

ARTICLE

THE REPERCUSSIONS OF THE FUNDÃO DAM RUPTURE ON THE SCHOOL PROVISION FOR THE  
PEASANT POPULATION<sup>1</sup>

MARIA ISABEL ANTUNES-ROCHA<sup>1</sup>

ORCID: <https://orcid.org/0000-0002-4044-6723>  
<isabelantunes@fae.ufmg.br>

MARCELO LOURES DOS SANTOS<sup>2</sup>

ORCID: <https://orcid.org/0000-0002-7167-1499>  
<marceloloures@ufop.edu.br>

<sup>1</sup> Universidade Federal de Minas Gerais. Belo Horizonte (MG), Brazil.

<sup>2</sup> Universidade Federal de Ouro Preto. Mariana (MG), Brazil.

**ABSTRACT:** This article presents the results of two studies conducted in public schools that serve the population living in rural areas of the mining region of Minas Gerais affected by the collapse of the Fundão dam, whose tailings traveled through peasant areas along approximately 90% of their path, affecting the ways of producing and reproducing rural life. The studies sought to assess the repercussions of the dam collapse on school provision, in its quantitative and qualitative aspects, in the years 2015 and 2020, using the Countryside Education (Educação do Campo) framework as theoretical reference. The research was developed in two stages: in the first, data were gathered from the School Census and the Brazilian Institute of Geography and Statistics on public schools in the thirty-six affected municipalities, which showed a reduction in the number of rural schools between the reference periods; in the second, the data were presented and discussed in conversation circles and interviews with teachers and school administrators, seeking to understand the repercussions of the dam collapse on school provision for students living in rural areas. It was observed that the participants recognized the importance of the peasant way of life and its difficulties, and were able to perceive the repercussions of the dam collapse on it, identifying its effects on school provision, but they showed difficulties in recognizing the role of the school in confronting and transforming this reality. The concept of "pedagogical silence" is used to characterize this difficulty in addressing the issue in pedagogical practices, highlighting the need to formulate teacher training policies grounded in this theme and in these contexts.

**Keywords:** rural education; education and mining; Fundão dam rupture; family farming; school census.

AS REPERCUSSÕES DO ROMPIMENTO DA BARRAGEM DE FUNDÃO SOBRE A OFERTA ESCOLAR  
PARA POPULAÇÕES CAMPESINAS

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**RESUMO:** Este artigo apresenta os resultados de duas pesquisas realizadas em escolas públicas que atendem à população residente no campo na região mineira atingida pelo rompimento da barragem de Fundão, cujos rejeitos percorreram cerca de 90% de seu trajeto em áreas campestres, afetando os modos de produzir e reproduzir seus modos de vida. As pesquisas buscaram avaliar as repercussões do rompimento sobre a oferta escolar, em seus aspectos quantitativos e qualitativos, nos anos de 2015 e 2020, tendo a matriz da Educação do Campo como referência teórica. O estudo foi desenvolvido em duas etapas: na primeira, buscaram-se dados no Censo Escolar e no Instituto Brasileiro de Geografia e Estatística sobre as escolas públicas dos 36 municípios atingidos, que apresentaram redução no número de escolas no campo nos períodos de referência; na segunda, os dados foram apresentados e discutidos em rodas de conversa e entrevistas com professores e gestores, a fim de compreender as repercussões do rompimento sobre a oferta escolar para estudantes residentes no campo. Observou-se que os participantes reconhecem a importância do modo de vida camponês e suas dificuldades e conseguem visualizar as repercussões do rompimento sobre eles, ao identificarem seus efeitos sobre a oferta escolar, mas apresentam dificuldades em reconhecer o papel da escola no enfrentamento e na transformação dessa realidade. O conceito de silêncio pedagógico é utilizado para caracterizar essa dificuldade de abordagem nas práticas pedagógicas e evidenciar a necessidade de formulação de políticas de formação de professores a partir dessa temática e nesses contextos.

**Palavras-chave:** Educação do Campo, educação e mineração, rompimento da barragem de Fundão, agricultura familiar, Censo Escolar.

## **LAS REPERCUSIONES DE LA RUPTURA DE LA PRESA DE FUNDÃO EN LA OFERTA ESCOLAR DE LAS POBLACIONES RURALES.**

**RESUMEN:** Este artículo presenta los resultados de dos investigaciones realizadas en escuelas públicas que atienden a la población residente en el campo, en la región minera de Minas Gerais afectada por la rotura de la presa de Fundão, cuyos relaves recorrieron cerca del 90% de su trayecto en áreas campestres, afectando los modos de producir y reproducir la vida en el campo. Las investigaciones buscaron evaluar las repercusiones de la rotura sobre la oferta escolar, en sus aspectos cuantitativos y cualitativos, en los años 2015 y 2020, teniendo la matriz de la Educación del Campo como referencia teórica. La investigación se desarrolló en dos etapas: en la primera, se recabaron datos del Censo Escolar y del Instituto Brasileño de Geografía y Estadística sobre las escuelas públicas de los treinta y seis municipios afectados, que presentaron una reducción en el número de escuelas en el campo en los períodos de referencia; en la segunda, los datos fueron presentados y discutidos en ruedas de conversación y entrevistas con profesores y gestores, buscando comprender las repercusiones de la rotura sobre la oferta escolar para los estudiantes residentes en el campo. Se observó que las participantes reconocen la importancia del modo de vida campesino y sus dificultades, y logran visualizar las repercusiones de la rotura sobre este, identificando sus efectos sobre la oferta escolar, pero presentan dificultades para reconocer el papel de la escuela en el enfrentamiento y la transformación de esta realidad. El concepto de "silencio pedagógico" se utiliza para caracterizar esta dificultad de abordaje en las prácticas pedagógicas, evidenciando la necesidad de formular políticas de formación docente a partir de esta temática y en estos contextos.

**Palabras clave:** educación rural; educación y minería; ruptura de la presa de Fundão; agricultura familiar; censo escolar.

## **INTRODUCTION**

On November 5, 2015, the Fundão dam collapsed in Mariana (Castro; Nalini Júnior; Lima, 2015), releasing approximately 55 million cubic meters of iron ore tailings into the Doce River basin. According to a report by the Brazilian Institute of the Environment – Ibama – (2015, p. 5),

along the entire route, in addition to social and economic losses, there was destruction of permanent preservation areas and native Atlantic Forest vegetation; mortality of aquatic biodiversity and terrestrial fauna; habitat loss and fragmentation; and the restriction or weakening of ecosystem services.

From an environmental perspective, 98% of the Doce River basin is situated within the Brazilian biome known as the Atlantic Forest. This area faces significant conservation challenges and is considered one of the world's 25 biodiversity hotspots, regions that are both rich in biodiversity and highly threatened (Instituto Mineiro de Gestão das Águas [Igam], 2010, *apud* Ibama, 2015).

Despite the magnitude of the event, the rural populations were the most affected by the collapse of the Fundão dam. These groups rely on the land and resources they extract or produce from it to their livelihood, and they are typically organized around the labor of family members (Costa & Carvalho, 2012). According to Gonçalves, Pinto, and Wanderley (2016, p. 164),

In Mariana, Barra Longa, and other locations affected by the tailings mud from the Fundão Dam, the situation of peasant family farming impacted by the collapse stands out. Thus, there is an urgent need to further examine and publicize the impacts experienced by land-based workers living in communities, rural settlements, and other riverside areas.

This is not an isolated case in the history of environmental impacts resulting from human activities. Martínez-Alier (2012, p. 37) highlights that peasant populations, despite demonstrating the capacity to manage agricultural and agroforestry systems within relatively small environmental spaces, find themselves “threatened by mines, oil wells, dams, deforestation, and forest plantations.” According to him, peasant populations are the ones who most strongly resist the encroachment of these activities and contribute the most to biodiversity. The Global Assessment Report on Biodiversity and Ecosystem Services (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services [IPBES], 2019) confirms these findings, noting that 25% of global agricultural production comes from traditional peoples, preserving biodiversity within their territories.

In Brazil, family farming, a mode of production characteristic of peasant populations, accounts for 76.8% of agricultural holdings and 67% of the workforce employed in the agricultural sector, even though it occupies only 23% of the total land area of such holdings (Nascimento; Aquino; Delgrossi, 2022). Family farming also predominates among agricultural holdings in 35 of the 36 municipalities in Minas Gerais affected by the Fundão dam collapse (Antunes-Rocha; Santos, 2024). Given this presence in the territory and the characteristics of their production methods, peasant populations are considered to have the potential to contribute to the revitalization of the Doce River basin.

Rural schools play a crucial role in revitalizing the Doce River basin by empowering individuals and fostering the development of transformative projects within their local communities. They maintain strong connections and ongoing dialogues with their rural school communities (Antunes-Rocha, 2010; Leite, 1999). For these communities, rural schools often serve as the main point of contact with public authorities through their physical infrastructure, educational roles, and engagement with families through their students. However, many teachers in rural schools lack adequate training to meet the unique needs of rural populations, and it is common for them to rely on traditional teaching methods (Molina; Antunes-Rocha, 2014).

The Countryside Education movement focuses on creating educational frameworks and methods for teacher training that use the knowledge of rural individuals. This approach connects their experiences with scientifically produced knowledge to foster transformation within their communities and society as a whole. The movement is organized around three fundamental principles: the active role of rural individuals, the right to quality education, and engagement with community and society development.

This article presents the results of research conducted in public schools serving rural populations across the 36 municipalities affected by the collapse of the Fundão dam in Minas Gerais. It details the findings of two studies carried out by the authors. The first study, conducted between 2016 and 2018, focused on rural schools in Mariana and Barra Longa. The second study, conducted between 2019 and 2021, examined rural schools and their communities in the remaining 34 affected municipalities within the Doce River basin in Minas Gerais.

These studies were based on the premise that education involving traditional populations would provide relevant information for identifying the repercussions of the collapse and for proposing educational and intersectoral public policies. We also expected the studies to shed light on “secondary impacts and the effectiveness of environmental recovery actions, while safeguarding the specific characteristics of each environment to generate highly reliable data,” and to foster the “engagement and mobilization of the population [...] aiming to contribute to repositioning their relationship with the environment and their social interrelationships” (Ibama, 2015). In this way, they would offer school communities, through the schools, contributions to revitalize the Doce River basin.

This article consists of an introduction, five sections, final considerations, and references. In the first topic, we address the presence of mining and the impacts of the dam collapse. In the second, we present the field and its subjects in this context. In the third and fourth, we present the theoretical and methodological framework, respectively. In the fifth, the data are analyzed and, finally, the final considerations are presented.

## **THE PRESENCE OF MINING IN THE RIO DOCE BASIN.**

The history of mining in Brazil began in the 17th century when the Portuguese started extracting and exporting valuable minerals. However, this activity did not lead to sufficient investment in local development. In essence, the mineral exploration did not translate into wealth for the population living in places where the ores were found. Instead, these resources were often extracted and became part of the wealth of other nations, impacting other countries and continents (Aráoz, 2020; Galeano, 2013).

In Minas Gerais, the São Francisco, Jequitinhonha, and Doce rivers were important routes for occupying the territory and, consequently, it was in these valleys that the first discoveries of diamonds and gold emerged (Moreno, 2001). The peak of gold extraction in the Inconfidentes region, in Minas Gerais, occurred at the end of the 17th century and the beginning of the 18th century. After the stagnation of gold extraction in the territories of Mariana and Ouro Preto, a long period of abandonment was imposed on the region. This abandonment was only overcome with the resumption of iron ore mining. As pointed out by Castro et al. (2011 *apud* Omachi, 2015, p. 62),

The demand for mineral resources and mining activities has also driven the inland expansion of the population. The origins of urban centers in Minas Gerais serve as a classic example of this. In the Iron Quadrangle region, these urban centers have experienced alternating periods of growth and stagnation directly linked to the various phases of gold mining.

The resumption of mining activities originated from the steel industry, which was driven in the first half of the 20th century by the company Belgo-Mineira. This company was responsible for the devastation of the Atlantic Forest to supply charcoal in the *Médio Rio Doce* region (Marinho Júnior; Espindola; Nodari, 2024). Following a decision by the Vargas administration, production parameters shifted from steelmaking to the commercialization of iron ore. During World War II, a partnership with the United States government led to the establishment of two of the country's most important mining companies: *Companhia Vale do Rio Doce* in 1941 and *Companhia Siderúrgica Nacional* (CSN) in 1942. Both companies remained state-owned until the 1980s. The wave of privatization that occurred during that time subjected these companies, along with the entire mining sector in the country, to the principles of commodity markets and introduced modern technologies for extracting vast quantities of resources in a short time, characteristics of the neo-extractivist model (Fischer, 2018).

Mining practices are often evaluated in terms of their benefits and harms. One of the benefits is that human needs are historically shaped, and mining, along with its products, is closely linked to labor

processes and technological development. However, the increasing demand for various types of ore brings numerous challenges for residents in areas affected by resource extraction: the disruption of environmental balance and, as evidenced in recent history, a lack of responsible action in mineral extraction leading to dam failures that cause severe and widespread environmental damage (Alves et al., 2020). Driven by a market-oriented, export-focused approach, the profits generated from mineral extraction are rarely reinvested in the regions where production occurs (Batista Júnior & Silva, 2013). From this perspective, the impact on the local territory is not compensated by direct or indirect revenues; nor does the industry improve living conditions commensurate with the wealth being extracted or guarantee the job-creation policies that are frequently promised.

Following the collapse of the Fundão and Brumadinho dams and the threats identified at numerous mine tailings dams, discussions regarding the mining model have become a priority agenda. In 2016, the *Brasil Popular* Project initiative emerged in Brazil. It aimed at debating and formulating a national, democratic, and sovereign project for the country, based on the premise that improvements in living conditions depend on the economic, political, cultural, and environmental development model implemented. It envisions the distribution of wealth and income generated by society and the participation of the population in State decision-making. The project comprises 31 Working Groups, one of which is the Mining Working Group (GT Mineração), driven by the pursuit of a new mining model guided by popular sovereignty and consideration of the “wide range of social, environmental, and economic impacts” (Alves et al., 2020, p. 44) associated with this activity.

In discussions about the relationship between education and mining held in a workshop on the topic, it became clear that mining companies were significantly present in schools. They demonstrated “control over content, methods, and narratives” (Alves et al., 2020, p. 72), mainly in discussions about Environmental Education. This influence resulted in a focus on individual responsibility on the issue and created an image of these companies as sustainable and responsible in their actions. Given this scenario, it was concluded that...

The topic of mining can be critically integrated into the basic and higher education curricula through Environmental Education, whether as a cross-cutting theme in pedagogical projects or as a specific curricular activity. Through Environmental Education, schools can and should foster collective, critical reflection on the nature of mining activities and their socio-environmental impacts, as well as on the foundations for a mining model characterized by social oversight and socio-environmental responsibility (Alves et al., 2020, p. 74).

From this perspective, we believe that understanding the context of peasant populations, represented here by the modes of life and production associated with peasant family farming, and the rural schools that serve them could shed light on the challenges and possibilities for addressing the damage caused by the collapse of the Fundão dam.

## ON THE FIELD AND ITS SUBJECTS

The characterization of rural populations and their ways of life has been widely discussed in Latin America and Brazil since the 1980s, alongside the emergence of social conflicts in rural areas. These perspectives share common features: a synergistic relationship between these populations and nature, involving the construction of a specific territoriality; an economic-productive rationality based predominantly on the family unit; and interrelationships with other groups with whom they share an identity (Cruz, 2012). In Brazil, rural populations are characterized, as defined in Item 1, Article 1 of Decree 7,352 of November 4, 2010 (Brazil, 2010) as follows:

family farmers, extractivists, artisanal fishers, riverine communities, agrarian reform settlers and encampment members, rural wage laborers, *quilombolas*, *caiçaras*, forest peoples, *caboclos*, and others who generate the material conditions for their existence through work in rural areas.

These individuals produce and reproduce their existence within a territory marked by the tension between large-scale and small-scale landholdings. While large-scale holdings are characterized by

production for export and the exploitation of labor, small-scale holdings are defined by “non-capitalist relations of production, lower environmental impact, land occupations, and rural settlements” (Girardi; Fernandes, 2009, pp. 342–343).

The mining territory bears a strong resemblance, in terms of its political objectives, to the agribusiness territory, which is characterized by “large-scale holdings, labor exploitation, environmental crimes, intensive mechanization, overproduction, and the concentration of economic and political power” (Girardi; Fernandes, 2009, p. 342).

From the perspective of the agrarian question, only peasant organization, backed by substantial public policy investment, including comprehensive state-led agrarian reform, can achieve the redistribution of land, resources, and income needed to address the structural inequality generated by the capitalist system in rural areas (Girardi; Fernandes, 2009).

In the 1990s, based on an analysis of the 1995–1996 Census of Agriculture, Guanziroli et al. (2009) assessed that family farming used productive resources more efficiently than large-scale commercial farming. Despite having less land and lower financing volumes, family farms generated higher output and employment levels relative to the total value of Brazil's agricultural income at the time. These characteristics are confirmed by recent research (Aquino; Schneider, 2021) drawing on data from the 2017 Census of Agriculture.

Although these perspectives offer distinct interpretations of the challenges facing peasant populations and their coping strategies, data from the 2017 Census of Agriculture provide elements that allow identification of both indicators associated with an economic perspective on family farming and indicators that help recognize aspects of the peasant family farming way of life. However, the prevailing designation is the one that governs access to the National Program for Strengthening Family Farming (Pronaf-*Programa Nacional de Fortalecimento da Agricultura Familiar*). According to Article 3 of Law 11.326 of July 24, 2006 (Brazil, 2006),

A family farmer and rural family entrepreneur is defined as an individual who carries out activities in a rural setting while simultaneously meeting the following requirements: I - does not hold, under any title, an area larger than 4 (four) fiscal modules; II - predominantly utilizes family labor in the economic activities of their establishment or enterprise; III - derives a minimum percentage of their family income from the economic activities of their establishment or enterprise, as defined by the Executive Branch; IV - manages their establishment or enterprise together with their family.

This research sought indicators, not limited to the Census of Agriculture, that present the socioeconomic challenges facing the production and reproduction of the peasant population's way of life and reveal their strategies for organization and for confronting these challenges.

Recent research highlights that these challenges are significant for rural populations, who face a situation of impoverishment in Brazil (Pinto; Rocha; Pirani, 2018) and in the Alto Rio Doce region (Freitas; Freitas, 2021), despite advances in certain agrarian policies such as Pronaf, the National School Feeding Program (PNAE-*Programa Nacional de Alimentação Escolar*), the Food Acquisition Program (PAA-*Programa de Aquisição de Alimentos*), etc. (Grisa; Schneider, 2015). According to social indicators from the Brazilian Institute of Geography and Statistics (IBGE-*Instituto Brasileiro de Geografia e Estatística*, 2023), poverty in Brazil is defined by per capita family income relative to the prevailing minimum wage. A per capita household income of less than half the minimum wage indicates poverty, while less than one-quarter indicates extreme poverty. Data from the 2015 National Household Sample Survey (Pnad) reveal that, while 46.1% of the rural population over 15 years old lived on just one minimum wage, this proportion dropped to 23.7% in urban areas (Pereira; Castro, 2021). According to Pinto, Rocha, and Pirani (2018, p. 103),

The inability of rural families in these regions to achieve higher income levels is just one more symptom of the degree of inequality and regional disparity embedded in Brazilian society. Challenges facing these regions include (1) the concentration of land ownership; (2) a lack of access to basic infrastructure that would facilitate the transport and marketing of produce; (3) the difficulty family farmers face in accessing credit lines from government programs; and (4)

the aggressive expansion of agribusiness and the intensification of technology in the agricultural sector, often resulting in the erosion of labor standards in rural areas, among other issues.

Despite income disparities between urban and rural areas, data on family farming in Brazil highlight the significant role it plays in the agricultural sector. It represents 76.8% of agricultural establishments and 67% of the employed workforce, even though it occupies only 23% of the total land area of such establishments, according to data from the 2017 Census of Agriculture (Aquino & Schneider, 2021). Nearly half of Brazil's family farming establishments are located in municipalities with up to 20,000 inhabitants, and over 80% are in municipalities with up to 50,000 inhabitants. Despite this substantial presence in agricultural production, the sector operates with far less public investment compared to commercial (employer-based) farming and relies on a precarious support structure (Aquino & Schneider, 2021). According to these authors, understanding the lives of family farmers in these small and medium-sized municipalities is essential to grasping their importance to the local economy.

## COUNTRYSIDE EDUCATION

For the theoretical discussion, we draw upon the framework of Countryside Education (*Educação do Campo*) (Kolling; Nery; Molina, 1999), which stands in contrast to the Rural Education (*Educação Rural*) model that had previously dominated the Brazilian educational landscape. From the perspective of Rural Education, education for rural populations is viewed through an instrumental, welfare-oriented, or social-ordering perspective. The pedagogical approach centers on workforce training needs, the provision of education outside the areas where children, youth, and adults actually live, a prioritization of school transportation, a pedagogical project disconnected from the economic, political, social, and cultural context of rural life, and a significant presence of social representations that devalue peasant ways of life (Martins; Antunes-Rocha; Martins, 2012).

The framework of Countryside Education gained strength during the final three decades of the 20th century, when rural social and trade union movements, universities, and non-governmental and religious organizations formed the Movement for Countryside Education (Kolling; Nery; Molina, 1999). Established around 1996, the Movement sparked a nationwide mobilization centered on the struggle to create public policies aimed at overcoming the precarious state of school education provision, access to education, and the retention of children, youth, and adults within the school system. In little more than two decades, the movement succeeded in organizing itself across the country and securing public policies at various levels of government. Throughout its development, principles, concepts, and practices were consolidated, structuring an organized body of knowledge effective in addressing the challenges associated with school education in the rural context.

For Freitas (2021), Countryside Education emerges as a paradigmatic shift by placing rural communities at the forefront, breaking with the hegemonic logic that casts rural populations as inferior and backward. In this sense, Countryside Education is a new educational framework for the “social, pedagogical, and political control of the quality of school education, through the effective participation of the community and rural social movements” (Diniz-Menezes, 2013, p. 33). This active role assumes a teleological function in the struggle to strengthen rural populations by fostering the economic, political, social, and cultural conditions necessary to produce and reproduce their ways of life. To this end, Countryside Education must foster the development of a vision for the school, the countryside, and society that recognizes the specific characteristics and needs of school communities and the rural population. Grounded in the material reality of peasant ways of life, such a school must be understood as a right essential to the full development of rural communities. While acknowledging specificities and needs, it must guarantee access to educational pathways, retention within them, and their completion under conditions equal to those of other populations. This new framework must challenge education and schools to examine the premises and objectives of human development, adopting a perspective aligned with the agrarian question, and demand a guaranteed educational trajectory that includes access to libraries, laboratories, and professionals with appropriate training and working conditions.

The following principles of Countryside Education, according to Freitas (2021), will be adopted in this research: (1) the active role of individuals in developing emancipatory projects for rural areas; (2) an education oriented toward a vision of school, countryside, and society that strengthens the peasant way of life; (3) the guarantee of education as a right, in accordance with Law 9.394 of December 20, 1996 (Brazil, 1996), the Law of Guidelines and Bases (LDB-*Lei de Diretrizes e Bases*); (4) historical-dialectical materialism as the analytical framework; and (5) the individuals, labor, and rural social movements as the object of study.

From the perspective of strengthening peasant family farming, the rural school is understood as defined in Item II, Article 1, of Decree 7,352 of November 4, 2010 (Brazil, 2010): “II – Rural school: one located in a rural area, as defined by the Brazilian Institute of Geography and Statistics (IBGE), or one located in an urban area, provided it predominantly serves rural populations.”

Education is an essential tool in the processes of organizing a new field, a task that necessarily entails building a new type of school. It is an education capable of generating theories and practices that contribute to the development of empowered social actors and, to that end, fostering appropriate learning processes. Therefore, the rural school demanded by peasant communities goes beyond the school of basic literacy, the school of the written word, or the school of textbooks. It is a school project that aligns with the social and economic projects of rural areas, creating a direct link between training and production, and between education and political commitment. It is a school that, in its teaching and learning processes, takes into account the cultural universe and the distinct learning styles of rural peoples, recognizing and legitimizing the knowledge derived from their life experiences. It is a school that transforms into a tool of struggle for the achievement of their rights as citizens (Kolling; Nery; Molina, 1999).

Guided by this framework, the question that drove our research was: does the provision of education in the municipalities affected by the Fundão dam collapse guarantee the rural population access to education as a right? Are location, the provision of educational stages, levels, and modalities, as well as access, retention, and learning, all guaranteed?

## METHODOLOGICAL AND ANALYTICAL GUIDELINES

The research was organized into two stages. The first gathered data from school databases regarding the provision of education for rural populations and their socioeconomic status. The second stage collected and discussed data with the affected population, using narrative interviews as the common instrument for both studies. The main distinction between the studies lay in the volume of information to be gathered, which required different approaches. Thus, the corpus of the first study included two rural schools and their respective school communities. It allowed for a longitudinal study involving in-depth interviews with students, teachers, and parents from each school, enabling an understanding of the complex repercussions within these communities, specifically given that they had been directly impacted by the mining tailings from the Fundão dam collapse. This study provided insights into the repercussions of the Fundão dam collapse on school communities and guided the second study, which adopted a broader understanding of the concept of “affected parties” and used methodological strategies capable of encompassing all rural schools across the other 34 affected municipalities in the Doce River basin. To this end, we also gathered data and conducted documentary and bibliographic research on the economic, political, social, cultural, and land-tenure contexts of these municipalities, organizing the information according to the coverage areas of the Regional Education Superintendencies, resulting in a total of five groups.

For the research on school data, a database was constructed using the School Census from 2015 and 2020. The School Census is an annual data collection instrument for basic education, conducted by the National Institute for Educational Studies and Research Anísio Teixeira (Inep) using information provided by the schools. It covers the various stages and modalities of basic and vocational education. The data were processed using SPSS statistical software, which enabled the selection of data regarding schools, teachers, and students across the 34 municipalities studied.

The school-related variables included in the datasets were: school code; municipality code; administrative dependency (federal, state, municipal, private); school location (urban, rural); specific school location type (*quilombola* area, indigenous area, settlement, prison); school name; operational status (active, suspended, closed during the Census year, closed in previous years); and school infrastructure (school meals, public water supply, public electricity supply, public sewage system, library, kitchen, computer lab, science lab, sports court, principal's office, teachers' room, Specialized Educational Assistance [AEE-*Atendimento Educacional Especializado*] room, indoor restroom, printer, computer for administrative use, computer for student use, television, internet).

The variables regarding student information were: total number of students per school; students' place of residence (urban or rural); public school transportation (use or non-use); and students residing in rural areas but attending school in urban areas.

Based on this data, it was possible to determine the number of active schools during the two periods analyzed, their locations, and the places of residence (rural or urban) of the enrolled students. A database was created comprising schools located in rural areas and those serving the rural population, regardless of their location (urban or rural). Within the enrollment dataset, a new variable was generated by combining two existing variables, school location and student residence, coded as 1 (urban) and 2 (rural). From this new variable, schools located in urban areas that serve rural students were selected. This procedure allowed for the identification of three types of schools: a) schools IN the countryside (located in rural areas); b) schools OF the countryside (located in urban areas but with more than 50% of their students residing in rural areas); and c) schools FOR the countryside (located in urban areas but with up to 50% of their students residing in rural areas).

This categorization aimed to assist in systematizing the schools that serve the rural population. In addition to the characterizations found in the Operational Guidelines for Basic Education in Rural Schools - *Diretrizes Operacionais para a Educação Básica nas Escolas do Campo* (Brazil, 2002) and the Guidelines for Rural Education in the State of Minas Gerais - *Diretrizes da Educação do Campo do Estado de Minas Gerais* (Minas Gerais, 2015), which define “rural schools” as those located in rural and urban areas where more than half of the student population resides in the countryside, the category of schools FOR the rural population aims to track the distribution of rural students within urban schools, seeking to identify them within the public education system. It also seeks to monitor quantitative variations in this provision over time and its correlation with the closure of schools located in rural areas. Furthermore, we believe that monitoring school provision across these three categories broadens the scope of research regarding educational access for the rural population and their way of life. This approach considers not only schools IN and OF the countryside as objects of study but also schools FOR the rural population, examining factors such as transportation effects, the impact on rural-to-urban migration, and the educational practices within these schools.

The contextual research gathered information from various databases (Agricultural Census, IBGE, National Institute for Colonization and Agrarian Reform [Incra-*Instituto Nacional de Colonização e Reforma Agrária*], etc.) regarding the demographic, economic, political, social, cultural, and environmental conditions of each municipality. The contextual data focused on population trends across the last three censuses (1991, 2001, and 2010), the population used in agriculture and livestock farming; the percentage of establishments classified as family farms, the presence of the Minas Gerais Technical Assistance and Rural Extension Company (Emater) or social and union organizations, and the impacts of the Fundão dam collapse. These categories were selected based on literature regarding the challenges and opportunities facing peasant populations within their territories, enabling an assessment of the characteristics and size of the peasant population, their forms of organization, and the repercussions of the Fundão dam collapse.

The data collected in Stage 1 were systematized and organized for each municipality based on school provision and contextual data.

In Stage 2, teachers and administrators from public school systems were engaged to present and discuss the data in discussion circles. Thirty-one such discussions were held with representatives IN and OF rural schools and, in some instances, representatives from Emater.

Subsequently, we conducted narrative interviews with one participant from each discussion circle, aiming to understand their professional experience with the rural population and their perspectives on the impact of the Fundão dam collapse on school communities.

Below, we present the analysis and synthesis of the research conducted, seeking to address the questions that drove the study.

## DATA ANALYSIS

To address the guiding question of this article, whether the provision of education in municipalities affected by the Fundão dam collapse guarantees the rural population access to education as a right, the principles of Countryside Education will be applied. These principles will be used to analyze data gathered and systematized during the first stage of the research regarding education provision for rural populations, as well as the narratives and accounts provided by research participants concerning the issue at hand.

Data from the School Census<sup>2</sup> indicate that the 36 affected municipalities had a total of 519 schools in 2015 and 500 in 2020. This total is distributed between schools located in rural areas, predominantly offering early childhood education and the early years of elementary education, and schools located in urban areas, offering the final years of elementary education and high school education.

However, educational data on the rural population are limited. Thus, cross-referencing data and constructing analytical categories were necessary to identify the education available to rural populations and its history. The following categories were created: schools **IN** the countryside: those located in rural areas where almost all students are rural residents; schools **OF** the countryside: schools located in urban areas but where more than half of the students reside in the countryside; and schools **FOR** the countryside: those where fewer than half of the students reside in the countryside. This distinction is significant based on the provisions of Decree 7,352 of November 4, 2010 (Brazil, 2010), which states in Article II that an institution where most of the students live in the countryside is classified as a rural school. The novel element among these categories is the creation of the designation school **FOR** the countryside. This category is important for identifying students who live in the countryside but attend schools that are not classified as rural and do not use the rural way of life as a contextual reference.

According to the 2015 School Census (Brazil, 2015), the municipalities studied had a total of 26,138 students living in rural areas enrolled in municipal and state public schools. Of these, 5,038 were in schools **IN** the countryside, 6,369 in schools **OF** the countryside, and 14,731 in schools **FOR** the countryside. In 2020, the total number of students residing in rural areas was 19,958. There were 4,456 students in schools **IN** the countryside; 4,261 in schools **OF** the countryside; and 11,241 in schools **FOR** the countryside (Brazil, 2020). We observe that, between 2015 and 2020, there was a reduction of 6,180 students living in rural areas within the public school system, a decrease of 23.6%. This reduction corroborates the trend shown in the population data for the municipalities surveyed. The most significant reduction occurred in schools **OF** the countryside. Monitoring the flow of students living in rural areas is an important avenue for future research. However, the most significant fact is that all schools serving students living in rural areas experienced a decline in this number.

During this period, the number of schools **IN** the countryside fell from 104 to 85, indicating the closure of 19 schools (18.3%). The number of students living in rural areas attending these schools dropped from 5,038 to 4,456, a reduction of 582 students (11.5%). The number of schools classified as **IN** the countryside decreased from 42 to 39, or 7.1%. The number of students residing in rural areas in these schools fell from 6,369 to 4,261, a reduction of 2,108 students (33%). The number of schools classified as **FOR** the countryside increased from 371 to 376 (1.3%). However, the number of students living in rural areas fell from 14,731 to 11,241, a reduction of 3,490 students (23.7%) (Brazil, 2015, 2020).

These data show that the greatest percentage change regarding the number of schools serving students living in rural areas is found among schools **IN** the countryside. Unlike the other two categories,

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<sup>2</sup> These data were systematized to create a research database. We conducted the research using this database. They are no longer available at the original locations.

a reduction in the number of these schools indicates their closure or deactivation, since one school OF or FOR the countryside might simply change its classification if the majority of its student body shifts from rural to urban (or vice versa). In other words, the closure of schools located in rural areas is significant in the municipalities of Minas Gerais affected by the Fundão dam collapse.

We also observed that schools FOR the countryside predominantly offer elementary, middle, and High school to students living in rural areas. There are significant differences in how each municipality manages the provision of education for rural students. The closure of rural schools is not a universal trend, although there is a tendency toward school consolidation, often referred to as *nucleação* (school consolidation), which results in fewer students at the remaining schools, increasing the likelihood of their eventual closure (Prado, 2025). The findings indicate that the historical decline of the rural population in Brazil is ongoing, which in turn affects the provision of schooling for this demographic: as student numbers drop, municipalities may be more inclined to opt for consolidation. This consolidation process, directed primarily at schools FOR the countryside, affects the Rural Education movement's proposal to tailor school curricula to the specific realities of rural students. It weakens their connection to their place of origin and hampers the strengthening of the rural population as an active agent in shaping the future of rural areas.

Maria, a teacher from a rural community in Barra Longa who was working at the Municipal Department of Education at the time of the interview, offers an important perspective on the role of educational policies in the closure of rural schools:

I was never able to sign up; we register in Simec [*Sistema Integrado de Monitoramento, Execução e Controle*], but when you go to enter a school, it doesn't fit the profile because they all have few students. We couldn't even get into *Novo Mais Educação* or the *Educação Conectada* program. Then the National Plan comes along saying we have to serve 50% of children aged zero to three. That's mandatory! How are we supposed to meet that requirement when our municipality is rural? It's very large, yet the town itself is tiny... it's one of the biggest municipalities in the region, but we have communities over 50 km away on the border with Ponte Nova, and others 25 km away on the border with Alvinópolis. So, how do you bring those rural students into town and close a local school? The children would have to get up at 5 a.m. At the same time, the city government doesn't have the land to build a school [in town]... so it would be better to keep the children there and serve them locally. At the same time, it's impossible to run a daycare for zero-to-three-year-olds due to the multi-grade classroom setup; for example, we have schools with eight or nine students where the teacher handles grades 1 through 5. It gets complicated for the municipality because you can't assign more than one teacher to that school; it becomes difficult for them to manage preschool, kindergarten, nursery, and elementary levels all at once. The options keep narrowing, and I think eventually everything will have to be centralized here. You're required to provide services, but you lack the means and resources because there aren't enough students... it's a major concern because there's a deadline for the municipal plan, it ends in 2024. It worries me because we already had to close some schools this year, one had only four students. In the neighboring village, the nearest school has transportation and everything, but parents are still worried about the situation (Narrative Interview, Maria, Barra Longa, 2018).

As Maria's data and narrative show, the quantitative decline in the number of establishments is occurring in rural schools, raising questions about the implementation of school transportation for young children. Long distances, combined with poor road and vehicle conditions, have been significant factors in discussions about the impact on student attendance and learning quality, directly affecting the quality of education provided.

Maria highlighted that those educational policies failed to align with the reality of rural schools, undermining the guidelines outlined in the Operational Guidelines for Basic Education in Rural Schools-*Diretrizes Operacionais para a Educação Básica nas Escolas do Campo* (Brazil, 2002) and the Rural Education Guidelines of the State of Minas Gerais-*Diretrizes da Educação do Campo do Estado de Minas Gerais* (Minas Gerais, 2015), which mandate that rural schools should not be closed.

From these narratives involving peasant school communities, we can infer that the provision of education has been compromised in several ways. On one hand, school closures have undermined the quality of education, specifically regarding the delivery of a contextualized, community-integrated, and

participatory educational model. On the other hand, there is the forced displacement of students from schools destroyed by the tailings, as seen in Mariana and Barra Longa, or of peasant families unable to sustain their ways of life following the dam collapse. In both instances, the school, the school community, and their ways of life are lost. This scenario reveals a precarious educational situation regarding access and retention; the closure of rural schools and the transportation of students to urban facilities create a disconnect between the school and the reality of peasant life. Consequently, this situation limits the scope for individuals and their specific contexts to play an active, central role in school practices.

When comparing the number of students living in rural areas across the 36 municipalities studied between 2015 and 2020, we observe a significant decline. In 2015, the region had 14,731 students living in rural areas, while in 2020, the number stood at 11,241 (Brazil, 2015, 2020). This 23.7% difference can also be interpreted as due to the riverine population's migration to urban centers, driven by the inability to sustain productive activities along the banks of the Doce River.

Results from the survey conducted with the municipalities already indicated at the time that, in contextual and historical terms, there had been a downward trend in the rural resident population across the last three censuses (1990, 2001, and 2010). Despite this historical trend, interpretations offered by the research participants indicated that the collapse of the Fundão dam influenced population flows within the municipalities, particularly among the rural population, due to their dependence on the Doce River. Participants in these activities stated that the numerical decline of the rural population is a reality within their municipalities' school systems. The interpretation of this situation is that unstable rural employment, a lack of opportunities, and insufficient public policies aimed at family farming are undermining rural communities. A discussion circle held in the municipality of Fernandes Tourinho provides examples of these impacts:

In our community, for example, this would happen through family farming. My husband actually works with family farmers; there used to be eight stalls made available to them here, but nowadays only four are in use. They aren't bringing produce to sell in the urban area. Everything has been negatively affected, not just by the pandemic, but also by the dam collapse and various other factors (Group discussion, Fernandes Tourinho, 2020).

In the context of the communities affected by the Fundão dam collapse at that time, the situation presented specific characteristics regarding the provision of temporary services by the Renova Foundation, which further weakened the individuals' ties to rural activities. This account from the research participants corroborates the testimony given to Freitas and Freitas (2021, p. 63) by an individual from the Alto Rio Doce countryside:

Outside firms come in and hire these people, mostly young people, paying them just minimum wage; then, after eight months, they all get laid off. They end up unemployed for a long time before chasing after another company to get hired again. I don't know if things have improved or gotten worse. I think they've gotten worse. It makes people more dependent. They've gone from being property owners to being dependent on chasing a minimum wage.

Data from contextual research showed that family farming is the predominant form of productive organization (>50%) among agricultural establishments in 35 of the 36 municipalities surveyed, in which 19 municipalities show figures above 50%, 13 above 70%, and 3 above 90% (IBGE, 2017). These data indicate that family farming is integral to the modes of production and livelihood reproduction for the rural population across all the municipalities surveyed. The data also reveal that, of the 36 municipalities surveyed, 33 have an STR (Rural Workers' Unions) and 28 have an Emater office<sup>3</sup>.

From this perspective, the data, discussion circles, and narrative interviews revealed a contradiction. On one hand, there was the presence of STRs and Emater in most municipalities, an acknowledgment of the problems school communities face in maintaining their ways of life, and an

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<sup>3</sup> Data regarding Emater were collected on February 13, 2021, from the website [https://www.emater.mg.gov.br/portal.cgi?flagweb=site\\_pgn\\_esloc&uregi=G0030](https://www.emater.mg.gov.br/portal.cgi?flagweb=site_pgn_esloc&uregi=G0030)

appreciation for family farming expressed by participants in the discussion circles and narratives. On the other hand, there was a lack of mention, within these spaces, of educational initiatives or partnerships aimed at incorporating these themes into school practice. From the perspective of Countryside Education, the school's understanding and reinforcement of the school community's way of life must be linked to discussions and reflections on the factors that jeopardize its maintenance and development. Rural Education is grounded in the principle that the school, as a space for dialogue, helps mobilize, strengthen, and equip the community to address identified problems, whether these involve the lack of public policies for family farming or a lack of access to them, precarious rural living conditions, a lack of coordination among intersectoral actions, or, specifically, the limitations of reparatory and compensatory processes for the municipalities affected by the dam collapse.

The results of the research conducted in Mariana and Barra Longa provided more contextualized information regarding the situation faced by their school communities, which were affected by the mining tailings from the Fundão dam collapse. Narrative interviews with members of these school communities reveal that the schools maintained close ties and served as local focal points.

According to Ms. Joana, from the Gesteira community, *"It was wonderful there! The teachers organized June festivals and family gatherings; they would invite the students, who could bring their mothers along, and they'd put on performances and plays; it was just great"* (Narrative Interview, Ms. Joana, Gesteira, 2018). This narrative highlights the role of rural schools as focal points and their close relationship with their communities, a theme often reflected in academic literature, fostering a process of understanding their ways of life, as well as the mobilization and empowerment needed to discuss and take action regarding them.

The statement of Laura, a teacher from Paracatu de Baixo in Mariana, illustrates how this school setting enabled her to engage with various aspects of local reality: *"If I wanted to work on community agriculture, for example, I could do it; I could go out with the kids, take them to the fields, and we could plant a vegetable garden..."* (Narrative Interview, Laura, Paracatu de Baixo, 2018). It also shows that the school is a space for community participation in deliberating on local interests: *"The roof for the sports court that we had long been calling for, the speed bumps, the paving... the little square was improved, it used to be just grass, and we'd be there in the dust, on the bare dirt. So, Paracatu was a gem. It was beautiful—absolutely stunning, truly wonderful"* (Narrative Interview, Laura, Paracatu de Baixo, 2018). At that time, the teacher believed that, as educators, *"you have to work in this area and embed the basics of mining in Minas into the school curriculum [...] Children need to grasp this at the very roots; they need to know where they live and how to defend their land"* (Narrative Interview, Laura, Paracatu de Baixo, 2018).

Maria, a teacher from Barra Longa, shows that she addressed the topic of the Fundão dam collapse with her students when asked about the role of education during the disaster:

I think it was also a matter of social work, you know, working with people and families. There was all that outrage among the families, and the children were left feeling somewhat lost. I remember working on the history of Barra Longa with my students; our history is defined by the confluence of the Carmo and Gualacho rivers. The Carmo used to be muddy while the Gualacho was clear; the Carmo was muddy because of mining operations in Ouro Preto. Even before the mud disaster, the rivers had already become nearly the same color due to environmental issues. But the mud reversed the situation; the Gualacho remains muddy to this day. I took the students there, and we talked a lot about the mud; they said they really missed the river. We discussed the situation; they remain outraged to this day. We studied the mud, and they wanted to build a scale model... they included a lot of trash in it. It went on like that all year long; throughout the rest of 2015 and 2016, we kept coming back to the subject; we kept revisiting it (Narrative Interview, Maria, Barra Longa, 2018).

In the last two narratives presented here, the teachers demonstrated synergy with the principles of Rural Education, specifically regarding the active agency of the individuals involved, the right to quality education, and the construction of a project offering an alternative to a societal model that disadvantages rural populations. They show sensitivity to this issue, recognizing the need to discuss the school community's interests and address the topic with their students to foster engagement with the challenges at hand.

Although teachers Laura and Maria mentioned the importance of addressing the subject of mining and the Fundão dam collapse with their students, this was not the case for other teachers in the affected municipalities. Research conducted by Hunzicker (2019, 2024), along with insights from the discussion circles in our studies, revealed that many teachers were unaware of the dams' existence and associated risks, and a critical perspective on mining was absent from classroom curricula. In a chapter authored by the research team, we point out that

c) Issues such as the agrarian question, mining practices, export-oriented monoculture, the indiscriminate use of pesticides, and violence against the rural population, among others, have come to constitute what we term “pedagogical silence” in school practice. d) The collapses of the Fundão and Córrego do Feijão dams highlight the relationship between corporations and schools in terms of sustaining and maintaining this “pedagogical silence.” e) It is necessary to discuss the school's place in this context to understand its role in the process that generates practices leading to disasters, such as dam collapses (Antunes-Rocha et al., 2021, p. 168).

We consider the concept of pedagogical silence, developed based on this research and the studies by Hunzicker (2019, 2024), to be an important reference for teacher education, fostering a critical approach to mining and other socio-environmentally predatory ventures while ensuring the necessary conditions for the responsible exercise of social oversight over them.

The research discussed in this article aimed to gather robust information regarding the repercussions of the Fundão dam collapse and mining practices on the provision of education, drawing on the accounts and narratives of the participating teachers. However, the insights shared by the participants can be systematized into the following aspects: (1) issues concerning the material conditions required to sustain the peasant way of life led to a population decline and the consequent closure of rural schools; (2) the Fundão dam collapse undermined the peasant way of life, driving population displacement to urban centers and further affecting student numbers in rural schools; (3) while the importance of the peasant way of life was acknowledged, there was no clear understanding of the school's role in promoting it; (4) the concept of “pedagogical silence” can help contextualize how schools address their reality within socio-environmentally impacted territories, thereby fostering social oversight and the development of alternatives to the prevailing model, in line with the guiding principles of Countryside Education. Although the narratives and accounts from the participating teachers reveal varying nuances in how they address the dam collapse and the population's way of life, they highlight a need for professional development processes. These processes should aim not only to foster knowledge, reflection, and the development of teaching strategies tailored to their school communities but, above all, to generate broad understanding regarding these ways of life, the threats facing them, and successful local initiatives, facilitating the sharing of experiences to collaboratively build revitalization strategies for these communities.

## FINAL CONSIDERATIONS

The data analyzed in this article indicate that the repercussions of the Fundão dam collapse on the provision of education for rural populations extend beyond the strictly quantitative dimension of school numbers and enrollment figures. The effects impact the material, social, and territorial conditions that sustain the ways of producing and reproducing life in rural areas and, consequently, affect these populations' right to education.

Analysis of data from the 2015 and 2020 School Censuses revealed a reduction in the provision of education in the affected municipalities. The number of rural schools fell from 104 to 85, representing the closure of 19 units, while the number of students residing in rural areas decreased by 23.6%, dropping from 26,138 to 19,958. Particularly significant was the reduction in schools classified specifically as schools OF the countryside, which recorded a 33% drop in the number of students living in rural areas. These data reveal a process of rural population displacement and a reorganization of school provision that requires analysis beyond mere demographic fluctuation.

By linking population displacement to the dam collapse, we identify that the contamination of the Doce River forced the population to abandon their established ways of life. This group has joined the urban population, leading to a decline in student enrollment in rural schools. Public officials have made the closure of schools, driven by observed population decline but without critically examining the underlying causes and consequences, a standard practice. Recognizing the collapse as a factor driving displacement from rural areas makes it possible to design policies that strengthen these communities' identities, even when they reside in urban areas.

In this context, closing rural schools and concentrating educational services in urban schools creates consequences that extend beyond mere physical access to schooling. When students must travel long distances to attend city schools, particularly in areas with poor roads and transportation challenges, the ties connecting the school to the territory, the community, and their way of life are weakened. The school ceases to serve as a local community anchor and loses some of its ability to acknowledge and incorporate the knowledge, experiences, and needs of rural residents.

However, it is necessary to examine how the collapse of the Fundão dam exacerbated processes already underway in the studied territories. Factors such as the long-term decline in the rural population, challenges in generating income, insufficient public policies for family farming, and transformations driven by mining activity all interact to influence whether families remain in rural areas. In this context, the impact of the dam collapse must be understood in relation to pre-existing vulnerabilities and the economic and territorial organizational structures of the affected municipalities.

At the same time, the data reveal a significant contradiction. Although family farming predominates in 35 of the 36 municipalities surveyed, and organizations such as unions and government agencies are present in most of them, discussions and interviews failed to identify any systematic efforts to integrate this knowledge, organizational presence, and experience into school curricula. This suggests that acknowledging the importance of rural ways of life has not necessarily been matched by pedagogical initiatives designed to strengthen them. The data point to a disconnect between public policies supporting family farming and educational policies. This misalignment creates situations that can be described as paradoxical: while there are initiatives to boost production and promote rural culture, there is a lack of policies aimed at strengthening educational provision in a way that addresses the specific needs of the rural context.

At this point, the concept of “pedagogical silence” (Antunes-Rocha et al., 2021), developed based on the research findings, takes on particular significance. This silence does not imply an absence of information regarding the dam collapse and/or peasant ways of life; rather, it refers to the failure of pedagogical practice to critically address themes fundamental to understanding the reality experienced by these communities, such as agrarian issues, mining, the causes and consequences of the dam collapse, transformations in ways of life, and the conditions enabling rural populations to remain on the land. The findings thus point to a gap between the students' concrete reality and the subject matter incorporated into school-based knowledge and reflection.

The results reinforce the need to understand rural schools as a right and as an integral part of the territory. The maintenance of these schools cannot be analyzed solely based on criteria such as enrollment numbers or administrative efficiency. It is essential to consider their social, cultural, and political functions for the communities, as well as their role in valuing rural ways of life and in building collective strategies to confront the conditions threatening the communities' continued presence in the territory.

The research highlights the need for public policies that integrate education, family farming, the environment, territorial development, and reparation processes related to the collapse of the Fundão dam. In the educational sphere, it is crucial to strengthen policies for initial and continuing teacher training that foster an understanding of the specific characteristics of rural populations and the development of pedagogical strategies capable of critically addressing the conflicts and transformations occurring within these territories.

It is also necessary to foster research that longitudinally tracks the effects of closing rural schools and the decline in the number of students living in rural areas, as well as to delve deeper into topics that would complement the present study, specifically addressing school transportation, a central

issue in the provision of schooling for rural populations. Likewise, it is important to investigate the repercussions of these processes on families remaining in the territory, on rural ways of life, and on the communities' capacity to participate in shaping alternatives for the revitalization of the Doce River basin.

Finally, the results lead to the conclusion that guaranteeing the right to education for rural populations means more than just ensuring enrollment and school attendance. It means guaranteeing a school that recognizes the individuals involved, their territories, their ways of life, their knowledge, and their visions for the future. In this sense, confronting “pedagogical silence” is a key challenge: schools must be transformed into spaces of knowledge, dialogue, critical inquiry, and participation, spaces collectively develop strategies for resistance, remaining in their territories, and revitalization. Thus, there is a clear need to create training processes that provide educators with the knowledge and the theoretical, conceptual, and methodological tools to address the issue of the dam collapse, including its causes and consequences, while linking it to the concerns raised by family farmers.

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## **ETHICS COMMITTEE APPROVAL STATEMENT**

The authors declare that the research was approved by the Research Ethics Committee.

## **DATA AVAILABILITY STATEMENT**

The content of the research text is included in the manuscript.

## **AUTHOR'S CONTRIBUTIONS**

Author 1 – Conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, resources, supervision, writing – review and editing.

Author 2 – Conceptualization, formal analysis, investigation, methodology, project administration, resources, supervision, writing – review and editing.

## **CONFLICT OF INTEREST STATEMENT**

The authors declare no conflict of interest regarding this article.