

EXPLANATORY GUIDE TO FEBRABAN'S GREEN TAXONOMY

**CLASSIFICATION OF ACTIVITIES FINANCED BY THE
BANKING SECTOR BASED ON
SOCIAL, ENVIRONMENTAL AND CLIMATE ASPECTS**

JANUARY 2021

PREPARED FOR:

FEBRABAN

Brazilian Federation of Banks



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ACKNOWLEDGMENTS

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1. INTRODUCTION

1.1. HISTORY AT FEBRABAN

FEBRABAN's effort to measure the allocation of financial resources in the Green Economy began in 2014 with its adhesion to the Inquiry Into The Design of a Sustainable Financial System initiative, coordinated by the United Nations Environment Program (UNEP). The initiative, in turn, aims to promote the channeling of financial resources to encourage the transition to a Green Economy, defined as an economy that improves “human well-being and builds social equity while reducing environmental risks and scarcities”¹.

In this sense, FEBRABAN, in partnership with the Center for Sustainability Studies of the Getúlio Vargas Foundation (FGVces - Centro de Estudos em Sustentabilidade da Fundação Getúlio Vargas), developed a methodology that identified economic activities belonging to the sectors of the Green Economy and activities potentially causing significant social and environmental impacts. With this recognition of activities in both modalities, it was possible to start an annual process of measuring the allocation of resources in the banking sector in Brazil, considering the information provided by banks that voluntarily joined the initiative and had a large representation in the total credit made available in the country. The reports have been Available at the FEBRABAN² website since 2015, but with retroactive data from 2013.

In 2019, FEBRABAN entered into a partnership with the Economics Department at PUC Rio to enable the processing of data obtained directly from the Credit Information System (SCR - Sistema de Informação de Crédito), made available by the Central Bank of Brazil (BCB – Banco Central do Brasil). Thus, the analysis started to consider the credit operations of all banking institutions, covering the entire national territory.

¹ United Nations Environment Programme (UNEP). About Green Economy: “An inclusive green economy is one that improves human well-being and builds social equity while reducing environmental risks and scarcities.” Available at: <https://www.unep.org/explore-topics/green-economy/about-green-economy> Accessed on: 11/05/2020

² Available at: <https://portal.febraban.org.br/pagina/3085/43/pt-br/estudos-sustentabilidade-2019>. Accessed on: 01/12/2020



In 2020, FEBRABAN, with the participation of the banks of its Sectorial Committee on Social Responsibility and Sustainability (CRSS - Comissão Setorial de Responsabilidade Social e Sustentabilidade), the Climate and Green Economy Working Group and technical support from SITAWI, carried out a review of the methodology for classifying activities. The new taxonomy has three modalities: Green Economy, Climate Change Exposure and Environmental Risk Exposure.

This measurement is an important activity for the financial sector and society, as it contributes to strategies towards sustainable development and increasing the stability and resilience of the financial system in a context of transition. The results can be used to direct capital flows to activities with the greatest social and environmental contribution, formulate strategies to manage social and environmental risks associated with climate change and identify new business opportunities. Additionally, the measurement supports the banking sector's alignment with initiatives such as the Paris Agreement and the United Nations Sustainable Development Goals (SDGs).

1.2. DEVELOPMENT OF TAXONOMIES AROUND THE WORLD

According to the World Bank (2020), the objective of “green” taxonomies is “to help financial actors and others determine which investments can be labeled “green”³. Other goals identified by the Organization for Economic Cooperation and Development (OECD, 2020) are to develop incentives to direct capital towards investments in a sustainable economy and avoid a possible “greenwashing”⁴ when defining which activities are sustainable⁵.

³ World Bank (2020). “A green taxonomy aims to help financial actors and others determine which investments can be labeled “green” for their jurisdictions” (page 14). Available at: <http://documents1.worldbank.org/curated/en/953011593410423487/pdf/Developing-a-National-Green-Taxonomy-A-World-Bank-Guide.pdf> Accessed on: 11/30/2020

⁴ False claim that a particular investment brings environmental or social benefits

⁵ OECD (2020). “Developing Sustainable Finance Definitions and Taxonomies” (page 60). Available at: https://read.oecd-ilibrary.org/finance-and-investment/developing-sustainable-finance-definitions-and-taxonomies_134a2dbe-en#page59. Accessed on: 11/30/2020



The development of taxonomies in the world has been increasingly frequent and has been given by different actors and for different motivations:

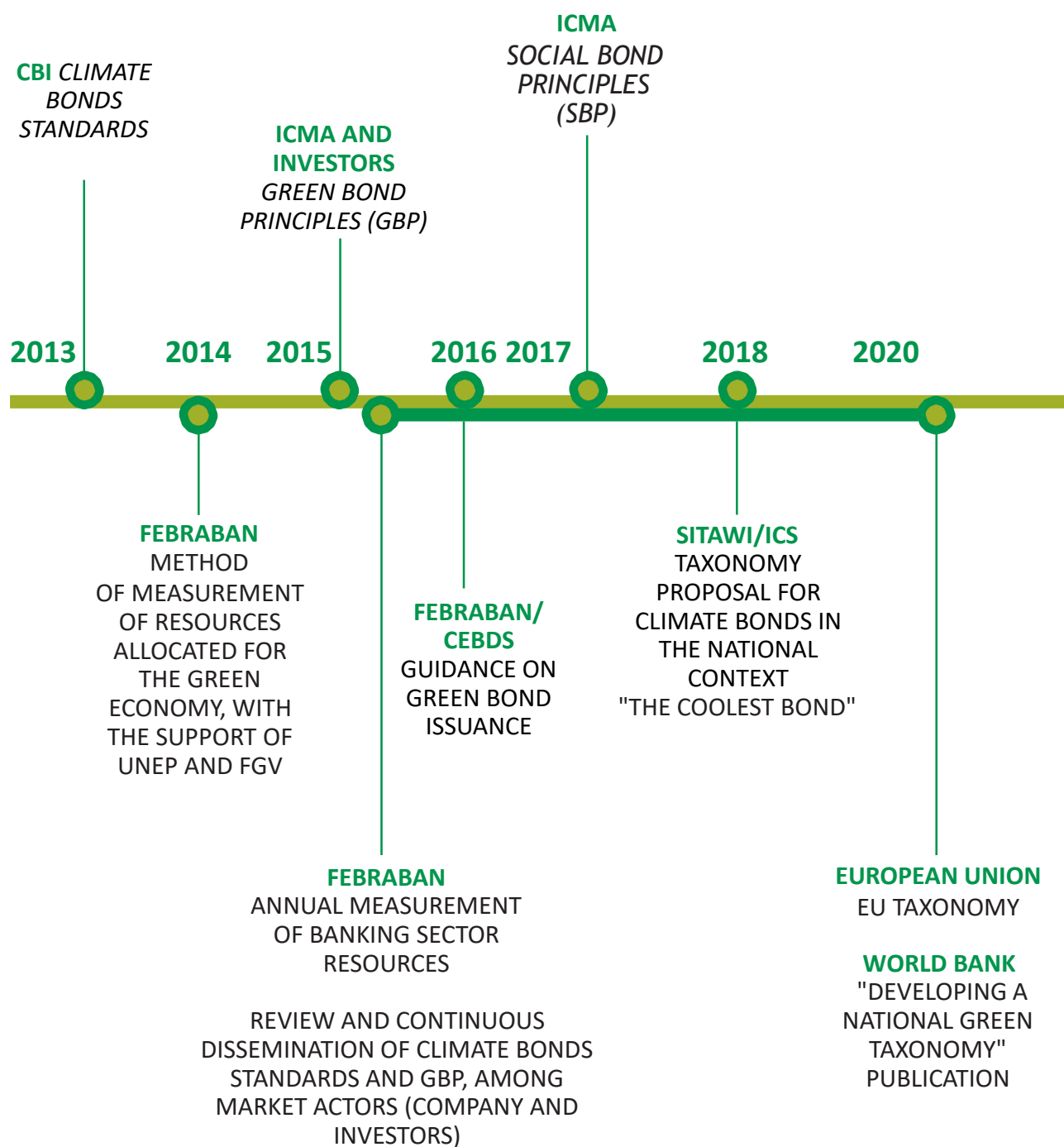
- I. **Voluntary, sectorial taxonomies:** They can be developed based on initiatives by sector associations, such as the Green Loan Principles (GLP) of the [Loan Market Association](#), and the Green Bond Principles (GBP) and Social Bonds Principles (SBP), of the [International Capital Market Association \(ICMA\)](#). Civil society organizations are also at the forefront of this movement, such as the taxonomies prepared by the [Climate Bonds Initiative \(CBI\)](#). In general, these taxonomies meet specific market demands and/or focus on a particular asset class or investment modality.
- I. **Mandatory, multi-sector taxonomies:** Taxonomies developed by government entities take into account the country's particular needs and objectives and, therefore, their use is directed to the sectors or actors of the jurisdiction where they are created. This is the case of the taxonomy of the European Union and countries like Bangladesh, China, Netherlands and Mongolia. The European Union taxonomy is based on the regional classification of economic activities, while the taxonomies of China and the Netherlands, for example, address different sustainable financial products such as loans or green investment funds (OECD, 2020). These cases primarily serve government regulatory objectives.

Next, Figure 1 presents some milestones in the development of “green” taxonomies in Brazil.



CLASSIFICATION OF ACTIVITIES FINANCED BY THE BANKING SECTOR
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FIGURE 1 - MILESTONES IN THE DEVELOPMENT OF TAXONOMY IN BRAZIL



SELF ELABORATION.



The purpose of a taxonomy depends primarily on its users, as summarized in Table 1 below, which was based on the World Bank publication (2020).

TABLE 1 – PURPOSE OF TAXONOMIES ACCORDING TO THE USER.

USER	POSSIBLE PURPOSES
Banks and other financial institutions	<ul style="list-style-type: none">• Support in the development of green products (such as financing and guarantees);• Increased allocation to green loans and financing;• Reduced transaction costs by quickly identifying and verifying assets eligible for green operations;• Reduction of reputational risk;• Understanding and supporting the disclosure of exposure to sustainable investments/financing.
Regulatory agencies	<ul style="list-style-type: none">• Regulatory interventions to encourage allocation of resources to eligible activities;• Improvement of climate or sustainability reports and disclosure guidelines for financial market agents;• Measurement of financial flows destined for sustainable development at asset, portfolio, institutional and national levels;• Prevention of reputational risk and greenwashing.



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USER	POSSIBLE PURPOSES
Investors	<ul style="list-style-type: none"> • Identification of opportunities that meet the sustainability criteria for higher impact investments; • Disclosure of exposure to certain investments; • Understanding the exposure of portfolios to green investments and developing investment policies aligned with the preferences of clients and beneficiaries; • Support involvement with investees regarding business models and transition plans.
Sustainable bond issuers and borrowers and other relevant actors such as certifiers and verifiers	<ul style="list-style-type: none"> • Identification of eligible activities that can be funded consistently with relevant bonds or thematic funding.
Policy makers	<ul style="list-style-type: none"> • Identification of green activities with less investment, to target actions that facilitate overcoming these gaps; • Development of a portfolio of green projects in line with national priorities for sustainable development; • Reference for formulating strategies for: <ul style="list-style-type: none"> (i) achieve sustainable development commitments, such as Contribution targets • Nationally Determined (NDC) and the SDGs and; (ii) improve associated systems for monitoring and measuring financial flows.

SOURCE: ADAPTED FROM WORLD BANK (2020). .



1.3. NEW FEBRABAN TAXONOMY

The main changes arising from the revision of the taxonomy, compared to the previous version, were:

- ✓ Systematization of a method for classifying economic activities, combining national and international references;
- ✓ Incorporation of international references that have been adopted by the international financial sector recently, such as the Task-force on Climate-related Financial Disclosures (TCFD), the European Union Taxonomy, the Climate Bonds Standards and the Social Bond Principles;
- ✓ Greater granularity in the modality of "Climate change exposure" compared to that published in 2019, with the CLASSIFICATION of activities at the level of subclasses of the National Classification of Economic Activities (CNAE);
- ✓ Creation of the modality "Environmental Risk Exposure", replacing "Activities potentially Causing Significant Environmental Impacts", thus eliminating the ambiguity that occurred in its understanding. This change in nomenclature facilitates the communication of the real objective of this modality: to provide information that supports adequate risk management by banks, compatible with exposure to certain sectors;
- ✓ Identification of 41 federal financing lines for sustainable agriculture and renewable energy, so that the classification for these balances does not depend only on the CNAE (through which it is not possible to segment renewable energy and fossil energy generation, for example), and allow the accounting of rural credit for individuals.



2. THE TAXONOMY

2.1. USE OF CNAE

The CNAE (*Classificação Nacional de Atividades Econômicas* [National Classification of Economic Activities]) is the instrument for national standardization of economic activity codes officially adopted by the National Statistical System in the production of statistics, and by the Public Administration, in the identification of economic activity in registries and legal entity records⁶. The establishment of norms and standards for these classifications and code tables is carried out under the coordination of the Internal Revenue Service, with technical guidance from IBGE (Brazilian Institute of Geography and Statistics), within the scope of the National Classification Commission (CONCLA - Comissão Nacional de Classificação).

Since all credit operations to Legal Entities in the country are associated with at least one CNAE, this is key information that can be used in a harmonious way throughout the banking system to assess financial flows. The amount granted by banks to each of these CNAEs can be accessed by regulatory bodies, and it is then possible to measure the volume of credit that is being directed to these assets and projects that fall under the same economic activity and, therefore, share social and environmental characteristics.

For this reason, CNAE has been used since 2015 by FEBRABAN as a basis for measuring financial flows. Since 2019, this measurement has been carried out in partnership with the Pontifical Catholic University of Rio de Janeiro (PUC-Rio - Pontifícia Universidade Católica do Rio de Janeiro), using data from the Credit Information System (SCR – Sistema de Informações de Crédito), made available by the Central Bank of Brazil (BCB – Banco Central do Brasil).

⁶ For more information, access: <https://receita.economia.gov.br/orientacao/tributaria/cadastros/cadastro-nacional-de-pessoas-juridicas-cnpj/classification-nacional-de-activities-economicas-2013-cnae/apresentacao>



2.2. REVIEW WORK METHODOLOGY

The review work went through the following steps:

1. Definition of taxonomy objectives

Considering the World Bank's recommendations for the development of a green national taxonomy, the objectives and uses of each taxonomy modality were defined. At this stage, there was the inclusion of the modality "Climate change exposure", taking advantage of the experiences accumulated from the work of FEBRABAN in the implementation of the TCFD recommendations in the Brazilian banking sector. See more details about this step in section 2.3.

2. Review of CNAEs and inclusion of funding lines/programs

The 1,331 subclasses of CNAEs were revised to assess their fit in the three taxonomy modalities, based on criteria defined based on references such as the European Union Taxonomy, the Climate Bond Standards and the Social Bond Principles. The lines and federal financing programs for the energy and agriculture sectors were mapped, thus seeking to reduce limitations in the classification of activities arising from the structure of CNAEs.

3. Validation in responsible bodies

The first three stages were followed by a series of meetings with the WG (Working Group) Climate and Green Economy and the Sectorial Committee on Social Responsibility and Sustainability (CRSS), in addition to specific consultations with other working groups related to FEBRABAN's Sustainability department. In addition, these collegiate bodies were consulted for validation and review of a pre-public consultation version.



4. Public consultation

FEBRABAN chose to carry out a public consultation of the new taxonomy. For this, it held an open webinar⁷ for the presentation of the new classification and made available at its website explanatory material and a form for sending suggestions from any individual or organization. In addition, FEBRABAN made direct contact with academic institutions, the financial sector, the government, civil society, multilateral organizations, the business sector and regulatory bodies, in order to disseminate and collect impressions and suggestions on the material to proceed with the new proposal.

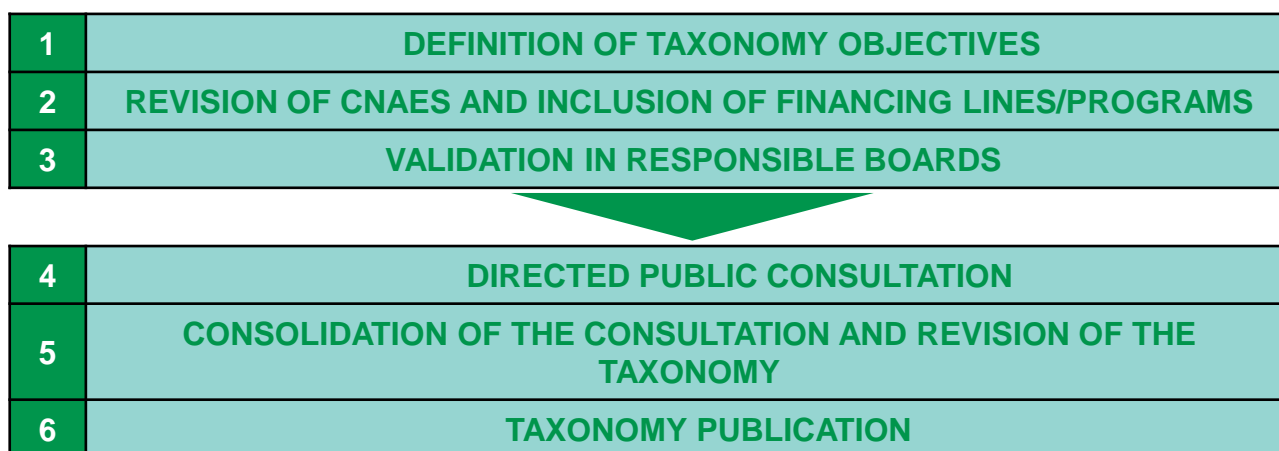
5. Consolidation of the consultation and revision of the taxonomy

More than 50 formal contributions were received from various institutions⁸, including banks, industry associations, companies in the industrial sector and multilateral organizations. A record of the suggestions was prepared, as well as the justifications for the respective incorporations or rejections in the final version of the FEBRABAN taxonomy.

6. Taxonomy Publication

FEBRABAN will make available at its website the taxonomy of economic activities from a socio-environmental and climate perspective.

FIGURE 2 - STAGES OF THE FEBRABAN TAXONOMY REVIEW



⁷ <https://www.youtube.com/watch?v=hguVkTM2V9Y>

⁸ Central Bank of Brazil (BCB), PUC Rio, ArcelorMittal Brasil, Banco Safra, Companhia Siderúrgica do Pecém, National Confederation of Industry (CNI), Gerdau SA, Brazil Steel Institute, Brazilian Tree Industry (Ibá), Siderúrgica Norte Brasil SA (SINOBRAS), Vallourec Soluções Tubulares do Brasil SA, UNEP-FI.



In addition to preparing this work, FEBRABAN also started conversations with CONCLA to assess possibilities for reviewing the economic activities included in the CNAE in some specific sectors, in order to facilitate the differentiation between resources intended for activities in the same sector, but which have distinct socio-environmental characteristics. For example, currently renewable and fossil energy generation are in the same CNAE subclass. In 2021, FEBRABAN will resume the preparation of a formal review proposal to the Commission in this regard.

2.3. THE CLASSIFICATION MODALITIES

The main objective of FEBRABAN's Green Taxonomy is to characterize credit from a socio-environmental and climate perspective, based on three modalities:

- ✓ In Green Economy, the focus is on the impact, that is, the potential positive impacts of these activities on society and the environment. Therefore, the results of this modality should be interpreted to assess the bank's potential contribution to the green economy and identify ways to maximize this exposure, such as through sustainable credit lines and products.
- ✓ In Climate Change Exposure, activities with greater exposure to physical and transitional risks related to climate change are grouped together⁹. This modality has a prudential focus for the banking sector: monitoring the exposure of its portfolios to climate risks. Banks can use the results of this measurement to manage risks in proportion to their exposure and also identify business opportunities to mitigate or adapt to these risks.
- ✓ In Environmental Risk Exposure the focus is also prudential. This modality aims to identify the portfolio's exposure to sectors whose nature of activity has greater environmental risk exposure. The results of this measurement allow banks to reflect on whether their management procedures are compatible with their exposure and for which sectors specific approaches can be created.

⁹ For more information, see the report produced by FEBRABAN in 2018 on the implementation of the TCFD recommendations in Brazil. Available at: <https://cmsportal.febraban.org.br/Arquivos/documentos/PDF/Acompanhamento%20Roadmap.pdf>



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FIGURE 3 - SUMMARY TABLE OF THE PURPOSE OF EACH CLASSIFICATION MODE

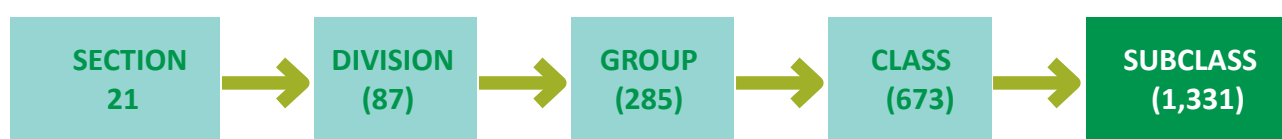
	WHAT IS THE PURPOSE	HOW THE RESULTS SHOULD BE INTERPRETED	THE MEASUREMENT EXERCISE WILL ENABLE THE BANKS TO EVALUATE
Green Economy	Focus on impact: Monitor potential impact positive for society/environment	"We must maximize this exposure"	<ul style="list-style-type: none"> • What % of the portfolio makes the greatest contribution to the green economy? • In which sectors should I expand my portfolio to maximize the contribution to the green economy? • What amount is potentially eligible to become backing sustainable fundraising, such as issuing sustainable bonds or accessing sustainable funds?
Climate Change Exposure	Prudential focus: Monitor exposure from portfolios to climate risk	"We must have risk management proportional to this exposure"	<ul style="list-style-type: none"> • What is the % of the portfolio with high climate change exposure? • What are the main sectors that increase the portfolio's climate change exposure? • Are the procedures for managing risk and capturing business opportunities compatible with the portfolio's exposure?
Environmental Risk Exposure	Prudential focus: Monitor exposure from portfolios to environmental risk	"We must have risk management proportional to the exposure"	<ul style="list-style-type: none"> • What is the % of the portfolio with High environmental risk exposure? • What are the main sectors that increase the portfolio's environmental risk exposure? • Are the procedures for managing risk and capturing business opportunities compatible with the portfolio's exposure?

SOURCE: SELF ELABORATION.



The activities were classified at the most granular level of the CNAE, subclass, comprising 1,331 activities¹⁰ (Figure 4).

FIGURE 4 - STRUCTURE OF THE NATIONAL CLASSIFICATION OF ECONOMIC ACTIVITIES (CNAE)



SOURCE: SELF ELABORATION.

2.3.1. GREEN ECONOMY

The classification of activities in this category uses the UNEP green economy concept. Although the term “green” is related to environmental issues in several cases, UNEP includes in the list of green activities those that generate social or environmental benefits.

The taxonomy of this modality makes use of the main international references for classifying sustainable activities. The CNAEs were evaluated against the Taxonomies of the [Climate Bonds Initiative \(CBI\)](#), the [Taxonomy of the European Union \(EU\)](#) and the [Social Bond Principles \(SBP\)](#)¹¹. It was identified whether each of the subclasses belonged or not to any of these references¹². Those that were present were classified in this modality, as explained below. The results obtained were revised according to the preliminary versions of the ISO 14.030 standard (Green Debt Instruments), which is still in the elaboration phase, and the Green Bond Principles (GBP), in order to identify any possible gaps.

¹⁰ Version CNAE-Subclasses 2.3 was used

¹¹ To check the Social Bonds Principles go to <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Social-Bond-PrinciplesJune-2020-090620.pdf>

¹² Taxonomies used as references present requirements/eligibility criteria to be verified at the operation/use of resources level. As the FEBRABAN taxonomy classifies only the level of economic activity, to meet the purpose of measuring the balances of banks' portfolios, these criteria/requirements were not considered.



Thus, the activities were classified into the following categories:

● HIGH CONTRIBUTION (ENVIRONMENTAL/SOCIAL)

Definition: activities with a high potential to contribute to the green economy, according to taxonomies and references that indicate their social and/or environmental benefit.

Method: (i) activities "automatically eligible" or with "eligibility criteria" were included in the CBI Taxonomy and with substantial contribution to the mitigation of climate change in the EU Taxonomy - classified as own performance ("Own performance") or enabling activities ("Enabling activity"); and (ii) activities that correspond to one of the six eligible project categories of the Social Bond Principles. This category does not overlap with an "Environmental Risk Exposure" rating.

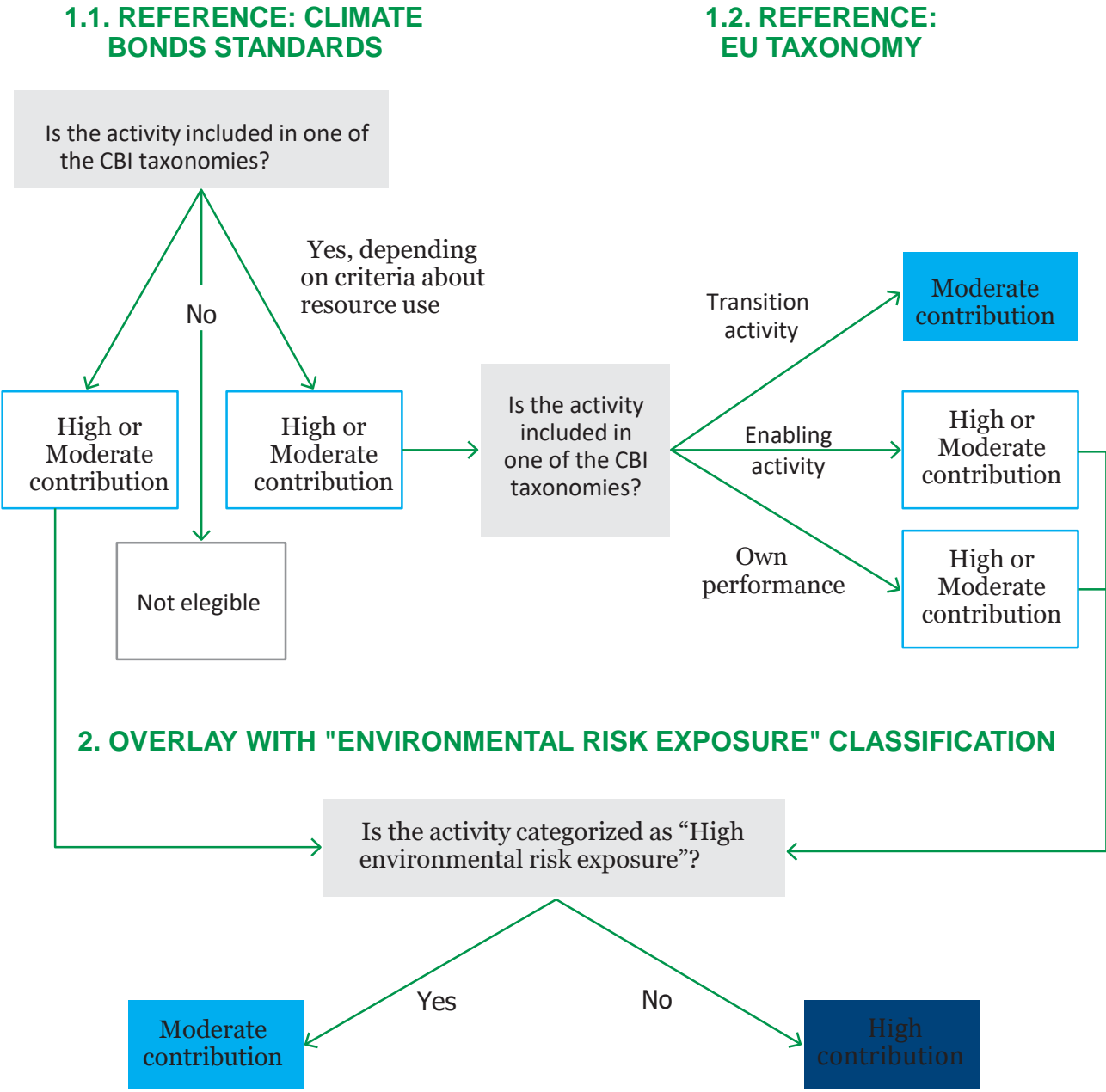
● MODERATE CONTRIBUTION (ENVIRONMENTAL/SOCIAL)

Definition: activities with moderate potential to contribute to a green economy as they are in transition to a low-carbon economy; or activities with a high contribution to the green economy, but with environmental risk relevant exposure.

Method: activities with eligibility criteria in the CBI Taxonomy and that are in transition in the EU Taxonomy or activities that meet the previous criteria for "High Environmental Contribution", but have an overlap with an "Exposure to Environmental Risk" classification.



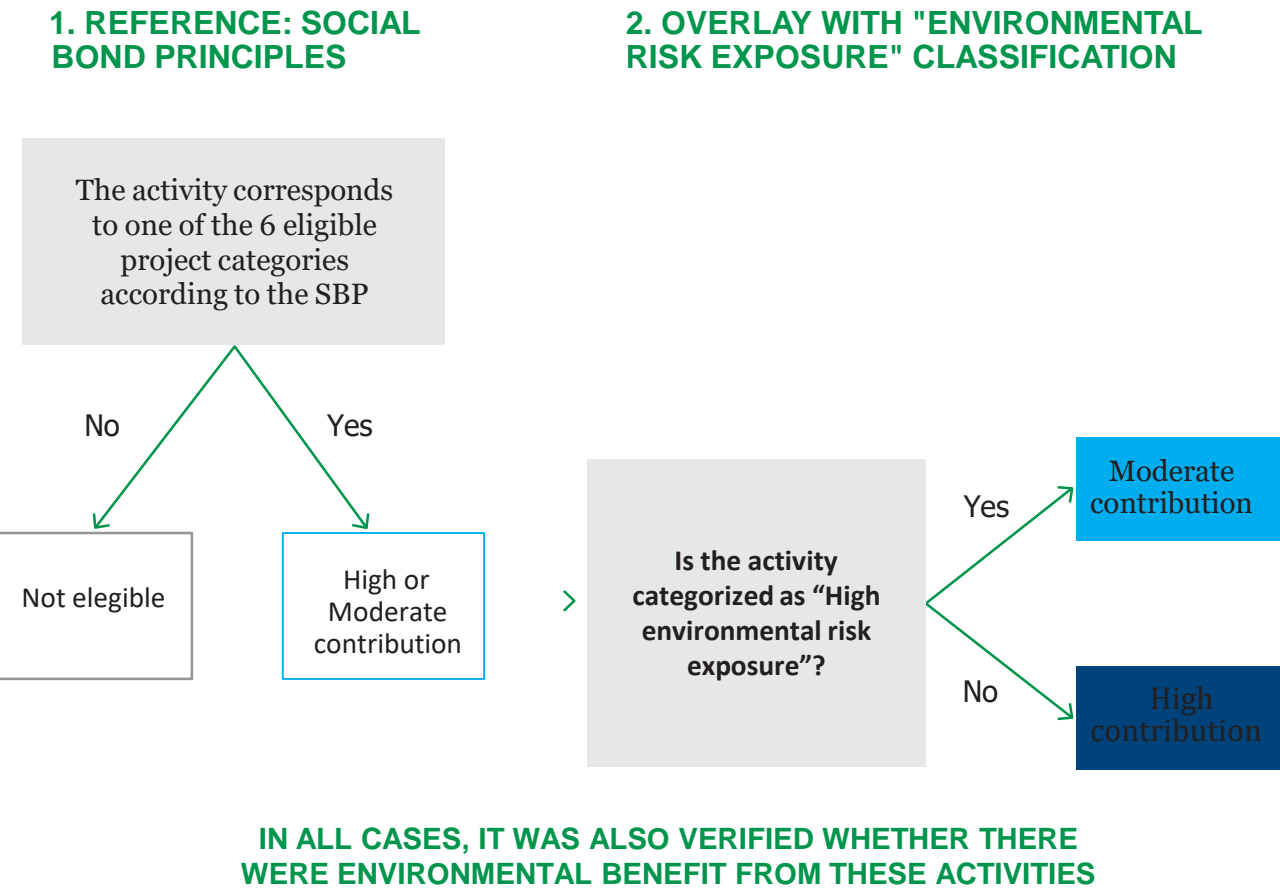
FIGURE 5 - SUMMARY SCHEME OF THE COMBINATION BETWEEN THE REFERENCES USED IN RELATION TO ENVIRONMENTAL BENEFIT



SOURCE: SELF ELABORATION.



FIGURE 6 - SUMMARY SCHEME OF THE REFERENCE USED IN RELATION TO SOCIAL BENEFIT



SOURCE: SELF ELABORATION.

In some cases, the classification was adapted to the Brazilian context for some activities, in an exception format. In this sense, activities that are not considered as belonging to the green economy in international references, but which in fact contribute to the green economy in Brazil were included in this category. This is the case of rail transport, which in other taxonomies is an activity of transition to the green economy, but in the Brazilian context, the migration from road transport to the rail modal brings relevant environmental and social contributions and that is why it is classified as " High social/environmental contribution", in cases where there is no overlap with the modality "Environmental Risk Exposure".



EUROPEAN UNION TAXONOMY¹³

In the first half of 2020, the EU Technical Expert Group on Sustainable Finance (TEG) launched the European Union Taxonomy. Among the taxonomy's objectives are to help investors identify whether a given activity is environmentally sustainable and consistent with political commitments such as the Paris Agreement.

It is one of the most comprehensive taxonomy initiatives in the world, with a catalog of 76 activities, including forestry, industrial and energy sectors. The screening criteria developed contemplate activities that contribute to the mitigation or adaptation of climate change, while not causing significant damage to other environmental objectives, in particular, use and protection of water, circular economy, control and prevention of pollution and protection and restoration of biodiversity and ecosystem.

The activities were classified according to their substantial contribution to climate change mitigation in:

- ✓ **Own performance** – economic activities that make a substantial contribution based on their own performance. For example, a reforestation or solar energy generation activity;
- ✓ **Enabling activities** – economic activities that, through their products or services, make a substantial contribution to other low-carbon activities possible. For example, a manufacturing of low-carbon technologies such as wind blades;
- ✓ **Transitional activities** – activities currently with relevant GHG emissions but important for the migration of the economy from high to low carbon, and which are capable of carrying out this transition based on the adoption of more sustainable practices. For example, in the agricultural or transport sector.

¹³ Information on European Union Taxonomy available at: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance/eu-taxonomy-sustainable-activities_en



Taxonomy will become mandatory for reporting by large non-financial companies and asset managers. Currently, the European Union is discussing operational issues on how to identify whether a given project, asset or investment is or is not aligned with the created categories.

CLIMATE BONDS INITIATIVE (CBI)¹⁴

CBI is a non-profit organization responsible for setting standards for the certification of debt securities that finance projects or assets aligned with a low-carbon economy.

Since 2013, the CBI has been developing climate bond taxonomies in different industries that serve as a guide to potential green and climate bond issuers and investors. These taxonomies are developed with the participation of companies, financial institutions, civil society organizations and experts. Currently, there are 27 ready-made taxonomies and another six to be finalized for activities in various sectors, including energy, transport, construction and industrial. Figure 7 below summarizes the current evolution in the development of these taxonomies.

The CBI taxonomies classify the use of resources for financed assets and projects into:

- ✓ **Automatically eligible** – The asset/project supports a low carbon economy and does not need to meet any requirements;
- ✓ **Eligible criteria required** – The asset/project is compatible with a low carbon economy if it meets certain requirements;
- ✓ **Not eligible** – The asset/project is not compatible with a low carbon economy.

¹⁴ More information on the CBI Taxonomies and its methodology can be found at: https://www.climatebonds.net/files/files/CBI_Taxonomy_Tables_January_20.pdf. Accessed on: 11/30/2020



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FIGURE 7 - SUMMARY TABLE OF CRITERIA FOR CBI CERTIFICATION

ENERGY	TRANSPORT	WATER	CONSTRUCTION	LAND USE AND MARINE RESOURCES	INDUSTRY	WASTE	TIC			
Solar <div></div>	Private transportation <div></div>	Water monitoring <div></div>	Residential <div></div>	Agriculture <div></div>	Cement production <div></div>	Screening <div></div>	Broadband networks			
Wind <div></div>	Public passenger transport <div></div>	Water storage <div></div>	Commercial <div></div>	Commercial forestry <div></div>	Production of steel, iron and aluminum <div></div>	Reuse <div></div>	Telecommunication software and services			
Geothermal <div></div>	Rail <div></div>	Water treatment <div></div>	Products and systems for efficiency	Conservation and restoration of ecosystem <div></div>	Glass production <div></div>	Recycling <div></div>	Data hub			
Bioenergy <div></div>	Aviation	Water distribution <div></div>	Urban development	Agriculture and fishing	Production of chemicals <div></div>	Biological treatment <div></div>	Energy management			
Hydropower <div></div>	Water transportation <div></div>	Flood protection <div></div>		Supply chain management	Fuel production <div></div>	Power generation by waste <div></div>				
Marine renewable energy <div></div>		Management and sustainable use of nature <div></div>				Landfill <div></div>				
Transmission and distribution <div></div>						Radioactive Waste Management				
Storage										
Nuclear										

● Approved certification criteria

● Criteria under development

● Criteria will be started

SOURCE: CLIMATE BONDS INITIATIVE (2020).



2.3.2. CLIMATE CHANGE EXPOSURE

This classification followed the correspondence of the sectors most likely to suffer financial impacts related to climate change, as defined by the Task-Force on Climate-related Financial Disclosures (TCFD), with the CNAE structure.

The activities were classified into two categories:

● High exposure

Core activities of the sectors presented by TCFD;

● Moderate exposure

Economic activities with financial exposure to highly exposed sectors, but which are not central to these sectors; activities directly related to activities with High exposure; and other activities in addition to those mentioned by TCFD that have a relevant relationship with greenhouse gas (GHG) emissions, energy and water use.

TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES (TCFD)¹⁵

The Task Force was created by the Financial Stability Board to improve and increase the disclosure of climate-related financial information. In 2017, TCFD identified 18 sectors most likely to suffer financial impacts related to climate change, based on energy and water use, GHG emissions. Table 2 below provides information on these sectors and the reasons why they were considered more sensitive to climate change.

¹⁵ Additional guidance for non-financial sectors is available starting on page 46 at: <https://assets.bbhub.io/company/sites/60/2020/10/FINAL-TCFD-Annex-Amended-121517.pdf>

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**TABLE 2 - SECTORS PRESENTED BY TCFD AS OF GREATEST
CLIMATE CHANGE EXPOSURE**

GROUP	SECTORS	CONCEPT
Energy	<ul style="list-style-type: none"> • Oil and Gas • Coal • Energy 	The sector has significant financial exposure to transition related to GHG emissions and, in many cases, is dependent on water availability. As a result, transition and physical risks can impact the industry's operating costs and asset valuation.
Transport	<ul style="list-style-type: none"> • Air Transport • Passenger Air Transport • Maritime Transport • Rail Transport • Services of • Transport by Truck • Cars and Auto Parts 	The industry is under increasing political and regulatory pressure to meet usage-phase emission targets. Fuel efficiency and increased emission restrictions will continue to impact costs in this group, mainly through investments in innovation.
Materials and Buildings	<ul style="list-style-type: none"> • Metals and Mining • Chemicals • Construction Materials • Capital Goods • Administration and Real Estate Development 	Many of the activities of this group result in financial exposures to high GHG emissions and high energy consumption. As well, several of the group's industries depend on water availability and/or are vulnerable to the effects of acute or chronic physical risks of weather events.
Agriculture, Food and Forestry Products	<ul style="list-style-type: none"> • Drinks • Agriculture • Processed Foods and Meats • Paper and Forest Products 	The risks related to climate change in this group emanate in large part from GHG emissions, sometimes diffuse, being caused by changes in land use patterns. In addition, the sectors are dependent on water availability and are more sensitive to extreme weather events.

SOURCE: ADAPTED FROM TCFD (2017).



2.3.3. ENVIRONMENTAL RISK EXPOSURE

The purpose of this classification is to monitor the exposure of portfolios to environmental risk, with a prudential focus. That is, the presence of sectors classified as “Social and environmental risk exposure” in a bank's portfolio should not be interpreted as a negative result and does not necessarily represent a negative impact on society. This result should be seen as a factor to be considered when establishing a risk management system proportional to this exposure. For example, infrastructure activities are classified in this modality due to the nature of the activities. Despite the exposure to risk, these activities are important for the national economy.

As in the methodology created in 2014, the classification of activities in this category is based on Resolution 237/1997 of CONAMA (*Conselho Nacional de Meio Ambiente* [National Council for the Environment]). The resolution defines types of activities or undertakings subject to environmental licensing due to their potential to cause significant environmental impact.

To improve the modality, a revision was made to the correspondence between the activities listed in the CONAMA resolution and the CNAE subclasses. The activities were classified into only one category:

● High exposure

Activities and undertakings listed in CONAMA resolution 237/1997 as activities subject to environmental licensing as they have greater potential environmental impact.



RESOLUTION 237/1997 OF THE NATIONAL ENVIRONMENT COUNCIL (CONAMA)¹⁶

The CONAMA resolution establishes, among other things, in Article 2 that:

The location, construction, installation, expansion, modification and operation of projects and activities that use environmental resources considered to be effectively or potentially polluting, as well as projects capable, in any form, of causing environmental degradation, will depend on prior licensing by the competent environmental agency, without prejudice to other legally required licenses (CONAMA, resolution 237/1997, Article 2).

The activities or ventures that are subject to environmental licensing are included in the following categories:

- Extraction and treatment of minerals
- Industry of non-metallic mineral products
- Metallurgical industry
- Mechanical industry
- Electrical, electronics and communications industry
- Transport material industry
- Wood industry
- Paper and cellulose industry
- Rubber industry
- Leather and fur industry
- Chemical industry
- Plastic products industry
- Textile, clothing, footwear and fabric artifacts industry
- Food and beverage industry
- Tobacco industry
- Diverse industries
- Construction
- Utility services
- Transport, terminals and warehouses
- Tourism
- Agricultural activities
- Use of natural resources

¹⁶ Brazilian National Council for the Environment. Resolution 237/1997. Available at: <http://www2.mma.gov.br/port/conama/res/res97/res23797.html>



3. CLASSIFICATION OF FEDERAL FINANCING LINES AND PROGRAMS

Despite being a harmonious option that allows its application throughout the banking system, the use of the CNAE presents some limitations for the classification of credit operations according to the nature of economic activities.

One of them is the fact that it is applicable to Legal Entities (PJ), thus not allowing the measurement of the credit balance for Individuals. This is not such a relevant limitation for most economic activities. However, in some sectors, such as agriculture, there is a large volume directed to individuals.

Furthermore, there are difficulties in segregating certain activities, even at the most granular level – the subclasses. For example, there is a single CNAE subclass for power generation, and it is not possible to differentiate between renewable and non-renewable energy sources. Nor are there CNAEs that differentiate sustainable agricultural activities. Therefore, it is important to apply an additional lens to obtain a better classification of the Agro and Energy portfolios.

Seeking to minimize these limitations, the taxonomy includes, in a complementary way, federal financing lines and programs for sustainable agriculture and renewable energy, including rural credit, constitutional funds and the BNDES (*Banco Nacional de Desenvolvimento Econômico e Social* [National Bank for Economic and Social Development]). In these cases, as these lines and programs rely on pre-defined socio-environmental criteria to delimit the financeable items, it is possible to identify whether the resources made available are classified as “Green Economy”. It is also possible to measure the amount of financial resources allocated to individuals (PF) in rural credit.



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For the agricultural sector, a total of 34 federal lines and subprograms aligned with the Green Economy were listed as “High contribution”. As for the energy sector, there were 10 lines and subprograms of federal programs classified in the Green Economy as "High contribution".

TABLE 3 - LIST OF LINES AND SUBPROGRAMS OF FEDERAL PROGRAMS FOR THE ENERGY SECTOR

PROGRAM	SUBPROGRAM/LINES
BNDES Finame	Renewable energy
BNDES – Others	Climate Fund
BNDES Finem	Power generation
	Environment - energy efficiency
PRONAF - Brazilian National Programme to Strengthen Family Farming	Eco (renewable energy and environmental sustainability)*
INOVAGRO - Incentive Program for Technological Innovation in Agricultural Production	No subprogram
FCO - Constitutional Midwest Financing Fund	Micro and mini generation financing
	Electricity for individuals
FNO - Constitutional North Financing Fund	Solar energy
FNE - Constitutional Northeast Financing Fund	Sun
	Green

(*) finances activities related to sustainable agriculture and renewable energy generation

SOURCE: SELF ELABORATION.



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**TABLE 4 - LIST OF LINES AND SUBPROGRAMS OF
FEDERAL PROGRAMS FOR THE AGRICULTURAL SECTOR**

PROGRAM	SUBPROGRAM/LINES
PRONAF - Brazilian National Programme to Strengthen Family Farming	<ul style="list-style-type: none"> • Forest • Agroecology • Cost • Productive oriented • Eco-palm and rubber tree • Bioeconomy • More food • Microcredit • Agribusiness (investment) • Agribusiness • Land reform • Woman • Agrarian reform (microcredit) • Shares • Semiarid • Eco (Renewable Energy and Environmental Sustainability)* • Young
ABC - Emission reduction program of greenhouse gases in agriculture	<ul style="list-style-type: none"> • Pasture recovery • Direct planting • Crop-livestock-forest integration and agroforestry systems • Adequacy and/or environmental regularization • Waste treatment • Organic systems • Biological nitrogen fixation • Forests • Palm Oil • Permanent crops
Moderate	<ul style="list-style-type: none"> • Soil recovery
BNDES Finem	<ul style="list-style-type: none"> • Environment - Recovery of environmental liabilities
FCO - Constitutional Midwest Financing Fund	<ul style="list-style-type: none"> • Rural - ABC - Nature conservation • Rural - Crop-livestock-forest integration
FNE - Constitutional Northeast Financing Fund	<ul style="list-style-type: none"> • FNE Verde
FNO - Constitutional North Financing Fund	<ul style="list-style-type: none"> • ABC/Biodiversity
INOVAGRO - Incentive Program for Technological Innovation in Agricultural Production	<ul style="list-style-type: none"> • No subprogram

(*) finances activities related to sustainable agriculture and renewable energy generation

SOURCE: SELF ELABORATION.



Banks that transfer other lines and programs with well-defined socio-environmental characteristics (e.g.: Minha Casa Minha Vida, FIES) and in line with the characteristics of the green economy used in this taxonomy are also encouraged to measure the balance allocated to these products.

In addition, banks with their own credit products for socio-environmental purposes are also encouraged to assess whether the characteristics of these lines are compatible with the “Green Economy” modality. In this case, they can complement the measurement of resources by identifying the balance of these lines.



4. LIMITATIONS

The use of existing national classification systems of economic activities, generally created for fiscal and tax purposes, is common in other sustainable taxonomies initiatives. Also, as already mentioned, it is information common to different economic activities and allows its application in the entire credit portfolio for companies in the banking sector.

However, in addition to the limitation mentioned in the previous chapter, partially overcome with the identification of lines and programs clearly aligned with the green economy, it is necessary to consider other challenges arising from the use of CNAE.

There are economic activities with a clear alignment with the green economy that do not have their own CNAE. The same happens in the EU Taxonomy, for example, where “manufacture of low carbon technologies” does not have a specific NACE¹⁷ code. It includes the following activities:

- ✓ Manufacture of products, components and machinery essential for renewable energy technologies;
- ✓ Manufacture of low carbon transport vehicles, fleets and vessels;
- ✓ Manufacture of energy efficiency equipment for buildings;
- ✓ Manufacturing other low carbon technologies that result in substantial reductions in GHG emissions in other sectors of the economy.

¹⁷ Statistical classification of economic activities in the European Community



There are a number of other activities that are not yet present in the current structure of CNAE. In order to fit them properly, it would be necessary, in some cases, to segregate existing CNAEs, such as a subclass for the manufacture of trucks and another for the manufacture of buses, based on the currently existing activity of manufacturing automobiles. In other cases, it would be pertinent to create specific CNAEs, such as: manufacture of electric vehicles, powered by hydrogen and biofuels; construction of public bicycle structures and viable structures for articulated buses and energy efficiency services.

Another limitation is the fact that exposure to environmental and climate risks from credit operations may also depend on contextual aspects, such as efficient practices in the use of resources and the location of projects and assets. Therefore, it is recommended that, at the level of the Environmental and Social Management System (ESMS) of each bank, additional filters be applied, especially for those sectors already classified in these modalities due to their economic nature. In this way, it is possible to more accurately identify these risks. However, this can be a great challenge, since there are credit operations without known use of resources and, even in project financing, there are cases where this information is not available.

Furthermore, this taxonomy does not incorporate a specific look at social risks. This decision was taken especially because these risks are associated with contextual aspects, not necessarily related to the nature of economic activities. This does not mean that these risks should not be analyzed in ESMS of banking institutions.

These aspects will be considered in future work by FEBRABAN in relation to this taxonomy and are already incorporated in other projects related to the management of environmental and climate risks (such as the Climate Risk Sensitivity Tool created in 2018, whose use takes into account contextual aspects of credit operations, to meet the objectives of this tool).



5. FINAL RESULT OF THE TAXONOMY REVIEW

The new Taxonomy revised the 1,331 CNAE subclasses, culminating in a result that allows banks to simply measure the exposure of their portfolios according to social and environmental criteria. This can be done for prudential purposes or to assess the potential positive impact, supporting the definition and monitoring of strategies.

Compared to the methodology in effect until 2019, there was the following change regarding the number of subclasses classified in each modality:

**FIGURE 8 - SUMMARY TABLE PRESENTING THE FINAL RESULTS
OF THE CNAES REVIEW FOR EACH MODALITY**

CLIMATE CHANGE EXPOSURE

	Previous version	Updated version
High exposure	490	459
Moderate exposure	248	230

GREEN ECONOMY

	Previous version	Updated version
High contribution	221	168
Moderate contribution	–	112

ENVIRONMENTAL RISK EXPOSURE

	Previous version*	Updated version
High exposure	660	552

SOURCE: SELF ELABORATION.



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Through an Excel spreadsheet, users of the new Taxonomy will be able to access the results of the new classification of activities at the CNAE subclass level, in addition to viewing which divisions of CNAE the activities belong to. Annex 1 presents the CNAE divisions that are present in each modality.

Figure 9 shows some examples of results from the new Taxonomy.

FIGURE 9 - EXAMPLE OF FEBRABAN TAXONOMY RESULTS

	CLIMATE CHANGE EXPOSURE	GREEN ECONOMY	ENVIRONMENTAL RISK EXPOSURE
Production of steel semi-finished products	High exposure		High exposure
Cement manufacturing	High exposure		High exposure
Logging in native forests	High exposure		High exposure
Logging in planted forests	High exposure	High contribution	
Wheat cultivation	High exposure	Moderate contribution	High exposure
Collective road transport of passengers	High exposure	Moderate contribution	
Freight rail transport	High exposure	Moderate contribution	High exposure
Passenger rail transport	High exposure	High contribution	
Sewage network management	Moderate exposure	Moderate contribution	High exposure



FEBRABAN's new taxonomy included a series of improvements, with the following main advantages:

- ✓ Greater clarity in understanding the purpose and use of each modality;
- ✓ Although the term “green” is related to environmental issues in several cases, UNEP includes in the list of green activities those that generate social or environmental benefits.
- ✓ Identification of the type of contribution (environmental and/or social) of activities classified as “Green Economy”;
- ✓ Inclusion of federal financing lines and programs for the agriculture and energy sectors, reducing the limitation resulting from the CNAE structure;
- ✓ Inclusion of the Individuals segment for rural credit operations, in the universe of operations whose balance can be measured using this taxonomy.

The improvement of the methodology will support FEBRABAN in its strategies towards sustainable development and increasing the stability and resilience of the financial system in relation to social and environmental issues, including climate, as well as helping to align the banking sector with international initiatives, such as the Agreement on Paris and the SDGs.



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7. ANNEX 1

Table 5 indicates the CNAE Divisions that contain activities, at the subclass level, categorized in the modalities “Climate change exposure”, “Environmental risk exposure” and “Green economy”.

TABLE 5 - CONSOLIDATION OF CATEGORIZATION BY CNAE DIVISION

CNAE DIVISION	DESCRIPTION	GREEN ECONOMY	CLIMATE CHANGE EXPOSURE	GREEN ECONOMY	ENVIRONM ENTAL RISK EXPOSURE
1	Agriculture, Livestock and Related Services				
2	Forest Production				
3	Fishing and Aquaculture				
5	Mineral Coal Extraction				
6	Oil and Natural Gas Extraction				
7	Extraction of Metallic Minerals				
8	Extraction of Non-Metallic Minerals				
9	Mineral Extraction Support Activities				
10	Manufacturing of Food Products				
11	Beverage Manufacturing				
12	Manufacturing of Tobacco Products				
13	Textile Product Manufacturing				
14	Clothing and Accessories Manufacture				
15	Leather Preparation and Manufacture of Leather Goods, Travel Items and Footwear				



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CNAE DIVISION	DESCRIPTION	GREEN ECONOMY	CLIMATE CHANGE EXPOSURE	GREEN ECONOMY	ENVIRONM ENTAL RISK EXPOSURE
16	Wood Product Manufacturing				
17	Manufacture of Pulp, Paper and Paper Products				
18	Printing and Playback of Recordings				
19	Manufacture of Coke, Petroleum Products and Biofuels				
20	Manufacturing of Chemicals				
21	Manufacturing of Pharmachemical and Pharmaceutical Products				
22	Manufacturing of Rubber and Plastic Material Products				
23	Manufacturing of Non-Metallic Mineral Products				
24	Metallurgy				
25	Manufacture of Metal Products, Except Machinery and Equipment				
26	Manufacturing of Computer Equipment, Electronic and Optical Products				
27	Manufacturing of Electrical Machines, Appliances and Materials				
28	Machinery and Equipment Manufacturing				
29	Manufacturing of Motor Vehicles, Trailers and Bodyworks				
30	Manufacturing of Other Transport Equipment, Except Motor Vehicles				



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CNAE DIVISION	DESCRIPTION	GREEN ECONOMY	CLIMATE CHANGE EXPOSURE	GREEN ECONOMY	ENVIRONM ENTAL RISK EXPOSURE
31	Furniture Manufacturing				
32	Manufacture of Miscellaneous Products				
33	Maintenance, Repair and Installation of Machines and Equipment				
35	Electricity, Gas and Other Utilities				
36	Water Collection, Treatment and Distribution				
37	Sewage and Related Activities				
38	Waste Collection, Treatment and Disposal; Materials Recovery				
39	Decontamination and Other Waste Management Services				
41	Building Construction				
42	Infrastructure Works				
43	Specialized Services for Construction				
46	Wholesale Trade, Except Motor Vehicles and Motorcycles				
47	Retail Business				
49	Ground Transportation				
50	Water transportation				
51	Air Transport				
52	Storage and Auxiliary Transport Activities				
53	Mail and Other Delivery Activities				
55	Accommodation				



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CNAE DIVISION	DESCRIPTION	GREEN ECONOMY	CLIMATE CHANGE EXPOSURE	GREEN ECONOMY	ENVIRONM ENTAL RISK EXPOSURE
58	Editing and Editing Integrated with Print				
64	Financial Services Activities				
65	Insurance, Reinsurance, Supplementary Pension and Health Plans				
68	Real Estate Activities				
72	Scientific Research and Development				
77	Non-Real Estate Rents and Management of Non-Financial Intangible Assets				
81	Services for Buildings and Landscape Activities				
84	Public Administration, Defense and Social Security				
85	Education				
86	Human Health Care Activities				
87	Human Health Care Activities Integrated with Social Assistance, Provided in Collective and Private Residences				
88	Social Assistance Services Without Accommodation				
90	Artistic, Creative and Entertainment Activities				
91	Activities Related to Cultural and Environmental Heritage				
93	Sports and Recreation and Leisure Activities				
94	Membership Organization Activities				
TOTAL DIVISIONS			50	35	46

