

Sustainability and Climate Change

Resources intermediated by
the Banking Sector in Brazil

Data from 2019 and 2020.



Final Report - March 2021

Technical Support



Prepared for

FEBRABAN
Federação Brasileira de Bancos



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Presentation

This report consists of an initial effort to, from a pilot with information from the Credit Information System (SCR – *Sistema de Informações de Crédito*) made available by the Central Bank of Brazil (BC – *Banco Central*) and from the taxonomy developed by FEBRABAN, with technical support from SITAWI (2020), assess the system's potential for characterizing credit flows for the Green Economy, Environmental Risk Exposure and High and Moderate Climate Risk Exposure sectors¹, as well as limitations and needs for greater detail.

It is important to point out that, as the SCR data does not allow the identification of the credit activity sector referring to individuals, all analysis on credit operations and total loan portfolio refer only to credit contracted by legal entities. It should be noted, in this regard, that, especially in the case of credit aimed at sectors of the Green Economy, the total loan portfolio is underestimated because it does not consider, for example, credit contracted by individuals in activity sectors classified as sustainable agriculture. To overcome this problem, an analysis of the loan portfolio in the Rural and Agroindustrial modality for individuals is proposed here, using information from the Rural Credit Matrix, in addition to the SCR data.

All results presented here refer to the loan portfolio (legal entity [*PJ – Pessoa Jurídica*]) of financial institutions on two base dates, December 2019 and December 2020, according to the database made available by the BC to FEBRABAN (Brazilian Bank Federation).

¹ *Green Taxonomy FEBRABAN (2020) and Explanatory Guide to the Green Taxonomy of FEBRABAN (2021)*.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Characterization of the sectors of the Green Economy, Environmental Risk Exposure and Climate Change Exposure from SCR information

1. Database and Methodology

The Credit Information System is a database of information sent to the Central Bank of Brazil, referring to operations and securities with credit characteristics and respective guarantees contracted by a customer with financial institutions. The purpose of the SCR is to provide information to the Central Bank of Brazil, for the purposes of monitoring credit in the financial system and for carrying out its inspection activities. In addition, the SCR enables the exchange of information between financial institutions, allowing a more accurate and secure assessment of the client regarding the payment capacity of contracted credit operations.

From the SCR dataset provided by the Central Bank of Brazil and the taxonomy developed by FEBRABAN, it is possible to carry out a classification, based on the 7-digit CNAE codes, into three groups, identifying the sectors of Green Economy, Environmental Risk Exposure and High and Moderate Climate Change Exposure. It should be noted that the data provided refer to the balances of outstanding credit operations with a base date in December 2019 and December 2020 and that the CNAE codes provided by the Central Bank are disaggregated to 7 digits.

2. Outcomes

Just to get an initial sketch or idea of what it is possible to obtain from the SCR data, some descriptive statistics of the available information are presented below. Table 1 shows the volume of credit distributed between individuals (PF) and legal entities (PJ). Throughout the report, the values for December 2019 were deflated by the National Price Index to Broad Consumers (IPCA – *Índice Nacional de Preços ao Consumidor Amplo*), and refer to December 2020 prices.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Table 1 – Distribution of Credit Operations by Type of Customer

Customer Type	Total Loan Portfolio (BRL thousands)			
	2019		2020	
	Value	Percentage	Value	Percentage
Individual	2,069,341,572	58.80%	2,236,980,346	56.39%
Legal Person	1,449,959,785	41.20%	1,729,651,547	43.61%
Total	3,519,301,357	100.00%	3,966,631,893	100.00%

Source: SCR/Central Bank, Dec/2019-Dec/2020

They are presented below, for each of the classifications defined by FEBRABAN (i. Green Economy, ii. Environmental Risk Exposure and iii. High Climate Change Exposure and iv. Moderate Climate Change Exposure), the amounts calculated from Central Bank data. It is noteworthy that it is possible to have some overlap in the classifications due to methodological limitations and the structure of the CNAE. To minimize the effects of such overlaps, FEBRABAN, in partnership with SITAWI, proposed the subdivision of sectors classified as Green Economy into 6 subcategories: Moderate Social + Environmental Contribution; Moderate Social Contribution; Moderate Environmental Contribution; High Social + Environmental contribution; High Social Contribution and High Environmental Contribution.

The tables in this report present the sectors by CNAE Division (2-digit codes), but the calculations were made from a more detailed classification, by Subclass (7-digit codes). Thus, the fact that some sectors appear in more than one category does not necessarily indicate total overlap. Some activities are framed in the same Division, however, they have different classifications according to FEBRABAN's Green Taxonomy.

Table 2 presents the details of credit operations classified as related to the sectors of the Green Economy. It should be noted that, only in the case of a legal entity, it is possible to identify the borrower's sector of activity.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Table 2 - Classification of Operations as Green Economy Sectors - Legal Entities

Sectors	Total Loan Portfolio (BRL thousands)			
	2019		2020	
	Value	Percentage	Value	Percentage
Green Economy	325,892,508	22.48%	376,149,404	21.75%
Other Sectors	1,124,067,277	77.52%	1,353,502,143	78.25%
Total	1,449,959,785	100.00%	1,729,651,547	100.00%

Source: FEBRABAN, from FEBRABAN Green Taxonomy and SCR/BancoCentral data, Dec/2019-Dec/2020.

Figure 1 shows the geographic distribution of credit portfolio exposure to sectors classified as Green Economy. Note that there are important differences in geographic distribution when considering the participation of the Green Economy in the volume of borrowed resources. It should also be noted that changes in this geographic distribution are observed in the comparison between the years 2019 and 2020, with a loss in the participation of the Green Economy in States such as Minas Gerais, São Paulo and Paraná, and an increase in several States from the Northeast and Mato Grosso do Sul. The maps show the percentage of the Green Economy sector in relation to the State's Total Loan Portfolio value. The numbers in parentheses represent the total number of States in each of the classes, which were constructed following the distribution quartiles².

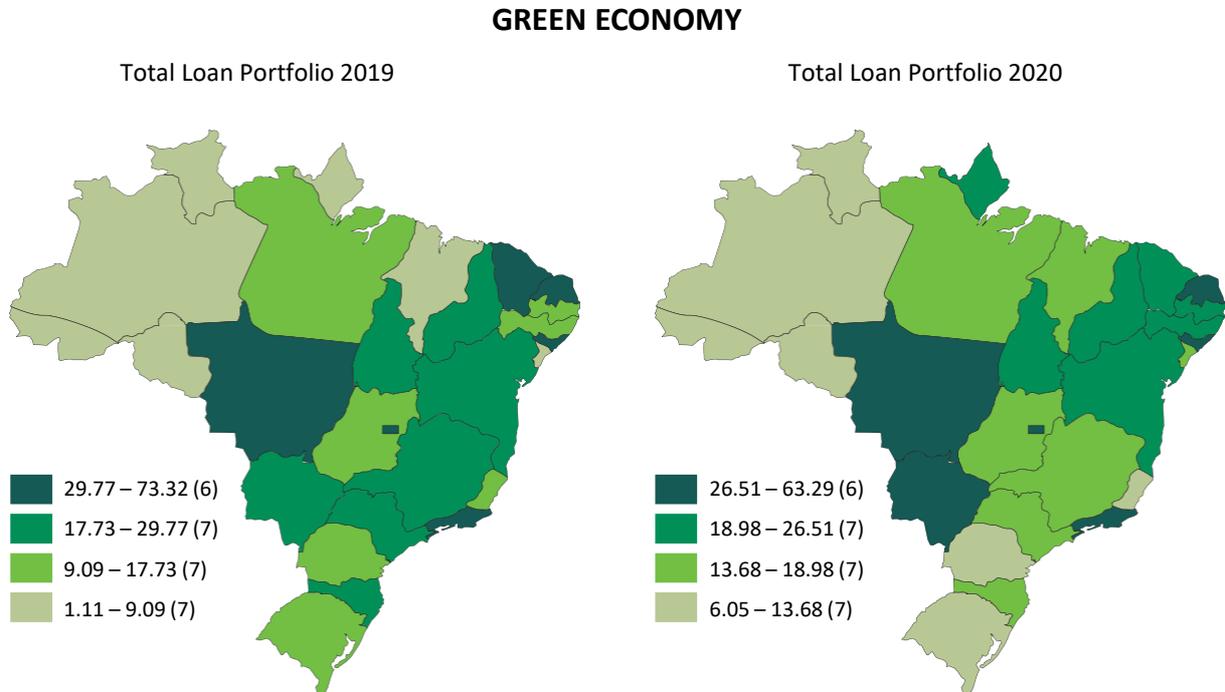
² This is the default legend for all other maps in this report.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Figure 1 – Green Economy: regional distribution of volume percentage



Source: FEBRABAN, from the FEBRABAN Green Taxonomy and data from the SCR/Central Bank, Dec/2019-Dec/2020.³

Table 3 shows the total loan portfolio broken down by Green Economy categories, based on the classification proposed by FEBRABAN. It should be noted that the sectors framed into the moderate contribution categories are those that overlap with the Environmental Risk Exposure category.

Table 3 - Breakdown by Category of Green Economy Sectors - Legal Entities

Sectors	Total Loan Portfolio (BRL thousands)	
	Value	Percentage
Moderate contribution [Social + Environmental]	225,772,772	60.02%
High contribution [Social]	82,295,666	21.88%
Moderate contribution [Environmental]	41,275,689	10.97%
High contribution [Social + Environmental]	20,076,823	5.34%
High contribution [Environmental]	4,020,213	1.07%
Moderate contribution [Social]	2,708,241	0.72%
Total	376,149,404	100.00%

Source: FEBRABAN, based on the FEBRABAN Green Taxonomy and data from the SCR/Central Bank, Dec/2020.

³ Numbers in parentheses represent total States in each of the percentage ranges.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Table 4 shows the distribution of the Green Economy sectors by CNAE division. **It is important to highlight that, as the classification of the sectors of the Green Economy is based on economic activity, by CNAE, such classification is only feasible for legal entities and has some limitations.** The value of the portfolio active in the sustainable agriculture sector, for example, is underestimated, since a large part of the operations in this sector are carried out by individuals and not companies. Another sector that may present inaccuracies is renewable energy, since the CNAE does not always allow the identification of generation by energy source.

Table 4 - Details of the Framework of Operations as Green Economy Sectors, Legal Entities

Sectors	Total Loan Portfolio (BRL thousands)	
	Value	Percentage
Electricity, Gas and Other Utilities	159,043,259	42.28%
Ground Transportation	40,480,074	10.76%
Health Care Activities	27,300,934	7.26%
Agriculture, Livestock and Related Services	22,721,190	6.04%
Water Transportation	21,616,933	5.75%
Manufacture of Metallurgical Coke, Petroleum Products and Biofuels	14,994,702	3.99%
Education	14,161,096	3.76%
Storage and Auxiliary Transport Activities	12,802,235	3.40%
Water Collection, Treatment and Distribution	11,475,579	3.05%
Manufacturing of Motor Vehicles, Trailers and Bodyworks	9,124,517	2.43%
Infrastructure Works	7,250,848	1.93%
Waste Collection, Treatment and Disposal; Materials Recovery	7,032,076	1.87%
Wholesale Trade, Except Motor Vehicles and Motorcycles	5,758,388	1.53%
Retail Business	4,757,397	1.26%
Sewage and Related Activities	3,234,882	0.86%
Sports and Recreation and Leisure Activities	3,087,986	0.82%
Forest Production	1,799,819	0.48%
Manufacture of Miscellaneous Products	1,591,560	0.42%
Editing and Editing Integrated with Print	1,173,858	0.31%



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Maintenance, Repair and Installation of Machines and Equipment	793,122	0.21%
Manufacturing of Other Transport Equipment, Except Motor Vehicles	702,616	0.19%
Health Care Activities Integrated with Social Assistance, Provided in Collective and Private Residences	696,618	0.19%
Manufacturing of Computer Equipment, Electronic and Optical Products	619,578	0.16%
Artistic, Creative and Entertainment Activities	605,450	0.16%
Scientific Research and Development	603,459	0.16%
Membership Organization Activities	507,740	0.13%
Services for Buildings and Landscape Activities	487,559	0.13%
Social Assistance Services Without Accommodation	402,474	0.11%
Specialized Services for Construction	341,532	0.09%
Public Administration, Defense and Social Security	284,762	0.08%
Manufacturing of Food Products	279,953	0.07%
Machinery and Equipment Manufacturing	145,001	0.04%
Decontamination and Other Waste Management Services	113,723	0.03%
Activities Related to Cultural and Environmental Heritage	90,986	0.02%
Financial Services Activities	67,499	0.02%
Total	376,149,404	100.00%

Source: FEBRABAN, based on the FEBRABAN Green Taxonomy and data from the SCR/Central Bank, Dec/2020.

In order to have a better perception of the contribution of the sectors in terms of contribution to the Green Economy vis-a-vis those of Environmental Risk Exposure, Tables 5 and 6 present the details of the sectors considering, separately, the High Contribution to the Green Economy and Moderate Contribution. Emphasizing that, in the first classification, there is no overlap with Exposure to Environmental Risk.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Table 5 - Details of the Framework of Operations as Green Economy Sectors, Legal Entities - High Contribution

Sectors	Total Loan Portfolio (BRL thousands)	
	Value	Percentage
Health Care Activities	27,300,934	25.66%
Water Transportation	21,616,933	20.32%
Education	14,161,096	13.31%
Electricity, Gas and Other Utilities	11,255,141	10.58%
Ground Transportation	6,296,036	5.92%
Wholesale Trade, Except Motor Vehicles and Motorcycles	5,682,170	5.34%
Retail Business	4,757,397	4.47%
Sports and Recreation and Leisure Activities	3,087,986	2.90%
Agriculture, Livestock and Related Services	1,728,207	1.62%
Manufacture of Miscellaneous Products	1,591,560	1.50%
Forest Production	1,267,320	1.19%
Editing and Editing Integrated with Print	1,173,858	1.10%
Infrastructure Works	870,860	0.82%
Maintenance, Repair and Installation of Machines and Equipment	793,122	0.75%
Health Care Activities Integrated with Social Assistance, Provided in Collective and Private Residences	696,618	0.65%
Artistic, Creative and Entertainment Activities	605,450	0.57%
Scientific Research and Development	603,459	0.57%
Membership Organization Activities	507,740	0.48%
Manufacturing of Other Transport Equipment, Except Motor Vehicles	491,166	0.46%
Services for Buildings and Landscape Activities	487,559	0.46%
Social Assistance Services Without Accommodation	402,474	0.38%
Public Administration, Defense and Social Security	284,762	0.27%
Manufacturing of Food Products	279,953	0.26%
Specialized Services for Construction	213,206	0.20%
Activities Related to Cultural and Environmental Heritage	90,986	0.09%
Water Collection, Treatment and Distribution	79,208	0.07%
Financial Services Activities	67,499	0.06%
Total	106,392,702	100.00%

Source: FEBRABAN, based on the FEBRABAN Green Taxonomy and data from the SCR/Central Bank, Dec/2020.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Table 6 - Details of the Framework of Operations as Green Economy Sectors, Legal Entities - Moderate Contribution

Sectors	Total Loan Portfolio (BRL thousands)	
	Value	Percentage
Electricity, Gas and Other Utilities	147,788,117	54.79%
Ground Transportation	34,184,037	12.67%
Agriculture, Livestock and Related Services	20,992,982	7.78%
Manufacture of Metallurgical Coke, Petroleum Products and Biofuels	14,994,702	5.56%
Storage and Auxiliary Transport Activities	12,802,235	4.75%
Water Collection, Treatment and Distribution	11,396,371	4.22%
Manufacturing of Motor Vehicles, Trailers and Bodyworks	9,124,517	3.38%
Waste Collection, Treatment and Disposal; Materials Recovery	7,032,076	2.61%
Infrastructure Works	6,379,988	2.37%
Sewage and Related Activities	3,234,882	1.20%
Manufacturing of Computer Equipment, Electronic and Optical Products	619,578	0.23%
Forest Production	532,498	0.20%
Manufacturing of Other Transport Equipment, Except Motor Vehicles	211,449	0.08%
Machinery and Equipment Manufacturing	145,001	0.05%
Specialized Services for Construction	128,326	0.05%
Decontamination and Other Waste Management Services	113,723	0.04%
Wholesale Trade, Except Motor Vehicles and Motorcycles	76,217	0.03%
Total	269,756,702	100.00%

Source: FEBRABAN, based on the FEBRABAN Green Taxonomy and data from the SCR/Central Bank, Dec/2020.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

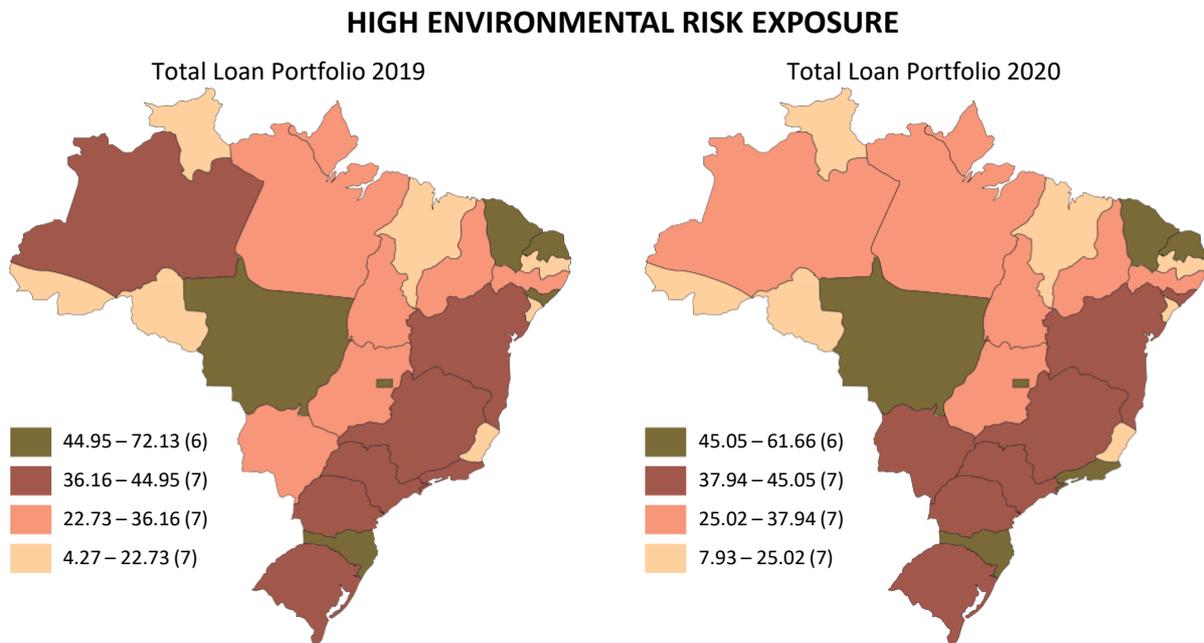
Table 7, on the other hand, depicts the distribution of credit between sectors classified as Exposure to Environmental Risk and other sectors. Figure 2, on the other hand, shows the spatial distribution of the percentage of credit destined to sectors classified as Exposure to Environmental Risk, according to the FEBRABAN classification. As in Figure 1, there are important state differences in the distribution of the percentage of the total loan portfolio.

Table 7 - Classification of Operations as Environmental Risk Exposure Sectors

Sectors	Total Loan Portfolio (BRL thousands)			
	2019		2020	
	Value	Percentage	Value	Percentage
Environmental Risk Exposure	622,640,061	42.94%	754,207,011	43.60%
Other Sectors	827,319,723	57.06%	975,444,537	56.40%
Total	1,449,959,785	100.00%	1,729,651,547	100.00%

Source: FEBRABAN, from the FEBRABAN Green Taxonomy and data from the SCR/Central Bank, Dec/2019-Dec/2020.

Figure 2 - Environmental Risk Exposure: regional distribution of volume percentage



Source: FEBRABAN, based on the FEBRABAN Green Taxonomy and data from the SCR/Central Bank, Dec/2020.4

4 Numbers in parentheses represent total States in each of the percentage ranges.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

The breakdown of credit operations separated into sectors classified as Environmental Risk Exposure is presented in Table 8. The analysis of the reported data points to a high percentage of the loan portfolio value concentrated in the electricity, gas and other utilities sectors.

Table 8 - Details of the Framework of Operations as Sectors of Exposure to Environmental Risk, Legal Entities

Division	Total Loan Portfolio (BRL thousands)	
	Value	Percentage
Electricity, Gas and Other Utilities	149,087,714	19.77%
Manufacturing of Food Products	102,123,094	13.54%
Manufacturing of Motor Vehicles, Trailers and Bodyworks	42,295,105	5.61%
Manufacture of Coke, Petroleum Products and Biofuels	39,174,339	5.19%
Storage and Auxiliary Transport Activities	36,556,881	4.85%
Wholesale Trade, Except Motor Vehicles and Motorcycles	33,511,183	4.44%
Metallurgy	32,757,309	4.34%
Ground Transportation	29,672,231	3.93%
Agriculture, Livestock and Related Services	25,113,561	3.33%
Manufacturing of Chemicals	24,121,991	3.20%
Manufacture of Pulp, Paper and Paper Products	19,705,979	2.61%
Building Construction	18,273,065	2.42%
Manufacturing of Rubber and Plastic Material Products	16,724,705	2.22%
Manufacture of Metal Products, Except Machinery and Equipment	15,753,907	2.09%
Machinery and Equipment Manufacturing	14,264,876	1.89%
Extraction of Metallic Minerals	13,269,054	1.76%
Retail Business	12,705,314	1.68%
Manufacturing of Electrical Machines, Appliances and Materials	12,167,143	1.61%
Water Collection, Treatment and Distribution	11,396,371	1.51%
Manufacturing of Non-Metallic Mineral Products	11,296,221	1.50%
Clothing and Accessories Manufacture	10,035,975	1.33%
Infrastructure Works	9,045,385	1.20%



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Textile Product Manufacturing	8,130,124	1.08%
Beverage Manufacturing	7,140,394	0.95%
Waste Collection, Treatment and Disposal; Materials Recovery	7,032,076	0.93%
Manufacturing of Pharmaceutical and Pharmaceutical Products	6,414,030	0.85%
Accommodation	5,618,078	0.74%
Manufacturing of Computer Equipment, Electronic and Optical Products	5,521,738	0.73%
Wood Product Manufacturing	5,290,543	0.70%
Leather Preparation and Manufacture of Leather Goods, Travel Items and Footwear	5,165,807	0.68%
Furniture Manufacturing	5,023,037	0.67%
Manufacturing of Other Transport Equipment, Except Motor Vehicles	4,506,275	0.60%
Specialized Services for Construction	3,605,651	0.48%
Sewage and Related Activities	3,234,882	0.43%
Extraction of Non-Metallic Minerals	2,349,598	0.31%
Water Transportation	2,109,677	0.28%
Manufacturing of Tobacco Products	1,662,464	0.22%
Forest Production	573,779	0.08%
Sports and Recreation and Leisure Activities	472,528	0.06%
Oil and Natural Gas Extraction	459,147	0.06%
Maintenance, Repair and Installation of Machines and Equipment	274,610	0.04%
Fishing and Aquaculture	238,109	0.03%
Air Transport	163,205	0.02%
Decontamination and Other Waste Management Services	113,723	0.02%
Mineral Coal Extraction	54,820	0.01%
Manufacture of Miscellaneous Products	1,314	0.00%
Total	754,207,011	100.00%

Source: FEBRABAN, based on the FEBRABAN Green Taxonomy and data from the SCR/Central Bank, Dec/2020.

Finally, Table 9 shows the classification of credit directed to sectors classified as High and Moderate Climate Change Exposure. The spatial distribution of the indicators reported in Table 9 is shown in Figure 3.



Sustainability and Climate Change

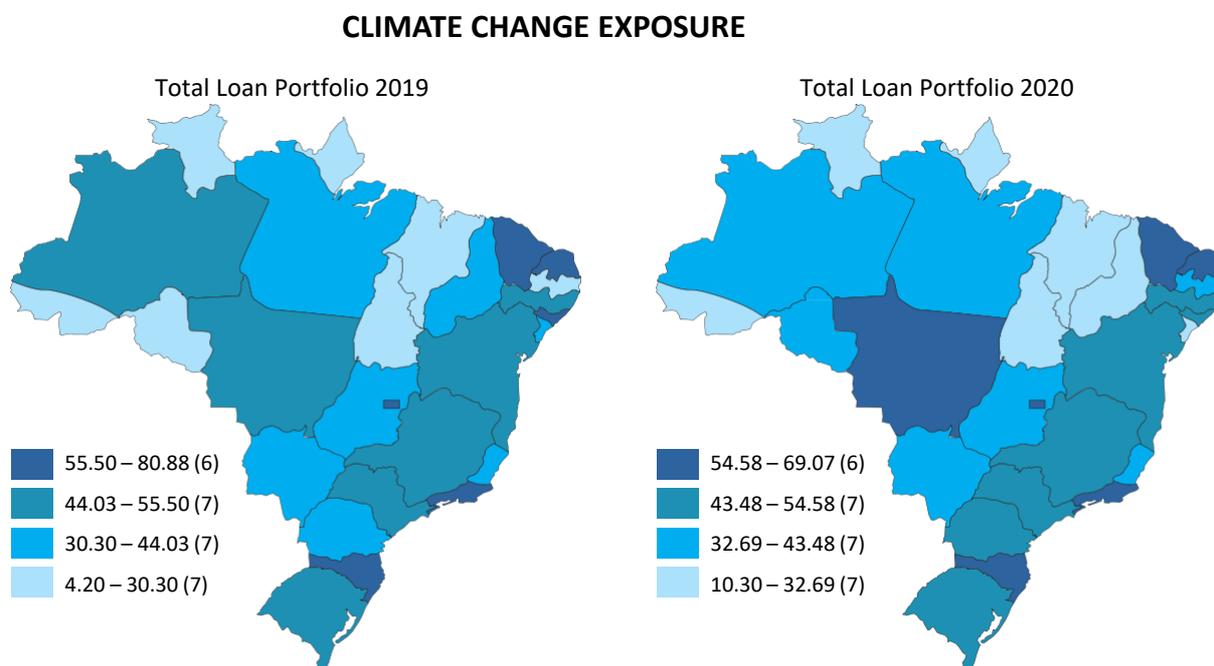
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Table 9 - Classification of Operations as Sectors of High and Moderate Exposure to Climate Change

Sectors	Total Loan Portfolio (BRL thousands)			
	2019		2020	
	Value	Percentage	Value	Percentage
Climate Change Exposure	763,751,966	52.67%	921,750,705	53.29%
Other Sectors	686,207,819	47.33%	807,900,842	46.71%
Total	1,449,959,785	100.00%	1,729,651,547	100.00%

Source: FEBRABAN, from the FEBRABAN Green Taxonomy and data from the SCR/Central Bank, Dec/2019-Dec/2020.

Figure 3 – Climate Change Exposure by Sectors: regional distribution of the percentage of operations and volume



Source: FEBRABAN, from the FEBRABAN Green Taxonomy and data from the SCR/Central Bank, Dec/2019-Dec/2020.5

5 Numbers in parentheses represent total States in each of the percentage ranges.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

In order to better understand the direction of credit in sectors exposed to climate change, Tables 10 and 11 provide a breakdown of credit operations and the value of the loan portfolio by sectors classified as presenting Climate Change Exposure.

Table 10 - Details of the Framework of Operations as Sectors with High Climate Change Exposure, Legal Entities

Division	Total Loan Portfolio (BRL thousands)	
	Value	Percentage
Electricity, Gas and Other Utilities	161,511,281	22.54%
Manufacturing of Food Products	102,403,048	14.29%
Ground Transportation	99,416,892	13.87%
Building Construction	45,045,238	6.29%
Manufacturing of Motor Vehicles, Trailers and Bodyworks	42,295,105	5.90%
Manufacture of Metallurgical Coke, Petroleum Products and Biofuels	39,076,415	5.45%
Metallurgy	32,757,309	4.57%
Agriculture, Livestock and Related Services	26,838,131	3.74%
Manufacturing of Chemicals	24,121,991	3.37%
Water Transportation	23,766,019	3.32%
Real Estate Activities	21,879,644	3.05%
Manufacture of Pulp, Paper and Paper Products	15,622,550	2.18%
Machinery and Equipment Manufacturing	14,264,876	1.99%
Extraction of Metallic Minerals	13,269,054	1.85%
Infrastructure Works	11,047,407	1.54%
Beverage Manufacturing	7,140,394	1.00%
Manufacturing of Non-Metallic Mineral Products	6,407,247	0.89%
Accommodation	5,627,749	0.79%
Manufacture of Metal Products, Except Machinery and Equipment	5,203,556	0.73%
Manufacturing of Other Transport Equipment, Except Motor Vehicles	4,446,789	0.62%
Air Transport	3,534,786	0.49%
Specialized Services for Construction	3,256,959	0.45%
Extraction of Non-Metallic Minerals	2,349,598	0.33%
Waste Collection, Treatment and Disposal; Materials Recovery	2,131,884	0.30%



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Forest Production	1,807,680	0.25%
Oil and Natural Gas Extraction	459,147	0.06%
Mineral Extraction Support Activities	387,983	0.05%
Fishing and Aquaculture	238,109	0.03%
Services for Buildings and Landscape Activities	223,887	0.03%
Water Collection, Treatment and Distribution	79,208	0.01%
Mineral Coal Extraction	54,820	0.01%
Wood Product Manufacturing	7,077	0.00%
Total	716,671,833	100.00%

Source: FEBRABAN, based on the FEBRABAN Green Taxonomy and data from the SCR/Central Bank, Dec/2020.

Table 11 - Details of the Framework of Operations as Sectors with Moderate Climate Change Exposure, Legal Entities

Division	Total Loan Portfolio (BRL thousands)	
	Value	Percentage
Financial Services Activities	57,616,517	28.09%
Non-Real Estate Rents and Management of Non-Financial Intangible Assets	17,915,724	8.74%
Manufacturing of Rubber and Plastic Material Products	16,197,933	7.90%
Manufacturing of Electrical Machines, Appliances and Materials	12,166,302	5.93%
Water Collection, Treatment and Distribution	11,396,371	5.56%
Manufacture of Metal Products, Except Machinery and Equipment	10,550,351	5.14%
Clothing and Accessories Manufacture	10,035,975	4.89%
Textile Product Manufacturing	8,130,124	3.96%
Manufacturing of Pharmaceutical and Pharmaceutical Products	6,414,030	3.13%
Furniture Manufacturing	5,617,940	2.74%
Manufacturing of Computer Equipment, Electronic and Optical Products	5,523,694	2.69%
Wood Product Manufacturing	5,283,466	2.58%
Leather Preparation and Manufacture of Leather Goods, Travel Items and Footwear	5,165,807	2.52%
Waste Collection, Treatment and Disposal; Materials Recovery	4,900,192	2.39%
Manufacturing of Non-Metallic Mineral Products	4,888,974	2.38%
Manufacture of Pulp, Paper and Paper Products	4,083,429	1.99%
Manufacture of Miscellaneous Products	3,824,560	1.86%



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Sewage and Related Activities	3,234,882	1.58%
Specialized Services for Construction	3,113,310	1.52%
Printing and Playback of Recordings	2,475,116	1.21%
Manufacturing of Tobacco Products	1,662,464	0.81%
Retail Business	1,517,733	0.74%
Wholesale Trade, Except Motor Vehicles and Motorcycles	1,440,985	0.70%
Mail and Other Delivery Activities	783,271	0.38%
Manufacturing of Other Transport Equipment, Except Motor Vehicles	550,652	0.27%
Insurance, Reinsurance, Supplementary Pension and Health Plans	535,424	0.26%
Forest Production	33,420	0.02%
Agriculture, Livestock and Related Services	20,223	0.01%
Total	205,078,871	100.00%

Source: FEBRABAN, based on the FEBRABAN Green Taxonomy and data from the SCR/Central Bank, Dec/2020.

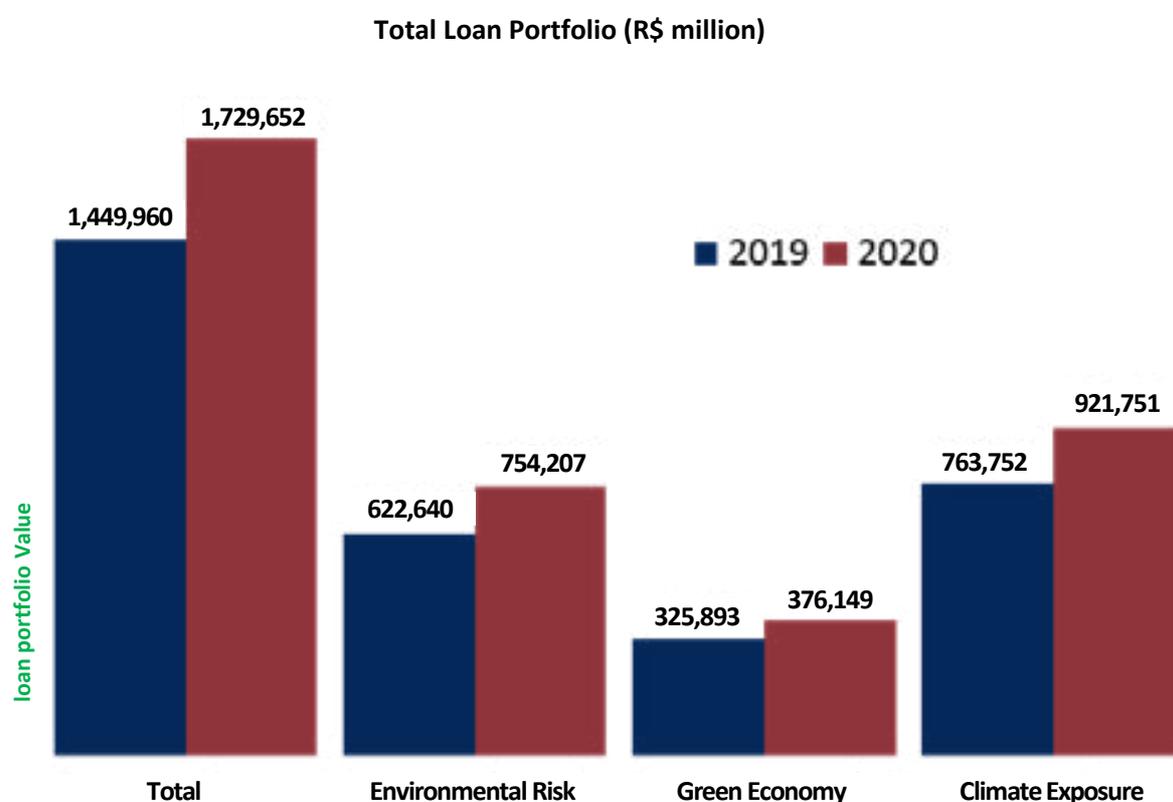


Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Figure 4 below shows the participation of sectors classified as Environmental Risk Exposure, Green Economy and Climate Change Exposure in the total volume of credit for legal entities. It should be noted that the total column encompasses all CNAE sectors, regardless of whether they were included in any of the analyzed groups.

Figure 4 – Comparison of Credit between Sectors of Environmental Risk Exposure, Green Economy and Climate Change Exposure:



Source: FEBRABAN, from the FEBRABAN Green Taxonomy and data from the SCR/Central Bank, Dec/2019-Dec/2020.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Complementary Analysis of Rural and Agroindustrial Credit Operations, based on data from the Rural Credit Matrix

Definition

The Rural Credit Matrix consists of aggregated data related to rural credit operations registered in the Comptroller System (*Sicor - Sistema de Operações de Crédito Rural e do Proagro*), contracted by rural producers in financial institutions. It is possible to carry out two types of analysis: analyzing the profile of credit taken by each municipality and the profile of credit granted by each Financial Institution. In both forms of analysis, there is information on the amount and value of credit granted for funding, investment, commercialization and industrialization.

On the municipal side, the information is detailed for the sector of activity (Agricultural or Livestock), type of credit program and subprogram, and source of funds. In relation to Financial Institutions, analysis can be carried out in relation to the Institution's segment, issuer category, type of credit program and subprogram, source of funds and sector of activity.

The Rural Credit Data Matrix (*MDCR – Matriz de Dados de Crédito Rural*) allows personalized queries in which the consultant selects the desired period, sources of funds, programs and type of insurance, if any.

The information on the contracted amount is the open credit available to the borrower. Thus, open credit is not to be confused with the granting of credit, which is the amount of funds effectively released to the borrower and on which financial remuneration will be incurred. It should be noted that the same query made at different times may bring different data. This happens due to changes in the database caused by data inclusions and exclusions.

Rural Credit is the supply of financial resources, by institutions of the National Rural Credit System (*SNCR – Sistema Nacional de Crédito Rural*), for exclusive application in the purposes and conditions established in the Rural Credit Manual (*MCR – Manual de Crédito Rural*). The National Rural Credit System (SNCR) was established by Law 4,829, of November 5, 1965. The composition of the SNCR is detailed in art. 7 of this law.

Therefore, based on information from the MCR, it is possible to retrieve the distribution of credits destined for the Green Economy and for other sectors, based on the taxonomy proposed by FEBRABAN, built from the definitions of programs and subprograms.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Methodology

The strategy of using data from the Rural Credit Matrix to identify credit operations aimed at the Green Economy in the Rural and Agroindustrial sector has as a first step the crossing of information from the Green Economy Taxonomy developed by FEBRABAN, with information on programs and subprograms available in the Rural Credit Matrix. Tables 12 and 13 show the result of this data crossing, that is, they report rural credit contracts by Programs and Subprograms, respectively, and their classification as Green Economy and other sectors.

Table 12: Rural Credit Contractions by Programs in the Rural Credit Matrix, Green Economy and Other Sectors (in R\$ thousand)

Programs	Green Economy	Other Sectors
ABC - Program for the Reduction of Greenhouse Gas Emissions in Agriculture	2,391,769	
Financing Not Linked to Specific Program		132,558,903
Funcafé (Coffee Economy Defense Program)		2,859,477
Inovagro - Incentive Program for Technological Innovation in Agricultural Production	1,704,466	
Moderagro - Agriculture Modernization and Natural Resources Conservation Program	61,028	1,426,880
Moderfrota - Modernization Program for the Fleet of Agricultural Tractors and Impl Assoc And Harvesters		7,976,932
Moderinfra - Incentive Program for Irrigation and Production in a Protected Environment		712,381
Pca - Warehouse Construction and Expansion Program		1,918,693
Procap-Agro (Capitalization Program for Agricultural Production Cooperatives)		49,943
Prodecoop - Cooperative Development Program for Adding Value to Agricultural Production		937,018
National Land Credit Program (Pncf-Ftra)		120,160
Pronaf - Brazilian National Programme to Strengthen Family Farming	32,389,697	
Pronamp - National Support Program for Medium Rural Producers		29,861,354
Total	36,546,960	178,421,741
Decontamination and Other Waste Management Services	113,723	0.04%
Wholesale Trade, Except Motor Vehicles and Motorcycles	76,217	0.03%
Total	269,756,702	100.00%

Font: FEBRABAN, based on the FEBRABAN Green Taxonomy and data from the MCR/Central Bank, Dec/2020.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Table 13: Rural Credit Contractions by subprograms in the Rural Credit Matrix, Green Economy and Other Sectors (in R\$ thousand)

Programs	Subprograms	Green Economy	Other Sectors
ABC - Program for the Reduction of Greenhouse Gas Emissions in Agriculture	Adequacy and/or environmental regularization	53,186	
	Biological Nitrogen Fixation	8,289	
	Forests	83,873	
	Crop-Livestock-Forest and Agroforestry System Integration	166,731	
	Direct Planting	1,008,898	
	Pasture Recovery	1,035,344	
	Organic Systems	6,081	
	Waste Treatment	21,789	
	ABC - Others	7,579	
Financing Not Linked to Specific Program			163,415,680
Funcafé (Coffee Economy Defense Program)	Acquisition of Coffee (FAC)		479,709
	Working Capital p Industries Soluble Coffee Roasting		459,649
	Storage		1,155,210
	Financing (costing, investment and marketing)		764,910
Inovagro - Incentive Program for Technological Innovation in Agricultural Production		1,704,466	
Moderagro - Agriculture Modernization and Natural Resources Conservation Program	Product, Benefit, Industry, Packaging and Storage Promotion		1,353,867
	Promotion of Animal Defense Actions		48,055
	Soil Recovery	61,028	
Moderfrota - Modernization Program for the Fleet of Agricultural Tractors and Impl Assoc And Harvesters	Acquire New Tractors, Combines and Implements		7,916,940
	Acquire Used Tractors, Combines and Implements		59,992
Moderinfra - Incentive Program for Irrigation and Production in a Protected Environment	Acquisition and Renovation of Irrigation Systems		678,933
Pca - Warehouse Construction and Expansion Program	Expansion and/or Modernization of Existing Warehouses		577,199
	Construction of New Warehouses		1,341,494



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Procap-Agro (Capitalization Program for Agricultural Production Cooperatives)	Working Capital for Cooperatives		14,443
	Payment Cooperative Share Capital Shares		35,500
National Land Credit Program (Pncf-Ftra)	Combating Rural Poverty		28,868
	Consolidation of Family Farming		39,931
	Nossa Primeira Terra		51,361
Pronaf - Brazilian National Programme to Strengthen Family Farming	Agroecology	5,805	
	Agroindustrial	1,428,784	
	Agroindustrial (investment)	99,327	
	Shares	31,134	
	Cost	15,379,305	
	Eco (renewable energy and environmental sustainability)	183,081	
	Forest	61,598	
	Young	3,075	
	More Food	11,163,838	
	Microcredit	2,758,557	
	Woman	59,104	
	Land reform	157,129	
	Semiarid	152,770	
Pronaf - Others	906,191		
Total		36,546,960	178,421,741

Source: FEBRABAN, based on the FEBRABAN Green Taxonomy and data from the MCR/Central Bank of Dec/2020.

It is important to highlight that, according to the MCR information, it is not possible to identify whether the contracts refer to individuals or legal entities, there is only credit for subprograms. In this analysis, we observe that 17% of Rural Credit contracts are linked to Programs and Subprograms classified as Green Economy. From the SCR data, it is possible to identify the amount of credit in the rural and agroindustrial modality by type of customer, that is, legal entity or individual. But the classification of credit operations in the taxonomy proposed by FEBRABAN for balances is only possible for legal entities, since, only in this case, it is possible to identify the CNAE code or economic activity sector, the basis of the classification. In the SCR data, it is also not possible to identify the programs related to credit operations, this is only possible in the MCR, which, as highlighted above, only presents the contracts and not the total loan portfolio.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

The way to recover or estimate the total loan portfolio of individuals, in the Rural/Agroindustrial modality, classified as Green Economy, is carried out by crossing information from the MCR and the SCR. From the SCR, it is possible to obtain the Green Economy total loan portfolio for legal entities in the Rural/Agroindustrial modality, as well as the total of the Rural/Agroindustrial. From MCR, we obtain the value of contracts for the Green Economy in rural credit, aggregated for both types of customers, individuals and legal entities. Hence, we assume that the proportion of Green Economy for legal entities in relation to the Rural/Agroindustrial modality is equal to the proportion of Green Economy in relation to the total number of contracts at MCR. Based on this hypothesis, it is possible to recover what would be the total loan portfolio of the Green Economy for individuals, in the Rural/Agroindustrial modality, in the SCR.

Tables 14 and 15 show the estimates of the total loan portfolio classified as Green Economy in the Rural/Agroindustrial modality for Individuals in the years 2019 and 2020, respectively. It is worth noting that the values for Legal Entities are those observed directly in the SCR.

Table 14: Estimate Total Loan Portfolio in Green Economy, Individuals, in the Rural/Agroindustrial modality – 2019 (in R\$ thousand)

Sectors	Individual	Legal Person	Total
Green Economy	41,331,859	6,606,598	47,938,457
Other Sectors	229,645,890	36,499,522	266,145,412
Total	270,977,749	43,106,119	314,083,869

Source: FEBRABAN, based on the FEBRABAN Green Taxonomy and data from the SCR/Central Bank, Dec/2019.

Of the total loan portfolio in the Rural/Agroindustrial modality for Individuals, we estimate that 15.25% is allocated to activities classified as Green Economy, in December 2019. For the same period, in 2020, the participation would be 17.12%.

Table 15: Estimate Total Loan Portfolio in Green Economy, Individuals in the Rural/Agroindustrial modality – 2020 (in R\$ thousand)

Sectors	Individual	Legal Person	Total
Green Economy	49,714,920	6,077,916	55,792,836
Other Sectors	240,628,181	31,751,652	272,379,833
Total	290,343,100	37,829,568	328,172,669

Source: FEBRABAN, based on the FEBRABAN Green Taxonomy and data from the SCR/Central Bank, Dec/2020.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

Final Considerations

This report presents, based on the Taxonomy developed by FEBRABAN and the SCR data summary, made available by the Central Bank, an analysis of the resources intermediated by the banking sector in Brazil with regard to sustainability and climate change.

With regard to financing granted to legal entities, the results show that the Green Economy accounted for 22% of the total loan portfolio in December 2020. Among the sectors classified as High Contribution to the Green Economy, Health Care Activities had the largest share of the loan portfolio, 26%, followed by Waterway Transport. Among the sectors classified as Moderate Contribution to the Green Economy, the Electricity, Gas and Other Utilities sector stands out, with a participation of 54%. This sector also stands out among those of Environmental Risk, which represented 44% of the total loan portfolio in December 2020, with a share of 20%. It is worth emphasizing that the overlap in this CNAE group is expected, since it includes the generation and transmission of electricity. The national classification does not allow these activities to be segregated by energy source.

With regard to Exposure to Climate Change, the sectors classified as such had a share of 53% of the total loan portfolio in December 2020, and in the case of High Exposure to Climate Change, once again, the highlight is for the Electricity, Gas and Other Utilities sector, followed by the Manufacturing of Food Products. The Financial Services Activities sector represented 28% of the total loan portfolio of sectors classified as Moderate Exposure to Climate Change. As an intermediary of resources between different economic agents, the financial sector is indirectly exposed to the risks associated with them.

This report also makes an important contribution with regard to financing the rural and agroindustrial sector for individuals and companies and sustainability. Although much of the work presented here is related to the classification in the Taxonomy proposed by FEBRABAN based on the CNAE codes, in this case limited to credit for legal entities, there was also an effort to detail rural credit for individuals, through the crossing of information of the SCR with the rural credit matrix. In this sense, it was classified as a Green Economy based on the classification of Programs and Sub-Programs contained in the Rural Credit Matrix, carried out within the scope of FEBRABAN's Taxonomy, with technical support from SITAWI. The analysis estimated that 17% of the Rural/Agroindustrial total loan portfolio for Individuals was allocated to activities classified as Green Economy in December 2020.

This effort to classify credit granted to individuals in the Taxonomy, in particular that relating to the rural sector, is based on the fact that, of the total loan portfolio in the Rural/Agroindustrial modality, 88%, in December 2020, was related to financing granted to individuals.



Sustainability and Climate Change

Resources Intermediated by the Banking Sector in Brazil

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Central Bank of Brazil:

Supervisory Board - Difis

Financial System Monitoring Department - Desig



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Sustainability and Climate Change
Resources Intermediated by the Banking Sector in Brazil

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IMPLEMENTATION

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