

- → Indirect operations guarantees are negotiated between accredited financial institutions and the client;
- → Direct operations collateral is required, such as a mortgage, pledge, fiduciary property, receivables, others;
- → Financing of machinery and equipment fiduciary ownership will be held over the assets subject to financing, to be maintained until the final settlement of the contract. The substitution of the goods included in the guarantee is not allowed, except in the case of claims or performance problems in the guarantee period, which must be reported to the BNDES.

## 4. BARRIERS AND POLICY INSTRUMENTS

This section details the barriers identified in the literature review and sector analysis activities, as well as the policy instruments to help overcome the main barriers. Table 1 presents these findings. The barriers are classified in E/F (economic/financial) and R/I (regulatory/ institutional), and the main priorities identified by the authors are marked in **bold**.

#### E/F or Mitigation **Barriers Identified Policy Instrument Proposals** Actions R/I The annual and medium-term monitoring of additional subsidies guaranteed by Law No. 13,586 / 2017 is an § Opacity of tax expenditures. important step in building an agenda towards the reform of fossil subsidies. § Lack of transparency about the Dialogue with the BNDES to stimulate the realization methodologies used to measure subsidies by of sectorial studies of subsidies, methodological and the Brazilian Federal Revenue (RFB). practical, to estimate the referred subsidies. § The concept of tax expenditures is not capable Approval of the legislative proposal that puts an of separating the exemptions that they integrate end to the fiscal secrecy of the beneficiaries of Tax from those that do not integrate the basic Expenses in Brazil, which would allow identifying the Eliminate structure of the tax system. beneficiaries linked to the Oil & Gas sector. R/I Fossil Fuel Subsidies § All exemptions related to the Repetro, The necessary reform of fossil fuel subsidies Repex, Reidi and Reporto regimes, likewise, requires an assessment of which subsidies are most as well as the regional tax exemptions, lack impacting on the environment, also considering greater transparency in the details of sectors which ones are more costly, misguided and unfair and sub-sectors benefited and values. from the socio-environmental point of view, as well as those that are more feasible to be eliminated § The loss of funds from Cide-Combustíveis in the short and medium-term, either due to the and PIS/Cofins are not estimated in the RFB's more favourable political environment or due to statement of tax expenditure. the presence of economic-social-environmental § REPETRO and REPEX do not have estimates alternatives to the replacement of fossil fuels by published in RFB's Tax Expenses statements other sources of energy. § Deficiencies in the legal and judicial system In developing countries, overcoming these structural R/I barriers is even more relevant as these countries tend § Unstable macroeconomic environment Improve to have weaker legal, macroeconomic and political E/F Financial § Subsidized credit systems and less developed capital markets. This is Policies and R/I § Unstable political environment particularly relevant for Brazilian policymakers. Most of Regulations the barriers mentioned here are beyond the scope of § Conservative investment culture (Conservative E/F this project but are worth mentioning. pension funds behaviour) Carbon pricing should be adopted in Brazil to foster low carbon investments in the productive § Lack of economic instruments to stimulate sector and help the country to meet its NDC goals. Improve/ low carbon investments in the productive Carbon prices should start low and increase slowly; establish E/F and sector - Carbon Pricing be as horizontal as possible, protect exposed Climate R/I sectors; allow offsets; and use carbon revenues to Finance stimulate jobs creation and reduce poverty. Instruments Improve conditions that foster the development of § Incipient green bonds market a bond market

### Table 1: Policy instruments related to the barriers identified

Source: Authors

 $\rightarrow$  Conclusion

## 5. CONCLUSION

This report presented and discussed barriers and policy instruments related to the financial sector in Brazil. The methodology consisted of identifying main barriers and policy instruments to overcome them, based on the sector analysis through literature review and, in the next phase of the research, stakeholders' consultation.

An analysis of the Brazilian financial sector points out three main sets of barriers that jeopardize the healthy development of climate finance in the country. The first one is related to the high level of subsidies to fossil fuels in the country: almost BRL 100 billion, corresponding to approximately 1.4% of the country's GDP, only in 2019. Most of these subsidies are due to tax incentives and tax rebates. The second main barrier is the lack of financial and economic instruments to foster low carbon investments, such as green bonds and the implementation of a carbon pricing policy in Brazil. The barriers for that, according to the literature review and interviews with stakeholders, are: perception of higher risks, lack of supply and demand for green bonds, low financial attractiveness, unstable macro-environment, deficiencies in the legal and judicial systems, unstable political environment, conservative investment culture and crowding-out due to subsided credit.

Last but not the least, it is also important to adjust and propose new financial policies and regulations to facilitate investments in low carbon projects.

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**Climate Transparency** is a global partnership with a shared mission to stimulate a 'race to the top' in climate action in G20 countries through enhanced transparency. It convenes partners from Argentina (Fundación Ambiente y Recursos Naturales), Brazil (CentroClima/COPPE UFRJ), China (Energy Research Institute), France (The Institute for Sustainable Development and International Relations), Germany (Germanwatch, HUMBOLDTVIADRINA Governance Platform, NewClimate Institute), India (The Energy and Resources Institute), Indonesia (Institute for Essential Service Reform), Mexico (Initiativa Climática de México), South Africa (Energy Research Center/University of Cape Town) and the UK (Overseas Development Institute). Climate Transparency is funded by the ClimateWorks Foundation, Stiftung Mercator and the World Bank and supported by the European Climate Foundation.

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