

## POLICY BRIEF

# THE ROLE OF COOPERATIVES IN RURAL CREDIT

## COOPERATIVE CREDIT GROWS DURING THE ECONOMIC CRISIS AND SUPPORTS THE INCLUSION OF SMALL-SCALE PRODUCERS



CLIMATE  
POLICY  
INITIATIVE

Credit cooperatives can be efficient tools for financial inclusion by distributing agricultural credit to small-scale rural producers. Due to their proximity to borrowers, cooperatives can deliver benefits that traditional banks cannot, such as lower transaction costs and lower costs of collecting information about producers. This tends to reduce financial risks.

Cooperative credit is currently an option in close to 2500 municipalities in Brazil, with an especially large presence in the countryside areas. Although it is distributed unevenly throughout the country, cooperative credit helps compensate for the scarcity of financial institutions in some regions and assists in fulfilling requirements in the application of rural credit resources.

This brief is the result of a collaboration between Climate Policy Initiative/Pontifical Catholic University of Rio de Janeiro (CPI/PUC-Rio)<sup>1</sup> and the Cooperatives Observer (OBSCOOP)<sup>2</sup> of the University of São Paulo. It aims to analyze cooperatives' participation in rural credit, addressing both recent developments and potential challenges.

## CREDIT COOPERATIVES TODAY

While the volume of rural credit funds fell by 14% in real terms during the recent economic crisis,<sup>3</sup> cooperative credit increased, helping to soften the impact of the recession on small and medium-scale rural property owners. There was real growth of 51.3% in cooperative lending in 2018/2019 compared to the agricultural year 2013–2014, in the amount of R\$ 33 billion. The aggregate market share for this sector grew from 11% to 17.5% during that period.<sup>4</sup> The number of contracts handled by cooperatives also increased during the same period, reaching 18.5% in 2018/2019.

Cooperatives tend to make loans for lower average amounts than public or private banks. The critical role cooperatives play in the provision of smaller loans can be explained by two main factors:

1 Climate Policy Initiative is PUC-Rio's Climate Policy Assessment Center, NAPC, which is the Portuguese acronym of *Núcleo de Avaliação de Políticas Climáticas*.

2 OBSCOOP is the Portuguese acronym for *Observatório de Cooperativas*.

3 Brazil's total rural lending had a constant value of R\$ 200.4 billion in 2013–2014 and R\$ 172.5 billion in 2018–2019. These numbers were inflation-adjusted by the Extended National Consumer Price Index (IPCA), using June 2019 as a reference.

4 These numbers include credit cooperatives and the two cooperative banks (Bancoob and Bansicredi).

## 1) Cooperatives help banks meet requirements for the application of rural credit resources

Commercial banks are required to direct a percentage of demand deposits and rural savings to rural credit at controlled rates determined by the Agricultural Plan (PAP)<sup>5</sup> and the National Plan for Strengthening Family Farming (Pronaf).<sup>6</sup> Commercial banks — particularly private banks — use credit cooperatives to distribute the rural credit required by current regulations. Thus, commercial banks maintain a portion of their requisite funds for their clients and transfer to cooperatives the remaining funds along with the task of their application.

## 2) Cooperatives' proximity to producers makes them an important distribution channel for rural credit

With better access to producers, cooperatives can reduce the costs of transactions and decrease information asymmetry (when the financial institution is not completely familiar with the type of producer or is not able to fully monitor their actions, increasing the risk of loan default). Lending can be simplified when a rural producer is also a member of a cooperative, since to become a member the credit borrower must present a file of personal and property documents. The analysis of these documents can provide helpful information for evaluating the credit transaction and reduce information asymmetry. Moreover, being a cooperative member with an interest in the cooperative's results can encourage producers to avoid moral hazard behavior.

These organizations also have other monitoring mechanisms. For example, neighbors of a producer who has taken out credit often join the same cooperative, which can help with verification in cases of loss of production or loan default. This also contributes to a reduction in problems with information asymmetry and the costs of transactions.

Chart 1 details the structure of the National System of Cooperative Credit (SNCC).<sup>7</sup> For the 2018/19 agricultural year, 393 individual cooperatives conducted rural financing transactions (Central Bank of Brazil).<sup>8</sup>

5 PAP is the Portuguese acronym for *Plano Agrícola e Pecuário*.

6 Pronaf is the Portuguese acronym for *Programa Nacional de Fortalecimento da Agricultura Familiar*. It is currently developed by the Ministry of Agriculture, Livestock and Food Supply (*Ministério da Agricultura, Pecuária e Abastecimento*). Between 2016 and 2018, Pronaf was run by the Special Bureau of Family Agricultural and Agrarian Development (*Secretaria Especial de Agricultura Familiar e do Desenvolvimento Agrário*), associated with the Civil House of the Presidency of the Republic. Before 2016, Pronaf was run by the Ministry of Agrarian Development (*Ministério do Desenvolvimento Agrário*). Of the total rural credit funds in 2017/18 agricultural year, 31.8% came from compulsory resources under the rules of the Rural Credit Manual (*Manual do Crédito Rural*, MCR), Chapter 6.2; and 24.4% came from rural savings (under the rules of MCR 6.4).

7 SNCC is the Portuguese acronym for *Sistema Nacional de Crédito Cooperativo*. In 2018 the SNCC included 940 individual cooperatives, 34 central cooperatives, 2 confederations, and 2 cooperative banks (data from the Central Bank of Brazil). The SNCC held R\$ 475.2 billion in assets in December of 2017, representing nearly 4% of the National Financial System (*Sistema Financeiro Nacional*).

8 Data from the Rural Credit Data Matrix from the Central Bank of Brazil.

**Chart 1:** Cooperatives and Cooperative Banks**INDIVIDUAL COOPERATIVES***First-grade cooperatives***At least 20 members**

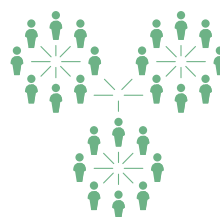
These economic organizations are collectively owned and belong to a group of members, mostly individuals, who use their products and services.

Each member has a vote in these organizations, regardless of the amount of social capital they contribute

**CONFEDERATIONS***Third-grade cooperatives*

These are contractual arrangements created by central cooperatives. Their function is to coordinate, set norms, supervise, sponsor, and give technological support for the financial processes and services provided by central cooperatives to individual cooperatives, and by individual cooperatives to their members.

In 2018 two cooperative confederations were registered with the Central Bank of Brazil: The Confederation of Cooperatives of the SICREDI System (*Confederação das Cooperativas do Sistema SICREDI*), and the Confederation of Cooperatives of the SICOOB System (*Confederação das Cooperativas do Sistema SICOOB*).

**CENTRAL COOPERATIVES***Second-grade cooperatives***At least 3 individual cooperatives**

These organizations' property belongs exclusively to a group of individual cooperatives. This arrangement generates economy of scale for members, allowing them to develop products and services at lower costs than they would be able to separately.

A central cooperative has an average of 23 associated individual cooperatives. Central cooperatives' control systems take into account the different levels of capital contributions each individual cooperative makes to the central cooperative.

**COOPERATIVE BANKS**

These are commercial or multiple banks with commercial portfolios; their shareholder control belongs to the central credit cooperatives. Their work involves developing products and services for the central and individual cooperatives, thereby expanding these organizations' financial portfolios.

In 2018, there were two cooperative banks: Bancoob and Banicredi.

**Source:** Produced by the authors with data from the Central Bank of Brazil.

There is wide regional disparity in the geographical distribution of cooperatives' branches. Figure 1a shows the number of lending branches in each Brazilian municipality. Cooperatives have a higher representation in the municipalities of the South, Central-west, and Southeast, but even so, few municipalities have more than five branches. Many Brazilian municipalities, including the vast majority of the ones in the North and Northeast, don't have any lending branches at all.

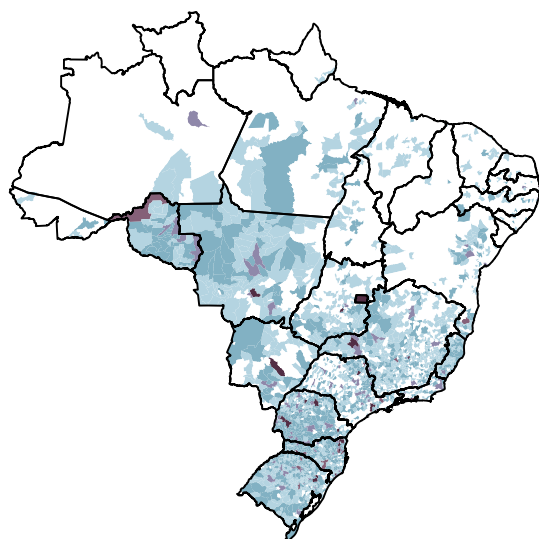
Figure 1b shows the share of credit cooperatives compared to the total volume of rural financing at the state level. Cooperatives in the states of Rio Grande do Sul, Paraná, and Espírito Santo hold a relatively high share of the total credit — between 25% and 35% of credit in these states is distributed by cooperatives. In contrast, cooperative credit represents less than 5% of lending in all Northeast states.

Figure 1c shows this geographic distribution from another angle: the volume of cooperative credit in each state and the total cooperative credit in Brazil. In the first quintile, states in the North and Northeast handle up to R\$ 693.5 thousand of cooperative credit. This contrasts with most of the states in the South, Southeast, and Central-West, which handle between R\$ 572.9 million and R\$ 7.7 billion.

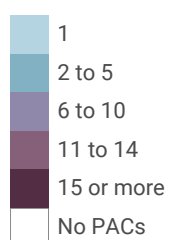


**Figure 1:** Geographical Distribution of Cooperative Credit in Brazil

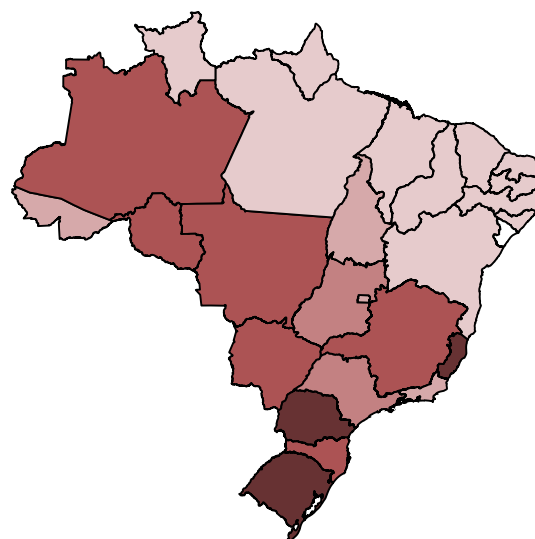
**Figure 1a:** Cooperative Service Points (PACs) by municipality (2019)



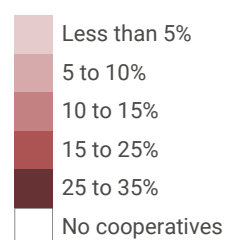
Number of PACs



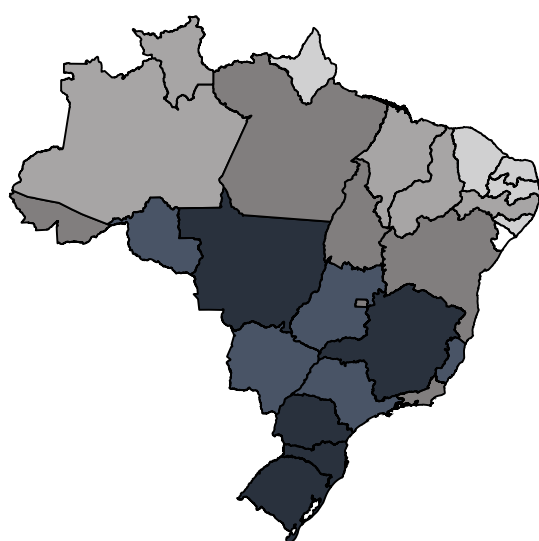
**Figure 1b:** Volume of credit distributed by cooperatives, 2018/2019



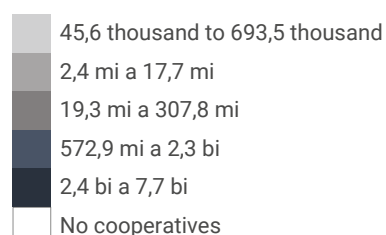
Amount of cooperative credit / Total amount



**Figure 1c:** The importance of cooperative credit for rural credit, 2018/2019



Amount of credit in reais (divided into quintiles)

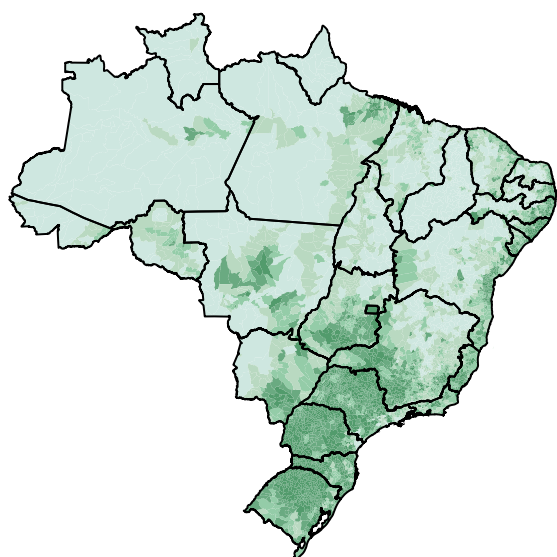


**Source:** Produced by the authors with data from the Central Bank of Brazil.

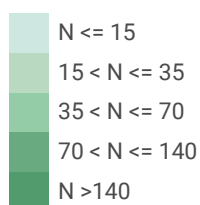
There is a clear relationship between the presence of credit cooperatives and the volume of agricultural production, as shown in Figure 2. Figure 2b shows the quintiles of the number of agricultural establishments in each municipality divided by the municipal area, according to data from the 2017 Agricultural Census by the Brazilian Institute of Geography and Statistics (IBGE).<sup>9</sup> Cooperatives' share of rural credit distribution is strongly linked to the number of agricultural establishments in a given area. A high number of small producers tends to be associated with a higher number of cooperatives (except for the Northeast, where cooperative credit is scarce despite the presence of many small producers). Data from the 2017 Agricultural Census also shows that 39%, 35%, and 18% of the agricultural establishments of Rio Grande do Sul, Paraná, and Espírito Santo, respectively, are linked to cooperatives.

**Figura 2:** Agricultural Activity in Brazil

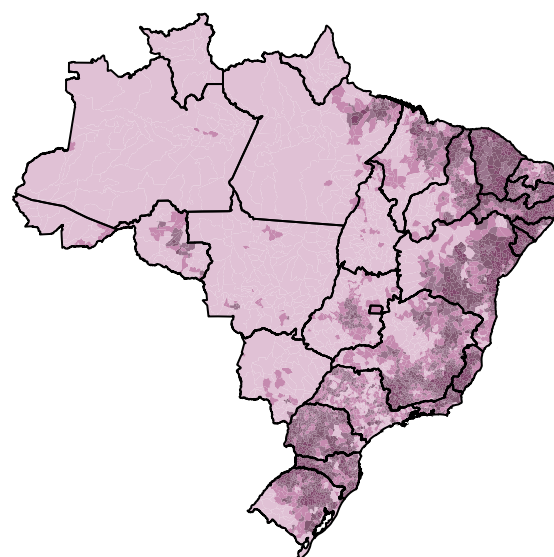
**Figure 2a:** Agriculture – Gross value added by municipality area (2016)



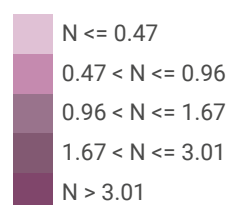
Agriculture Gross value added (R\$ 1,000/Km<sup>2</sup>)



**Figure 2b:** Number of agricultural establishments by municipality area (2017)



Number of establishments/Km<sup>2</sup>



**Source:** Produced by the authors with data from the Municipal Crop Production Survey (PAM, 2016) for figure 2a and data from the Agricultural Census (2017) for figure 2b. Both surveys are from the Brazilian Institute of Geography and Statistics (IBGE).

<sup>9</sup> IBGE is the Portuguese acronym for *Instituto Brasileiro de Geografia e Estatística*.

## COOPERATIVES DURING THE RECENT PERIOD OF ECONOMIC INSTABILITY

The recent economic crisis did not spare rural financing. The volume of effectively financed rural credit fell 14% between 2013/2014 and 2018/2019, and the number of contracts declined by 26% in that same period (see Table 1). There was a corresponding increase of 17% in the value of the average rural credit contract, from R\$ 78.1 thousand to R\$ 91.4 thousand (in real values).<sup>10</sup> In this context, some beneficiaries of the rural credit policy stopped accessing resources.

**Table 1:** Total value and number of rural credit contracts between 2013/2014 and 2018/2019.

Year	Cooperative Credit*		Private Commercial Bank		Public Commercial Bank		Total	
	Total Value (billion R\$)	Number of Contracts (thousand)	Total Value (billion R\$)	Number of Contracts (thousand)	Total Value (billion R\$)	Number of Contracts (thousand)	Total Value (billion R\$)	Number of Contracts (thousand)
2013–14	21,8	356,9	59,8	215,5	118,8	1994,1	200,4	2566,5
2014–15	22,5	354,4	55,3	202,9	107,0	2028,1	184,8	2585,4
2015–16	21,7	333,7	48,2	137,1	111,1	1846,4	181,0	2317,2
2016–17	25,4	345,9	53,4	102,9	85,6	1392,8	164,5	1841,6
2017–18	28,8	370,5	46,9	99,1	97,4	1143,2	173,1	1612,8
2018–19	33,0	374,1	44,9	98,7	94,8	1413,4	172,5	1886,3

\* Includes credit cooperatives and cooperative banks.

\* Values are inflation adjusted by the Extended National Consumer Price Index (IPCA) to June 2019 levels.

**Source:** Produced by the authors with data from the Rural Credit Data Matrix from the Central Bank of Brazil, 2019.

<sup>10</sup> Values are inflation adjusted by the Extended National Consumer Price Index (IPCA), with reference to June 2019.

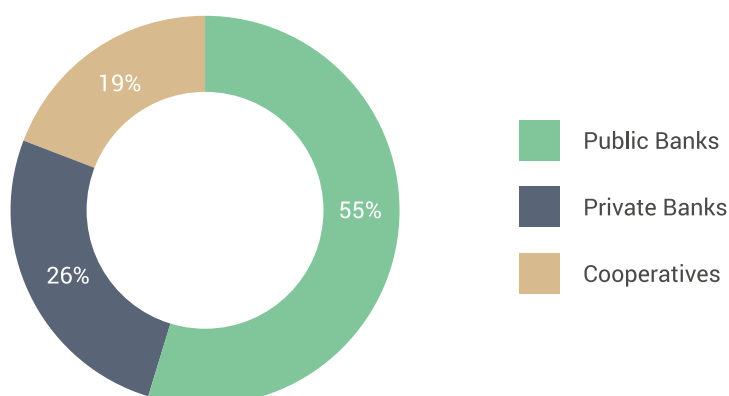
Faced with a reduction in applied volume,<sup>11</sup> financial institutions possibly changed their criteria for selecting credit beneficiaries. Producers in financial difficulty also changed their decisions about how much to borrow and which institutions to work with.

While the total volume of rural credit fell, cooperative organizations increased their rural credit lending from R\$ 21.8 billion in 2013–2014 to R\$ 33 billion in 2018–2019. This real growth of 51.3% means that their aggregate market share rose from 11% to 17.5%. With the expansion of credit from cooperatives – in contrast to the contraction of public and private banks – the number of beneficiaries who stopped accessing credit during the economic crisis may have been lower than it might have been otherwise. Given the profile of smaller producers – a group more vulnerable to restrictions on lending offers – cooperatives have become particularly important. Cooperatives cushion the impact on small producers of reduced credit offers from public and private banks.

## CHARACTERISTICS OF CONTRACTS IN THE VARIOUS CREDIT CHANNELS

For the 2018/2019 agricultural year, there were 1.4 million rural credit contracts in public banks, 374.1 thousand in cooperatives, and 98.7 thousand in private banks (see Table 1). In terms of volume of credit for that agricultural year, public banks handled R\$ 94.8 billion, credit cooperatives handled R\$ 33 billion, and private banks handled R\$ 44.9 billion. Public banks clearly dominate rural credit. Figure 3 shows how total credit in Brazil is divided between cooperatives, public and private banks. The dominant position of public banks in rural credit is evident.

**Figure 3:** Total of rural credit lending by public banks, private banks and cooperatives for the 2018/2019 agricultural year

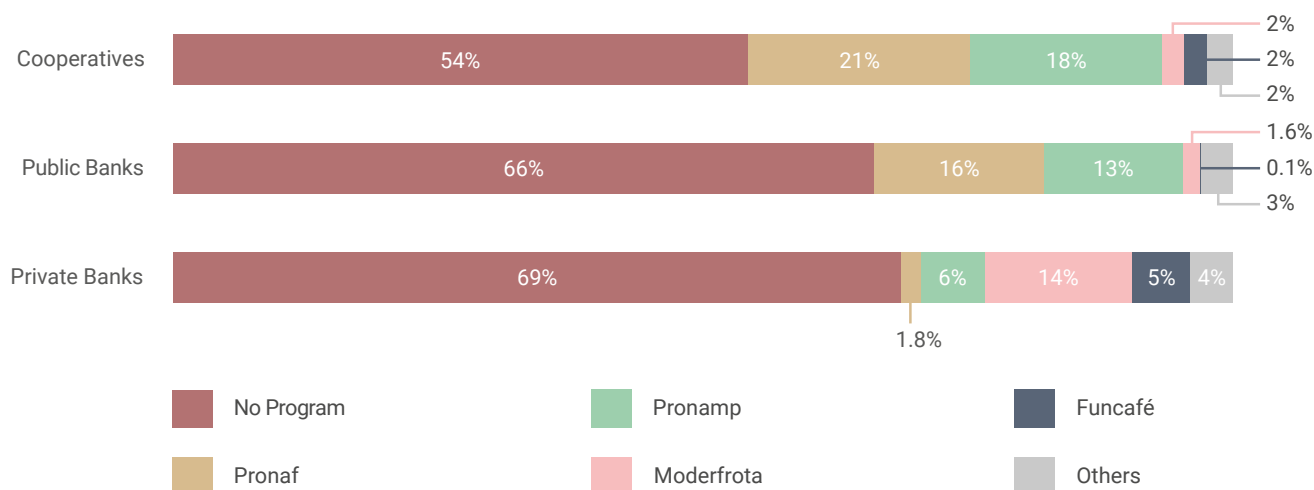


**Source:** Produced by the authors with data from the Rural Credit Data Matrix from the Central Bank of Brazil, 2019.

<sup>11</sup> There has been an 8% increase in real terms in the funds announced for PAP, and 12% for Pronaf, between the crops of 2013–2014 and 2017–2018. Meanwhile, in terms of effectively applied volume, there were reductions of 13% and 22% in PAP and Pronaf, respectively.

In the same agricultural year, cooperatives and public banks had notably lower average contract values (R\$ 88.2 thousand and R\$ 67.1 thousand, respectively) than private banks (R\$ 454.9 thousand). Since contract values are generally related to a producer's size, it may be inferred that, on average, small and medium-scale producers access cooperatives and public banks, while the largest producers access private banks. Figure 4 shows the distribution of the various rural credit lines lent by cooperatives, public banks, and private banks, and provides evidence regarding the scale of producers accessing cooperatives' resources. In the 2018/2019 agricultural year, 21% of funds lent by these organizations were financed through Pronaf and 18% through the National Program to Support Medium-sized Rural Producers (Pronamp).<sup>12</sup> In the same year, these numbers were 16% and 13% for public banks, and 2% and 6% for private banks. The average value of a Pronaf contract in the cooperatives was R\$ 32.4 thousand, while the average value of a Pronamp contract was R\$ 118.8 thousand.

**Figure 4:** Distribution of lending by cooperatives, public banks, and private banks by rural credit lines for the 2018/2019 agricultural year



**Source:** Produced by the authors with data from the Rural Credit and Proagro Operations System (SICOR) from the Central Bank of Brazil.

Figure 5 shows the share of various funding sources between agricultural years 2013/2014 and 2018/2019. The most important sources of credit for cooperatives were compulsory resources of checking accounts (MCR - 6.2),<sup>13</sup> rural savings (MCR - 6.4),<sup>14</sup> and Agricultural Credit Notes (LCA).<sup>15</sup> The share of compulsory resources – which used to be the largest source of credit – dropped significantly during this period: in 2013/2014, they made up 47% of the rural financing budget, but in 2018/2019 they accounted for only around 18%. On the other hand, it is interesting to note the growth of rural savings and the LCA.

<sup>12</sup> Pronamp is the Portuguese acronym for *Programa Nacional de Apoio ao Médio Produtor Rural*.

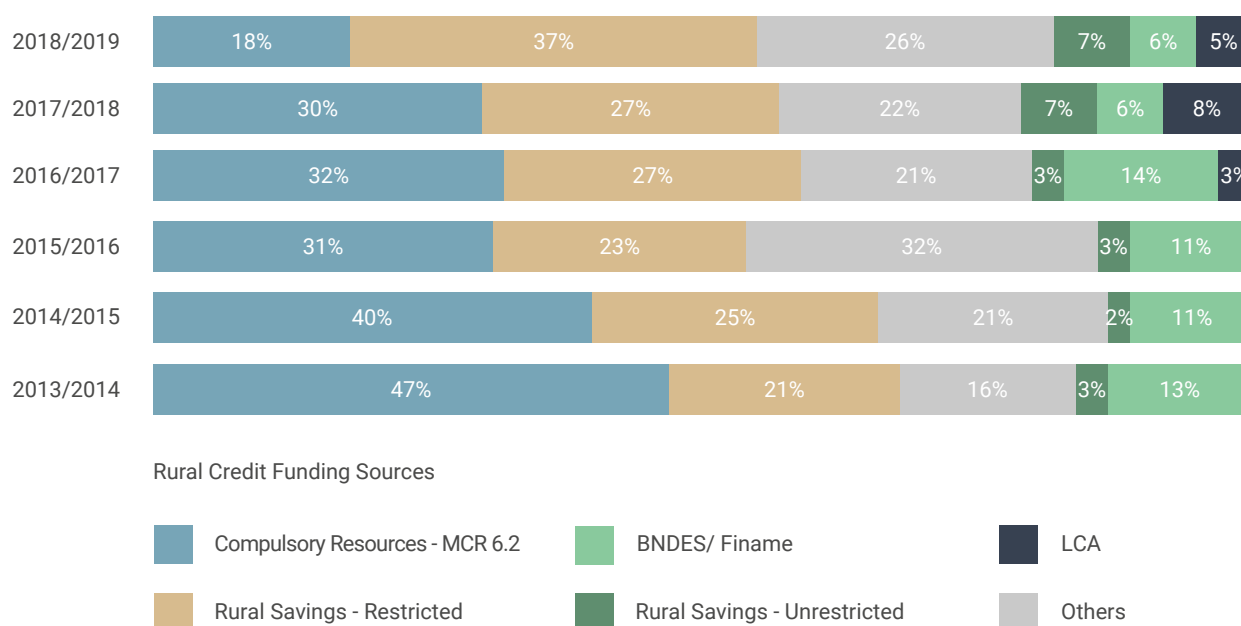
<sup>13</sup> According the rules of the Rural Credit Manual (*Manual do Crédito Rural* - MCR 6.2), compulsory resources represent 34% of checking account deposits made in Brazilian financial institutions.

<sup>14</sup> The volume of deposits in rural savings comes from fundraising associated with this financial tool by federal banks (*Banco da Amazônia*, *Banco do Nordeste*, and the *Banco do Brasil*) and by cooperative banks. A percentage of these funds (currently 60%) must be applied to rural credit.

<sup>15</sup> LCA is the Portuguese acronym for *Letras de Câmbio do Agronegócio*.

Unlike the LCA, which can be issued by credit cooperatives, funds used in transactions originating from compulsory resources derive from interbank deposits linked to rural credit (DIR)<sup>16</sup> in public or private commercial banks, since they are not subject to the same requirements. In the case of resources from rural savings, funds can come from Cooperative Banks, which receive deposits in rural savings.

**Figure 5:** Funding sources used by cooperatives between the agricultural years 2013/2014 and 2018/2019



**Source:** Produced by the authors with data from the Rural Credit and Proagro Operations System (SICOR) from the Central Bank of Brazil.

The configuration of the funding sources financed by cooperatives provides evidence of the interbank relationship between cooperatives and commercial banks. Cooperatives are becoming an alternative channel for distributing required rural credit at controlled rates. That is, private banks can lend directly to select clients and allocate remaining funds and the requirements for their administration to credit cooperatives, which apply the funds.

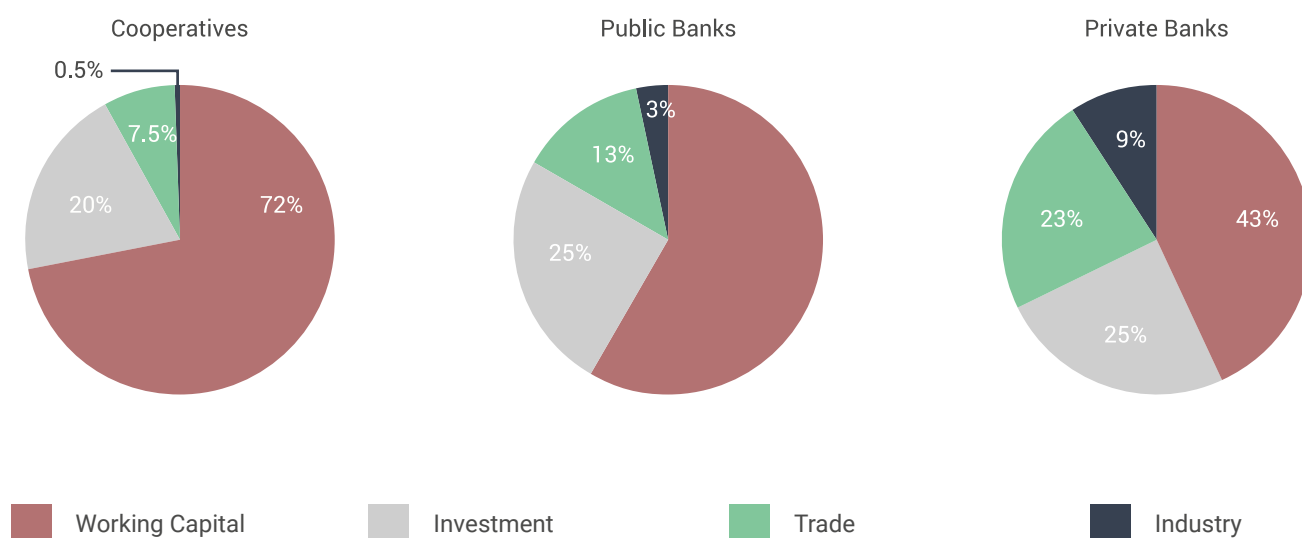
The analysis of funding sources used by cooperatives in rural financing shows that although the share of compulsory resources dropped in 2018/2019, this source still represents 18% of their lending.

Figure 6 shows the percentage of rural credit allocated for production costs, investment, commercialization, and industrialization in the 2018/2019 agricultural year. In all three channels of distribution, the largest share of funds went to production costs. For cooperatives, this amounted to 72% of funds, a considerably larger percentage than for public banks (59%) and private banks (43%). Like public and private banks, cooperatives lent more for investment (20%) than for commercialization (8%).

<sup>16</sup> DIR is the Portuguese acronym for *Depósitos Interfinanceiros Vinculados ao Crédito Rural*.

Between 2013/2014 and 2018/2019, while public and private banks saw reductions in the number of contracts for all purposes, cooperatives increased their number of contracts financing production costs by 7%. For agricultural year 2018/2019, the average value of production-cost contracts held by cooperatives (R\$ 79.9 thousand) was significantly lower than the average contracts of public banks (R\$ 115.2 thousand) and private banks (R\$ 303.8 thousand).

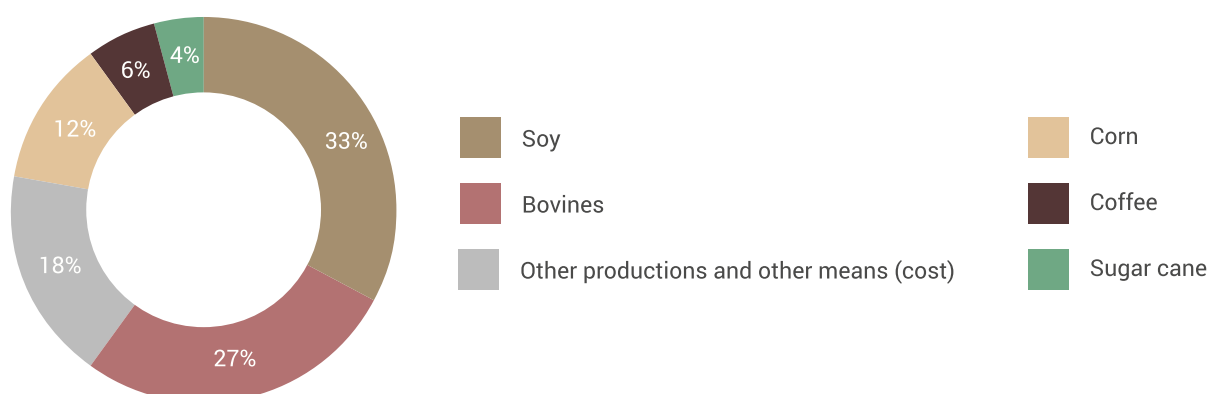
**Figure 6:** Distribution of lending by cooperatives, public banks and private banks by rural credit types for the 2018/2019 agricultural year



**Source:** Produced by the authors with data from the Rural Credit and Proagro Operations System (SICOR) from the Central Bank of Brazil.

Figure 7 shows that in agricultural year 2018/2019, cooperatives' lending for production costs was predominately allocated to soy (33%) and beef (27%). Corn also received a significant percentage of funds for production costs (12%). While public and private banks reduced the number of contracts directed toward financing soy farming (production costs) by 27% and 51% respectively, cooperatives increased this funding by 17% between agricultural years 2013/2014 and 2018/2019. In terms of credit volume for this period, there was a decrease of 16% for private banks, an increase of 13% for public banks, and an increase of 112% for cooperatives.

**Figure 7:** Distribution of credit cooperatives' lending for working capital by product for the 2018/2019 agricultural year



**Source:** Produced by the authors with data from the Rural Credit and Proagro Operations System (SICOR) from the Central Bank of Brazil.

## TAXATION AND REGULATION OF CREDIT COOPERATIVES

Credit cooperatives benefit more from tax and regulatory advantages than banks and other financial institutions. In terms of fiscal contributions, cooperatives are exempt from income taxes and the Social Contribution on Net Profits (CSLL)<sup>17</sup> for cooperative actions, which are defined as actions aimed at meeting social objectives, carried out between cooperatives and their members as well as among cooperatives.

In the regulatory framework, some credit cooperatives are also exposed to differentiated conditions that vary according to their size and operational complexity.<sup>18</sup> To make this distinction, cooperatives have been divided into three categories by the Central Bank of Brazil: full, classic, and capital and loan. Full cooperatives are authorized to carry out some operations that the others are not. The classic and capital and loan cooperatives are allowed to carry out the same activities as the full cooperatives, with the exceptions of fundraising and deposits between associates.<sup>19</sup>

<sup>17</sup> CSLL is the Portuguese acronym for *Contribuição Social sobre o Lucro Líquido*.

<sup>18</sup> This segmentation dates to 2013, when the Central Bank decided that cooperatives should adopt one of two verification systems for the minimum requirements for capital requests to face the financial institution's risks. One of the means of verification is the Full Prudential Regime (*Regime Prudencial Completo*, RPC), in which financial institutions are obligated to use the calculation methodology Required Minimum Assets (*Patrimônio Mínimo Requerido*, PMR). The PMR takes into account lending risks (associates' failure to pay), market risks (currency and interest rate variations), and operational risks (unexpected losses). The second option is the Basic Prudential Regime (*Regime Prudencial Simples*, RPS), which only covers credit risk, without calculating market and transactional risks, among other factors. The line between credit cooperatives was even more clearly drawn in 2015, when the Central Bank decided that cooperatives must follow the regime best suited to their size and level of operational complexity.

<sup>19</sup> According to Resolution no. 4.434/2015, classic cooperatives and capital and loan cooperatives are permitted the same operations with the following exception: "collecting, exclusively from associates, funds, and deposits without issuance of certificate, except for fundraising by municipalities, their agencies or entities and by businesses under their control, under the terms of article 2 of Complementary Law no. 130 of 2009." This operation cannot be performed by capital and loan cooperatives.



Changes put in place by the Central Bank in 2015 highlighted the heterogeneity between credit cooperatives. While full cooperatives are considered more complex, classic cooperatives and capital and loan cooperatives are considered more basic institutions, with less exposure to risk, that would benefit from governmental support. Accordingly, full cooperatives have joined the Full Prudential Regime (RPC)<sup>20</sup> and have adopted policies in line with Basel III. The other cooperatives have joined the Basic Prudential Regime (RPS),<sup>21</sup> which facilitates their operational routines.

Moreover, credit cooperatives are not subject to compulsory deposits, since they are not required to allocate a portion of their deposits to rural credit.

---

<sup>20</sup> RPC is the Portuguese acronym for *Regime Prudencial Completo*.

<sup>21</sup> RPS is the Portuguese acronym for *Regime Prudencial Simples*.

## CONCLUSION

Credit cooperatives have become increasingly important in rural credit distribution. They are a valuable tool in agricultural policy, receiving tax incentives and regulatory incentives vis-à-vis the banks. They have shown positive growth in rural lending during the recent economic crisis, possibly softening the impact of the crisis on small producers.

Cooperatives' relationship with banks, particularly private banks, has allowed small and medium-scale producers access to credit. Cooperatives' proximity to production areas, their ownership structures, and their operational profiles seem to make rural credit transactions smoother and less burdensome. These characteristics are important in the design of agricultural policy that aims to foster gains in efficiency and well-being.

## AUTHORS

### Juliano Assunção

Climate Policy Initiative/Pontifical Catholic University of Rio de Janeiro (CPI/PUC-Rio)  
Associate Professor, Department of Economics, PUC-Rio  
[juliano.assuncao@cpiglobal.org](mailto:juliano.assuncao@cpiglobal.org)

### Priscila Souza

Climate Policy Initiative/Pontifical Catholic University of Rio de Janeiro (CPI/PUC-Rio)  
[priscila.souza@cpiglobal.org](mailto:priscila.souza@cpiglobal.org)

### Davi Rogério de Moura Costa

Faculdade de Economia, Administração e Contabilidade de Ribeirão Preto (FEA-RP/USP)  
[drmouracosta@usp.br](mailto:drmouracosta@usp.br)

The authors thank the excellent assistance of Daniel Souza, Marcos Fabbri, Stela Herschmann, and Vitória Daier.

[www.inputbrasil.org](http://www.inputbrasil.org)

### Suggested citation

ASSUNÇÃO, Juliano; COSTA, Davi Rogério de Moura; SOUZA, Priscila. Policy Brief. **The Role of Cooperatives in Rural Credit: Cooperative credit grows during the economic crisis and supports the inclusion of small-scale producers**. Rio de Janeiro: Climate Policy Initiative, 2020.

July 2020

The **Land Use Initiative (INPUT - Iniciativa para o Uso da Terra)** is a dedicated team of specialists who work at the forefront of how to increase environmental protection and food production. INPUT engages stakeholders in Brazil's public and private sectors and maps the challenges for a better management of its natural resources. Research conducted under INPUT is generously supported by (NICFI) Norway's International Climate and Forest Initiative, (CIFF) Children's Investment Fund Foundation and (ICS) Instituto Clima e Sociedade, through a grant to the (CPI) Climate Policy Initiative.



Content licensed under Creative Commons Attribution 4.0 International. The texts in this publication may be reproduced in whole or in part provided that the source and the respective authors are cited.