

The Classist, Sexist, Racist, and Regionalist Nature of the Access to Rural Extension Service in Brazil: An Intersectional and Spatio-temporal Analysis of 2006 and 2017 Agricultural Census Data

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Abstract

Between 2004 and 2018, more than R\$2.4 billion were made available by the Brazilian Federal Government to guarantee the provision of rural extension services in the states of the country, serving, at the end of this period, approximately 7 million families. However, despite the significant investments and various actions carried out by the Federal Government, recent studies reveal that the continuous and universal provision of rural extension services in the country remain a serious challenge to the Brazilian State. In order to investigate this issue, this article seeks to examine the changes that occurred in the metrics of access to this service in Brazil between 2006 and 2017. To fully achieve this objective, we examine a set of statistical data from the 2006 and 2017 agricultural censuses with information representing access to the rural extension services according to criteria of class (family and non-family farmers), gender (men and women), ethnicity (white, afro-descendants, asian and indigenous peoples) and region (major regions of the country: North, Northeast, Midwest, South and Southeast). From the analysis of these data, it was found that access to this service in Brazil is marked by a classist, sexist, racist, and regionalist nature.

Keywords: classism, intersectional, public policy, racism, sexism.

Highlights: this article examines, from an intersectional perspective, a set of statistical data with information related to access to the extension service in Brazil according to criteria of class, gender, ethnicity and region. We demonstrated the classist, sexist, racist, and regionalist nature of the access to this service in the country.



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La naturaleza clasista, sexista, racista y regionalista del acceso al servicio de extensión rural en Brasil: un análisis interseccional y espacio-temporal de los datos de los censos agrícolas de 2006 y 2017

Resumen

Entre 2004 y 2018, el Gobierno federal brasileño invirtió más de 2400 millones de reales (R\$) para garantizar la prestación de servicios de extensión rural en los estados del país, atendiendo, al final de este periodo, a aproximadamente siete millones de familias. Sin embargo, a pesar de las importantes inversiones y las diversas acciones realizadas por el Gobierno federal, estudios recientes revelan que la provisión continua y universal de los servicios de extensión rural en el país sigue siendo un serio desafío para el Estado brasileño. Para investigar este tema, este artículo busca examinar los cambios ocurridos en las cifras de acceso a los servicios de extensión rural en Brasil entre 2006 y 2017. Para ello, se ha analizado un conjunto de datos estadísticos de los censos agrícolas de 2006 y 2017 que contienen información sobre el acceso al servicio de extensión rural según criterios de clase (agricultores familiares y no familiares), género (hombres y mujeres), color (blanco, negro, asiático e indígena) y región (las cinco principales regiones del país: norte, noreste, medio oeste, sur y sudeste). A partir del análisis de estos datos, se ha descubierto que el acceso a este servicio en Brasil está marcado por un carácter clasista, sexista, racista y regionalista.

Palabras clave: clasismo, interseccional, política pública, racismo, sexismo.

Ideas destacadas: artículo de investigación que examina, desde una perspectiva interseccional, un conjunto de datos con informaciones relacionadas con el acceso al servicio de extensión rural en Brasil según criterios de clase, género, color y región. Destaca el carácter clasista, sexista, racista y regionalista del acceso a este servicio en el país.

A natureza classista, sexista, racista e regionalista do acesso ao serviço de extensão rural no brasil: uma análise interseccional e espaço-temporal dos dados dos censos agropecuários de 2006 e 2017

Resumo

Entre 2004 e 2018, o governo federal brasileiro disponibilizou mais de 2,4 mil milhões de reais para garantir a prestação dos serviços de extensão rural nos estados do país, tendo sido atendidas cerca de 7 milhões de famílias no final desse período. No entanto, apesar dos investimentos expressivos e das diversas ações realizadas pelo Governo federal, estudos recentes revelam que a prestação contínua e universal dos serviços de extensão rural no Brasil continua a ser um sério desafio para o Estado brasileiro. Para investigar esta questão, o presente artigo analisa as mudanças ocorridas no número de pessoas com acesso aos serviços de extensão rural no Brasil entre 2006 e 2017. Para esse efeito, foi analisado um conjunto de dados estatísticos dos Censos Agropecuários de 2006 e 2017 com informações relacionadas ao acesso ao serviço de extensão rural segundo critérios de classe (agricultores familiares e não familiares), género (homens e mulheres), cor (brancos, pretos, asiáticos e indígenas) e região (grandes regiões do Brasil): Norte, Nordeste, Centro-Oeste, Sul e Sudeste. A partir da análise desses dados, constatou-se que o acesso a este serviço no Brasil é marcado por um carácter classista, sexista, racista e regionalista.

Palavras-chave: classismo, interseccional, política pública, racismo, sexismo.

Ideias destacadas: artigo de pesquisa que examina, sob uma perspectiva interseccional, um conjunto de dados com informações relacionadas ao acesso ao serviço de extensão rural no Brasil segundo critérios de classe, género, cor e região. Destaca-se o carácter classista, sexista, racista e regionalista do acesso a esse serviço no país.

Introduction

In the second half of the twentieth century, the Brazilian state created a complex institutional apparatus aimed at strengthening and expanding the technical and economic relations between the activities of agricultural, industrial, and financial capital with the external sector (Gonçalves Neto 1997; Graziano da Silva 2003; Delgado 2005; Hespanhol 2008).

The development and diffusion of technologies and scientific knowledge aimed at introducing of new logics and rationalities of production closely linked to the hegemonic order of global capitalism was made possible by the active participation of various social agents, including the institutions of rural extension. These institutions acted as intermediaries between the institutes of research and technological innovation and the rural producers, as well as in the implementation of the agricultural and rural credit policies elaborated by the Brazilian state aimed at the technological modernization of the productive forces in the field (Fonseca 1985; Rodrigues 1997; Caporal 1998).

By actively participating in the dissemination of scientific and technological innovations for agricultural activities, extension institutions have played a crucial role in the processes of (re)production and (re)organization of rural areas in Brazil. As such, they have undoubtedly contributed the significant transformations in the geographical environment, in which science, technology and information have begun to dialectically and inextricably configure the foundations of the occupation, appropriation, production, circulation and organization of territories. Thus, these territories were transformed into a new and increasingly globalized rural area, where the humanized/artificial nature and the socio-spatial relations between social actors and these spaces were subordinated to new orders and rationalities alien to local logics (Santos 2008).

In the early 2000s, in the midst of the consolidation of a democratic and popular government that sought to reassert the role of the State in promoting the country's social and economic development, the National Policy for Technical Assistance and Rural Extension (PNATER) was created with the intention to establishing mechanisms for social participation and control of public policies. In operation since 2004, PNATER's main objective has been to promote a rural extension service committed to the sustainability of agroecosystems, guided by the principles of agroecology and aimed at the empowerment,

autonomy and emancipation of social groups historically, economically and geographically marginalized in the country: family farmers, Afro-descendants, women and residents of poorer regions, such as the North and Northeast.

In order to operationalize the policy, the federal government invested in the provision of: training courses for family farmers and rural extension workers, resources and equipment for the expansion and modernization of the working infrastructure of extension institutions, the development and dissemination of social technologies, and the creation of thematic networks of rural extension in an effort to better articulate extension institutions and services to improve the exchange of knowledge and experiences on the different strategic themes included in PNATER (Caporal 2006, 2014; Mussoi 2011; Diesel, Dias, and Neumann 2015).

Between 2004 and 2018, more than R\$ 2.4 billion were allocated by the federal government to guarantee the provision of rural extension services in the states of the country, which at the end of this period served, approximately 7 million families, mainly made up of family farmers, settlers of agrarian reform programmes, quilombolas, indigenous peoples, members of riverine communities, fishermen, women and young people (Diniz 2018; Diniz, and Hespanhol 2018). The services were provided during this period by state and non-state extension agencies, with the aim of promoting the transition to agroecological production systems through the use of social technologies, the preservation and socialization of traditional knowledge, the sharing of heirloom seeds of agricultural crops, and the promotion of the creation and expansion of solidarity economy enterprises in the area.

However, despite the significant investments and the various actions carried out by the federal government to implement this public policy, the resources allocated annually to the state rural extension agencies represented only 7.5 % of the total budget, and most of the expenditure, approximately R\$ 1.7 billion per year, was covered by resources from the states governments (Asbraer 2014; Caporal 2014). Moreover, the average number of extension agents per family farm has always been far below what the Ministry of Agrarian Development (MDA) considers ideal for the providing quality services to farmers, which is one rural extension agent per 80 to 100 families (Caporal 2014). The worst averages are found in the Northeast and Southeast regions, which have the largest number of family farms

Table 1. Number of rural extension agents, total number of family farms, ratio of extension agents to family farms and shortage of extension agents in 2014, Brazil and main regions

Country and major regions	Number of extensionists	Total of family farming establishments	Extensionist/family farming establishment ratio	Deficit of extensionists
Brazil	15,745	3,897,408	1: 248	23,229
North	2,617	480,575	1: 184	2,188
Midwest	1,318	223,275	1: 169	914
Southeast	3,456	688,945	1: 199	3,433
South	3,353	665,767	1: 199	3,305
Northeast	5,001	1,838,846	1: 368	13,387

Source: ASBRAER (2014) and IBGE (2017).

in Brazil, as shown in Table 1. Given these figures, there is a shortfall of at least 23,229 extension agents in the country, of which 57.6 % are needed to meet the needs of the Northeast region alone.

Recent studies by (Gerhardt 2014; Rambo et al. 2015; Zarnott et al. 2015; Diniz and Hespanhol 2014, 2018; Diniz 2018; Diniz, and Clemente, 2020), as well as reports from extension agencies (Asbraer 2014) and statistical data from the Brazilian Institute of Geography and Statistics (IBGE 2006, 2017), show that the continuous and universal provision of rural extension services in the country, whether by state or non-state agencies, remains a serious challenge for the Brazilian state. This means that it is very difficult for rural producers to access new technologies, knowledge and innovations that can contribute to the improvement of agricultural production practices. There is also a lack of dissemination of techniques the promote sustainability in the sector and their incorporation into public policies aimed at supporting rural enterprises, especially family farms.

Nevertheless, given the considerable resources invested by the federal government to expand, democratize and universalize the provision of rural extension services throughout the country, it is imperative to examine the extent to which this new state policy has achieved positive results in terms of improving access to this service, especially among the most marginalized classes and social groups: family farmers, women, Afro-descendants and indigenous peoples, and in less socio-economically dynamic regions, such as the north and north-east. Thus, the aim of this paper is to carry out an intersectional analysis, taking into account the variables of class, race, gender and region, considering that Brazil is a country constituted and structured over centuries on the use of slave labor of black men and women, the extermination

of indigenous populations, misogynist patriarchy and the exploitation of women's labor and bodies, as well as through the implementation of development policies concentrated in the South and Southeast regions, one cannot understand the inequality that characterizes its society by analyzing only one variable (Carneiro 2011; Biroli and Miguel 2015; Souza 2017).

In order to investigate this issue, we reviewed a set of statistical data from the 2006 and 2017 IBGE agricultural censuses, with information on access to rural extension services according to criteria of class (family and non-family farmers), gender (men and women), colour (white, Afro-descendants, Asian and indigenous peoples) and region (main regions of the country: north, northeast, midwest, south and southeast). Considering that the IBGE censuses cover a significant period of time and different phases of the PNATER implementation process, including the years with the greatest contribution of resources and actions developed (2004-2015) and, more recently, a drastic reduction of investments due to the adoption of neoliberal policies by the federal governments (2016-2018), It is argued that the statistical data in question can help to clarify the advances, limitations and challenges of the Brazilian state in contributing to the expansion and democratization of the provision of rural extension services among classes and social groups that have been historically, economically and geographically marginalized in the country.

Furthermore, it is affirmed that the understanding of the situational and spatio-temporal variation of these data will allow the federal and state governments to better understand the scenario and the profile of access to the rural extension services in the field, thus supporting the elaboration of initiatives aimed at mitigating or even solving problems related to extension action

in different socio-spatial contexts, in order to mitigate the social and spatial inequalities that exist in access to these services.

The spatial scope of this study is Brazil, the 26 states and the Federal District. The data were analyzed comparatively in order to evaluate the situation, position and evolution of one unit in relation to the other during the period covered by the two agricultural censuses.

In order to fully achieve the objectives listed, the following methodological procedures were adopted; compilation, systematization, cross-referencing, spatialization and analysis of different data from the agricultural censuses related to the Rural Extension Service, resulting in the construction of tables according to the purposes of analysis of this study. Access to these data was obtained through the website of the IBGE Automatic Recovery System (SIDRA), which contains the information for 2006 and 2017. It should be noted that in Brazil the agricultural census is carried out every ten years, and in 2006 the reference period of the statistical data corresponded to the interval from January 1 to December 31 of that year, while in 2017 the interval from October 1, 2016 to September 30, 2017 was adopted.

In addition, studies with analyses and evaluations of the advances and challenges faced by the federal government and by rural extension agencies in the process of operationalizing of extension policy over the last two decades were consulted.

Through these procedures, the interpretation and spatio-temporal analysis of the statistical data related to access to the rural extension services in the spatial section delimited for this study was carried out, as well as the presentation of arguments explaining the changes observed in these data and their socio-spatial expression in the national territory.

Before proceeding with the analysis of the data, in the following paragraphs we will reflect on the evolution of rural extension services in Brazil during the 20th and 21st centuries. The discussion will include the ethical-philosophical, theoretical-methodological and epistemological principles that guide the actions in Brazil and how they have contributed to the creation of new logics and rationalities in the social relations of work, production and organization in the rural space.

Then, we analyze these data to provide a critical understanding of the advances and challenges in promoting universal, continuous and democratic access to rural extension services in Brazil and its states.

From Domestic Education to the Proposal of Dialogue as a Practice for Freedom and Agroecological Transition: The Trajectory of Brazilian Rural Extension Throughout the 20th and 21st Centuries

This section seeks to interpret, contextualize and reflect, through a geographical and historical-critical analysis, the transformations that have taken place in public policies and extension practices in Brazil. These adjustments have been influenced by the demands of the state and society through the different political-economic, socio-environmental and scientific-technological contexts of the 20th and 21st centuries. This will allow us to understand how rural extension protagonized the processes of (re)production and (re)arrangement of the Brazilian rural space.

Although the diffusion of knowledge and technological innovation in the Brazilian agricultural sector dates back to the mid-nineteenth century (Rodrigues 1997), it was only after the creation of the Brazilian Credit and Rural Assistance Association in Minas Gerais (Associação de Crédito e Assistência Rural de Minas Gerais – ACAR-MG), in December of 1948, that rural extension services were officially instituted in Brazil.

Seeking to reconcile the functional requirements of capital accumulation with the legitimization of the state and its various rural segments in the division of economic surplus (Rodrigues 1997), the rural extension service was founded as a pedagogical action based on the North American model of agricultural extension. The service sought to disseminate new ideas, knowledge and techniques of agricultural production and household management, as well as the renewal of individual and collective habits, attitudes and skills (Fonseca 1985; Rodrigues 1997; Caporal 1998).

The actions fomented by the rural extension policy in the Brazilian countryside – as well as in other Latin American, African and Asian countries – integrated geopolitical strategies developed by the United States of America (USA) during the Cold War against the Union of Soviet Socialist Republics (USSR). These strategies were used as political-ideological instruments for the expansion of North American capitalism in an attempt to stop the advance of communist ideology among the marginalized rural populations. In this way, the actions served the commercial interests of the Rockefeller Group, which sought to open up new markets for the use of chemical

and mechanical products in the nascent Brazilian agricultural sector (Mendonça 2010).

In the national context, the extension service was part of the power project implemented by the bourgeois agrarian class to combat the rise of numerous rural social movements, such as, the *ligas camponesas* (peasant leagues). By means of the collective discipline of workers and rural families, which reinforced their condition of alienation and subalternity, the elite class hoped to avoid any change in the concentrated structure of Brazilian land ownership and to minimise class conflict in the fields (Fonseca 1985; Mendonça 2010).

The theoretical-methodological and epistemological references and the ethical-philosophical principles that guided the extension services in Brazil, directed towards rural families and communities, were strongly influenced by the North American school of "The Sociology of Rural Life" (Caporal 1998). For the intellectuals of this school of thought, small farmers were seen as belonging to a "backwards subculture" that was "conservative" and "resistant to change". In contrast, rural extension professionals were perceived as "knowledgable" and it was accepted that they should be "helped" to formulate and find adequate solutions to their problems making them more receptive to technological innovations in agriculture and the household (Caporal 1998). This matrix of thought in accordance to the reflections of Souza (2017) constituted a way to enslave the oppressed in their spirit by domesticating and colonizing them through concepts that inferiorized them and consequently deprived them of self-confidence and self-esteem.

Although focusing on small agriculturalists as their primary priority and utilizing a humanist lens (which must be noted that in practice showed itself to be strongly assistencialist and oppressive) in the execution of activities towards this public, rural extension generally resulted in benefiting other groups more than others. This is because not everyone had the conditions to realize the changes suggested by the technicians and rural credit did not resolve many of their principal problems as well as the fact that such credit was inaccessible to many families (Caporal 1998; Mendonça 2010). Furthermore, we emphasize that the rigorous criteria to select the beneficiaries of extensionist programs established that the technicians should work with those "most capable", "least resistant" and most open to the adoption of scientific-technological innovation. While others considered "uneconomical", "sub-marginal" and with "a small volume of business" were in contrast excluded from the

trriage process (Mendonça 2010). In effect, these selection "criteria" remained one of the constitutional elements of the *modus operandi* of the extensionist service in Brazil throughout the 20th and 21st centuries. This resulted in the exclusion of social groups considered "unviable", such as women, Afro-descendants and peasants: which will be elaborated upon in the following section.

According to Caporal (1991), in its initial phase the principal objective of the Brazilian extensionist service was to announce the "modernization" of the technical base of Brazilian agriculture. This task was executed through a selective policy founded on an educational effort to discipline and domesticate the agriculturalists to capital. Orientating them through an attempt to "educate to consume" which transformed them into producers of food and raw materials as well as consumers of industrial products. In other words, integrating them horizontally and vertically in the nascent agro-industrial chain of production.

During the middle of the Brazilian Civil Military Dictatorship in the 1970s, the Federal Government created The Brazilian Agricultural Research Corporation (*Empresa Brasileira de Pesquisa Agropecuária - EMBRAPA*) and The Brazilian Enterprise of Technical Assistance and Rural Extension (*Empresa Brasileira de Assistência Técnica e Extensão Rural - EMBRATER*) with the intention to centralize under its strict control the practices of research, innovation and extension (Caporal 1998).

As a result, extension services underwent profound changes due to being conceived and implemented under new philosophical and operational orientations. Under EMBRAPA and EMBRATER the preferred beneficiaries of extensionist action were large to mid-sized agriculturalists who were considered to be more open and prepared for the adoption of the new scientific-technological knowledge and innovation resulting from the advent of the Green Revolution (Caporal 1991, 1998; Rodrigues 1997).

Therefore, the perspective of a humanist education which resided and served as a reference in the ambit of the theoretical-methodological conceptions and ethical-philosophical principals of extensionist action was substituted and a strictly technical, pragmatic and productivist pedagogical approach was adopted. Which conformed in image and similitude to the North American experience of rural extension grounded in the theory of "the diffusion of innovations" by the sociologist Everett Rogers (Caporal 1991, 1998; Rodrigues 1997).

Complemented and made more effective with the use of principles and assumptions originating from

communication theory (Caporal 1998), the Rogerian theoretical reference, aligned with the functionalist tradition and in consonance with modernization theory, became the framework for Brazilian extension. Leading to the origination of the so called “methods of rural extension” utilized in the formation and practice of said extensionism.

Referencing the studies of Althusser (1987) and Caporal (1991, 1998) it can be affirmed that the process of statization of extensionist services caused the rural extension institutions to assume the function of ideological state apparatuses of the *status quo* by implementing public policy that guaranteed the legitimization of the State and capitalist accumulation in the rural and urban space (Rodrigues 1997).

In other words: through extensionist services the State guaranteed the reproduction of heteronormal social practices that constituted themselves as vectors of a rationality that was superior, despotic, antidialogical, pragmatic and the arbiter of a new order in the field. Extensionist services began to have their social and economic dynamics regulated by forms of sociability and production seated in mercantile, entrepreneurial and capitalist values. These mechanisms of an oppressive ideology were reified among the agriculturalists make them susceptible to the alienation, manipulation and discipline of the hegemonic agents of global capitalism.

As a result, the rural extension service in Brazil during the Civil Military Dictatorship constituted itself as the instrument of the State for the expansion of the relationships of capitalist production in the agricultural sector. Thus, contributing to conceal/attenuate the class conflicts in the field and guarantee the continuation of the hegemony of the dominate classes in the urban and rural environment. This consequently resulted in the exploitation, alienation and subordination of agriculturalists to the industrial, commercial and financial capitals of the country. In doing so privileging the accommodation of determined social groups (well capitalized White males) and geographical regions (South and Southeast) where the process of agricultural technification was concentrated in the second half of the 20th century.

However, following the economic and socio-environmental crisis provoked by the diffusion of the technological package of the Green Revolution, in the 1980s the philosophical and theoretical-methodological principles that founded the extensionist service started to come to be the object of criticism and inquiry from within and outside the rural extension institutions. EMBRATER

endeavoured to implement a more popular and democratic extensionist policy which prioritized the poor of the rural agricultural landscape. These policies also incentivized the adoption of better ecological practices in the production of agricultural crops and the raising of livestock (Rodrigues 1997; Caporal 1998).

As a result, the pedagogical project of rural extension started to become founded in new ethical-philosophical and theoretical-methodological principles. These ideals aimed to comprehensively promote the humanity of men and women agriculturalists. This was achieved through the negation of the traditional paternalist approach by treating agriculturalists as protagonists of their own actions; active citizens and thinkers that problematized and transformed their reality and history. Leading the extensionist to no longer be a manipulative “agent of change”, but the interlocutor of a horizontal, dialogical and democratic relationship (Rodrigues 1997).

However, in spite of the efforts engaged upon by the institution, the distance between discourse and the way in which extensionist actions were exercised was soon expanded and the new orientations were merely sketched out and to a large extent limited to “a well-intentioned plan”. This indicates that the measures and criticisms realized showed themselves to be insufficient to encourage the agents of rural extension to definitively and immediately abandon their diffusionist focus which orientated the form of intervention in the countryside. In summary, despite the changes to the official discourse, the majority of extensionists continued to act following the traditional diffusionist methods elaborated by Everett Rogers guiding themselves by the productivist targets of the agricultural policies of the Brazilian State. Thus, acting in an uncritical and authoritarian way in the transfer of “alternative” technologies and methodologies to agriculturists (Caporal 1991, 1998).

In the beginning of the 21st century, through the definition of new philosophical and theoretical-methodological foundations for the execution of an extensionist service that was more committed to the sustainability of agroecosystems, PNATER represented a continuity and qualitative leap to the changes proposed in the 1980s. The policy was orientated by agroecological principles and directed towards the empowerment, autonomy and emancipation of rural social groups (women, afro-descendants, indigenous peoples and peasants) who had until then been removed from the development policies implemented within Brazil.

In this sense the policy proposed a rupture from the conventional extensionist practices grounded in the innovation diffusion paradigm and “Green Revolution” technical packet. Guiding towards, in this new phase, a holistic and integrative focus on developmental strategies through a multidisciplinary approach of agroecosystems and a technological paradigm based on agroecology. Where the methodologies adopted by extensionist actions were to be founded in a constructivist and humanist pedagogy to foment the generation and collective appropriation of knowledge. Promoting dialogue between traditional and scientific knowledge therefore reinforcing the adoption and adaptation of technologies that emphasize sustainable agricultural practices and management.

As such it can be perceived that PNATER sought to institute and strengthen other types of rationality in the production and organization of the rural space. These parallel and concurrent rationalities that were unable to fully subordinate the hegemonic rationality insurrected the incumbent rationality to pose strategic resistance to it. Thus, contributing to the engendering of new and sustainable processes of socialspacial reproduction that could help to ensure the emancipation and empowerment of the rural social subject.

However, in 2013, the Federal Government ceded to the interests and power games of the ruralists within the National Congress and adopted an antagonistic position to the new paradigm in rural extension by creating - Lei N° 12.897/13 (Brasil 2013) - the National Agency of Technical Assistance and Rural Extension (Agência Nacional de Assistência Técnica e Extensão Rural- ANATER). The creation of this agency represented a point of inflection in the trajectory of the adoption of agroecological approaches in the extensionist service by establishing an instrumental perspective within the services of ATER. The agency endorsed a technocratic vision without granting priority to socio-environmental imperatives. Orientating itself by productivist-diffusionist paradigms as well as including “mid-sized producers” to the public that benefited from its actions (removing the “exclusivity” of family farmers).

Despite the setback that these changes represented by returning rural extension to diffusionism (having in reality never been completely disentangled from it), it is important to observe that the transformations generated by PNATER left a substantial legacy in various governmental and non-governmental agencies and promoted changes not only in discourse, but also in the practices of many extensionist and agricultural organizations

(Caporal 2014; Diesel, Dias, and Neumann 2015; Rambo et al. 2015; Diniz 2018).

However, it is observed that in the light of the contemporary political-economic context marked by the imposition of neoliberal economic reforms and the accession of a government of neofascist nature in the national purview. The legislations that dictate extensionist service in Brazil have shown themselves to be extremely disfavoured to the adoption of ethical-philosophical and new epistemological foundations, as well as, the theoretical-methodological and scientific-technological proposals elaborated by PNATER. In effect limiting the realization of an extensionist service orientated by an agroecological transition through the implementation of participative methodologies and the exclusive attendance to non-hegemonic/hegemonized social groups. Which in certain measure substantiates and exemplifies the sexist, racist and regionalist nature of access to this service in the Brazilian countryside as will be demonstrated in the following section.

Characterization, Spatialization and Analysis of the Provision of Rural Extension Services in Brazil and its Federal States Between 2006 and 2017

Despite the significant investments made by the Federal Government to carry out the rural extension service across the national territory between 2006 and 2017, the number of agricultural establishments (family and non-family farming) without access to this service in the country increased by 0.4 % in the period, totaling 4,047,881 establishments (80 % of the absolute total), compared to 4,030,587 in 2006 (78 % of the absolute total), as can be seen in Table 2. In the federal states there was an even more significant increase, ranging between 3 % and 247 %, especially in the seven states of the Northern region, which had the largest variations, between 20 % and 247 %. On the other hand, the number of establishments that were assisted by the rural extension service varied negatively in the country (-10 %) and positively in only eight federal states, between 11 % and 170 %, totaling 1,025,443 assisted units (20 % of the absolute total), compared to 1,145,049 (22 % of the absolute total) in 2006.

Among the types of agricultural establishments present in the Brazilian countryside, those belonging to the category of “family farming” had the largest negative variations in the numbers of access to the rural extension

service, -15 % in the country and between -9 % and -53 % in 19 federal states, mainly verified in eight states of the Northeast region and four in the North, totaling 708,318 establishments assisted in 2017 (compared to 832,702 in 2006). The “non-family” units, in turn, showed a 2 % increase in the number of establishments assisted in the country and more modest negative variations in 12 states, between -2 % and -25 %, of which three belong to the North and four to the Northeast, totaling 317,125 establishments assisted in 2017 (compared to 312,347 in 2006).

It can be observed, from a socio-spatial analysis of these data, that among the social groups and the regions with the greatest negative variations in the numbers of access to the rural extension service, most of them are concentrated among family farmers and in the states of the North and Northeast, that is, the historically, economically and politically more marginalized groups and the less economically dynamic regions of the country, which, according to Diniz (2018), were the least favored by the financial resources of the Federal Government during the implementation of PNATER between 2006 and 2017.

Therefore, the difference between the numbers of family and non-family farming establishments assisted by extension institutions in Brazil corroborates our hypothesis that access to this service has a classist and spatially selective nature, since the most capitalized, non-family and well located producers situated in the most economically dynamic regions/states of the federation, are the ones who have the best financial, organizational and political conditions to obtain the assistance provided by public or private agents of rural extension. Family farmers, on the other hand, remain with few economic resources to pay for the services provided by private agents and difficulties in obtaining the free assistance provided by public entities of rural extension as they rely on the relatively few available public extensionists that provide services in the majority of Brazilian municipalities.

It is inferred that one of the main objectives of the Brazilian State in implementing PNATER, that is, the promotion of universal and continuous access to extension services for social groups historically, economically and geographically marginalized in rural areas of the country, was not only not achieved in these more than 15 years of operationalization of the policy, but was also unable to prevent a worsening in this indicator in the national territory and in most of the federal states, especially in those located in economically depressed regions with the worst socioeconomic indices, such as the North and Northeast.

With this being said, there is a clear need for expansion, continuity and equitable distribution of investments and actions by the federal, state and municipal public authorities in order to correct these socio-spatial inequalities in access to rural extension services in the country. This expansion needs to aim to promote, enable and expand the provision of services that facilitate the availability of knowledge, techniques and public policies that are of significant importance to the longevity of family farmers in the field.

With regard to access to the rural extension service by gender of the person who runs the agricultural establishment, it is observed that between 2006 and 2017 there was a 16 % reduction in the number of men assisted, from 1,061,904 to 896,149 individuals in Brazil, equivalent to 22 % of the total number of establishments run by male producers, while among women there was an increase of 40 %, from 83,145 to 116,127 individuals, which is equivalent to 12 % of the total number of establishments run by female producers, as observed in Table 3. Despite the significant percentage increase in access to rural extension services by the female public, the number of women who run agricultural establishments and who did not receive this service increased even more significantly in the period, from 573,110 to 829,948 individuals (45 % increase), equivalent to 88 % of the total number of establishments run by female producers, while among men this parameter decreased by -7 %, from 3,457,477 to 3,214,301 individuals, which is equivalent to 78 % of the total agricultural establishments run by male producers. Indeed, in 2017 women represented only 11 % of the total managers of agricultural establishments who were assisted by the rural extension service in Brazil (compared to 7 % in 2006), and the number of those who did not receive this service was about seven times higher than those who received it, while among men this proportion was 4 to 1.

Among the federal states, it is observed that in relation to the total number of agricultural establishments run by female producers, the lowest numbers of women who were assisted by the rural extension service occurred in the North and Northeast regions, ranging from 3 % to 15 %, while in Midwest, South and Southeast states this parameter varied between 17 % and 77 %. In other words, the unequal opportunities of access to rural extension services by the female public is, in addition to a gender issue, a sociospatial problem, since rural women living in less economically dynamic regions, such as the North and Northeast, have more limitations (economic, cultural,

Table 2. Access to rural extension services by family and non-family farming establishments in Brazil and its federal states in 2006 and 2017

Major Regions	Country and federal states	Rural extension services	Total of establishments		Variation	Family farming - Law 11,326		Variation	Non-family farming		Variation
			2006	2017		2006	2017		2006	2017	
North	Brazil	Total	5,175,636	5,073,324	-2 %	4,366,267	3,897,408	-11 %	809,369	1,175,916	+45 %
		Received	1,145,049	1,025,443	-10 %	832,702	708,318	-15 %	312,347	317,125	+2 %
		Did not receive	4,030,587	4,047,881	+0.4 %	3,533,565	3,189,090	-10 %	497,022	858,791	+73 %
	Rondônia	Total	87,078	91,438	+5 %	75,165	74,329	-1 %	11,913	17,109	+44 %
		Received	24,912	17,100	-31 %	20,490	12,931	-37 %	4,422	4,169	-6 %
		Did not receive	62,166	74,338	+20 %	54,675	61,398	+12 %	7,491	12,940	+73 %
	Acre	Total	29,483	37,356	+27 %	25,114	31,109	+24 %	4,369	6,247	+43 %
		Received	2,873	4,270	+49 %	2,204	3,338	+51 %	669	932	+39 %
		Did not receive	26,610	33,086	+24 %	22,910	27,771	+21 %	3,700	5,315	44 %
Amazonas	Total	66,784	80,959	+21 %	61,830	70,358	+14 %	4,954	10,601	114 %	
	Received	8,745	9,692	+11 %	7,347	7,540	+3 %	1,398	2,152	+54 %	
	Did not receive	58,039	71,267	+23 %	54,483	62,818	+15 %	3,556	8,449	+138 %	
Roraima	Total	10,310	16,846	+63 %	8,898	13,103	+47 %	1,412	3,743	+165 %	
	Received	825	2,227	+170 %	629	1,389	+121 %	196	838	+328 %	
	Did not receive	9,485	14,619	+54 %	8,269	11,714	+42 %	1,216	2,905	+139 %	
Pará	Total	222,029	281,699	+27 %	195,985	239,737	+22 %	26,044	41,962	+61 %	
	Received	21,346	16,869	-21 %	15,821	11,317	-28 %	5,525	5,552	+0,005 %	
	Did not receive	200,683	264,830	+32 %	180,164	228,420	+27 %	20,519	36,410	+77 %	
Amapá	Total	3,527	8,507	+141 %	2,865	6,984	+144 %	662	1,523	+130 %	
	Received	1,448	1,293	-11 %	1,083	983	-9 %	365	310	-15 %	
	Did not receive	2,079	7,214	+247 %	1,782	6,001	+237 %	297	1,213	+308 %	
Tocantins	Total	56,567	63,808	+13 %	42,809	44,955	+5 %	13,758	18,853	+37 %	
	Received	13,373	8,900	-33 %	9,054	4,900	-46 %	4,319	4,000	-7 %	
	Did not receive	43,194	54,908	+27 %	33,755	40,055	+19 %	9,439	14,853	+57 %	

Northeast	Maranhão	Total	28,7039	219,765	-23 %	262,042	187,118	-29 %	24,997	32,647	+31 %
		Received	12,198	9,283	-24 %	8,693	5,408	-38 %	3,505	3,875	+11 %
		Did not receive	274,841	210,482	-23 %	253,349	181,710	-28 %	21,492	28,772	+34 %
	Piauí	Total	245,378	245,601	+0,1 %	220,735	197,246	-11 %	24,643	48,355	+96 %
		Received	15,589	8,474	-46 %	11,957	5,616	-53 %	3,632	2,858	-21 %
		Did not receive	229,789	237,127	+3 %	208,778	191,630	-8 %	21,011	45,497	+117 %
	Ceará	Total	381,017	394,330	+3 %	341,509	297,862	-13 %	39,508	96,468	+144 %
		Received	450,94	42,608	-6 %	36,938	32,120	-13 %	8,156	10,488	+29 %
		Did not receive	335,923	351,722	+5 %	304,571	265,742	-13 %	31,352	85,980	+174 %
	Rio Grande do Norte	Total	83,053	63,452	-24 %	71,210	50,680	-29 %	11,843	12,772	+8 %
		Received	18,356	10,205	-44 %	14,639	7,106	-51 %	3,717	3,099	-17 %
		Did not receive	64,697	53,247	-18 %	56,571	43,574	-23 %	8,126	9,673	+19 %
	Paraíba	Total	167,286	163,218	-2 %	148,069	125,489	-15 %	19,217	37,729	+96 %
		Received	15,325	28,286	+85 %	11,860	21,123	+78 %	3,465	7,163	+107 %
		Did not receive	151,961	134,932	-11 %	136,209	104,366	-23 %	15,752	30,566	+94 %
	Pernambuco	Total	304,790	281,688	-8 %	275,720	232,611	-16 %	29,070	49,077	+69 %
		Received	25,510	18,995	-26 %	20,050	1,4016	-30 %	5,460	4,979	-9 %
		Did not receive	279,280	262,693	-6 %	255,670	218,595	-15 %	23,610	44,098	+87 %
	Alagoas	Total	123,332	98,542	-20 %	111,750	82,369	-26 %	11,582	16,173	+40 %
		Received	9,807	6,085	-38 %	7,424	4,177	-44 %	2,383	1,908	-20 %
		Did not receive	113,525	92,457	-19 %	104,326	78,192	-25 %	9,199	14,265	+55 %
	Sergipe	Total	100,607	93,275	-7 %	90,329	72,060	-20 %	10,278	21,215	+106 %
		Received	11,156	8,312	-25 %	8,983	5,791	-36 %	2,173	2,521	+16 %
		Did not receive	89,451	84,963	-5 %	81,346	66,269	-19 %	8,105	18,694	+131 %
	Bahia	Total	761,558	762,848	+0,1 %	665,767	593,411	-11 %	95,791	169,437	+77 %
		Received	52,672	58,556	+11 %	36,073	39,472	+9 %	16,599	19,084	+15 %
		Did not receive	708,886	704,292	-1 %	629,694	553,939	-12 %	79,192	150,353	+90 %
Southeast	Minas Gerais	Total	551,621	607,557	+10 %	437,320	441,829	+1 %	114,301	165,728	+45 %
		Received	142,254	158,986	+12 %	91,356	100,118	+10 %	50,898	58,868	+16 %
		Did not receive	409,367	448,571	+10 %	345,964	341,711	-1 %	63,403	106,860	+69 %

Southeast	Espírito Santo	Total	84,361	108,014	+28 %	67,414	80,775	+20 %	16,947	27,239	+61 %
		Received	21,832	25,321	+16 %	14,854	17,088	+15 %	6,978	8,233	+18 %
		Did not receive	62,529	82,693	+32 %	52,560	63,687	+21 %	9,969	19,006	+91 %
	Rio de Janeiro	Total	58,493	65,224	+12 %	44,121	43,786	-1 %	14,372	21,438	+49 %
		Received	17,483	16,075	-8 %	10,913	9253	-15 %	6,570	6,822	+4 %
		Did not receive	41,010	49,149	+20 %	33,208	34,533	+4 %	7,802	14,616	+87 %
	São Paulo	Total	227,622	188,620	-17 %	150,900	122,555	-19 %	76,722	66,065	-14 %
		Received	101,463	77,211	-24 %	54,882	42,506	-23 %	46,581	34,705	-25 %
		Did not receive	126,159	111,409	-12 %	96,018	80,049	-17 %	30,141	31,360	+4 %
South	Paraná	Total	371,063	305,154	-18 %	302,828	228,888	-24 %	68,235	76,266	+12 %
		Received	163,565	137,499	-16 %	125,265	100,350	-20 %	38,300	37,149	-3 %
		Did not receive	207,498	167,655	-19 %	177,563	128,538	-28 %	29,935	39,117	+31 %
	Santa Catarina	Total	193,668	183,066	-5 %	168,512	142,987	-15 %	25,156	4,0079	+59 %
		Received	104,017	94,863	-9 %	89,747	77,530	-14 %	14,270	17,333	+21 %
		Did not receive	89,651	88,203	-2 %	78,765	65,457	-17 %	10,886	22,746	+109 %
	Rio Grande do Sul	Total	441,472	365,094	-17 %	378,353	293,892	-22 %	63,119	71,202	+13 %
		Received	219,921	182,283	-17 %	184,329	147,519	-20 %	35,592	34,764	-2 %
		Did not receive	221,551	182,811	-17 %	194,024	146,373	-25 %	27,527	36,438	+32 %
Midwest	Goiás	Total	135,692	152,174	+12 %	88,326	95,684	+8 %	47,366	56,490	+19 %
		Received	39,961	33,419	-16 %	19,758	14,995	-24 %	20,203	18,424	-9 %
		Did not receive	95,731	118,755	+24 %	68,568	80,689	+18 %	27,163	38,066	+40 %
	Mato Grosso do Sul	Total	64,864	71,164	+10 %	41,057	43,223	+5 %	23,807	27,941	+17 %
		Received	24,552	22,598	-8 %	10,412	9,417	-10 %	14,140	13,181	-7 %
		Did not receive	40,312	48,566	+20 %	30,645	33,806	+10 %	9,667	14,760	+53 %
	Mato Grosso	Total	112,987	118,679	+5 %	85,815	81,635	-5 %	27,172	37,044	+36 %
		Received	27,783	21,998	-21 %	16,729	10,211	-39 %	11,054	11,787	+7 %
		Did not receive	85,204	96,681	+13 %	69,086	71,424	+3 %	16,118	25,257	+57 %
Federal District	Total	3,955	5,246	+33 %	1,824	2,733	+50 %	2,131	2,513	+18 %	
	Received	2,989	4,035	+35 %	1,212	2,104	+0,74 %	1,777	1,931	+9 %	
	Did not receive	966	1,211	+25 %	612	629	+3 %	354	582	+64 %	

Source: IBGE - Agricultural Censuses of (2006) and (2017).

institutional, organizational etc.) in obtaining this service than those located in the Southeast, Midwest and South regions of the country. Therefore, this highlights the sexist nature of the access to rural extension services in Brazil and its federal states, marked by historical, geographical and significant disparity in the rates of access and non-access of this service by men and women leading agricultural establishments.

Among the explanatory reasons for this situation, one of the most important is the permanent asymmetry and positional subalternity of rural women and the fact that their work is not conceived as linked to the production sphere, which, as demonstrated by Fiúza et al. (2009), eventually reproduces a vicious cultural-institutional cycle, with different implications for the possibilities of access to scientific-technological knowledge and innovations and, therefore, for the development of their multiple capacities and abilities. It must also be added that state institutions of rural extension, by reproducing sexist culture in their institutional *habitus*, normalize inappropriate and distinct extension practices for the male and female public in the field, contributing to the preservation of a situation of sexual division of labor that neglects the productive role of women and contributes to the permanence of disparities in the various spheres already mentioned (Siliprandi 2002; Monteiro 2008; Fiúza et al. 2009). In this regard, Siliprandi (2002: 40) states:

There is no way to analyze the work of rural extension without realizing that it was permanently marked by a gender bias. Just as women extensionists suffered a series of restrictions on their work, in the case of rural women, this bias was basically manifested in the denial of their role as farmers. [...] This action contributed to the exclusion of women from the spaces where technological issues and financing of agricultural production were, although they have always actively participated in these activities and the consequences of the changes that have occurred.

Thus, although PNATER instituted public campaigns specifically designed with a focus on promoting gender equality to establish standards and guidelines with anti-sexist directives for extension actions (aiming to contribute to overcoming inequalities in gender relations and discrimination, oppression and marginalization of rural women) it is observed that Brazil and its federal states, especially in those of the less economically dynamic regions still have a strong sexist bias in access to the rural extension service. It is urgent, therefore, to create public policy instruments and subsidize actions aimed at

mitigating these issues, otherwise the field will continue to be, for many women, a place that offers a low quality of life without the hope of professional growth and change in the position they occupy in the family and social hierarchy. This therefore stimulates, as warned by Fiúza et al. (2009), the departure of young women towards the cities and contributes to leaving the rural area with an increasingly masculine facade. Finally, in relation to access to the rural extension service by color or race of the producer, data on this issue were produced only in agricultural census of 2017. It can be seen from the data analysis that most of the producers who were assisted by the rural extension service this year declared themselves White (70.5 %), while Afro-descendants (blacks and mixed-race [pardos]) made up 28 % of this class, followed by Asians (1 %) and Indigenous peoples (0.5 %), as shown in Table 4. Among the producers who did not have access to the rural extension service, most are afro-descendants (59 %), followed by white (39 %), Asian (1 %) and indigenous peoples (1 %). In relative numbers, considering the number of producers of the same color or race who did not have access to the rural extension service in relation to the absolute total number of producers who declared themselves with the same color or race, it is observed that the inequality is highly pronounced between white and other colors or races: unassisted white producers represented 69 % of their class, while asians totaled 72 %, afro-descendants 89 %, and indigenous peoples 92 %.

Among the federal states, the producers who declared themselves White had the highest proportions of aid from the rural extension service in the South region, in the states of Santa Catarina, Rio Grande do Sul and Paraná, where they represented, respectively, 95 %, 94 % and 85 % of the total producers assisted that year, while afro-descendants reached the highest rates in the states of the North and Northeast, ranging from 27 % to 42 % of the total assisted producers. In relative numbers, however, whites had higher rates of assistance than afro-descendants in the South, Southeast and Midwest regions of the country, ranging, respectively, from 32 % to 80 % against 19 % and 73 % of afro-descendants, while in the North and Northeast the percentage values between both groups were similar, ranging from 5 % to 21 % versus 3 % and 16 % of afro-descendants. Among the unassisted producers, in relative numbers, those who declared themselves white had values between 20 % and 75 % in the states of the South, Southeast and Midwest regions, while afro-descendants varied between 27 % and

83 % in this region. In the North and Northeast, on the other hand, white producers who did not have access to the rural extension service had values between 79 % and 95 %, while afro-descendants varied between 84 % and 97 %, that is, less discrepant values compared to those observed in the South, Southeast and Midwest states.

Thus, the results point to the racist nature of the access to rural extension services in Brazil and its federal states, characterized by the predominance of producers who declared themselves white among those who had a high rate of access to the service and also by the greater representation of afro-descendant and indigenous peoples (groups that have been historically, economically and geographically marginalized) being among the producers who were not assisted by rural extension institutions.

That said, it is observed that despite the resources made available and the actions carried out in the implementation process of PNATER aiming to promote the democratization of the access to rural extension services to indigenous peoples and rural black population, and thus contribute to equality in ethnic-racial relations in the field, the racist bias of the access to knowledge, scientific-technological innovations and public policies of rural development still remain unchanged in Brazil and its federal states. It is imperative, therefore, to resume, expand and distribute equally financial resources to mitigate these issues and promote new strategies aimed at democratizing access to rural extension services to these marginalized groups and, thus, repair the historical debt within Brazilian State and society.

Final Considerations

Throughout the second half of the 20th century, rural institutions played the role of instrumenting the expansion of capitalist production relations in the field for the Brazilian State. Contributing to the maintenance of the hegemony of the dominant classes in rural and urban environments, the modernization of the technical basis of the agricultural sector and, consequently, to the exploitation, expropriation, subordination and alienation of farmers to industrial, commercial and financial capital. In fact, a technical-scientific-informational means was created in the field, produced and disseminated with the fundamental support of these institutions, which served (and still serves) the interests of the hegemonic agents of the capitalist mode of production, ensuring the functioning and reproduction of global actions that seek to impose a hegemonic rationality on all subjects and spaces.

In view of the persistence of social inequality in rural areas, which affects differently men and women, whites, afro-descendants and indigenous peoples, and regions of the country, PNATER was established in 2004 seeking to contribute to the Brazilian State's efforts to promote a more equitable and supportive developmental model in the field in terms of class, gender and race relations.

However, despite the increasing investments and the various actions carried out towards implementing the policy between 2004 and 2017, the analysis of the data from the agricultural censuses produced by IBGE in this period shows that there is still a classist, sexist and racist nature in the country and its federal states.

As demonstrated in this article, non-family farmers, who have large tracts of land and are dedicated to the mono-cultural production of agricultural commodities for export, were the ones who had the most access to the rural extension service in the country and in its federal states in 2006 and 2017, to the detriment of family farmers, who work in small and medium-sized establishments and dedicate themselves to agricultural production for the domestic market.

In terms of access to the rural extension service by gender of the managers of the agricultural establishment, it was found that, although the number of women who received this service increased, the number of those who were not assisted grew even more significantly in the period in question. In fact, women represented only 11 % of the total managers of agricultural establishments that were assisted by the rural extension service in Brazil in 2017.

In relation to the color or race of the producers, those who declared themselves white are the majority among those who were assisted by the rural extension service in 2017, while the historically marginalized social groups in the country, afro-descendants and indigenous peoples, totaled less than 30 % of the total producers assisted that year.

It is worth pointing out that, in addition to a social, gender and racial issue, inequalities in access to rural extension services are also a geographical problem, since farmers in the less economically dynamic regions of the country, North and Northeast, had much lower rates of assistance than those obtained by producers in the South, Southeast and Midwest regions. Thus, it highlights the regionalist nature of the access to this service, since the regions historically richer and favored by the country's public policies have better rates of assistance for their different social groups compared to regions that were

(and still are) more marginalized by the policies implemented by the Brazilian State.

Thus, we demonstrated the classist, sexist, racist, and regionalist nature of the access to rural extension services in Brazil, that is: white men of higher social class located in the South, Southeast and Midwest regions of the country have greater opportunities and resources to acquire new knowledge and scientific-technological innovations than black men and, above all, black women and historically 'subalternized' and marginalized classes, especially those living in less socioeconomically dynamic regions, such as the North and Northeast, hence perpetuating the situation of social, racial, regional and gender inequality in the Brazilian countryside.

Considering the current political and economic scenario, marked by the rise of a government with neofascist tendencies that has implemented a set of neoliberal policies for the dismantling of the state, this issue is expected to worsen over the next few years. Therefore, it is imperative to build new strategies of organization and action by marginalized social groups and social agents who provide technical and sociopolitical support (non-governmental organizations – NGOs, universities, pastoral and religious institutions, social movements etc.) in order to promote the establishment of networks that favor the production and sharing of new knowledge and social technologies that contribute to the strengthening and continuation of their families in the field.

Table 3. Access to rural extension services in Brazil and its federal states according to the gender of the leaders of agricultural establishments in 2006 and 2017

Major Regions	Country and Federal States	Rural Extension Services	2006			2017		
			Total	Men	Women	Total	Men	Women
Major Regions	Brasil	Total	5,175,636	4,519,381	656,255	5,056,525	4,110,450	946,075
		Received	1,145,049	1,061,904	83,145	1,012,276	896,149	116,127
		Did not receive	4,030,587	3,457,477	573,110	4,044,249	3,214,301	829,948
North	Rondônia	Total	87,078	79,257	7,821	91,349	77,016	14,333
		Received	24,912	22,961	1,951	17,044	14,887	2,157
		Did not receive	62,166	56,296	5,870	74,305	62,129	12,176
	Acre	Total	29,483	26,600	2,883	37,317	29,771	7,546
		Received	2,873	2,614	259	4,242	3,460	782
		Did not receive	26,610	23,986	2,624	33,075	26,311	6,764
	Amazonas	Total	66,784	59,919	6,865	80,891	63,982	16,909
		Received	8,745	8,033	712	9,651	7,831	1,820
		Did not receive	58,039	51,886	6,153	71,240	56,151	15,089
	Roraima	Total	10,310	8,993	1,317	16,817	13,155	3,662
		Received	825	706	119	2,203	1,803	400
		Did not receive	9,485	8,287	1,198	14,614	11,352	3,262
	Pará	Total	222,029	198,384	23,645	281,428	223,955	57,473
		Received	21,346	19,404	1,942	16,690	14,088	2,602
		Did not receive	200,683	178,98	21,703	264,738	209,867	54,871
	Amapá	Total	3,527	3,164	363	8,480	6,494	1,986
		Received	1,448	1,283	165	1,275	1,017	258
		Did not receive	2,079	1,881	198	7,205	5,477	1,728
	Tocantins	Total	56,567	51,382	5,185	63,647	53,300	10,347
		Received	13,373	12,151	1,222	8,788	7,592	1,196
		Did not receive	43,194	39,231	3,963	54,859	45,708	9,151

Northeast	Maranhão	Total	28,7039	237,673	49,366	219,550	174,696	44,854
		Received	12,198	10,874	1,324	9,111	7,714	1,397
		Did not receive	274,841	226,799	48,042	210,439	166,982	43,457
	Piauí	Total	245,378	212,695	32,683	245,400	191,060	54,340
		Received	15,589	12,857	2,732	8,311	6,766	1,545
		Did not receive	229,789	199,838	29,951	23,7089	184,294	5,2795
	Ceará	Total	381,017	338,607	42,410	393,804	317,535	76,269
		Received	450,94	41,635	3,459	42,256	35,839	6,417
		Did not receive	335,923	296,972	38,951	351,548	281,696	69,852
	Rio Grande do Norte	Total	83,053	73,813	9,240	63,222	53,206	10,016
		Received	18,356	16,640	1,716	10,033	8,548	1,485
		Did not receive	64,697	57,173	7,524	53,189	44,658	8,531
	Paraíba	Total	167,286	140,678	26,608	163,083	125,383	37,700
		Received	15,325	13,640	1,685	28,183	22,557	5,626
		Did not receive	151,961	127,038	24,923	134,900	102,826	32,074
	Pernambuco	Total	304,790	249,148	55,642	281,386	205,065	76,321
		Received	25,510	22,192	3,318	18,766	14,634	4,132
		Did not receive	279,280	226,956	52,324	262,620	190,431	72,189
Alagoas	Total	123,332	102,765	20,567	98,362	75,416	22,946	
	Received	9,807	8,654	1,153	5,927	4,892	1,035	
	Did not receive	113,525	94,111	19,414	92,435	70,524	21,911	
Sergipe	Total	100,607	80,939	19,668	93,148	72,086	21,062	
	Received	11,156	9,689	1,467	8,211	6,887	1,324	
	Did not receive	89,451	71,25	18,201	84,937	65,199	19,738	
Bahia	Total	761,558	625,306	136,252	761,921	567,271	194,650	
	Received	52,672	47,222	5,450	57,902	46,170	11,732	
	Did not receive	708,886	578,084	130,802	704,019	521,101	182,918	
Southeast	Minas Gerais	Total	551,621	492,247	59,374	605,325	518,582	86,743
		Received	142,254	132,74	9,514	157,204	141,709	15,495
		Did not receive	409,367	359,507	49,860	448,121	376,873	71,248
	Espírito Santo	Total	84,361	75,771	8,590	107,734	93,073	14,661
		Received	21,832	20,313	1,519	25,113	22,504	2,609
		Did not receive	62,529	55,458	7,071	82,621	70,569	12,052
	Rio de Janeiro	Total	58,493	51,693	6,800	64,832	54,589	10,243
		Received	17,483	16,104	1,379	15,765	13,920	1,845
		Did not receive	41,010	35,589	5,421	49,067	40,669	8,398
	São Paulo	Total	227,622	207,130	20,492	184,798	160,917	23,881
		Received	101,463	94,020	7,443	73,992	65,191	8,801
		Did not receive	126,159	113,110	13,049	110,806	95,726	15,080

South	Paraná	Total	371,063	336,200	34,863	303,541	26,2895	40,646
		Received	163,565	154,081	9,484	136,218	124,639	11,579
		Did not receive	207,498	182,119	25,379	167,323	138,256	29,067
	Santa Catarina	Total	193,668	179,213	14,455	181,674	162,900	18,774
		Received	104,017	98,850	5,167	93,844	87,232	6,612
		Did not receive	89,651	80,363	9,288	87,830	75,668	12,162
	Rio Grande do Sul	Total	441,472	400,635	40,837	363,624	319,691	43,933
		Received	219,921	207,133	12,788	181,154	166,053	15,101
		Did not receive	221,551	193,502	28,049	182,470	153,638	28,832
Midwest	Mato Grosso do Sul	Total	135,692	58,038	6,826	70,470	56,832	13,638
		Received	39,961	22,729	1,823	22,024	18,752	3,272
		Did not receive	95,731	35,309	5,003	48,446	38,080	10,366
	Mato Grosso	Total	64,864	102,733	10,254	118,071	98,147	19,924
		Received	24,552	25,657	2,126	21,498	18,957	2,541
		Did not receive	40,312	77,076	8,128	96,573	79,190	17,383
	Goiás	Total	112,987	122,899	12,793	151,464	129,088	22,376
		Received	27,783	37,024	2,937	32,888	29,172	3,716
		Did not receive	85,204	85,875	9,856	118,576	99,916	18,660
	Federal District	Total	3,955	3,499	456	5,187	4,345	842
		Received	2,989	2,698	291	3,983	3,335	648
		Did not receive	966	801	165	1,204	1,010	194

Source: IBGE - Agricultural Censuses of (2006) and (2017).

Table 4. Access to rural extension services in Brazil and its federal states according to the color or race of the producer in 2006 and 2017

Major Regions	Country and Federal States	Rural Extension Services	Total	White	Mixed-race (Pardo)	Black	Asian	Indigenous
Major Regions	Brazil	Total	5,056,525	2,297,013	2,248,549	423,408	31,108	56,447
		Received	1,012,276	714,754	243,531	40,530	8,719	4,742
		Did not receive	4,044,249	1,582,259	2,005,018	382,878	22,389	51,705
North	Rondônia	Total	91,349	36,772	45,921	7,590	561	505
		Received	17,044	7,424	8,109	1,272	105	134
		Did not receive	74,305	29,348	37,812	6,318	456	371
	Acre	Total	37,317	7,995	23,910	2,846	295	2,271
		Received	4,242	1,064	2,442	377	39	320
		Did not receive	33,075	6,931	21,468	2,469	256	1,951
	Amazonas	Total	80,891	11,106	48,168	4,676	412	16,529
		Received	9,651	1,977	6,396	578	76	624
		Did not receive	71,240	9,129	41,772	4,098	336	15,905

North	Roraima	Total	16,817	2,709	7,348	1,006	99	5,655
		Received	2,203	569	984	112	16	522
		Did not receive	14,614	2,140	6,364	894	83	5,133
	Pará	Total	281,428	55,171	191,790	30,005	2,013	2,449
		Received	16,690	4,949	9,881	1,409	206	245
		Did not receive	264,738	50,222	181,909	28,596	1,807	2,204
	Amapá	Total	8,480	1,353	4,875	1,241	82	929
		Received	1,275	193	826	233	11	12
		Did not receive	7,205	1,160	4,049	1,008	71	917
Tocantins	Total	63,647	19,890	33,943	8,621	550	643	
	Received	8,788	3,777	3,948	940	79	44	
	Did not receive	54,859	16,113	29,995	7,681	471	599	
Northeast	Maranhão	Total	219,550	43,867	140,767	31,046	1,684	2,186
		Received	9,111	3,114	4,959	927	80	31
		Did not receive	210,439	40,753	135,808	30,119	1,604	2,155
	Piauí	Total	24,540	55,460	159,128	30,456	10	346
		Received	8,311	2,570	4,872	829	7	33
		Did not receive	237,089	52,890	154,256	29,627	3	313
	Ceará	Total	393,804	106,120	255,180	29,946	634	1,924
		Received	42,256	12,872	25,897	3,117	62	308
		Did not receive	351,548	93,248	229,283	26,829	572	1,616
Rio Grande do Norte	Total	63,222	26,192	31,253	5,156	418	203	
	Received	10,033	4,480	4,648	758	111	36	
	Did not receive	53,189	21,712	26,605	4,398	307	167	
Paraíba	Total	163,083	57,642	91,073	12,212	774	1,382	
	Received	28,183	10,740	15,063	1,803	158	419	
	Did not receive	134,900	46,902	76,010	10,409	616	963	
Pernambuco	Total	281,386	92,019	159,838	22,288	1,770	5,471	
	Received	18,766	6,809	10,140	1,514	147	156	
	Did not receive	262,620	85,210	149,698	20,774	1,623	5,315	
Alagoas	Total	98,362	28,842	59,332	8,854	537	797	
	Received	5,927	2,413	3,030	429	34	21	
	Did not receive	92,435	26,429	56,302	8,425	503	776	
Sergipe	Total	93,148	25,277	58,114	9,361	285	111	
	Received	8,211	2,511	5,024	614	38	24	
	Did not receive	84,937	22,766	53,090	8,747	247	87	
Bahia	Total	761,921	190,448	442,749	120,026	4,250	4,448	
	Received	57,902	17,879	31,326	7,962	467	268	
	Did not receive	70,4019	172,569	411,423	112,064	3,783	4,180	

Southeast	Minas Gerais	Total	605,325	345,117	215,363	40,775	2,516	1,554
		Received	157,204	110,878	39,255	6,107	796	168
		Did not receive	448,121	234,239	176,108	34,668	1,720	1,386
	Espírito Santo	Total	107,734	73,027	28,419	5,942	196	150
		Received	25,113	18,518	5,593	928	51	23
		Did not receive	82,621	54,509	22,826	5,014	145	127
	Rio de Janeiro	Total	64,832	43,071	15,513	5,918	258	72
		Received	15,765	11,313	3,392	945	103	12
		Did not receive	49,067	31,758	12,121	4,973	155	60
	São Paulo	Total	184,798	148,642	25,296	4,793	5,765	302
		Received	73,992	61,249	8,674	1,433	2,532	104
		Did not receive	110,806	87,393	16,622	3,360	3,233	198
South	Paraná	Total	30,3541	241,016	49,789	7,944	3,372	1,420
		Received	136,218	116,178	15,662	2,048	2,109	221
		Did not receive	167,323	124,838	34,127	5,896	1,263	1,199
	Santa Catarina	Total	181,674	166,649	11,152	2,585	384	904
		Received	93,844	88,752	3,729	956	195	212
		Did not receive	87,83	77,897	7,423	1,629	189	692
	Rio Grande do Sul	Total	363,624	335,384	18,511	7,268	708	1,753
		Received	181,154	170,973	7,322	2,055	296	508
		Did not receive	182,470	164,411	11,189	5,213	412	1,245
Midwest	Goiás	Total	70,470	41,806	21,378	3,187	916	3,183
		Received	22,024	15,699	5,007	776	380	162
		Did not receive	48,446	26,107	16,371	2,411	536	3,021
	Mato Grosso do Sul	Total	118,071	58,155	48,309	9,408	1,146	1,053
		Received	21,498	14,401	5,899	903	219	76
		Did not receive	96,573	43,754	42,410	8,505	927	977
	Mato Grosso	Total	151,464	81,086	59,170	9,756	1,284	168
		Received	32,888	21,685	9,773	1,147	251	32
		Did not receive	118,576	59,401	49,397	8,609	1,033	136
	Federal District	Total	5,187	2,197	2,260	502	189	39
		Received	3,983	1,767	1,680	358	151	27
		Did not receive	1,204	430	580	144	38	12

Source: IBGE - Agricultural Census of (2017).

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