RELISE

PERCEPTIONS AND IMPACTS OF UNSUSTAINABLE ACTIONS AT TIRADENTES MILITARY STATE SCHOOL IN SINOP/MT: AN EXPLORATORY ANALYSIS FOR SUSTAINABLE AND CONSCIOUS MEASURES[1]

PERCEPÇÕES E IMPACTOS DAS AÇÕES NÃO SUSTENTÁVEIS NA ESCOLA ESTADUAL MILITAR TIRADENTES EM SINOP/MT: UMA ANÁLISE EXPLORATÓRIA PARA MEDIDAS SUSTENTÁVEIS E CONSCIENTES

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ABSTRACT

This research aimed to investigate the perceptions of students, parents and guardians, teachers, and military personnel at the Tiradentes Military State School in Sinop/MT regarding the impacts of unsustainable actions and sustainable and conscious measures. Classified as applied, mixed-methods (qualitative and quantitative), and exploratory, it utilized a case study approach. A questionnaire containing 16 statements and one open-ended question was administered to parents, students, military personnel, and teachers. Responses were collected and subsequently analyzed using word cloud technique, and a Collective Subject Discourse (CSD) was created to represent the participants' positions on the impacts of the actions analyzed in this research. The results highlighted a significant concern with awareness regarding various environmental issues. Additionally, they revealed recognition of environmental problems such

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as excessive consumption of natural resources, improper use of pesticides in agriculture, ecosystem degradation, and pollutant emissions. The findings also emphasized the importance of adopting sustainable measures to address these challenges. These insights suggest that environmental awareness is gaining traction in society, which may drive the adoption of more sustainable practices both individually and collectively. Based on these perceptions, it is concluded that the school must strengthen initiatives that promote the conscious consumption of natural resources, ecosystem conservation, pollutant emission reduction, and sustainable agricultural resource management.

Keywords: unsustainable actions, sustainable and conscious measures, Tiradentes Military School.

RESUMO

A presente pesquisa teve como objetivo investigar as percepções dos alunos, pais e responsáveis, professores e militares da Escola Estadual Militar Tiradentes em Sinop/MT em relação aos impactos das ações não sustentáveis e medidas sustentáveis e conscientes. Sendo classificada como aplicada, mista (qualitativa e quantitativa), exploratória, por meio de um estudo de caso, para tanto, foi utilizado um questionário contendo 16 afirmativas e apenas uma questão aberta, destinado aos pais, alunos, militares e professores, cujas respostas foram coletadas e posteriormente analisadas, utilizando a técnica de nuvem de palavras e, por fim, elaborado um Discurso do Sujeito Coletivo (DSC) para representar os posicionamentos dos participantes sobre as suas percepções em relação aos impactos das ações analisadas nesta pesquisa. Os resultados destacaram uma notável e significativa preocupação com a conscientização em relação a várias questões ambientais. Além disso, revelaram um reconhecimento das problemáticas ligadas ao meio ambiente, como o consumo excessivo de recursos naturais, a utilização inadequada de agrotóxicos na agricultura, a degradação dos ecossistemas e as emissões de poluentes. Evidenciaram também a importância de adotar medidas sustentáveis para enfrentar tais desafios. Esses achados sugerem que a conscientização ambiental está ganhando espaço na sociedade, o que pode impulsionar a adoção de práticas mais sustentáveis tanto em nível individual quanto coletivo. Diante dessas percepções, se conclui que se torna essencial que a escola venha fortalecer iniciativas que promovam o consumo consciente de recursos naturais, a conservação dos ecossistemas, a redução das emissões de poluentes e o manejo sustentável dos recursos agrícolas.

Palavras-chave: ações não sustentáveis, medidas sustentáveis e conscientes, Escola Militar Tiradentes.

INTRODUCTION

Humanity is in ecological deficit with the Earth, which means that, for example, in 2023 the global population's demand for natural resources exceeded the planet's capacity to regenerate them within a year, reaching overload on August 2. In general terms, this date indicates that, at present, 1.7 planets would be needed to meet all consumption demands (Instituto Akatu, 2023). This situation highlights the urgency of sustainability.

Sustainability is a fundamental approach to ensuring the preservation of the environment and the balance between human development and the conservation of natural resources, encompassing the protection and maintenance of the environment. It involves practices aimed at meeting present needs without compromising the ability of future generations to meet their own needs (Gadotti, 2008; Jacobi, 2003).

On the other hand, unsustainable actions contradict and oppose the principles of sustainability, involving practices such as excessive consumption of non-renewable resources, air and water pollution, uncontrolled deforestation, inadequate waste disposal, among other activities that damage the environment and deplete natural resources without considering long-term impacts (Couto, 2014; Oliveira Júnior, 2015).

To combat the negative impacts of unsustainable actions, it is essential to adopt conscious and sustainable measures, promoting greater environmental responsibility at both individual and collective levels. In this sense, rethinking consumption habits, adopting clean and renewable technologies, encouraging recycling, and reducing waste are fundamental (Ribas et al., 2017).

These sustainable measures must also be implemented at governmental and corporate levels, developing public policies and corporate strategies that prioritize the responsible use of natural resources, the protection of biodiversity, and the promotion of social justice (Oliveira, Gomez & Correia, 2018).

Thus, it is clear that sustainable measures are fundamental to promoting environmental awareness and the preservation of natural resources, and students in public schools play a crucial role in this process. Moreover, public schools can serve as a favorable space for implementing sustainable initiatives, such as creating school gardens, encouraging sustainable mobility, and carrying out environmental education projects.

In this context, the Tiradentes Military School in Sinop/MT, which combines the rigor of military training with a solid educational foundation, can stand out in implementing sustainable initiatives in its educational practices by offering a favorable environment for actions such as creating school gardens, encouraging sustainable mobility, and promoting environmental education projects.

Based on the above, the following question arises: what are the perceptions of students, parents and guardians, teachers, and military staff at the Tiradentes State Military School in Sinop/MT regarding the impacts of unsustainable actions on the school community? To address this issue, the objective was to investigate the perceptions of students, parents and guardians, teachers, and military staff at the Tiradentes State Military School in Sinop/MT regarding the impacts of unsustainable actions and sustainable, conscious measures.

This research is justified by its contribution to raising awareness in society - particularly among members of the Tiradentes Military School in Sinop/MT - about the importance of sustainability and the impacts of unsustainable actions. By providing relevant and accessible information, society can make more informed decisions and adopt more responsible environmental practices.

In addition, the research expands scientific knowledge on sustainability and unsustainable actions, filling gaps in academic literature and enabling the development of more robust theories in this field.

Finally, scientific research on sustainability can be rewarding for researchers, providing a sense of purpose and personal fulfillment by working toward a more sustainable future for the planet and for future generations.

LITERATURE REVIEW

A literature review is a fundamental step in academic or scientific work, consisting of a systematic and critical process of analyzing, synthesizing, and interpreting available information and knowledge on a specific topic. Its main objective is to identify, evaluate, and integrate relevant previous studies and research to inform current research (Mattar & Ramos, 2021).

Environmental impact and sustainability

The environmental aspect is characterized as the mechanism by which a human action causes an environmental impact, that is, human actions produce environmental effects that, in turn, generate environmental impacts (Stein, 2018).

According to the definition provided by CONAMA Resolution (1986), environmental impacts may be:

> Any alteration of the physical, chemical, and biological properties of the environment, caused by any form of matter or energy resulting from human activities that, directly or indirectly, affect: I - the health, safety, and well-being of the population; II - social and economic activities; III - the biota; IV - the aesthetic and sanitary conditions of the environment; V - the quality of environmental resources (Brazil, 1986).

Based on this concept, environmental impacts can be divided into two main types: positive impacts and negative impacts. Positive impacts refer to beneficial changes that an action can bring to the environment, such as the recovery of degraded areas, biodiversity conservation, pollution reduction, job

creation, growth of the local economy, stimulation of new markets, among others. Negative impacts, on the other hand, are those that cause harm to the environment, such as habitat destruction, water pollution, greenhouse gas emissions, biodiversity loss, increased/altered local traffic, among others (Stein, 2018).

In this context, the dimensions of sustainability are present in practically all human relations, and their presence is of utmost importance to achieve an ecologically balanced environment, as argued by Iaquinto (2018). The author goes on to list the following dimensions: the ecological or environmental dimension, the economic dimension, the social dimension, the spatial or territorial dimension, the cultural dimension, the political dimension (both national and international), the legal-political dimension, the ethical dimension, the psychological dimension, and the technological dimension.

In this scenario, sustainability, more than any other value, must also be globalized. If we look at the future of humanity and Mother Earth through the eyes of our children and grandchildren, we will immediately feel the need to care about sustainability and to create ways of implementing it in all fields of reality (Boff, 2017).

Oliveira, Leoneti, and Cezarino (2019) indicated that the concept of sustainability has been definitively consolidated at the center of the most current and complex discussions regarding the role of organizations in promoting Sustainable Development. Despite this widespread adoption, it is important to understand the origin of the term and its evolution up to the present day.

To understand sustainability more broadly, it can be stated that this term denotes:

> […] the set of processes and actions aimed at maintaining the vitality and integrity of Mother Earth, the preservation of its ecosystems with all the physical, chemical, and ecological elements that make possible the existence and reproduction of life, the fulfillment of the needs of the present and future generations, and the continuity, expansion, and

> realization of the potential of human civilization in its various expressions (Boff, 2017, p. 14).

However, as Silva (2016) points out, the growing discussions about the various dimensions of sustainable development highlight the need to create mechanisms capable of minimizing as much as possible the negative impacts of human activity on the environment, in order to maintain economic progress compatible with the planet's limitations.

Fundamentally, these issues are, in essence, the result of the aggressive actions perpetrated by human beings against nature. The relentless pursuit of extracting resources from the environment to meet human needs often takes place without due awareness of the finiteness of these resources and their importance for human survival. Such behavior, ultimately culminates in the creation of an authentic environmental crisis (Iaquinto, 2018).

Environmental education

Originating from the verb "to educate," education can be defined as the refinement of human capacities through the advancement of intellectual and ethical activities. In addition to being of significant importance for the individual, education also presents itself as a social phenomenon that enables the transmission of cultural elements essential to ensure coexistence in society for future generations. This phenomenon dates back as far as history itself (Oliveira et al., 2019).

In the Brazilian context, according to Loureiro (2012), environmental education in Brazil is thus oriented toward human development. This means that it is responsible for both knowledge (ecological, scientific, and socio-political) and behavior, but for this to occur, it must simultaneously promote:

> Active participation of individuals and groups in improving the environment; the autonomy of social groups in building sustainable alternatives; broad access to information as a condition for decision-making; changes in attitudes; the acquisition of specific skills; and the problematization of environmental reality (Loureiro, 2012, p. 84).

Environmental education, which became law in Brazil on April 27, 1999 (Law No. 9,795), is presented as a holistic approach to education. Its goal is to reach all citizens through a continuous and participatory educational process, aiming to instill in learners a critical awareness regarding the environmental challenges of their surroundings. This approach significantly incorporates the idea of fostering the construction of sustainable societies, not only in economic terms but also socially and environmentally (Oliveira et al., 2019).

To reaffirm this reality, Philippi Júnior and Pelicioni (2014) emphasize that it is essential to understand that the act of participation is not limited solely to the extent of involvement, but also to the manner in which one engages in a conscious, critical, and reflective intervention. This approach is grounded in individual choices in situations that not only affect the person but are also relevant to the community in which they are embedded.

According to Loureiro (2012), the act of raising awareness is often reduced to a synonym for informing or, at most, teaching others what is right. This understanding tends to be restricted to sensitizing people to environmental issues, transmitting knowledge, and instructing behaviors suitable for preservation. However, this approach often neglects the socioeconomic and cultural influences of the group with which one is working.

As Roos and Becker (2012) point out, environmental challenges arise as a result of the harmful lifestyle adopted by humanity, in which the pursuit of human “survival” culminates in the excessive exploitation of natural resources, leading to a crisis. Environmental Education fosters awareness of the true meaning of sustainability. When analyzing sustainable development, it is essential to direct attention to education, since it serves as the foundation for building conscious understanding that effectively promotes sustainability.

Environmental education, as a political and pedagogical process, is tasked with preparing individuals for the exercise of citizenship, developing

interdisciplinary knowledge based on an integrated worldview. Such training enables each individual to investigate, reflect, and act on the causes and effects of environmental problems that affect quality of life and public health (Philippi & Pelicioni, 2014).

According to Silva (2016), given this context permeated by ever-growing discussions on environmental issues, it is clear that it is possible to substantially reduce the impact on the environment through awareness and the implementation of a paradigm of production and consumption that is sustainable. Furthermore, environmental education is an essential instrument for promoting active and informed participation of individuals in matters related to the environment.

METHODOLOGY

This section addresses the methodology adopted to carry out the research, through a detailed explanation of each stage, from formulation to development, providing the reader with information for an adequate perception and understanding of the research.

Tiradentes Military School in Sinop/MT

The Tiradentes State Military School 2nd Sergeant PM Claudemir França Maciel, located in Sinop-MT, was established through State Decree No. 1,017, dated July 14, 2021 (Mato Grosso, 2021). Fully integrated into the state's public education system, its central purpose is to provide an educational formation rooted in military values, discipline, and citizenship.

Like other military educational institutions, the school is guided by the principles of hierarchy, discipline, patriotism, and respect for national symbols. In addition to conventional academic subjects, students also have the opportunity

to participate in military training and physical activities, aiming to strengthen teamwork and a sense of responsibility.

As prescribed by Art. 7 of Law No. 11,273 of December 18, 2020, student admission takes place through an annual selection process. Within this procedure, applicants may be required to pay a symbolic registration fee, except for those classified as economically disadvantaged, who are exempt according to the law.

Additionally, 20% of the available spots are reserved for legal dependents of military police officers and members of the State of Mato Grosso's Military Fire Department, while 5% are allocated to persons with disabilities (PwD). The remaining spots, including those unfilled after the quotas mentioned above, are assigned to other applicants in accordance with their ranking order.

Article 3 of Law No. 11,273 of December 18, 2020, outlines the objectives of the Tiradentes State Military School in Sinop as follows:

I - To serve students of both sexes enrolled in the 3rd cycle of elementary education and in high school;

II - To provide students with formal education grounded in civic, patriotic, ethical, and moral values;

III - To employ the teaching of civility, respect for laws, citizens' rights and duties, and family ideals as educational tools;

IV - To improve the development indicators of basic education;

V - To reduce school dropout rates and low academic performance;

VI - To increase the approval rates of public school students in higher education entrance examinations, as well as their integration into the labor market;

VII - To value education professionals;

VIII - To promote improvements in public security standards within the school community through the integrated participation of society and governmental entities, as a means of transforming educational management.

Therefore, the Tiradentes State Military School 2nd Sergeant PM Claudemir França Maciel in Sinop, Mato Grosso, stands out for providing education based on civic and military values. By integrating military discipline with conventional teaching, the school aims to raise educational standards, promote citizenship, ethics, and social responsibility, and foster a new generation of conscious and committed individuals. In doing so, it contributes to the formation of citizens prepared to face contemporary challenges with respect, dedication, and solid principles.

Research classification

This research is classified, in terms of technical procedures, as a case study. Marconi and Lakatos (2021) state that the objective is to obtain a detailed and comprehensive analysis of the case in question, generally using multiple data sources - such as interviews, observations, documents, and records - to collect extensive information. It is an in-depth study of an object, allowing for broad and detailed knowledge about it, which would be practically impossible through other investigative methods.

Regarding the nature of the research, it is classified as applied. According to Sampieri et al. (2013), applied research aims to generate knowledge for practical applications, as well as to seek solutions to specific problems.

With respect to the research objectives, it is classified as descriptive. According to Lozada and Nunes (2019), descriptive research can be defined as that which describes a reality, such as an opinion survey. It is developed from documents, surveys, and field approaches.

In relation to the problem approach, the present study is mixed-methods research. According to Michel (2015), mixed research - also known as the integrative approach - combines quantitative and qualitative methods, seeking to take advantage of the strengths of both.

Population and sample

The population to be researched is the total set of individuals, objects, events or elements that share common characteristics and that are the focus of a research or study (Sampieri, Collado & Lucio, 2013). Table 1 below provides information about the population and the research sample.

Tabela 1 – População e amostra da pesquisa

	Population		**Sample**	
Participants	**F**	***f***	**F**	***f***
Studentes	556	*46,8%*	352	*56,9%*
Parents or guardians	556	*46,8%*	247	*39,9%*
Others (Military staff, Employees and teachers)	76	*6,4%*	19	*3,2%*
Total	**1.188**	***100%***	**618**	**52,1%**

Source: Elaborated by authors, 2023

Table 1 presents the description of the research population and sample. The total population is composed of 1,188 members, distributed into three categories: students (46.8%), parents or guardians (46.8%), and others (6.4%). In the parents or guardians' category, one was conventionally assigned per student as a reference for quantification - that is, 556 members, equal to the number of students. Finally, the research includes other participants, such as military personnel, staff, and teachers, who make up the total of 76 individuals.

The research sample, in turn, is a representative subset of the total population selected to be studied and analyzed in a scientific investigation. It is an essential part of research, as it allows researchers to obtain data and information about the larger population of interest without having to study every individual or element included in the population (Santos et al., 2015).

In this case, students account for 56.9% of the total sample, that is, 352 students. As for parents or guardians, the number is 247, representing 39.9% of the total. In the selected sample, only 20 other individuals are present, corresponding to 3.2% of the sample. The total sample corresponds to 52.1% of the population.

Most participants fall within the age range of 13 to 18 years (57.1%). The majority have incomplete elementary education (33.1%) and are female (67.2%). In addition, most households (32.2%) have a family income between 3 and 6 minimum wages, with the majority of respondents (55.6%) being students. Finally, 54.7% of participants have never taken part in any project or initiative related to sustainability.

According to Ramos (2009), these data are fundamentally relevant for understanding the selection of the sample in relation to the total population, providing information on the representativeness of the different groups of participants in the study. This analysis is crucial to ensure the validity of the results and to allow inferences about the broader population based on the studied sample.

Methods of data collection and analysis

According to Gil (2021), data collection involves clearly defining the objectives to be achieved and determining the questions that will guide the research. It also requires identifying the most appropriate procedures for obtaining the data, defining a suitable sampling strategy, obtaining permissions, preparing the means for recording information, anticipating strategies for data analysis, considering ethical implications, and, most importantly, recognizing the researcher’s competence, since in qualitative research the researcher themselves is considered a data collection instrument.

Between August 1 and 4 of the current year, a visit was made to the Tiradentes State Military School in Sinop/MT to explain the purpose of the present research and, subsequently, a questionnaire was administered through a link. The questionnaire consisted of fourteen multiple-choice statements, using a five-point Likert scale, and only one open-ended question.

The Likert scale is a type of psychometric response scale commonly used in questionnaires and is the most frequently applied in opinion research. When responding to a questionnaire based on this scale, participants specify their level of agreement with a statement (Likert, 1932).

The data collected in the research were processed using the “word cloud” tool. According to Prais and Rosa (2017), a word cloud is a graphical resource used to describe the most frequent terms in a given text. The font size in which a word appears is a function of its frequency in the text: more frequent words are displayed in larger fonts, while less frequent ones appear in smaller fonts.

Finally, the Collective Subject Discourse (CSD) technique was employed, which is a method for obtaining social representations - that is, a technology for extracting and understanding them. These representations are not spontaneously acquired but rather are a complex product derived from research. The CSD is one of several investigative instruments designed for this purpose (Lefèvre & Lefèvre, 2014).

DESCRIPTION AND DISCUSSION OF RESULTS

In this section, the research results will be presented and discussed based on the statements extracted from various pieces of legislation addressing the issue of unsustainable actions and sustainable and conscious measures. The main laws and regulations related to environmental sustainability and awareness, from which the statements applied to participants were drawn, will be highlighted. The main ones are:

National Environmental Policy Law (Law No. 6,938/1981): establishes the National Environmental Policy, defining principles and guidelines for the protection, preservation, and improvement of the environment.

Environmental Crimes Law (Law No. 9,605/1998): defines criminal and administrative sanctions arising from conduct and activities harmful to the environment, such as pollution and environmental degradation.

Atlantic Forest Law (Law No. 11,428/2006): provides for the protection of the native vegetation of the Atlantic Forest, one of Brazil's most threatened biomes.

Brazilian Forest Code (Law No. 12,651/2012): sets rules for the protection and sustainable use of forests and other forms of vegetation within the national territory.

National Solid Waste Policy (Law No. 12,305/2010): establishes guidelines for the proper management of solid waste, seeking to reduce, reuse, and recycle materials, in addition to promoting shared responsibility among government, the private sector, and civil society.

National Environmental Education Policy (Law No. 9,795/1999): defines principles, objectives, and guidelines for environmental education in Brazil, aiming to raise public awareness of the importance of sustainability.

National Program for the Conservation of Electric Energy (Procel): establishes actions and programs to promote the efficient use of electric energy in the country.

National Biodiesel Production and Use Program (PNPB): aims to stimulate the production and consumption of biodiesel, a renewable energy source.

National Water Resources Policy (Law No. 9,433/1997): defines the integrated and sustainable management of water resources in the country.

These are some of the main environmental laws in Brazil, but there are other rules and regulations at different levels of government that also address specific aspects of sustainability and environmental awareness. The country has made progress on several fronts to protect the environment and promote more sustainable practices across various sectors of society.

Positioning on perceptions of unsustainable actions and conscious and sustainable measures

This subsection will present statements related to unsustainable actions and conscious and sustainable measures based on the aforementioned legislation. Table 2 presents the participants' positions regarding excessive energy use.

Table 2 – Position on excessive energy use

Perceptions of unsustainable actions			**Conscious and sustainable measures**		
Energy overuse occurs when non-renewable energy sources are used indiscriminately, without considering energy efficiency and waste.			To address the problem of energy overuse, one must opt for renewable energy, adopting clean and renewable energy sources such as solar, wind, and hydroelectric power.		
Position	**F**	***f***	**Position**	**F**	***f***
Totally agree	207	33,6%	Totally agree	292	47,3%
Agree	363	58,7%	Agree	283	45,9%
Indifferent	32	5,1%	Indifferent	35	5,7%
Disagree	14	2,3%	Disagree	5	0,9%
Totally disagree	2	0,3%	Totally disagree	3	0,2%
Total	**618**	**100%**	**Total**	**618**	**100%**

Source: Elaborated by authors (2023)

Table 2 shows that most participants agree (92.3%) with the statements regarding excessive energy use, demonstrating concern about the indiscriminate use of non-renewable sources and the need for energy efficiency. Only a small portion expressed indifference (5.1%) or disagreement (2.6%). Regarding sustainable measures, the majority also agree (47.3% totally and 45.9% partially) with the adoption of renewable sources, such as solar and wind energy.

This indicates significant awareness of the importance of replacing non-renewable sources. Only a few participants are indifferent (5.7%) or disagree

(0.9% and 0.2%). This positive trend reflects the acceptance and understanding of sustainable measures as a solution to the environmental challenges of energy consumption. Next, Table 3 presents the participants' views on water waste.

In Table 3, the vast majority of participants agree (93.2%) with the statements about water waste, showing concern over the indiscriminate use of drinking water and the conservation of water resources. Only a small portion expressed indifference (4.8%) or disagreement (2%). Regarding sustainable measures, the majority also agree (46.7% totally and 46.4% partially) with the adoption of conservation practices and the preservation of water resources.

Tabela 3 – Position on water waste

Perceptions of unsustainable actions			**Conscious and sustainable measures**		
Water waste occurs due to the indiscriminate use of drinking water, the lack of reuse of treated wastewater, and the lack of conservation of water resources, resulting in inefficient use and the loss of a precious and limited resource.			To address the problem of water waste, it is necessary to promote awareness of responsible water use, implement practices for reusing treated water, and adopt conservation measures aimed at preserving water resources and environmental sustainability.		
Position	**F**	***F***	**Position**	**F**	***F***
Totally agree	294	47,6%	Totally agree	288	46,7%
Agree	282	45,6%	Agree	287	46,4%
Indifferent	30	4,8%	Indifferent	27	4,3%
Disagree	7	1,1%	Disagree	14	2,3%
Totally disagree	5	0,9%	Totally disagree	2	0,3%
Total	**618**	**100%**	Total	**618**	**100%**

Source: Elaborated by authors (2023)

This demonstrates significant awareness of the importance of consciously using water resources, adopting sustainable consumption and reuse practices, and thus maintaining a good quality of life and the environment. Only a few participants expressed indifference (4.3%) or disagreed (2.3% and 0.3%).

This positive trend reflects the acceptance and understanding of sustainable measures as a solution to environmental challenges related to water consumption. Table 4 below presents participants' perceptions regarding air pollution.

In Table 4, the majority of participants (92.3%) agree with the statements about air pollution, demonstrating concern about the emission of atmospheric pollutants. Only a small portion expresses indifference (5.1%) or disagreement (2.6%). Regarding sustainable measures, the majority also agree (49.9% fully and 43.0% partially) with the adoption of actions to reduce pollutant emissions.

Table 4 – Position on air polution

Perceptions of unsustainable actions			**Conscious and sustainable measures**		
Air pollution results from the emission of atmospheric pollutants from industrial activities, vehicles, and the burning of fossil fuels.			To combat air pollution, it is essential to adopt measures to reduce pollutant emissions, such as controlling industrial emissions, using cleaner vehicles, and using cleaner and renewable energy sources.		
Position	**F**	***f***	**Position**	**F**	***F***
Totally agree	278	45,0%	Totally agree	266	43,0%
Agree	292	47,3%	Agree	308	49,9%
Indifferent	32	5,1%	Indifferent	32	5,1%
Disagree	14	2,3%	Disagree	9	1,4%
Totally disagree	2	0,3%	Totally disagree	3	0,6%
Total	**618**	**100%**	**Total**	**618**	**100%**

Source: Elaborated by authors (2023)

This demonstrates significant awareness of the importance of addressing atmospheric pollutant emissions and adopting measures to reduce them. Only a few participants expressed indifference (5.1%) or disagreed (1.4% and 0.6%).

This positive trend reflects the acceptance and understanding of sustainable measures as a solution to environmental challenges related to pollutant emissions. Table 5 below presents the participants' positions regarding deforestation and forest degradation.

In Table 5, the majority of participants (93.2%) agree with the statements about deforestation and forest degradation, demonstrating concern about the excessive removal of forests and natural ecosystems. Only a small portion express indifference (4.3%) or disagreement (2.5%). Regarding sustainable measures, the majority also agree (47.6% fully and 46.7% partially) with the adoption of sustainable forest conservation and management.

Table 5 – Position on deforestation and forest degradation

Perceptions of unsustainable actions			**Conscious and sustainable measures**		
Deforestation and forest degradation occur due to the excessive removal of forests and natural ecosystems, without considering the importance of preserving biodiversity, ecosystem services, and the sustainability of forest resources.			To combat deforestation and forest degradation, it is necessary to adopt measures for conservation and sustainable forest management, promote responsible agricultural practices, and raise awareness of the vital importance of forests for the health of the planet.		
Position	**F**	***f***	**Position**	**F**	***F***
Totally agree	273	44,2%	Totally agree	288	46,7%
Agree	302	49,0%	Agree	294	47,6%
Indifferent	27	4,3%	Indifferent	25	4,0%
Disagree	12	2,0%	Disagree	7	1,1%
Totally disagree	4	0,5%	Totally disagree	4	0,6%
Total	**618**	**100%**	**Total**	**618**	**100%**

Source: Elaborated by authors (2023)

This demonstrates significant awareness of the importance of addressing the excessive removal of forests and natural ecosystems, and the need to adopt sustainable forest conservation and management measures. Only a few participants are indifferent (4.0%) or disagree (1.1% and 0.6%).

This positive trend reflects the acceptance and understanding of sustainable measures as a solution to the environmental challenges related to deforestation and forest degradation. Table 6 then presents the participants' positions regarding unsustainable production and consumption.

Table 6 – Position on unsustainable production and consumption

Perceptions of unsustainable actions			**Conscious and sustainable measures**		
Unsustainable production and consumption are linked to models that rely on the excessive consumption of natural resources and the improper disposal of waste that is not easily recyclable or biodegradable. This leads to resource depletion, increased waste generation, and environmental pollution.			To combat unsustainable production and consumption, it is crucial to adopt a sustainable approach, promoting the circular economy and raising awareness about responsible consumption and the choice of sustainable products.		
Position	**F**	***f***	Position	**F**	***f***
Totally agree	223	36,2%	Totally agree	230	37,3%
Agree	343	55,6%	Agree	347	56,1%
Indifferent	37	6,0%	Indifferent	30	4,8%
Disagree	12	2,0%	Disagree	11	1,8%
Totally disagree	3	0,2%	Totally disagree	0	0,0%
Total	**618**	**100%**	**Total**	**618**	**100%**

Source: Elaborated by authors (2023)

In Table 6, the majority of participants agree (91.8%) with the statements about unsustainable production and consumption, demonstrating concern about the excessive consumption of natural resources and the improper disposal of non-easily recyclable waste. Only a small portion expresses indifference (6.0%) or disagreement (2.2%).

Regarding sustainable measures, the majority also agree (37.3% fully and 56.1% partially) with adopting a sustainable approach and raising awareness about responsible consumption. This demonstrates significant awareness of unsustainable consumption, excessive consumption of natural resources, and improper disposal, and highlights the crucial importance of adopting a sustainable approach. Only a few participants are indifferent (4.8%) or disagree (1.8% and 0.0%).

This positive trend reflects the acceptance and understanding of sustainable measures as a solution to environmental challenges related to the consumption of natural resources and improper disposal, thus promoting responsible consumption. Table 7 below presents the participants' positions regarding the unsustainable exploitation of natural resources.

Table 7 – Position on unsustainable exploitation of natural resources

Perceptions of unsustainable actions			**Conscious and sustainable measures**		
Irresponsible exploitation of natural resources occurs due to the excessive and unsustainable extraction of minerals, water, fossil fuels, and other resources, without considering their regenerative capacity. This results in resource depletion, environmental degradation, and biodiversity loss.			To combat the unsustainable exploitation of natural resources, it is necessary to adopt a sustainable management approach that considers the regenerative and conservation capacity of ecosystems, such as responsible extraction practices, efficient use of resources, conservation measures, and the search for more sustainable alternatives, such as renewable energy and environmentally friendly technologies.		
Position	**F**	***f***	**Position**	**F**	***F***
Totally agree	346	56,0%	Totally agree	227	36,7%
Agree	226	36,6%	Agree	317	51,4%
Indifferent	30	4,8%	Indifferent	42	6,8%
Disagree	14	2,3%	Disagree	26	4,2%
Totally disagree	2	0,3%	Totally disagree	6	0,9%
Total	**618**	**100%**	**Total**	**618**	**100%**

Source: Elaborated by authors (2023)

In Table 7, most participants agree (92.6%) with the statements on the unsustainable exploitation of natural resources, showing concern about the excessive and unsustainable extraction of minerals, water, fossil fuels, and other resources. Only a small portion expressed indifference (4.8%) or disagreement (2.6%). Regarding sustainable measures, the majority also agree (36.7% totally and 51.4% partially) with the adoption of a sustainable management approach, taking into account the regeneration capacity and conservation of ecosystems.

This indicates significant awareness of the importance of addressing the excessive extraction of minerals and the need to maintain sustainable management of natural resources, considering their regenerative capacity. Only a few participants are indifferent (6.8%) or disagree (4.2% and 0.9%).

This positive trend reflects the acceptance and understanding of sustainable measures as a solution to environmental challenges related to resource extraction methods, such as water and fossil fuels. Next, Table 8 presents participants' views on unsustainable agricultural practices.

In Table 8, the vast majority of participants (92.6%) agree with the statements on unsustainable agricultural practices, showing concern over the excessive use of pesticides, deforestation for agricultural expansion, intensive monoculture cultivation, and the lack of soil conservation practices. Only a small portion expressed indifference (4.8%) or disagreement (2.6%).

Regarding sustainable measures, the majority also agree (36.6% totally and 51.5% partially) with the adoption of more sustainable agricultural practices. This demonstrates significant awareness of the excessive use of pesticides and deforestation for agricultural expansion, emphasizing the importance of promoting sustainable agriculture.

Table 8 – Position on unsustainable agricultural practices

Perceptions of unsustainable actions			**Conscious and sustainable measures**		
Unsustainable agricultural practices involve the excessive use of pesticides, deforestation of areas for agricultural expansion, intensive monoculture cultivation, and a lack of soil conservation practices. These practices have a significant impact on environmental degradation and biodiversity loss.			To combat unsustainable agricultural practices, it is necessary to promote more sustainable agriculture. This includes reducing pesticide use through organic and agroecological farming practices, preserving forest areas, and adopting sustainable land management techniques such as crop rotation, no-till farming, and agroforestry systems.		
Position	**F**	***f***	**Position**	**F**	***f***
Totally agree	226	36,5%	Totally agree	226	36,6%
Agree	347	56,1%	Agree	318	51,5%
Indifferent	30	4,8%	Indifferent	45	7,2%
Disagree	14	2,3%	Disagree	25	4,0%
Totally disagree	1	0,3%	Totally disagree	4	0,7%
Total	**618**	**100%**	**Total**	**618**	**100%**

Source: Elaborated by authors (2023)

Only a few respondents were indifferent (7.2%) or disagreed (4.7%). This positive trend reflects the acceptance and understanding of sustainable measures as a solution to the environmental challenges of excessive pesticide consumption in agriculture.

Collective subject discourse on the positions of research participants

This section will present the research participants' positions, using the Collective Subject Discourse, based on the following open-ended question: In your opinion, and based on the questions answered, what are the main challenges faced by the Tiradentes State Military School that you observed in addressing the impacts of unsustainable actions and promoting sustainable and conscious measures?

To this end, a "Word Cloud" was used, which is a visual representation of the most common words and phrases from the open-ended responses. It consists of a total of 178 words, cited, identified, and extracted as the main elements carrying meaning related to the topic analyzed. Figure 1 illustrates the most prominent terms in the word cloud.

Figure 1 - **Word cloud of student, parent, teacher, and others views.**
Source: Elaborated by authors (2023)

Out of a total of 73 identified words, the most frequently cited were: "Awareness" (90), "Sustainability" (84), "Sustainable" (80), "Environment" (77), "School" (71), "Unsustainable" (65), "Consumption" (61), "Students" (59), "Scarcity" (52), "Environmental" (45), "Consumption" (39), "Lectures" (38), and "Education" (34)[8]. Based on these words highlighted in Figure 1, it is evident that the Tiradentes State Military School in Sinop/MT faces a series of significant challenges in addressing the impacts of unsustainable actions and seeks to promote conscious and sustainable measures within its educational environment.

One of the main challenges is raising awareness among students, teachers, and staff about the importance of sustainability and its effects on the environment. To achieve this objective, it is essential for the school to adopt a proactive approach to environmental education, organizing lectures and activities that address relevant topics such as responsible consumption, the scarcity of

[8] "Conscientizar" (90), "Sustentabilidade" (84), "Sustentável" (80), "Meio-ambiente" (77), "Escola" (71), "Insustentável" (65), "Consumo" (61), "Alunos" (59), "Escassez" (52), "Ambiental" (45), "Consumo" (39), "Palestras" (38) e "Educação" (34).

natural resources, and the negative environmental impacts resulting from excessive and unsustainable consumption.

Based on the responses to the open-ended question, the Collective Subject Discourse (CSD) was developed to represent the participants' perception regarding the analyzed topic. The CSD captures the main ideas and sentiments of the participants regarding these effects, providing a collective view of the subject, which was represented as follows:

Raising awareness and encouraging people to adopt sustainable actions regarding the environment is essential to face the environmental challenges the world is currently experiencing. It is necessary to educate students about the importance of caring for the environment by organizing lectures and activities that engage them in this cause. However, there is a noticeable lack of an appropriate space, such as a school garden, to foster direct contact with sustainable practices. Avoiding food waste is an important measure, as is learning to reuse and recycle materials. Additionally, replacing car use with more sustainable alternatives and reducing plastic consumption are actions that positively impact the environment. Encouraging conscious energy consumption is also crucial, particularly by using renewable sources such as solar energy. It is important to combat unsustainable production and consumption, as waste - especially of food during breaks - has a significant environmental impact. Reducing waste and adopting more conscious practices are fundamental steps in this process. Raising awareness, especially among young people, about the importance of sustainability is the first step toward building a future that is more harmonious with the environment. By adopting sustainable practices, such as reuse, recycling, use of renewable energy sources, and waste reduction, we contribute to a healthier and more balanced world for future generations. It is evident that the Tiradentes State Military School in Sinop/MT has conscientiously strived to adopt sustainable measures to prevent waste and the depletion of natural

resources. However, the institution's greatest challenge is the lack of an adequate space to develop and promote practices that encourage sustainability, as the property belongs to a higher education institution. One suggestion is for the school to develop a community urban reforestation project, involving students, parents, and the community, thereby strengthening the connection with nature. Field lessons, providing experiences outside the traditional classroom environment, are believed to spark students' interest and willingness to adopt more sustainable methods. It is essential to raise awareness among both parents and students about the importance of caring for the environment. Conducting field research, promoting lectures, and addressing topics with seriousness and responsibility are fundamental steps in this process. The school's biggest challenge is managing the litter left by students, indicating that awareness about proper disposal still needs improvement. Furthermore, the excessive use of energy, such as running multiple air conditioning units, could be replaced with solar energy, making the school more sustainable. The school can encourage students to take care of their learning environment by avoiding littering and maintaining cleanliness. An effective approach would be to promote collection and awareness activities so that students understand the importance of caring for their own surroundings. Another important point is that a lack of communication among people can lead to uncertainty about the correct actions to take. Therefore, establishing good communication is crucial to ensure sustainable actions are effectively implemented in society. A more pleasant and cooler climate can be achieved by planting more trees around the school. This not only improves the school environment but also contributes to air quality and the well-being of everyone. Education promotes behavioral changes, helping people recognize environmental problems and understand the need to improve the future. The school should teach that natural resources are increasingly scarce and, therefore, must be used rationally to avoid waste. Moreover, students should

be taught that this concern must be continuous and passed on to future generations. One way to help the environment, save money, and foster social connections is to participate in a carpooling network. The school can encourage this activity by connecting parents who live nearby. The reality is that most teachers, when they left university, did not receive training to view the environment in an integrated way, which is essential. It is ineffective to approach the topic in a segmented manner, separating it into Chemistry, Geography, etc. From an early age, students need to analyze the environment as a whole. The environmental field is a transdisciplinary subject and, as such, presents topics and problems expressed across different spheres of interaction and multiple levels of reality. Therefore, it is understood that an isolated subject cannot explain the complexity of socio-environmental reality, and the more qualified the teachers are, the better environmental education will be integrated into the school. In conclusion, caring for the environment must be a collective effort, from raising awareness of the negative effects of everyday actions to the effective implementation of sustainable practices. The collection and separation of school waste are also important measures to contribute to a healthier and more sustainable environment. With everyone's cooperation, we can make a difference and build a better future for our planet. In short, awareness is key to addressing environmental challenges. The school can play a fundamental role by promoting environmental education across all subjects, involving all members of the school community to build a more sustainable and environmentally responsible environment. To tackle environmental challenges and foster awareness, it is essential for the school to conduct more campaigns, lectures, and activities that broadly and educationally address these topics. With the knowledge gained, students will be able to contribute more effectively to sustainability.

Based on the methodology used in the Discourse of the Collective Subject (DSC), it is possible to clearly observe the participants' positions

regarding the sustainable actions analyzed in this research. In short, they emphasize the importance of knowledge and dissemination of these sustainable actions.

FINAL CONSIDERATIONS

Throughout this research, it was possible to analyze the perceptions of the participants from the Tiradentes State Military School in Sinop/MT regarding the impacts of unsustainable actions and sustainable and conscious measures. The results revealed a remarkable concern and significant awareness of various environmental issues, reflecting recognition of problems related to excessive consumption of natural resources, improper use of pesticides, deforestation, air pollution, among other challenges.

Participants demonstrated a positive inclination toward adopting sustainable practices, such as reuse, recycling, the use of renewable energy sources, and waste reduction. This trend indicates that environmental awareness is gaining ground within the school community and that there is an interest in seeking solutions to preserve the environment and promote a healthier and more balanced future.

However, the research also revealed certain challenges to be addressed. The lack of an adequate space to develop and promote initiatives encouraging sustainability was identified as one of the main obstacles. The need for a transversal approach to environmental education, involving all subjects and actors within the school community, was also highlighted as an opportunity for improvement.

To advance toward sustainability, it is essential for the school to promote more campaigns, lectures, and activities that address environmental topics in a broad and educational manner. Additionally, establishing effective

communication is necessary to ensure that sustainable actions are successfully implemented in society. This was one of the key findings of the research.

A concrete suggestion is the development of community projects, such as urban reforestation, involving students, parents, and the broader community, thereby strengthening the connection with nature and fostering awareness of the importance of environmental care.

Therefore, based on the perceptions and positions of the participants in this study, it is clear that environmental care must be a collective effort, and the school plays a crucial role in promoting environmental education in a comprehensive and engaging manner. Through awareness, the adoption of sustainable practices, and engagement with the school community, we can contribute to a more sustainable, balanced, and harmonious world for present and future generations.

One limitation of this research is that it was conducted in a single specific school, the Tiradentes State Military School in Sinop/MT. This may limit the generalization of the results to other schools or communities, as perceptions and attitudes toward sustainability can vary depending on socioeconomic, cultural, and geographic contexts.

As a suggestion for future research, it would be valuable to include the active participation of the school community and other stakeholders in the planning and execution of the study, allowing for a more inclusive and collaborative approach.

REFERENCES

Boff, L. (2017). *Sustentabilidade: O que é – o que não é*. Petrópolis, RJ: Vozes.

Brasil. (1986). *Resolução CONAMA nº 001, de 23 de janeiro de 1986*. Disponível em: https://www.gov.br/mma/pt-br/search?SearchableText=Resolu%C3%A7%C3%A3o%20Conama%20n%C2%BA%20001,%20de%2023%20de%20janeiro%20de%201986. Acesso em: agosto 2023.

Brasil. (1999). Lei n. 9.795, de 27 de abril de 1999. *Dispõe sobre a educação ambiental, institui a Política Nacional de Educação Ambiental e dá outras providências.* Disponível em: https://www.planalto.gov.br/ccivil_03/leis/l9795.htm. Acesso em: agosto 2023.

Couto, E., & Silva, F. (2014). Desenvolvimento "(in) sustentável". *Enciclopédia Biosfera, 10* (18).

Gadotti, M. (2008). Educar para a sustentabilidade. *Inclusão Social, 3* (1).

Gil, A. C. (2021). *Como fazer pesquisa qualitativa*. São Paulo: Atlas.

Iaquinto, B. O. (2018). A sustentabilidade e suas dimensões. *Revista da ESMESC, 25* (31), 157-178. DOI: http://dx.doi.org/10.14295/revistadaesmesc.v25i31.p157 .

Instituto Akatu. (2023). Dia da Sobrecarga da Terra 2023: não temos tempo a perder! Disponível em: https://akatu.org.br/dia-da-sobrecarga-da-terra-2023-nao-temos-tempo-a-perder/. Acesso em: agosto 2023.

Jacobi, P. (2003). Educação ambiental, cidadania e sustentabilidade. *Cadernos de Pesquisa, 118*, 189-205.

Lefevre, F., & Lefevre, A. M. C. (2014). Discurso do sujeito coletivo: representações sociais e intervenções comunicativas. *Texto & Contexto-Enfermagem*, *23*, 502-507.

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology, 22* (140), 1-55.

Loureiro, C. F. B. (2012). *Sustentabilidade e educação: um olhar da ecologia política* (v. 39). Rio de Janeiro: Cortez.

Lozada, G., & Nunes, K. S. (2019). *Metodologia científica*. São Paulo: Grupo A.

Marconi, M. D. A., & Lakatos, E. M. (2021). *Fundamentos de metodologia científica* (9ª ed.). São Paulo: Grupo GEN.

Mattar, J., & Ramos, D. K. (2021). *Metodologia da pesquisa em educação: Abordagens qualitativas, quantitativas e mistas*. Portugal: Grupo Almedina.

Mato Grosso. (2021). Decreto Estadual nº 1.017, de 14 de julho de 2021. *Estabelece a Escola Estadual Militar Tiradentes 2º Sargento PM Claudemir França Maciel, situada em Sinop-MT.*

Mato Grosso. (2020). Lei nº 11.273, de 18 de dezembro de 2020. *Regulamenta o funcionamento e a criação ou transformação, no âmbito da PMMT, das Escolas Estaduais da Polícia Militar Tiradentes, e no âmbito do CBMMT, das Escolas Estaduais do Corpo de Bombeiros Militar Dom Pedro II, no Estado de Mato Grosso, e dá outras providência*s. Palácio Paiaguás, Cuiabá.

Michel, M. H. (2015). *Metodologia e pesquisa científica em ciências sociais: um guia prático para acompanhamento da disciplina e elaboração de trabalhos monográficos* (3ª ed.). São Paulo: Grupo GEN.

Oliveira Júnior, A. B. (2015). A influência da comunicação de ações sustentáveis corporativas na intenção de compra e o efeito moderador do tipo de consumidor. *Revista de Gestão Social e Ambiental, 9* (1), 2-18.

Oliveira, S. V. W. B., Leoneti, A., & Cezarino, L. O. (2019). Sustentabilidade: Princípios e estratégias. São Paulo: Editora Manole.

Oliveira, V. M., Gomez, C. R. P., & Correia, S. E. N. (2018). Papéis das empresas e o consumo sustentável na visão de especialistas brasileiros. *Revista de Gestão Social e Ambiental, 12* (2), 55-70.

Philippi Jr., A., & Pelicioni, M. C. F. (2014). *Educação ambiental e sustentabilidade*. São Paulo: Editora Manole.

Prais, J. L. S., & Rosa, V. F. (2017). Nuvem de palavras e mapa conceitual: estratégias e recursos tecnológicos na prática pedagógica. *Nuances: Estudos sobre Educação, 28* (1), 201-219.

Ramos, A. (2009). *Metodologia da pesquisa científica: como uma monografia pode abrir o horizonte do conhecimento*. São Paulo: Grupo GEN.

Ribas, J. R., Vicente, T. V. S., Altaf, J. G., & Troccoli, I. R. (2017). Integrações de ações na gestão sustentável. *Revista Eletrônica Administração, 86* (2), 31-57.

Roos, A., & Becker, E. L. S. (2012). Educação ambiental e sustentabilidade. *Revista Eletrônica em Gestão, Educação e Tecnologia Ambiental REGET/UFSM, 5* (5), 857-866.

Sampieri, R. H., Collado, C. F., & Lucio, M. D. P. B. (2013). *Metodologia de pesquisa*. São Paulo: Grupo A.

Silva, M. S. (2016). *Análise dos documentos de patentes correlacionados a tecnologias verdes depositados por universidades públicas brasileiras* (Dissertação de Mestrado, Universidade Federal do Rio de Janeiro). Rio de Janeiro: Instituto Brasileiro de Informação em Ciência e Tecnologia, Universidade Federal do Rio de Janeiro, Escola de Comunicação.

Stein, R. (2018). *Avaliação de impactos ambientais*. Porto Alegre: SAGAH.