


Family farming in Brazil: Analysis of the precariousness of work through a systematic mapping

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ABSTRACT

The theme of "precariousness of work" has been arousing the interest of researchers worldwide since the second half of the twentieth century, expanding the debate on this field of study every day, and providing, since then, the generation of a new morphology in the world of work. In family farming, the advent of precariousness has considerably increased the difficulties of rural workers, and consequently, generating increasing social inequalities. This study aimed to analyze published articles on "the precariousness of work in family farming in Brazil" with a time frame of 20 years (2000 to 2020). The method adopted included typical stages of a systematic mapping of literature. As a result of the execution of these steps, a total of 25 articles were analyzed, which allowed us to obtain important elements for a more qualified analysis of this field of study. The findings indicate that the precariousness of work reveals itself as a field of study that potentiates a rupture in the morphology of work, transforming labor relations for rural workers.

Keywords: Social inequality in the countryside, Human ecology, I work in rural areas.

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INTRODUCTION

In everyday language, the word work has many meanings, ranging from pain, torture, and sweat on the face, to the transformation of elements of nature into objects of culture. Derived from the Latin *tripalium*, an instrument of torture, the word work evokes burden, suffering and pain (Albornoz, 2002). However, despite having negative connotations, work can be seen as something positive, which allows personal fulfillment, the satisfaction of material needs and the construction of a fairer and more balanced society.

In this way, work awakens in man diverse and unique sensations of each being, while some express suffering, torture, others find fulfillment and satisfaction, since work is an inexhaustible source of knowledge and human transformation. On this premise, Engels stated that:

Work is the source of all wealth, economists say. Thus, in fact, it is in charge of providing the materials that it converts into wealth. The work, however, is much more than that. It is the basic and fundamental condition of all human life. And to such a degree that, to a certain extent, we can affirm that labor created man himself (Engels, 1876 *apud* Mores, 1999, p. 4).

According to Engels, it was through work that man created society, culture and its history. In addition, work is a form of expression of human creativity and is fundamental for personal development and professional fulfillment. Within this context, it can be seen that work represents the moment of the ontological leap in which the merely biological being gives rise to the social being. However, the world of men asserts itself in opposition to the natural world, even though the latter is the conditional basis for their existence.

In this sense, "work is a symbol of human freedom, through which man differentiates himself from the animal, by the ability to transform nature not only to satisfy his needs, but to fulfill himself" (Macêdo, 2015, p.1).

According to Marx, "the component elements of the labour process are: 1) activity suited to an end, i.e., labour itself; 2) the subject matter to which the work is applied, the object of the work; 3) the means of labor, the instruments of labor" (Marx, 1987, p. 202). In relation to the second element, Marx asserts, "all things that labor merely separates from its immediate connection with its natural environment constitute objects of labor, provided by nature" (*Ibid.*, 1987, p. 203). On the other hand, "the means of work is a thing or a complex of things, which the worker inserts between himself and the object of work and serves him to direct his activity on this object" (*Ibid.* 1987, p. 203).

Thus, it can be understood that the founding structure of the human being is work, which has an emancipatory character, generating dignity, in the perspective of surviving on the fruit of one's work. Therefore, it is understood that work, as a human need, has its origins in the search for food in nature, and thus, since then, its field has been one of the sources of work, making family farming an open segment for the precariousness of work.



In this sense, work has been a fundamental part of human life since the dawn of history, when people had to forage for food in nature to survive. Family farming is a clear example of this, as it involves the production of food on small farms, usually maintained by families or small groups of workers.

Historically situated on the margins of Brazilian development, family farming is currently facing a scenario of deep financial crisis in our country, playing a fundamental role, previously denied, as an important social actor and productive segment, potentially capable of generating jobs and income, especially in the countryside.

Family farming, which plays an important economic and social role in terms of supply, food and nutritional balance for Brazilians, is not always on the agenda of public policies, where a significant portion of workers are excluded from development and financing policies by public banks.

Based on these assumptions, this article was based on the following guiding questions: Q1: What are the main critical points pointed out in this study on the precariousness of work in family farming in Brazil in the period between 2000 and 2020? Q2: What were the main public policies developed by the Federal Government during the period between 2000 and 2020, with a view to minimizing the process of precarious work in Brazilian family farming? Q3. What are the effects generated by these main public policies implemented by the Federal Government on the lives of family farming workers in Brazil in the respective period analyzed?

Substantiating this problem, Antunes (2018) states that in the contemporary world, the interest in studies related to the work environment, as well as its relations between the individual, organizations, and the State, grows every day. These are changes imposed by the process of financialization and globalization of the economy to a degree never reached, since financial capital began to direct all other capital enterprises, subordinating the productive sphere and contaminating all its practices and modes of labor management. As Kuenzer (2021) recalls:

The precariousness of work is one of the constituent dimensions of capitalism, which, through the process of exploitation, has as its objective the accumulation of capital; Like capitalism, it is constructed as a category as the relations of production are transformed." Thus, it is from this perspective that the process of precariousness of work needs to be better understood in order to be combated within the destructive logic of the capitalist system in vogue. In addition, as stated in the above-mentioned excerpt, for the rural worker within family farming, a very great effort is required in the day-to-day dealing, since they work from dawn to dusk subject to all the natural risks of work, as well as climatic factors, in addition to the lack of various material resources, making their work even more precarious (Kuenzer, 2021, p. 235).

According to the author, the precariousness of work is a constitutive characteristic of capitalism, whose objective is the accumulation of capital through exploitation. The precariousness of work in family farming is a complex issue that must be understood in order to combat it within the



logic of the capitalist system. In addition, workers in family farming face a range of challenges, including long hours, natural hazards, adverse weather conditions, and a lack of resources, which makes the work even more precarious and challenging.

According to Navarro and Padilha (2007), the changes that occurred in the world of work at the turn of the twentieth to the twenty-first centuries are remarkable and the increase in global unemployment is certainly the worst aspect of this situation. This indicates that, despite the advancement of science and technology and important innovations in the production process, there has been little evolution in the area of human work. These changes in the economy and society are consequences of structural changes in production that have occurred since the 1990s, which have intensified the exploitation of labor and the precariousness of employment. It can be seen that, despite the development of science and technology, and all the important innovations in the technical basis of the productive process, in the sphere of human labor it is almost non-existent.

In this sense, aiming to address these issues, the present study analyzed the academic production, published in the form of scientific articles that discuss the precariousness of work in family farming in Brazil, and, more specifically, the problem of the process of precariousness in this labor activity and its developments between the years 2000 and 2020.

This chapter is structured with an introduction and sub-items such as – Precariousness of work in family farming: a comprehensive understanding; Family farming in the context of Human Ecology; Environmental Education in the conservation of the environment; then there is the Methodology and the Results found, analyzing the main effects of this process of precariousness of work in family farming. It is reiterated that the path taken by the text aimed to analyze, through systematic mapping, the publications referring to the process of precariousness of work in family farming in Brazil in the period from 2000 to 2020.

Finally, the final considerations are presented, highlighting the main effects of this process of precarious work in family farming and the references that supported the writing of the article.

DEVELOPMENT

FAMILY FARMING IN THE CONTEXT OF HUMAN ECOLOGY

The creation of agriculture was the milestone that definitively changed the course of human history. Although the term family farming is new, it only gained popularity in Brazil in the 1990s, when it became the target of public policies that defended its consolidation as a social category. It is clear that the concept of family farming is heterogeneous and presents diversity and comprehensiveness as a social category.

Family farming is a model of agricultural production that is based on small rural properties, usually of family origin, where agriculture is an important economic activity and production is



mainly destined for own consumption and local sale. In this context, family farming is characterized by the diversification of production, the appreciation of local culture and identity, the conservation of natural resources and the search for balance between economic development and social well-being. In addition, family farming is seen as an important strategy for rural development and for the promotion of food security and food sovereignty.

According to Harari (2019, p. 107), "agriculture has allowed populations to increase so rapidly and radically that no complex agricultural society could sustain itself again if it were to rededicate itself to hunting and gathering." According to this author, agriculture was fundamental for human development.

In this sense, agriculture is defined as the practice of growing plants and raising animals to obtain food that meets the nutritional needs of a community. According to Pereira, Cordeiro and Araújo (2016), this activity is essential to ensure the livelihood of the population. In addition to producing food, agriculture also contributes to the economic and social development of a region.

Agriculture has its origins around 10,000 B.C. (Khatounian, 2001). Since then, man has used his skill and knowledge to produce his own food and ensure his survival. The evolution of agriculture over the years has allowed people to improve their living conditions, using nature's resources to achieve a more prosperous lifestyle.

The paradigmatic change in the advent of human ecology in this twenty-first century, in which human beings will be directly responsible for the conservation of the environment, breaks with the concepts of predation since the times of the first human groups, passing with greater voracity throughout the twentieth century, leading to the extinction of several species, as well as unbalancing naturally harmonized ecosystems.

It is through this new way of thinking and acting that the new paradigm of global conservation of the Earth's environment is inaugurated. Thus, according to Bomfim (2021):

Contradictorily, changes have been announced over time, putting the human being in conflict with himself, disturbing him with the estrangement that denounces the antagonism with his ontology. Not only does the real in its uniqueness, multifacetedness, interconnectivity, contradictoriness, and multi-referentiality disturb us, provoke us, demanding from us an intellection that accounts for its attributes, but our own socio-historically developed ontology beckons with the exhaustion of time of the old paradigm in shipwreck (Bomfim, 2021, p.359).

From the analysis of Bomfim (2021), we can conclude that constant change in the real world is a challenge for human beings, since the strangeness that these changes cause demands our understanding and ability to adapt. In addition, the⁷ socio-historical ontology of the human being is

⁷ For Lukács (2018), ontology studies the nature of existence, reality, and the existence of being. It focuses on answering the question "what is it?" and seeks to understand the fundamental nature of reality, being, and knowledge. Ontology



also being challenged, as the old paradigm is in decline, which threatens the stability of our social and historical structures.

Based on the studies of Navarro (2021), it is understood that the first challenge to deal with the theme "family farming" would be to problematize it, because, according to him, the expression itself is conceptually empty. This is so because, in fact, all rural producers are, in fact, "family-owned", including those who own very large establishments. Concretely, "family" refers exclusively to the management of the property, and thus almost everyone is family. Also according to this author, this is an original error of the expression in Brazil, and its authors wanted, in fact, to constitute a smaller subgroup, the producers of smaller economic size, that is, the poorest. This form of agricultural production, based on small farms and the use of traditional techniques, is considered a more sustainable and balanced alternative for the environment and society, compared to industrial agriculture.

Navarro (2021) makes an observation in his research on the topic in question and points out that not even medium-sized producers should be part of the group initially thought. For this reason, the delimitation of this concept in our country has expanded beyond the area of the establishment, including criteria that, in practice, sound somewhat absurd, such as, for example, establishing limits for the hiring of labor or non-agricultural work outside the rural establishment, citing as an example, a new labor modality that is quite widespread nowadays, which is the case of "plurality".⁸

That said, the impression he has when studying the subject in our country is that the expression has become "magical" and spoken by everyone, suggesting something consensual, becoming more evidence that in Brazil, its themes are little discussed, indicating that the existence of critical thinking is very scarce among Brazilians.

After all, how to define Family Farming (FA)? According to Navarro (2021, p.35), the expression has been institutionalized and thus become commonplace in Brazil in the last two decades, suggesting empirically indicating the large group of "small rural producers with lower incomes". However, for a better epistemic understanding, the aforementioned author inserts, in the perspective of the historical evolution of the concept of family farming, four different angles, although according to him, interrelated:

considers questions such as what exists, what is real, what is possible, the nature of existence, and the relationship between being and the world.

⁸ Second Nascimento; Silva; Maciel (2019), pluriactivity corresponds to agricultural and non-agricultural activities that have significance in the formation of family income, including in this aspect, in addition to agricultural activity in the strict sense: the performance of salaried work on other rural properties; para-agricultural activities, corresponding to the processing and processing of fresh or derived production, *carried out on the property itself or acquired externally, for own consumption and for sale; non-agricultural activities carried out or not within the property, such as rural tourism or, totally outside the peasant routine, labor activities linked to the urban sector, such as industry, commerce, services and informal work.*



The first and oldest use of the expression family farming is limited to the North American case, since the mid-19th century, and comes from the colonization of its vast rural regions (in which there was no previous peasant history). In the United States, the adjective "family" refers exclusively to the form of administration, that is, if the management of the property is in the hands of the family members, the property will be so designated. [...] A second tradition on the subject is the European *latu sensu* (because here the differences between countries, which can be significant, are disregarded). With regard to the European Union as a whole, the conceptual similarity between government policies, on the one hand, and academic interpretations, on the other, began to converge only in recent years, with the consolidation of the bloc and its policies for the countryside, especially the "Common Agricultural Policy". [...] A third look at the expression is one that would reflect the long and rich interpretive tradition of the agrarian left. Without the possibility of examining the almost infinite nuances of this political and theoretical field, for a long time it was a focus that insisted, particularly, on the intensification of the processes of social differentiation and the gradual disappearance of small producers. [...] Finally, the fourth look at the subject is typically Brazilian. In the country, the expression emerged in the first half of the 1990s, giving rise to a relevant rural credit program, such as PRONAF (Program for the Strengthening of Family Farming) and even merited a "Family Farming Law", signed in 2006 (Navarro, 2021, p. 35).

In this regard, family farming plays an important role in maintaining biodiversity, conserving and preserving natural resources, and building more self-sustaining communities. In addition, these small farms generally use healthier farming practices that are less harmful to the environment, such as crop rotation and the use of organic fertilizers.

However, family farming also faces challenges, such as a lack of financial and technological support, unfair competition with large producers, and difficulty in accessing markets. Therefore, it is important that managers expand public policies and that they are aware of this reality and support family farming in its path towards a more balanced and sustainable development.

The family farmer is an important element of contemporary society, with firm roots in the rural environment and acting according to the needs of the market. Even though it maintains characteristics of the peasant tradition, each family farmer has his own conditions and ways of working. They are dedicated to the sustainability of their family, passing on knowledge acquired from generation to generation to take care of their crops on a daily basis (Nascimento; Santos, 2020). According to the authors, the family farmer is more than a simple social agent, he is also a builder of knowledge through his interactions with nature, the world and others. These interactions allow them to organize their own experiences and learnings in a way that is unique and specific to their integrated social and ecological relationship.

Biased by this premise, sustainable development is a global issue and important for the preservation of the environment and ecological balance. According to a United Nations (UN) survey, mentioned by Bevilaqua (2016), sustainable development has a positive impact on environmental issues. This is due to the way it is conducted, without the excessive use of pesticides, with the responsible management of the land and flora, and the preservation of water sources, such as springs and streams.

However, it is important to highlight that this is only one aspect of the issue of sustainable



development and to have an even more positive impact it is necessary to consider other factors, such as energy efficiency, waste management, the preservation of biodiversity and other important aspects for the environment. In addition, it is necessary to involve society as a whole in order for this type of development to succeed and achieve the desired environmental impact.

However, with the approval of Law No. 11,326/2006, which provided the legal framework for family farming, the segment was able to ensure recognition and social and economic importance through the expansion of public policies such as credit (Pronaf); Technical Assistance and Rural Extension (ATER); Commercialization, through the Food Acquisition Program (PAA) and the National School Feeding Program (PNAE); Crop insurance and equality for women. It is worth mentioning that, based on the Food Acquisition Program (PAA), in 2003, and the reformulation of the National School Feeding Program (PNAE), with Law No. 11,947, of 2009, with these programs strategies were created for food and nutritional security and the fight against hunger, seeking to establish a connection with production and consumption through the institutional purchase of food from family farming (Fragoso *et al.*, 2020).

Contributing to a better understanding of the context of family farming, Human Ecology has also focused on the study of issues related to work in the field, from the perspective of a better understanding of themes such as: formality/informality, unemployment, precariousness of labor relations, loss of labor rights, among others.

The first person to use the expression "Human Ecology" in 1892 was the American chemist Ellen Swallow (1842-1911), a pioneer in the field of sanitary engineering. She conceptualized that "Human Ecology is the study of the environment of human beings in the effects they produce in the lives of men" (Bomfim, 2021, p. 17). However, Bomfim (2021) states that:

Human Ecology emerged at the beginning of the twentieth century and developed until the 1940s as a result of a given way of scientifically facing the understanding and resolution of a series of social problems that aggravated social life in the USA, mainly resulting from the intense unbridled industrialization in the midst of two world wars, the absence of public policies that could resolve them and the *stock market crash* of 1929 (Bomfim, 2021, p.37).

Contributing to this analysis, Pierson (1970, p. 12-13) states that "Human Ecology, however, studies the relations that exist, not directly between the physical environment and man, whether the influence of the former on the former, or of that on the latter, but the relations between men themselves, to the extent that these relations are in turn influenced by the *habitat*". From this perspective, the assumptions of human ecology, as well as studies directed to our national reality, began to be part of the discussion as such, only from 1983, with Avila-Pires.

Bomfim (2021) points out that:

In 1984, with Dr. Maria José Lima and physician and researcher Paulo de Almeida Machado; in 1993, timidly, with Dr. Alpina Begossi; and from 2009, with Dr. Juracy Marques. On



August 20, 2012, the Brazilian Society of Human Ecology was founded, and the book by Prof. Dr. Ronaldo Alvim, *Human Ecology: from the academic view to current issues*, was launched (Bomfim, 2021, p. 82).

Thus, human ecology is a concept that has been approached in different ways, which makes it important to have a more in-depth analysis of its variants. However, it is undeniable that family farming is a key element in generating jobs and ensuring dignity and sustainability for families working in the countryside. In addition, family farming is also essential to ensure food supply and income generation for farmers.

In view of the above, it is understood that family farming becomes essential for the generation of jobs in the countryside, in addition to providing dignity to the families involved in the food production process, aiming at the family's food supply, as well as the prospect of income generation for the peasant worker.

Therefore, deepening the discussion on the importance of family farming, including practical models of how it has positively impacted the lives of the families and communities involved, in addition to providing public policies that support family farming and its contribution to food security, job creation, economic development and environmental preservation, is essential to strengthen its insertion as a strategic activity in society.

Concrete examples of how family farming has positively impacted the lives of families and communities include the preservation of cultural traditions, the guarantee of healthy and quality food for communities, the generation of employment and income, the promotion of sustainable agriculture and the contribution to food security.

In this sense, public policies to support family farming, such as credit, technical assistance, access to markets, and land preservation, are essential to ensure its success. In addition, actions that value and recognize the importance of family farming, such as the inclusion of its production in school feeding programs and the creation of marketing programs, are also important for strengthening the activity.

According to Machado (1984, p. 140), "since man realized that the surface of the planet is limited and, therefore, natural resources exist in limited quantity, there has been an awareness and man has discovered that he needed to meditate on the depletion of natural resources". Despite the limitation of natural resources for the survival of man on our planet, it is not enough for the human being to have "consciousness". It is necessary to take more concrete actions to conserve these resources in various environments, with more ecologically responsible extraction and management practices, under penalty of compromising the survival of the planet and all human beings. These actions include more responsible extraction practices, such as the use of more efficient and less impactful technologies, the implementation of environmental protection measures, the creation of public policies that encourage the conservation of natural resources, among others.



According to Bomfim (2021, p. 215), "Paulo de Almeida Machado, the most sober of the theorists of Brazilian Human Ecology [...] It makes it very clear that the human ecologist's gaze must also focus on interfaciality, which constitutes the relationship of the human being with his environment", therefore, family farming can and should help in the conservation of the environment in its various productive spaces, respecting nature, man and his work. However, it is important that it is aligned with practices that respect nature, man and his work, thus ensuring sustainable and harmonious production with the environment. Therefore, within this understanding, family farming, when well planned and executed, can be an important ally in the conservation of the environment and in ensuring a more sustainable future for communities and nature. Therefore, we must highlight the importance of family farming as a fundamental element in the search for a healthier relationship between human beings and nature.

As an economic activity carried out on a small scale, family farming can be seen as an opportunity to implement more sustainable agricultural practices, which seek to conserve biodiversity and minimize negative impacts on nature. In addition, family farming can also be a means of fostering society's awareness of the importance of environmental protection, being fundamental for the development of an ecological culture.

Therefore, our understanding is that there is a direct relationship between Brazilian family farming and human ecology, which seeks to be a matter of survival, which works daily in the perspective of having a balanced environment, as well as a society that is sensitized and oriented in this direction.

PREARIOUSNESS OF WORK IN FAMILY FARMING: A COMPREHENSIVE UNDERSTANDING

The changes imposed on the world of work are accelerated, and often destructive, taking away workers' rights won over years of struggle. It is these changes, often maliciously exploited by authorities and legislators to serve the disruptive logic of capital, that weave the web of precariousness, aiming at the global deterioration of historically conquered labor rights, imposing on daily life a gigantic project of social deconstruction.

Souza (2017, p. 96) states that "nowadays, financial capitalism begins to create its own working class, increasingly precarious and threatened by unemployment and the cutting of rights". With the advance of capitalism, as modernization infiltrates the rural environment, and leads to new forms of work and life for rural workers, it has strongly affected small farmers who live from family farming on small properties in the countryside (Werlang; Mendes, 2016). In this way, small family farmers become hostages of a mechanization process, as well as of a financially unviable production system, which can lead to the end of their activity.



As Werlang and Mendes (2016) argue, the contradiction that is installed in this space of life and work, which expresses the case of family farming, is undeniable. In order to survive, labor relations are made more flexible and precarious, gradually changing the way small farmers are and what they do. Therefore, the precariousness of work in family farming is a serious problem that affects the lives and well-being of workers and their families, as well as the quality and sustainability of agricultural production. It is important to highlight that family farming is an important source of employment and income, especially in rural regions, and that the precariousness of work can lead to the exhaustion of workers, the degradation of the environment and the discontinuity of agricultural production.

The precariousness of work in family farming can be caused by a number of factors, including a lack of public policies to support family farming, a lack of investment in technologies and equipment, a lack of social protection, and a lack of political representation. In addition, unfair competition with large agricultural companies and excessive dependence on international markets can also harm the situation of family farming.

In this sense, in order to combat the precariousness of work in family farming, it is important to implement public support policies, which include investments in technologies and equipment, social protection and political representation for family farmers. In addition, it is important to promote the appreciation of family farming, highlighting its economic, social and environmental importance for the country.

Marx (2014), from a critical perspective of the capitalist system, argues that the structural changes promoted in the productive system at the end of the nineteenth century show how essential human labor has become to the reproduction and self-valorization of capital, to the forms of intensification and extraction of surplus value for the perpetuation of the system over time. The same thought expressed by Sousa (2017, p. 89) when he states that "that hatred and contempt that is devoted to the sub-human in relation to which all classes, even the class of semi-skilled and precarious workers, will want to distinguish themselves and feel superior".

Thus, there is a clear perception that:

The capitalist system at the global level, especially in the last four decades, has been transformed under the aegis of flexible accumulation, thus breaking with the Fordist pattern, thus generating a way of work and life based on the flexibilization and precariousness of work (Antunes, 2018, p. 153).

Substantiating this problem, it is necessary to understand that global capitalism has been evolving with the implementation of flexible accumulation, which is characterized by decentralized production and an accelerated pace of technological and organizational changes. This results in greater flexibility in the labor market, with the expansion of precarious forms of work, such as



temporary, self-employed, outsourced work, among others. In addition, flexible accumulation has led to an intensification of work, which means a greater workload for workers. Therefore, the precariousness of work has significant implications for people's lives, including economic uncertainty, lack of job security and reduced labor rights, which can lead to an erosion of quality of life and an intensification of worker exploitation.

In this sense, Bourdieu (1998, p.120) points out the effects that such a productive order can have on the world of work. The author notes that "precariousness is everywhere today", acting in the most diverse market segments, because what prevails in the relations of production are temporary and interim forms of insertion typical of the flexible accumulation model, also found in Brazilian family farming. Within this context, the author states:

Precariousness profoundly affects any man or woman exposed to its effects; By making the future uncertain, it prevents any rational anticipation and, especially, that minimum of belief and hope in the future that one must have in order to revolt, especially collectively, against the present, even the most intolerable (Bourdieu, 1998. p. 120).

No less important, within the corollary of the degradation of labor relations, we also have the precariousness of Brazilian family farming. Lesbaupin and Mineiro (2002) point out that the problems associated with the precariousness of work in family farming and its effects, both for rural workers and for consumers of agricultural products, are of great importance, since work is a category of sociological analysis that can understand social changes in the countryside.

The precariousness of work in family farming is a very relevant issue in Brazil, in view of the importance of agriculture for the economy and for feeding the population. Many rural workers suffer from precarious working conditions, without labor rights, and without adequate monitoring and inspection. The lack of social assistance and the lack of investment in public policies for the agricultural sector are serious problems that contribute to the precariousness of work in family farming. Rural workers are left with no protection and no means to fight for their rights. In addition, the concentration of land and the expansion of monocultures have harmed family farming, making many peasant workers landless and forced to seek employment in precarious conditions. In addition, it is necessary to intensify the inspection and monitoring of compliance with regulations to protect the rights of workers and improve their living and working conditions for these workers.

Still in the context of concerns about issues related to the precariousness of work in family farming and its effects on rural workers and consumers of agricultural products, Wanderley (2014) points out that in Brazil there are two obvious situations in relation to forms of agriculture: the first, a dominant model, based on the logic of capital, of high cost, encouraged and financed, based mainly on land concentration and the production of a large-scale crop, agribusiness; and the second, a blocked and excluded model, which preserves traditional knowledge of production (but also



innovates), is based on family work, is generally diversified, etc., family farming.

Following this bias, the reflexes of this conception in the world of work are clear, with the development of labor laws that are much more focused on industrial and urban activities and, with regard to the rural environment, referring only to the relations established in the agro-industrial or agribusiness process today (Nishikawa; Nunes; Espíndola, 2012).

The advancement of the agro-industrial process and agribusiness resonates with the liberal principles of delegating to the market the way the economy is conducted, and how the economy will dictate the social rules of society. Liberalism, thought of as a space of freedom and autonomy for those who produce, without the need for the imposition of the "state hand", comes into conflict with the social difficulties and needs of a fragmented, sick and impoverished society. Souza (2017, p. 99), states that "the freedom that our liberalism has always defended has been the freedom to plunder society, both collective work and national wealth, into the pockets of the predatory elite that has always characterized us".

The capitalist system in the process of production and commercialization of products derived from the countryside has been providing, every day, scenarios of precariousness of work, among these are mechanisms that lead to the disintegration of the peasantry, to its annihilation as a social class. Among them, we can highlight the migration from the countryside to the city, as well as pluriactivity. In addition to being an expression of the precariousness of work, they are also vectors of the destruction of an economy based on family farming. However, it is observed that such mechanisms have a double perspective: they are necessary as a means of social reproduction, but they are also perfidious, since they attack or pervert the small farmer in his essence, that is, the production of the land and the raising of animals for his survival and that of his family (Werlang; Mendes, 2016).

According to the articles analyzed in this study, the main effects of this process of precariousness of work in family farming in our country are: i. the use of agricultural inputs indiscriminately; ii. social disaggregation; iii. formality/informality at work; iv. unemployment; v. precariousness of labor relations; vi. loss of labor rights; vii. problems related to insufficient technical and management assistance in the coordination of government programs for the sector; VIII. low schooling of rural workers; ix. low level of organization on the part of producers; x. migration from the countryside to the city; XI. participation of children and adolescents in work activities in the field; XII. use of pesticides without control and technical monitoring, weakening the health of rural workers every day; xiii. pluriactivity, among others (Santos; Cândido, 2013; Oliveira, 2007; Del Fiori, 2017; Nishikawa *et al*, 2012; Silva *et al*, 2000; Lesbaupin; Mineiro, 2002; Werlang; Mendes, 2016). In addition, the lack of protection and investment in public policies for this agricultural segment undermines the competitiveness and sustainability of family farming, affecting



the country's economy and food security.

THE CHALLENGE OF ENVIRONMENTAL EDUCATION IN THE CONSERVATION OF THE ENVIRONMENT

Environmental education (EE) is fundamental for the conservation of the environment and for ensuring a sustainable future for the next generations. The challenge of EE is to sensitize people to the importance of conserving the environment and to teach sustainable practices that allow the harmonization between human development and the protection of the environment.

The pressures exerted by natural resources together with anthropogenic actions cause worrying situations, where the natural environment is completely transformed by the man-made environment, as he points out (Santos, 2018), and which has as an example what often occurs within this context, which is the use of pesticides in family farming, generating with this practice, risk to the health of the populations of field workers, as well as the possibility of contamination of soil and water sources, due to the simple fact of not properly disposing of the packaging used in the production of various agricultural crops.

To this end, it is necessary that EE be included in political and educational agendas, both in school and outside of it, and must be transversal, covering all areas of knowledge and all sectors of society, in order to sensitize all social actors to its importance and impact on people's lives.

The process of environmental conservation is recent, including in Brazil, where every day it has been gaining more importance in discussions about the preservation and conservation of the global environment. In this way, human intervention creates a direct impact on the ecological structure of ecosystems, altering various habitats, thus compromising the natural cycle within the biosystems involved.

In addition, it is important to develop concrete actions to conserve the environment, such as reforestation, conservation of green areas, recycling of disposable materials, the use of renewable energy sources, among others.

Therefore, EE must be a continuous and dynamic process that involves the whole of society in building a sustainable future.

Still endorsing this understanding, Santos (2018) states that:

The global environmental crisis we are experiencing is of great magnitude and is reflected in climate change, desertification, land and water degradation, and social crises such as the lack of basic conditions for human existence in the four corners of the Earth. In this context, the socio-environmental impacts in the current scenario generate a great concern for specialists around the world, as natural resources are considered inexhaustible, combined with unbridled consumption patterns, putting the environmental balance of our planet in a delicate situation (Santos, 2018, p. 13).

Thus, it can be seen that these events, often catastrophic, are increasingly frequent, related to



environmental problems. However, international organizations began to demand a new posture, and the United Nations (UN) has a remarkable performance, as demonstrated by (Coutinho, 2009). In this aspect, contemporary man has been destroying the planet's biodiversity on a daily basis, generating unprecedented consequences for the future of several species of living beings.

Segundo Moura *et al.* (2021):

We live in an extremely consumerist society, which always puts economic issues ahead of environmental ones, of the individual above the collectivity, of the wealth of a few to the detriment of the poverty of the vast majority of the population, of the perspective of easy profit, even destroying nature instead of a more equitable distribution of income, combined with a collective practice of preserving the natural resources that still exist. From this perspective, and many others, it can be seen that planet Earth will not support economic growth based on the current pattern of extraction and consumption of natural resources for long (Moura *et al.*, 2021, p. 06).

Thus, EE from the perspective of environmental conservation can also be described as a critique of social systems, the economic model, the mode of production of goods, forms of social development and the generation of knowledge, centralizing socio-environmental issues, questioning the causes of problems and seeking to respond to some of the challenges imposed by the environmental crisis. providing the possibility of transforming the world in the conservation and preservation of our natural resources, which are so essential to the planet and to human beings.

In this sense, it is important to highlight that the teaching of EE in Brazil is supported by Federal Law No. 9,795, of April 27, 1999 (which provides for the National Environmental Education Policy (PNEA) In the State of Bahia, it is based on Federal Law No. 12,056, of January 7, 2011 (which institutes the Environmental Education Policy of the State of Bahia).

According to the PNEA (National Policy on Environmental Education) in its Art. 2, Environmental Education is an essential component of National Education, and must be present in an articulated way, at all levels and modalities of the educational process, in a formal character (public and private educational institutions) and non-formal (in educational actions and practices aimed at raising awareness of the community about environmental issues, which can occur in spaces outside the school, without determining a curriculum, of schooling) (Oliveira; Santos, 2019).

It is emphasized that the EE process must go through the various social spaces that man lives in this contemporary society. In other words, EE should and can go beyond the family, the job, the community, the church, etc., while Formal Education is a broader concept, where the school environment is a place with the function of training the individual.

The process of sensitizing the subject through environmental education can be an important step towards the preservation of the planet. However, these laws propose the understanding of environmental education, through the processes through which individuals and collectivity build social values, aimed at the conservation of the environment, essential to a healthy quality of life and



the sustainability of the planet (Oliveira; Santos, 2019).

Human activities carried out through capital and the capitalist system have exploited natural resources and destabilized ecosystems, with the purpose of producing food and material consumer goods, without taking into account the capacity for regeneration of these resources, which naturally does not occur at the same intensity as they are extracted (Moura *et al.*, 2021).

In this context, the process of mass destruction of the planet's natural resources has been causing harmful consequences in several areas of life in society, such as agriculture, livestock, food security and in general, in other forms of production, implying soil erosion, salinization, desertification, soil contamination, contamination of riverbeds, greatly affecting the structure of the most diverse ecosystems on Earth. endangering human survival itself (Vargas, Fontoura; Wizniewsky, 2013).

From this perspective, environmental education presents itself as a paradigm that transforms social praxis, proposing the modification of man in such a way that it can provide a more just and supportive society (Moura *et al.*, 2021).

Confirming what Moura *et al.* (2021) state, Verdelone, Campbell and Alexandrino (2019), reiterate that environmental education is a process of recognition of values and clarification of concepts, which aims to develop skills and change attitudes towards the environment, to understand and value the interrelationships between human beings, their cultures and their biophysical environments.

From this perspective, the proposal of environmental education discussed from the Conferences of Tbilisi (USSR) 1977, Thessaloniki (Greece) 1997, among others, seeks to create a global awareness among the peoples of the Earth, of value for the environment in the reorientation of the production of knowledge based on interdisciplinarity and transversality, providing the realization of new experiences of creative and innovative environmental education in various segments of the population at various levels of training. Such experiences are based on the concepts of a new ethics, cultural identity, and sustainability, from the perspective of improving the relationship between man and the environment (Moura *et al.*, 2021).

Carvalho (2012) describes environmental education as a critical education focused on citizenship, whose role is to contribute to social changes, change values and formation of subjects capable of political action. Loureiro (2012), on the other hand, refers to the role of social movements and collective actions in environmental education, through which individualities are formed that aim to break with the current patterns of sociability.

Reigota (2012) points out that, initially, environmental education was associated with the protection and conservation of plant and animal species, which, in this sense, are very close to biological ecology. However, the author also defines EE as political education, committed to the



expansion of citizenship, autonomy and freedom, stimulating the dialogue of scientific, ethnic and popular knowledge. Thus, EE, in its origins having similarities with ecology, in a critical approach emphasizes the need to go beyond the knowledge of the natural sciences, to discuss the role of people in society.

According to Seabra (2022), the anthropization of the global physical landscape, destructive and autophagic, accelerates the steps today. The speed of humanity's destruction of nature is infinitely faster than the time it takes to restore planetary health, endangering any form of life on Earth. Thus, the abyss is at our feet and its overcoming depends solely on resilient actions, at the global, national, regional, as well as local levels.

Therefore, it is understood that EE can be recognized as a fundamental tool that has been proposing ruptures with the model of agriculture agreed by the destructive capitalist system in vogue. In short, by questioning the economic system and the current social structure, as well as the increasingly consumerist and destructive model of life to the detriment of nature in this contemporary society, we are increasingly convinced that through EE, it is possible to have a concrete alternative to change the behavior of human beings, with a view to transforming and improving the world.

METHODOLOGY

For the selection of the studies analyzed in this research, a systematic mapping was carried out. This type of mapping is a literature review method that meets some guidelines, whose main purpose is to provide a comprehensive view of a given field of research, highlighting gaps to be investigated (Kitchenham *et al.*, 2007).

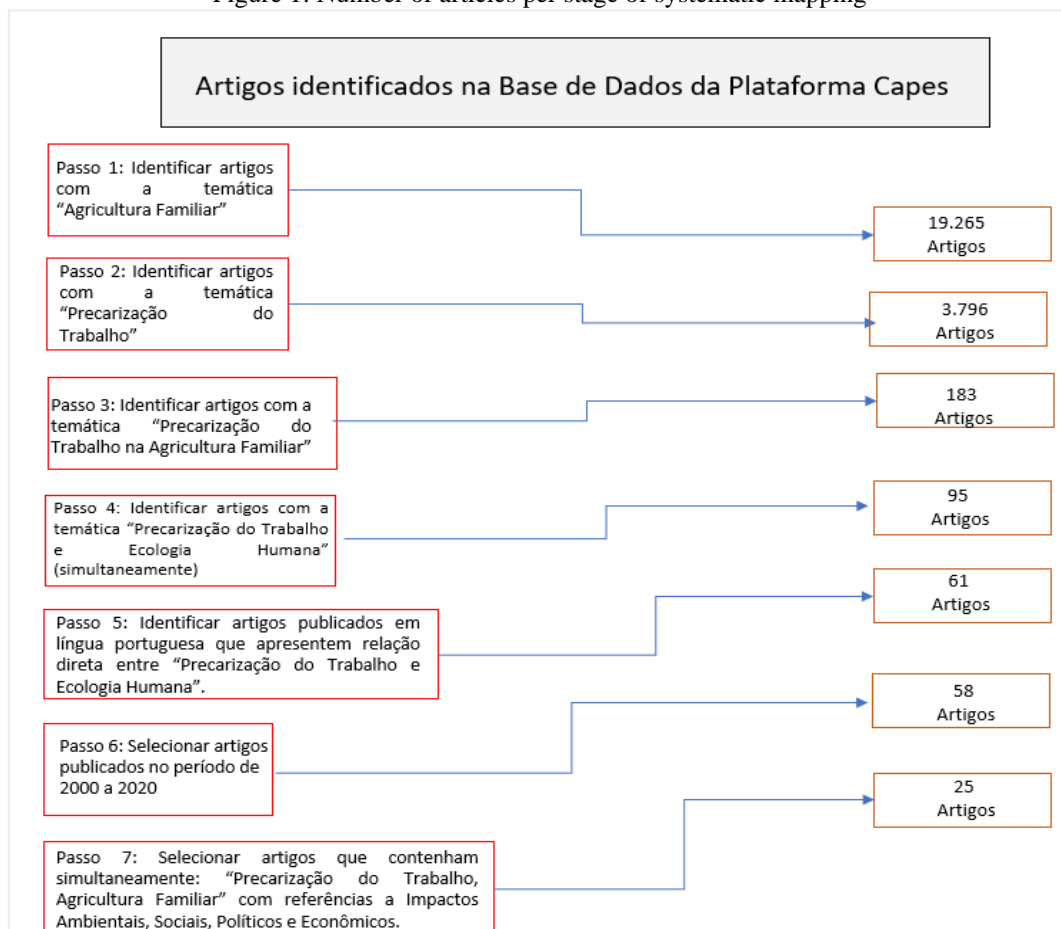
According to the guidelines suggested by Petersen *et al.* (2008), the steps taken in the mapping begin with the definition of the research questions. In line with the object established in this study, centered on the analysis of academic production, through scientific articles that discuss the precariousness of work in family farming in Brazil, and, more specifically, the problem of the precariousness process in this labor activity and its developments between the years 2000 and 2020, three specific research questions were defined: Q1: What are the main critical points pointed out in this study on the precariousness of work in family farming in Brazil in the period between 2000 and 2020? Q2: What were the main public policies developed by the Federal Government during the period between 2000 and 2020, with a view to minimizing the process of precarious work in Brazilian family farming? Q3. What are the effects generated by these main public policies implemented by the Federal Government on the lives of family farming workers in Brazil in the respective period analyzed?

The research source used in the search for articles related to the purpose of this study was

Brazilian journals qualified by the Coordination for the Improvement of Higher Education Personnel (CAPES), during the period from 2000 to 2020. Twenty-five (25) scientific articles were considered (Figure 1), which simultaneously met the following conditions: 1) belonging to the stratum with the theme "Family Farming"; 2) belong to the stratum with the theme "Precariousness of Work"; 3) belong to the stratum with the theme "Precariousness of Work in Family Farming"; 4) belong to the stratum with the theme "Precariousness of Work and Human Ecology" (simultaneously); 5) belong to the stratum of articles published in Portuguese and that were directly related to the theme "Precariousness of Work and Human Ecology"; 6) belong to the stratum of articles published in the time frame from 2000 to 2020; and 7) belong to the stratum with the theme "Precariousness of Work", with reference to Environmental, Social, Political and Economic impacts.

As for conditions 1 and 2, these selection criteria were adopted due to the main themes addressed in the study in question. Regarding condition 3, the selection was made based on the reading of the titles of the aforementioned articles. Only those that were directly related to the following themes were selected: Precariousness of Work; Family Farming; Environmental Impacts; Social; Political and Economic. In these reviews, 25 (twenty-five) articles were analyzed, submitted to the systematic mapping selection process, as shown in Figure 1.

Figure 1: Number of articles per stage of systematic mapping



Source: Capes Journals (2022).

The selection of articles, in the period from 2000 to 2020, took place in two phases: In the first phase, the researchers read the titles and abstracts of each article, filtering only the publications that, apparently, met the inclusion and exclusion criteria, as shown in Chart 1. In the second phase, the papers were thoroughly read, allowing the final selection of articles that met the established criteria.

Table 1: Inclusion and exclusion criteria for systematic mapping

CRITERION	DESCRIPTION
Inclusion	Secondary studies
	Full papers published in conferences or journals
	Articles that deal with the Precariousness of Work in the Context of Human Ecology
Exclusion	Duplicate articles
	Articles associated with the context of Agribusiness (monocultures)
	Review of scientific articles, theses or dissertations

Source: Authors (2022)

Regarding condition 3, the selection was made based on the reading of the titles of the aforementioned articles. Only those that were directly related to the following themes were selected: precariousness of work; family farming; environmental impacts; Social; political and economic. By searching the CAPES Platform Database, it was possible to locate nineteen thousand two hundred and sixty-five (19,265) articles.

After the two selection phases, 25 (twenty-five) articles remained. The number of articles published in the period from 2000 to 2020 is shown in (Graph 1). In the next section, the results and discussions of these articles are presented, considering the 03 (three) specific research questions that guided the systematic mapping.

RESULTS AND DISCUSSIONS

In this section, the results of the data collected are shown according to the purpose established in this research, based on the search for answers to the guiding questions.

Regarding **Q1** (*What are the main critical points pointed out in this study on the precariousness of work in family farming in Brazil in the period between the year 2000 and 2020?*), based on the 25 (twenty-five) articles from the CAPES database (2022), the main critical points found in this study were: **1)** The use of agricultural inputs indiscriminately; **2)** Social disaggregation; **3)** Formality/informality at work; **4)** Unemployment; **5)** The precariousness of labor relations; **6)** The loss of labor rights; **7)** Problems related to the insufficiency of technical and management assistance in the coordination of government programs for the sector; **8)** The low level of organisation on the part of producers; **9)** Migration from the countryside to the city; **(10)** The participation of children and adolescents in work activities in the field; and, **11)** The uncontrolled use and technical



monitoring of pesticides, weakening the health of rural workers, as well as pluriactivity.

It is essential to reiterate that due to its territorial extension, Brazil presents a diversity of critical points in the relationship between the precariousness of work within amillary agriculture, evidencing the size of the challenge of governmental and regulatory agencies of labor relations, in the perspective of mitigating the critical points evidenced in this study.

In addition, it is important to highlight that the lack of monitoring and inspection for effective compliance with current regulations on the impacts of precariousness on family farming contributes to the perpetuation of these problems. The low level of education of rural workers and the lack of effective social assistance also aggravate the situation, leaving workers even more vulnerable and unprotected.

Thus, it is clear that it is necessary to implement effective measures to improve working conditions in family farming, such as training programs for workers, rigorous inspection to ensure compliance with labor regulations, as well as effective public policies for social and technical assistance for the sector. This is essential to ensure the preservation of workers' rights and the healthy development of family farming in the country.

Regarding the guiding question **Q2** (*What were the main public policies developed by the Federal Government during the period between 2000 and 2020, with a view to minimizing the process of precarious work in Brazilian family farming?*), to the main public policies implemented by the Federal Government between 2000 and 2020, it was found that the vast majority of articles (88%), that is, 22 (twenty-two) articles, explored content related to the incentive and development of family farming in our country, evidencing the importance of these policies aimed at this segment of agriculture in Brazil, among which, We can highlight: **1)** Law No. 10,420, of April 10, 2002, which created the Crop Guarantee Fund and instituted the Crop Guarantee Benefit, aimed at family farmers victimized by the drought phenomenon; **2)** Law No. 10,696, of July 2, 2003, which gave rise to the Family Farming Food Acquisition Program (PAA). The PAA is one of the public policies carried out by the Federal Government aimed at confronting hunger and poverty in Brazil. This program was established by article 19 of Law No. 10,696 and regulated by Decree No. 7,775, of July 4, 2012; **3)** Law No. 11,326, of July 24, 2006, which provides for the National Policy on Family Farming and Rural Family Enterprises, known as the Family Farming Law; **4)** Law No. 11,346, of September 15, 2006, which originated the National System of Food and Nutrition Security (SISAN), with a view to ensuring the human right to adequate food; **5)** Law No. 11,947, of June 16, 2009, which provides for the provision of school meals and the direct money at school program to students in basic education.

It was also found that the 25 (twenty-five) articles selected in the final sample of the mapping did not contemplate specific public policies of Brazilian states in isolation, but at the national level, with the Federal Government as the protagonist of this process.



This indicates that there was a strong focus on national public policies aimed at family farming during the period from 2000 to 2020. In addition, the policies mentioned aim to minimize the precariousness of work in this area, including the Crop Guarantee Fund, the Food Acquisition Program, the National Family Farming Policy, the National Food and Nutrition Security System, and the provision of school meals. In general, these policies aim to improve living and working conditions for family farmers, increasing food and nutrition security and ensuring basic rights for the population.

Regarding the guiding question **Q3** (*What are the effects generated by these main public policies implemented by the Federal Government in the lives of family farming workers in Brazil in the respective period analyzed?*), the effects generated by public policies, it was found within the analyzed sample that there is a positive context that intends to mitigate the process of precariousness of family farming in Brazil, in the perspective of improving labor relations, as well as the negative context providing a certain social antagonism, when the state in a certain way, benefits agribusiness to the detriment of family farming, mainly in the allocation of financial resources.

Among the effects, we highlight those that are considered most relevant in this study, described in the articles analyzed: **1)** Distortions in access to land and water; **2)** The process of modernization of agriculture; **3)** Greater need to develop a system of cooperatives among rural family farmers in Brazil, with a view to greater rural empowerment; **4)** Public policies focused on food (school and population) and commercialization, highlighting the need to create institutional channels to generate income for farming families, improving the quality of life and consequently reducing the rural exodus; **5)** Consolidation of the economic and political dualism between family farming and employer/agribusiness agriculture in constant dispute for public funds in Brazil; **6)** More resources for technical assistance, with a view to improving production, logistics and commercial processes for these small producers; **7)** Allocate a greater amount of resources each year to guarantee the National Program for the Strengthening of Family Farming (Pronaf); **8)** Greater access to agricultural inputs and specific credit lines for this activity; **9)** Implementation of public policies that can encourage and favor the development of family farming aiming at the preservation of the environment; **(10)** Public policies that seek to value work in the field, as well as greater control and supervision of the correct insertion of pesticides in family farming; **(11)** Improvement in rural infrastructure (such as roads and bridges, energy, etc.).

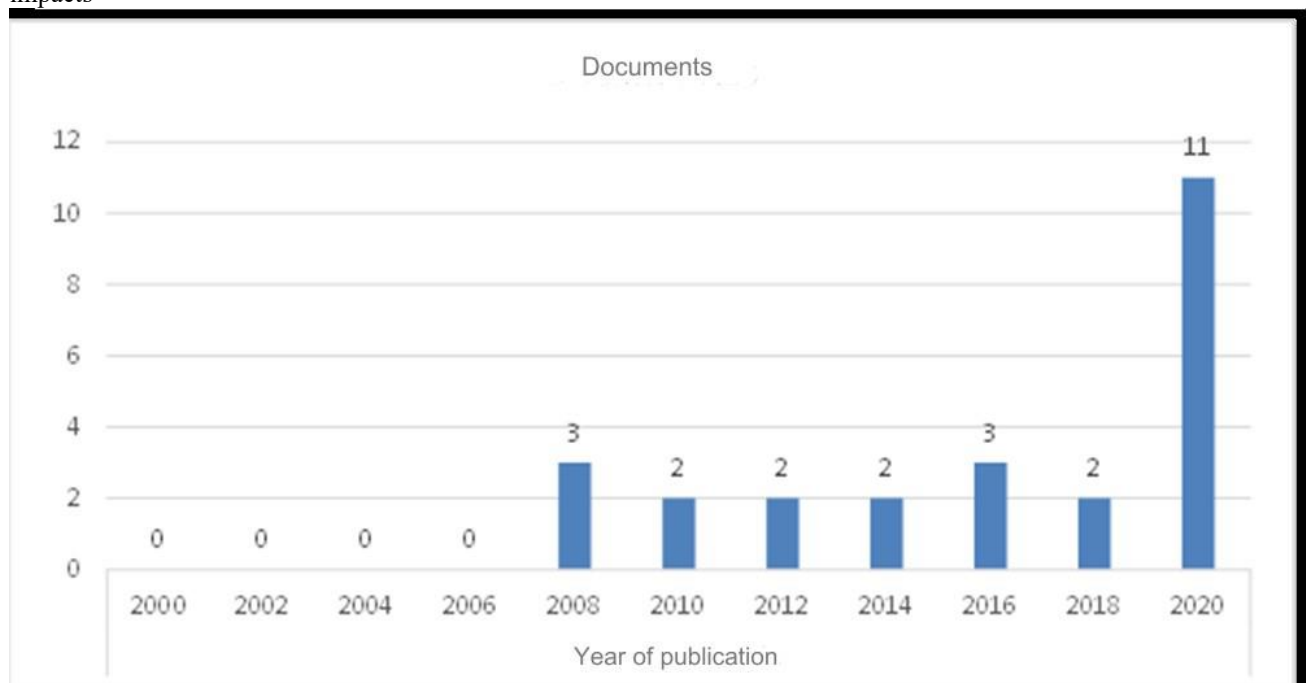
It is understood that family farming is an important instrument to combat social inequality in the countryside, since it provides work and income promoting more social justice in our country, and, in summary, the public policies implemented by the Federal Government in the life of family farming workers in Brazil have both positive and negative effects.

Some of the positive effects include: a) improved technical assistance; b) access to

agricultural inputs and credit lines; c) encouraging the development of family farming with a view to conserving the environment; d) valuing work in the field; and, (e) improvement in the infrastructure of rural areas. On the other hand, there are also negative effects, such as: a) distortions in access to land and water; (b) the process of modernisation of agriculture; c) the social antagonism between family farming and agribusiness; and, d) the consolidation of the economic and political dualism between the two. In general, family farming is seen as an important way to combat social inequality in the countryside, providing work and income, promoting more social justice in the country.

Graph 1 shows the evolution of publications from the year 2000 onwards, showing that there was a considerable growth in scientific production in the field of study from 2019 onwards, showing an accelerated growth until 2020.

Graph 1: Articles citing precarious work, family farming with reference to environmental, social, political and economic impacts



Source: Capes Journals (2022)

This graph also shows a time gap (2000 to 2006) with no record of publications, revealing that interest in the theme begins to appear with publications from 2008 onwards. Even timidly, scientific production in 2008 surpassed the years 2010, 2012 and 2014, growing again similarly in 2016, but falling again in 2018. Therefore, it is clear that 2020 was a year of overcoming for the productions that discuss the theme addressed in this study.

This suggests that the discussion on public policies for family farming in Brazil has gained more attention over the years, but there is still room to increase scientific production on the subject. It is important to note that the lack of publications in the period from 2000 to 2006 does not



necessarily mean a lack of interest or attention to the topic, but can be a consequence of several factors, including resource limitations, lack of incentives for research, etc.

In addition, it is important to highlight that fluctuations in the number of publications can be influenced by several factors, such as the availability of resources, political priorities, and the evolution of social and political discussions related to the subject. Therefore, it is important to continue monitoring and stimulating scientific production on public policies for family farming in Brazil, to ensure that their effects are continuously evaluated and improved.

FINAL THOUGHTS

Based on a systematic mapping of the literature, twenty-five (25) articles were analyzed that addressed the precariousness of work in family farming in Brazil from 2000 to 2020. The period analyzed in the study shows a growing, although still small, flow of research on the subject, thus identifying a research gap on the precariousness of work in family farming in our country, making it evident that this field of study has become the target of research and publications, and that it has been developing as and at the pace of evolution and transformation of society. the result of their constant changes, challenges and needs.

In addition, it was found that there is a need for more in-depth research on the precariousness of work in family farming, since there are peaks and decreases in scientific production over the years, which may indicate the existence of gaps in knowledge on the subject. It is important that more research be carried out on this topic, as it is essential to understand and solve problems related to the precariousness of work in family farming, as well as to ensure the protection and well-being of workers in family farming, who play a fundamental role in the economic and social development of our country.

Therefore, these new studies can, for example, analyze the recent impacts and developments caused by the process of precariousness of work in family farming in Brazil within another time frame. Another research suggestion is that analyses be carried out on the implementation of new public policies aimed at the development of family farming in Brazil.

From the analysis of the sample of articles selected in this mapping, it is observed that, with the direction of public policies in vogue, as well as the support of public and private institutions that support research aimed at improving the production process of this agricultural segment, Brazil will be able to improve its labor process in the field, aiming at a balance in the relationship between man-nature-society.

The evolution of studies on the precariousness of work in family farming in Brazil from 2000 to 2020 demonstrates an increase in the degree of maturity of the field researched. This systematic mapping allowed a discussion of the theme, since it is very instigating, and as such, it will always be



lacking, as society evolves, new perspectives and discussions.

Analyzing the articles, it is evident that two factors were left out of the authors' analysis, namely: the first, deals with access to new technologies for the field, such as machinery and implements, which in fact is abundant in the Brazilian agribusiness segment with government support and incentive, unlike family farming that has seen every day the reduction of government resources year after year, as well as the difficulties of small producers in accessing financial resources for this purpose; and the second, referring to the impacts of the COVID 19 pandemic, which has systematically modified and continues to modify the functioning of market dynamics in all segments, including impacting labor relations, thus offering another path for new publications within this field of study.

However, this work did not intend to exhaust the debate here, since the subject is too instigating, and may provide new studies on the subject, with other perspectives. Therefore, the findings point to the relevance of the theme of precariousness of work in family farming in Brazil in the period from 2000 to 2020, seeking to raise society's awareness to resolve conflicts related to the world of work in contemporary times.

In addition, the results obtained in this study allow us to identify the existence of a trend of increased interest in the theme, which is important for the planning of future research, public policies and actions aimed at improving the quality of life of family farming workers in Brazil. It is important to highlight that the precariousness of work in family farming is a relevant problem, which directly affects the lives of millions of people and has social, economic and environmental implications. The development of research and actions aimed at improving working conditions in this sector is essential for the strengthening of family farming in Brazil and for the construction of a fairer and more equitable society.

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