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SUSTAINABLE ENTREPRENEURSHIP IN AGRIBUSINESS: A CASE STUDY IN A BRAZILIAN AGRO-INDUSTRIAL COOPERATIVE

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ABSTRACT

Purpose: To identify sustainable practices in an agro-industrial cooperative in Rio Grande do Sul - RS (a southern state of Brazil well known for its significant participation in the national production of agribusiness), correlating them to the Sustainable Development Goals (SDGs) of the 2030 Agenda, as well as analyzing how sustainable entrepreneurship is transforming the lives of families and the space where they live.

Methodology: The study used primary data collection through a semi-structured interview that took place in July 2020 with the Environmental Coordinator, also made use of secondary data with observation, document analysis through consultation on the cooperative's website, documents, and internal controls to generate evidence convergence and strengthen construct validity through source triangulation, in which case study findings are supported by more than one source of evidence.

Originality/Relevance: Sustainable entrepreneurship refers to the discovery, creation and exploitation of business opportunities that contribute to sustainability, generating socio-environmental gains for society.

Key findings: The studied Cooperative assumes a socio-environmental responsibility role through the developed activities that generate value to the cooperative members in an innovative, safe, and sustainable way, in addition to benefiting the surrounding community with sustainable practices, therefore the Cooperative in question is certified with the Certificate of Environmental Distinction, proving its commitment to sustainable development and good environmental practices. Educational and environmental practices that contribute to the promotion of sustainability in agribusiness were identified, such as the use of clean technologies in production and the proper management of waste generated by agro-industrial activity. These practices generate socio-environmental gains for society.

Results: This study brings a relevant theoretical contribution linked to sustainability and entrepreneurship in agribusiness based on findings in the practices of a cooperative. In addition to also contributing at an environmental level, this work contributes to contributing to the financial and social pillars that sustainability encompasses.

Keywords: Sustainable entrepreneurship, Sustainable agribusiness, Sustainable development goals (SDGs), Cooperative

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1. INTRODUCTION

Latin America may be one of the regions with the highest indicators of social inequality on the globe, but at the same time, it stands out for the significant reduction of these indicators in recent decades (Balakhrisnan & Toscani, 2018). The commodity boom has considerably boosted poverty reduction on the continent, with emphasis on the development of Brazilian agribusiness. Agribusiness can be understood as the operations of production and distribution of agricultural inputs, operations, storage, processing and distribution of cultivated products and their derivatives (Gaban, Morelli, Brisola & Guarnieri, 2017). This industry is of great importance for the Brazilian socioeconomic development, since it is one of the pillars of the Gross Domestic Product (GDP), representing about 25% of GDP and 50% of exports (MAPA, 2020). According to the United Nations (UN), the world population continues to grow, as it does in Brazil. The increase in the world population directly reflects on the consumption of food and the search for a better quality of life (UN, 2014).

The dimensions of agribusiness in production, human development, in the area explored and, in the technologies, used are of great relevance for a productive area. The accounts, as said, of more than 20% of the national GDP, grew 3.81% in 2019, with the predominance of the rural class in Brazil, if we consider agribusiness as a promising sector of the Brazilian economy (MAPA, 2020). Despite the impacts suffered by the truck drivers' strike in 2018 and an unstable external scenario, agribusiness arrives in 2020 with a more heated activity, especially meat, with high exports to China. In the sugar-alcohol sector, with the production of sugar and ethanol, agricultural production is expected to rise only about 3.4%, compared to the previous year, according to the Ministry of Agriculture, Livestock and Supply (MAPA, 2020).

One of the sustainable development goals (SDGs) of the UN Global Agenda is, by 2030, to achieve sustainable management (Ribeiro & Lima, 2022) and efficient use of natural resources (UN, 2015). The increase in the world population reflects directly on the consumption of food and the search for a better quality of life. As a result, the process of producing green food stands out, that is, sustainable enterprises

adopt productive actions based on socio-environmental development (FAO, 2021). This scenario requires a parsimonious analysis of the current development model, which focuses on the quantitative growth of the economy (Elkington, 2012).

The UN predicts that the world's population of 7.7 billion people will continue to increase in the coming decades. According to the World Population Perspectives: The 2017 Review report, population growth is forecast to be 8.3 billion in 2030 and 8.9 billion in 2050. After that, the global population will stabilize at about 9 billion (UN, 2014).

The world scenario is one of population growth. In addition, food production and consumption, consequently, also need to grow. The challenge for the world will be to meet the increased demand for food in these growing economies, driven by the increase in the world's population (USDA, 2020). Moreover, in the context of climate change and socio-environmental challenges (Guimarães, Severo, & Dorion, 2022), this growth cannot be separated from policies aimed at protecting the environment. In 2015, 193 UN member states committed to the 2030 Agenda, which provides for the 17 sustainable development goals, divided into 169 global goals that each country or organization can adapt (UN, 2015). We highlight here SDG number 2, which concerns the fight against hunger and poverty. In addition, we could have highlighted others, such as SDG 12, which concerns sustainable consumption and production, as they are all interconnected.

In Brazil, the Brazilian Institute of Geography and Statistics (IBGE) estimates that by 2030 there will be a growth of more than 14 million people, bringing the country's population to about 223 million (IBGE, 2017). According to FAO (2021), more than 70% of the Brazilian population has some degree of food insecurity, according to data from the Brazilian Research Network on Food and Nutrition Sovereignty and Security (REDE PENSAN). Food insecurity in the world has been growing since 2014. Due to the economic recession, Brazil is one of the world's leading producers and has produced enough food to supply its domestic market and much of the external demand. According to information from the United States Department of Agriculture (USDA), Brazil is currently the largest exporter of meat (beef and chicken), soybeans, sugar, orange juice and coffee; in addition to being among the top exporters of cotton, corn, fruit, pork, and forest products (USDA, 2020).

Sustainable development consists of reconciling the laws of nature with the laws of economics (Zak, 2015). The unsustainability that has occurred in the last three centuries is the result of human activities and comes from two crises, one environmental and the other social. This unsustainability is attributed to the model of technological and economic development existing in the world and is directly related to the customs of society. As characteristics of the model, there is the excessive consumption of goods and services, which affects the aesthetic and sanitary conditions of the environment (Alves & Leal, 2003).

It is visible in this scenario the impossibility of remaining with the current development model. It is necessary to move towards a type of development that integrates the social, environmental, and economic dimensions, that is inclusive, offers security and sustainability (Sachs, 1994; Elkington, 2012). A global trend is green business, that is, sustainable enterprises that have productive actions based on socio-environmental development, which promotes improvements in communities and organizational sustainability (Souza, 2020).

Studies on social entrepreneurship (Zahra et al., 2009) and environmental entrepreneurship (Schaper, 2002) began to be developed earlier and can be considered as precursors of sustainable entrepreneurship (Hockerts & Wustenhagen, 2010). This source close, social, and environmental paths, but not identical, and the development, still incipient, of sustainable entrepreneurship led to difficulties in the delimitation of the theme and research gaps to be explored in this sense evidence the importance and relevance of studies on sustainable entrepreneurship, central theme of this research.

This industry ends up involved in environmental controversies and, rightly, brings excellent opportunities for sustainable entrepreneurship. Sustainable entrepreneurship refers to discovering, creating, and exploring entrepreneurial opportunities that contribute to sustainability, generating social and environmental gains for others in society.

In this perspective, according to Schumpeter (1934), entrepreneurship, which has always been seen as an agent of social transformation, especially for economic growth, has also come to be considered as a vehicle that can collaborate with sustainable

development (Dean & Mcmullen, 2007; Kuckertz and Wagner, 2010). Sustainable entrepreneurship is the detection, development and exploitation of opportunities connected to social and environmental niches that generate socioeconomic or environmental improvements, attracting the attention of governments, entrepreneurs, and researchers (Hockerts & Wustenhagen, 2010; Pastor & Patzelt, 2011). The research question is: How can sustainable entrepreneurship in the local agrarian environment contribute to the promotion of sustainable practices? It is fair to say that sustainable entrepreneurship can transform the lives of families and the productive scenario in which they operate. In this context, the study aims to identify and analyze sustainable practices in an agribusiness cooperative, correlating them to the sustainable development goals (SDGs) of the 2030 Agenda and analyzing how sustainable entrepreneurship is transforming the lives of families and the space where they live.

In addition to this introduction, the article is structured in the following sections: i) theoretical framework, covering: agribusiness in Brazil, sustainable development, and sustainable entrepreneurship; ii) methodological procedures; iii) results and discussions; and iv) conclusions.

2. THEORETICAL FRAMEWORK

In the following topics, we present a brief theoretical framework that supports the analyses.

2.1 Agribusiness in Brazil

The Institute of Applied Economic Research (IPEA), in 2020, predicts GDP growth in the agribusiness sector of 3.4% driven by the rural credit subsection (IPEA, 2020). Progressively, agribusiness becomes the most critical sector for economic, technological, political, and social activities. With the production, processing, distribution, and consumption of products of animal and vegetable origin, agribusiness becomes relevant. This segment is the engine of growth and stability of the Brazilian macroeconomy, which impacts on the reduction of the trade deficit of other productive sectors (Gasques et al., 2004).

Brazil has a total available arable area estimated at 152.5 million hectares or 17.9% of the territory, and of these 57.3 million hectares or

7.3% of the territory consists of the arable area already used. There is a potential for agricultural expansion corresponding to 90 million hectares or 10.5% of the territory, corresponding to the available and not yet used arable areas (Brasil, 2016).

In Brazil, a country of rural aptitude, from the 16th to the 18th century, the predominance of the economy occurred through the cycles of Brazilwood, sugarcane, gold, and livestock, with the economic policy established in Portugal that, until then, kept Brazil as a colony. Many transformations have taken place. The country had the heyday of coffee, for example. In addition, there was an intense process of mechanization of agriculture and livestock. From the 1980s, what is called agribusiness is observed, that is, the true exploitation of agriculture in business models (Paulo, 2021). Agribusiness has been recognized as a crucial driver of Brazilian economic growth (CNA, 2020). Agricultural production in Brazil has shown significant growth over the years. New technologies have been implemented in agriculture to meet the growing demand of the world consumer market (& Piacenti, 2021).

In the last 40 years, Brazilian agricultural production has developed so that Brazil will be the major food supplier of the future. This transformative effect of the agricultural revolution is undoubtedly the most crucial fact in Brazil's recent economic history and continues to open prospects for the future of the country's development.

Producing more and more, Brazilian agribusiness has drastically reduced the price of food, improving the health and quality of life of the urban population, freeing up its purchasing power for goods produced by industry and the service sector. Agricultural production increases significant surpluses. There was an expansion of its sales to the world, conquering new markets, generating exchange surpluses that liberated the Brazilian economy. Despite the contemporary challenges in the domestic and international markets, the products, destinations, and diversity of Brazilian agribusiness have increased significantly (CNA, 2020).

As for international trade, 43% of Brazilian exports in 2019 were agribusiness products. There is also a substantial contribution of agribusiness to the performance of the Brazilian economy. Figure 1 shows that, since 2008, the trade surplus of Brazilian agribusiness has exceeded more than the trade deficit of the other sectors of the

Brazilian economy, and successive surpluses have been guaranteed to the Brazilian Trade Balance.

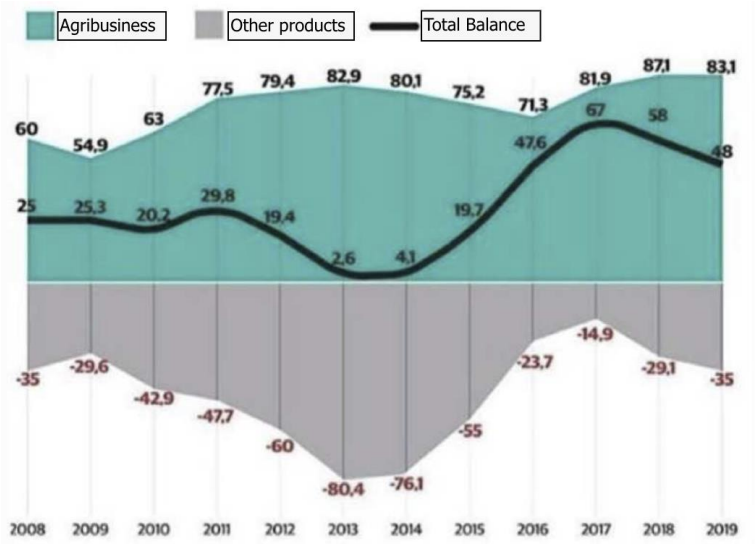

Figure 1: Brazilian Trade Balance Balance from 2008 to 2019 (in US$ billion)
Source: AgroStat /MAPA/CNA (2020).

Borges et al. (2013) explain that from the 1960s onwards, the current development model and social and environmental impacts began to be questioned. Until the first half of the 20th century, companies emerged and expanded without significant concerns about the environmental and social impacts generated. Progress was seen because of economic growth and development.

The Industrial Revolution, which emerged in the mid-eighteenth century, is considered the starting point of environmental problems, from the mechanization of the textile industry in Great Britain, which triggered not only the economic and technological development of the time, reflecting on the entire production process worldwide, but also on the origin of the production of solid waste and tailings, resulting from these processes of creating machinery and equipment, which ended up contributing to the intensive use of natural resources to meet the production and consumption demand of the time (Foster, Roberto and Igari, 2018).

The incessant search for economic results has left gaps in the resolution of environmental and social problems, caused mainly by the

improper exploitation of natural resources (EMF, 2013). A growing global concern has occurred in recent years regarding the preservation of our planet's natural resources, related to the concept of sustainability, some new, others classic, but renewed, and sometimes overlapping (Sehnem et al., 2019).

2.2 Sustainable Development

According to Elkington (2012), this concept adds dimensions of economic character and brings together physical, financial, human, intellectual, social, and natural capital, and the last two, over time, become economic capital. Sachs (1994) states that sustainable development seeks to integrate the socio-economic-environmental tripod (*triple bottom line*), harmonizing financial profitability and economic growth with justice, social welfare, environmental conservation, and rational use of natural resources. From worldwide movements, the discussion about the need for change in organizations takes shape, topics such as environmental management and corporate social responsibility are increasingly occupying the agenda of managers. To this end, it seeks to transform traditional organizations into sustainable organizations (Lawrence et al., 2005; Barbiere and Simanton, 2007).

Souza Filho (2009) adds that the concept of sustainable development has intensified, and the implications caused by agriculture have been a cause of constant concern and discussion. In this sense, when it comes to sustainable agribusiness, Giodarno (2005) presents employer agriculture as a cause of problems related to the environment. Therefore, sustainable techniques have been sought to reduce these problems. Corporate sustainability in recent years has become increasingly broad, based on the integration of social and environmental practices, aiming to meet the needs of society (Lapenda, 2017).

The issue of sustainability in this century assumes a central role in the reflection on the dimensions of development and the alternatives presented. The use of environmental practices by organizations is a worldwide trend, as they increasingly realize the strategic importance of the theme (Veiga, 2010). In this way, cooperatives have the potential to comply with the Sustainable Development Goals (SDGs), either

through the adoption of practices and actions aligned with them, or through the awareness of the population about the importance of behavioral changes to achieve these goals. Today, the Sustainable Development Goals (SDGs), contained in the UN 2030 Agenda, to which 193 member countries are signatories, are a global call to action to end poverty, protect the environment and climate, and ensure that people, everywhere, can enjoy peace and prosperity. These are the goals to which the United Nations contributes to achieve the 2030 Agenda in Brazil (UN, 2015).

In this sense, cooperatives play a fundamental role in the scenario of sustainable development since, according to Annibelli (2008), cooperativism can be considered an economic and social instrument that promotes inclusion, rescues citizenship and boosts development.

Sustainable enterprise can support the development of the social and environmental macrosystem that it integrates (Boszczowski & Teixeira, 2012). Thus, cooperatives can be considered as a system that play a significant role for a more secure social and economic future, based on ethical values (Annibelli, 2008) that value the gathering of people around the needs of the group, in addition to profit, through joint development (Bocayen; Silva, 2021) and this, combined with their distinctive characteristics, such as responsibility, democracy, freedom and solidarity make cooperatives be recognized by the United Nations (UN) as an important agent for social and economic development (Buttenbender et al., 2021).

2.3 Sustainable Entrepreneurship

The traditional literature of entrepreneurship assumes that market imperfections generate opportunities for entrepreneurial action and economic gains (Boszczowski & Teixeira, 2012). Entrepreneurship was associated with economic development and capital generation (e.g., Schumpeter, 1942; Kirzner, 1973), while environmental and social problems were neglected. Bansal (2005) states that economic development must be aligned with the awareness of the limits of society and the environment, as well as the analysis of the impacts caused using

natural resources. *Sustainable entrepreneurship* is an integrated vision that has been emerging in the last decade in the academic literature and is a combination of economic, social, and environmental value creation (Cohen & Winn, 2007; Dean Mcmullen, 2007; Schaltegger and Wagner, 2008; Binder & Belz, 2015).

Sustainable entrepreneurship for Hockerts and Wustenhagen (2010) has been attracting the attention of governments, entrepreneurs, and researchers, considering the discovery, development and exploitation of opportunities linked to social and environmental niches that generate economic gains and social or environmental improvements (Shepherd & Patzelt, 2011).

As Haldar (2019) states, as part of social and environmental issues, growing concerns bet on the need to develop fewer activities harmful to the environment and society, to meet a normative demand for the performance of organizations, regardless of the performance or size of the sector (Aghelie et al., 2016).

The agribusiness industry has been considered one of the sectors causing significant problems of demarcation of the local landscape and causes negative consequences to the population (De Souza Ramos et al., 2015; Cepea, 2019). The initiatives seek a more sustainable agribusiness, necessary to minimize these issues. Sustainability presents itself as a relevant problem, especially when considering the need to minimize the impacts related to erosion and pollution of soil, water, and food (Da Silva, 2012).

Paz and Kipper (2016) point out the benefits directly related to the economic dimension of sustainability. It is possible to verify that the social dimension is included when citing the best relationship with government agencies, environmental groups, a generation of harmony with society and better relations in the work environment. The environmental dimension is reflected in the economic dimension in terms of reducing the consumption of water, energy and raw materials, better adaptation to environmental standards and prevention and reduction of fines and ecosystem penalties.

Young and Tilley (2006) state that sustainable entrepreneurship is based on an integrated model with different dimensions included in entrepreneurship. This model proposed that organizations cannot think about sustainability in isolation. The integration between the

dimensions must be connected to each other for organizational strengthening, as shown in Figure 2.

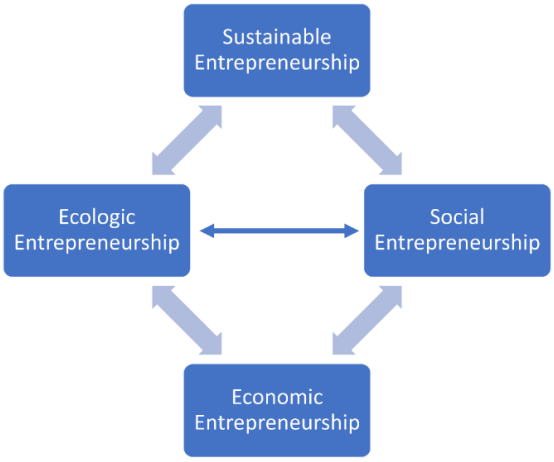

Figure 2: Sustainable entrepreneurship based on the integrated model.
Source: Adapted from Young and Tilley (2006).

Fussler (1996, p. 9) states that most companies today do not actively pursue sustainable entrepreneurship as a strategy to create market share, however, the author does not believe that this "lethargy of innovation" will continue in the coming years. According to Morgan (1996), the relationship between sustainable development and entrepreneurship courses is always linked. It is attributed to the fact that organizations present themselves as an indispensable instrument for the entrepreneur to create something relevant. On the other hand, both form primary vital elements of society.

3. METHODOLOGICAL PROCEDURES

According to Malhotra (2012), the method must be consistent with the proposed research objectives. In view of the objectives of this theoretical study, a qualitative research approach was carried out that emerges to develop models, typologies, and theories to describe or explain social issues (Gibbs, 2009). In addition, exploratory research highlights the characteristics of a specific population or phenomenon of certain groups (Gil, 1991), in the form of a case study (Yin, 2010), and this is an “empirical investigation that investigates a contemporary

phenomenon in depth and in its real-life context, especially when the boundaries between the phenomenon and the context are not evident" (Yin, 2010, p. 39).

This study was carried out in an agro-industrial cooperative in the north of Rio Grande do Sul – RS (southern state of Brazil well known for its significant participation in the production of national agribusiness). The cooperative will have its name preserved and named in this study as Cooperative X. Primary data collection was conducted through semi-structured interviews in July 2020 with the Cooperative's Environment Coordinator. The interview is one of the main methods of preliminary information. It is a technique that reflects the conscious and unconscious of the interviewee (Malhotra, 2012). Secondary data with observation, analysis of documents through consultation of the cooperative website, documents, and internal controls.

Triangulation of sources was used, in which the findings of the case study are supported by more than one source of evidence (interviews, field observation and documents), allowing the convergence of evidence, and reinforcing the construct validity. For Gibbs (2009) it is the analysis of different data, resulting from interviews, observations, and documents. In the understanding of (Yin, 2015), the main advantage of case studies is the ability to capture all the nuances and complexities of a specific phenomenon, providing a comprehensive and in-depth understanding. Table 1 presents the criteria that aim to ensure the excellence and rigor of the research when adopting this approach.

Table 1: Criteria for research rigor

Criteria for ensuring research excellence	
Validity	It can be internal, when referring to explanatory studies that seek causal and external relationships, when the findings of the case study are generalizable, that is, its results are applicable to other cases.
Generalization	Generalization is closely related to validity and is sometimes called external validity, and research results are used in applications in specific contexts.
Reliability	The main criterion of science is reliability and a study with high reliability can be replicated by other researchers, and the objective is to ensure that another researcher can reach the same results, so a protocol is used.

Source: Yin (2015).

The interview privileges the acquisition of data through

individual speech, revealing structural conditions, value systems, norms, symbols and, through the spokesperson, allows to transmit representations of a certain group (Minayo, 1994). The data collection instrument, consisting of a semi-structured script, was validated by a specialist in environmental management and agribusiness. As is typical of semi-structured interviews, the questions are unfolded according to the development of the answers and the level of interaction with the research subject. The first questions focused on a knowledge of the organization and its activities, and, from this, it was sought to identify and analyze the sustainable practices of the cooperative surveyed. The validation and reliability of data collection occurred through triangulation of the information obtained in the interviews, observation and comparison with documents and controls of the cooperative. For data analysis, the concepts of Bardin (2009) were used, using content analysis, whose primary function is to unveil the criticism, allowing a better understanding of the events. The coordination of the cooperative has a broad vision of the entire sustainable business model and, in a comprehensive way, manages to transmit the vision of the members and the beneficiaries by the work developed.

4. RESULTS AND DISCUSSIONS

With commodities on the rise, investments in agribusiness act as a lever in the generation of employment and income throughout the country (Schymura, 2023). It is due to the favorable conditions and the existing agrarian structure, combined with the experience of organizing rural producers and the official incentives for the modernization of agriculture, that the "Cooperative X" was created in 1957, covering 18 municipalities in the region and located in the north of Rio Grande do Sul. It has 39 production units receiving, has more than 7,000 associates and has more than 1,400 employees. Its turnover in 2019 was more than R$ 2.353 billion. It operates around commercialization of correctives, fertilizers, and pesticides, through its 13 stores of agricultural and livestock inputs distributed in its coverage area.

In relation to Brazilian agribusiness, it is important to highlight that the culture of cooperation has been observed since the time of Portuguese colonization. This process emerged in Brazilian

Cooperativism at the end of the 19th century, stimulated by civil servants, military, liberal professionals, and workers, to meet their needs. From 1906, cooperatives were born and developed in rural areas, idealized by rural producers. In southern Brazil, many of the producers were European immigrants, especially from Germany and Italy. These immigrants brought from their countries of origin their cultural baggage, associative work, and the experience of community family activities, which motivated them to organize themselves into cooperatives. Brazilian cooperatives have entered the 21st century facing the challenge of communication. Active and structured, its goal is to be increasingly known and understood as an integrated and strong system, capable of promoting sustainable economic development.

The 'X' Cooperative aims at development through its policies, assuming a role of social and environmental responsibility through the activities developed through its Secretariat of Environment. In addition to generating value for members in an innovative, safe, and sustainable way, Cooperativa 'X' maintains permanent actions aimed at the development of the communities where it operates. It acts, for example, strongly in environmental education and acts in the search for eco-efficiency and clean technologies for the field.

As an environmental policy, the Cooperative aims to minimize environmental impacts in the development of products and services and promote environmental education actions. The activities are organized in an environmental agenda and are based on four objectives: 1 - Legal compliance (compliance with current environmental legislation); 2 - Eco-efficiency and clean technologies; 3 - Environmental Awareness; and 4 - Continuous Improvement.

In line with Hockerts and Wustenhagen (2010), the "Cooperative X", in recognition of the work of environmental awareness and preservation and compliance with current environmental legislation, was awarded the Certificate of Environmental Distinction, for the Environmental Coordinator the certification proves the commitment of the cooperative to sustainable development and good environmental practices: "It is proof that we are on the right track, assuming a role of social and environmental responsibility, aiming to minimize environmental impacts and promote environmental education actions."

From the content analysis of the interviews and the articulation

with documents and observations collected in the field, it was possible to identify a series of good environmental practices of Cooperative X. For analysis purposes, two main groups were identified: Educational Practices and Environmental Practices.

The results demonstrate that the surrounding community benefits from the sustainable practices carried out by the "X" Cooperative, so it is fair to say that acting locally is crucial to transforming people's lives and promoting more humane and sustainable communities.

In relation to Educational Practices, we highlight the Activities in Cooperative X itself and its project "School in the Field", which is present in 14 different municipalities. It has already benefited more than 20,000 students from public schools, in the 5th and 6th grades. The goal of the project is to make students aware of the need to preserve natural resources, promote safety in the use of pesticides and encourage the production of healthy food.

As an example of environmental practices, the cooperative has the Program for the Receipt of Empty Pesticide Packaging, which ensures the correct disposal of pesticide packaging and the recycling of packaging. In addition, as environmental practices have the selective collection of garbage, committed to the National Policy on Solid Waste.

The empty packaging receiving unit is a place to receive the packaging of these products, designed to meet the requirements of the legislation. These units are intended to subject the packaging to a process that facilitates its transport to the appropriate destination. The understanding of the legislation is essential for the implementation of these units, as well as the environmental licensing granted by the state environmental agency.

In "Cooperative X", the Environment sector has existed for almost twenty years and carries out educational and environmental preservation projects throughout the year, as well as actions aimed at legal compliance. Haldar (2019) highlights the need to develop activities that are less harmful to the environment and society.

Within the social dimension of sustainability, with an emphasis on diversity and continuous improvement, the Women's Meeting of Cooperative X stands out as an important event that reflects the broadly participatory character of the cooperative. In it, the women of the

members' families are encouraged to reflect on their condition with the family and at the head of the business, through the exchange of experiences in the most diverse subjects, ranging from motivation and self-esteem to the definition of strategies for greater inclusion in the social and organizational dynamics. The Cooperative also encourages female participation in meetings, courses, study trips and other activities, aiming to form a cohesive association where women exercise their leadership at all levels of the organization.

Also in the social dimension, the Cooperative carries out the so-called "Child Leader Project", carried out since 2007. This project aims to bring the children of cooperative members under 15 years of age to discuss issues and educational practices of integration and strengthening of the cooperative idea. This practice fulfils the objective of ensuring inclusive, equitable and quality education and promoting lifelong learning opportunities for all. It is a way to make young people aware of the community's modes of production from an early age, promoting integration and interest in the development of skills and techniques pertinent to their surroundings.

Each of the practices identified in the Cooperative may be related to the SDGs. For example, the sustainable agricultural production chain helps halve per capita food waste worldwide. In addition, at the local level, sustainable practices can help end hunger, achieve food security, improve nutrition, and promote sustainable agriculture. An example of this is the "School in the Field Project", empirically verified in this research. Table 1 below highlights some of the practices of Cooperative X and lists the related SDGs.

Table 1 - Environmental Practices Developed by the "X" Cooperative

Related SDGs	Environmental practices developed in "Cooperative X"
SDG 1, 4, 10.	✓Activities in "Cooperative X"; Within the 84 hectares of the park, an area of 11 hectares is intended to carry out actions related to environmental education. The Cooperative exists since 2002 and every year works different themes for the discussion of the public visiting the fair, through workshops, theater, exhibitions, among other activities.
SDG 2, 12.	✓ "School in the Field Project"; Present in 14 municipalities in the region it covers, the "School in the Field Project" has already benefited more than 20,000 students from public schools, from 5th and 6th grades. The goal is to make students aware of the need to preserve natural resources, promote safety in the use of pesticides and encourage the production of healthy food.
SDG 6, 12, 13,	✓ Considering the enormous social and environmental damage caused by the packaging of pesticides thrown into the environment and their contamination power, superior to the

	pesticide used in crops, they rely on the Program for Receiving Empty Pesticide Packaging. Through a consolidated partnership with Cinbalagens – Aria, the Cooperative guarantees the correct destination and recycling of packaging. In 2017 alone, the association processed more than 1,030 tons of packaging, the cooperative delivered, in the same period, a total of 364,324 units. Thus, in addition to promoting the circular economy, Cooperative "X" prevents pesticide residues from reaching rivers and seas, harming the surrounding fauna and flora.
SDG 3, 8, 12.	✓ Selective garbage collection within the cooperative and disposal of toxic waste. The correct disposal of solid waste, in addition to complying with the National Solid Waste Policy, established by law, promotes employment and income for recyclers and benefits nature.

Source: Research data (2020).

Corporate sustainability in recent years has become increasingly broad, based on the integration of social and environmental practices, with a view to meeting the needs of society (Lapenda, 2017; Veiga, 2010). The "Cooperative X" works together to increase productivity and profitability and keep people in the countryside and in this way promotes the development of the entire region where it operates, not only of people alone, according to the manager of the cooperative, "this growth occurs both economically and in the improvement of the quality of life".

"Around the world, cooperativism has a huge responsibility both to the economy and to the social issue. Where there is a cooperative, the human development index is higher. And this is even more evident in times of crisis, because in these times of difficulties cooperativism stands out, providing security to its members, contributing to more sustainable societies." (Interviewee)

Sustainable entrepreneurship is an integrated vision that has been emerging lately (Cohen & Winn, 2007, Dean & Mcmullen, 2007 , Schaltegger & Wagner, 2008; Hockerts and Wustenhagen, 2010), showing the importance of the cooperative and how it needs to develop competitive strategies that have sustainable entrepreneurship in their scope, seeking to dialogue with the dimensions of sustainable entrepreneurial activities with products/services, vision, mission and values, sustainable entrepreneurship is actively present in cooperativism, and a cooperative can increase the business opportunity, achieve better results, risk reduction and economies of scale benefits.

Fussler (1996) says that organizations do not have the pursuit of actively sustainable entrepreneurship as part of the market strategy, and in contrast to Cooperative X says

"It only achieved solidity and became a cooperative that everyone is proud of because the associate is very united, in these 60 years of history, we continue to work together to achieve the best results for the producer and for everyone who in some way is part of our return" (Interviewee).

The results demonstrate that the surrounding community benefits from the sustainable practices carried out by the "X" Cooperative, so it is fair to say that acting locally is crucial to transform people's lives and promote more humane and sustainable communities. The due compliance with environmental legislation by Cooperative X also produces opportunities, from the valuation of the company identified with the protection of the environment, to the raising of funds that finance projects of maintenance and proper exploitation of the environment.

Target 16.5 of SDG 16 aims to substantially reduce corruption and bribery. Compliance practices with environmental standards, in addition to directly assisting in the health and well-being of the environment, reinforce anti-corruption behavior, benefiting society as a whole and creating a culture of compliance for future generations. Figure 3, below, illustrates the main axes of action of the cooperative in terms of sustainable development and the objectives most consistent with the projects studied.

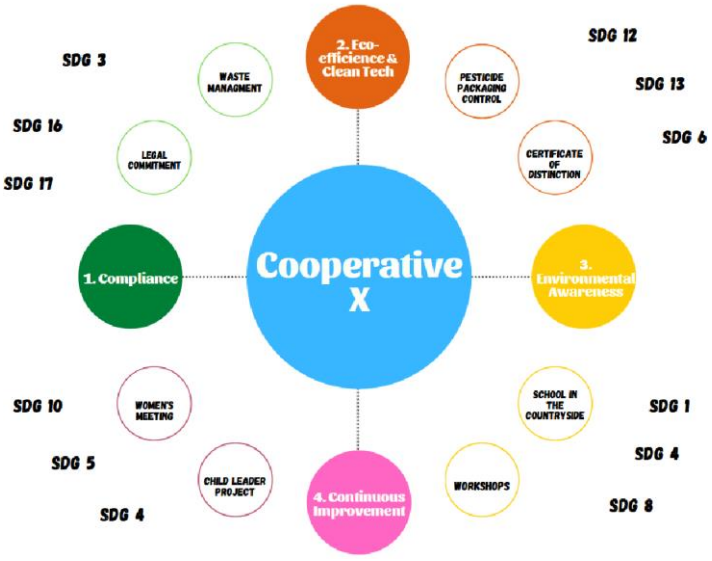

Figure 3 - SDG cooperatives "X" and related

Source: The Authors (2020).

Through processes of cooperation and aggregation, the management of social issues increases the bond between organizations and society, even if conflicts between stakeholder concerns may occur.

5. CONCLUSIONS

The transformative effect of the agricultural revolution of the last 40 years is undoubtedly a crucial fact in Brazil's recent economic history. It continues to open prospects for the future development of the country. Producing increasingly significant surpluses, agribusiness expanded its sales worldwide, conquered new markets and generated exchange surpluses that freed up the Brazilian economy. Agribusiness has been recognized as a crucial driver of Brazilian economic growth.

This study sought to investigate environmental sustainability practices in an agro-industrial cooperative and analyze how sustainable entrepreneurship is transforming the lives of families and the space where they live. The sustainability of an organization is not just a marketing factor. Sustainable agribusiness presents itself as an alternative to traditional agriculture to solve problems related to the environment, aiming to seek sustainable techniques to reduce these problems. As a result, this study sheds light on Cooperative X's constant pursuit of sustainable development and SDG-related practices. In addition to generating sustainable value for the cooperative, the cooperative has continuous actions for the development of the communities where it operates, with practical actions of environmental education and the search for eco-efficiency in the field.

Regarding the relevance of the work, it is important to note, moreover, that the final destination of pesticide packaging would be an obligation of the industries, but an adequate place to store the product is necessary. The technical specifications include points such as the care of the floor, which must be waterproofed to prevent leakage of pollutants and the awareness of the farmer about the importance of properly disposing of the product container. The collection made by the cooperative itself facilitates the delivery by the farmer, who does not need to move to an accredited central often located outside the municipality of his property.

This study contains a relevant theoretical contribution related to sustainability and entrepreneurship in agribusiness from findings in the scope of the practices of a cooperative. In addition to contributing at the level This work contributes to the financial and social pillars that sustainability encompasses. It is possible to infer that the large number of discarded packages generates concern, but, above all, opportunities. Agro-industrial cooperatives can contribute with their experience to the establishment of public policies and technical guidance in the promotion of sustainable agriculture with rationalized use of pesticides.

It should be noted that this study was an exploratory cut for further deepening of the theme. As a limitation, it can be pointed out that it was not possible, in this first exploration, to access different actors of the cooperative system, leaving the research attached to the Cooperative "X", as exposed in the delimitation – which in no way invalidates the results, given that the research environment portrays the reality of a region that can be deepened in future research.

There are several particularities in the process of sustainable entrepreneurship for future research that need to be explored in future studies. They need to go beyond financial concerns, as there is little research on sustainable entrepreneurship that investigates and explores social and environmental business in an integrated way. Future research may also investigate the context of other cooperatives for future comparisons. Relevant questions like these can only be answered with varied interdisciplinary and theoretical lenses. We also recommend delving into how rural cooperatives can contribute to sustainable development and their relationship to achieving the SDGs.

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REFERENCES

Aghelie, A., Sorooshian, S., &Azizan, N. (2016). A. Research gap in sustainable Entrepreneurship. *Indian Journal of Science and Technology,*

vol. 9, n. 12, p. 1-6. https://doi.org/10.17485/ijst/2016/v9i12/77648
Alves, A. O., & Leal, A. C. (2003). Pressupostos teóricos e metodológicos do planejamento ambiental. Formação (Online), 1(10).

Balakhrisnan, R., Toscani, F. Como o boom das commodities ajudou a reduzir a pobreza e a desigualdade na América Latina. Insights & Analysis on Economics & Finance. IMF Blog. 21 de junho de 2018. Available: <https://www.imf.org/pt/Blogs/Articles/2018/06/21/blog-how-the-commodity-boom-helped-tackle-poverty-and-inequality-in-latin-america>. Access on: [Jun 2023].

Bansal, P. (2005). Evolving sustainability: A longitudinal study of corporate sustainabledevelopment. *Strategic Management Journal*, v. 26, n. 3, p. 197-218, 2005. https://doi.org/10.1002/smj.441

Barbiere, Jc; Simanton, Ma. (2007). *Organizações Sustentáveis Inovadoras*. São Paulo: Atlas.

Bardin, L. (2009). *Análise de conteúdo*. ed. rev. e atual. Lisboa: Edições, *70*.

Binder, Julia Katharina; Belz, Frank-Martin. (2015). Sustainable entrepreneurship: what it is. Handbook of Entrepreneurship and Sustainable Development Research, p. 30-72, 30 jan 2015.Edward Elgar Publishing. https://doi.org/10.4337/9781849808248.00010.

Borges, C., Borges, M. M., Ferreira, V. D. R. S., Najberg, E., & Tete, M. F. (2013). Empreendedorismo sustentável: proposição de uma tipologia e sugestões de pesquisa. *REGEPE Entrepreneurship and Small Business Journal*, *2*(1), 77-100. https://doi.org/10.14211/regepe.v2i1.36

Boszczowski, Anna Karina; Teixeira, Rivanda Meira. (2012). O Empreendedorismo Sustentável e o Processo Empreendedor: em busca de oportunidades de novos negócios como solução para problemas sociais e ambientais. *Revista Economia & Gestão*, v. 12, n. 29, p. 1-28, PUCMG. https://doi.org/10.14392/REG-2012-12-29-01.

Brazil. Ministério da Agricultura e Meio Ambiente. A agricultura brasileira em números 2020. Available at: https://www.gov.br/agricultura/pt-br/assuntos/politica-agricola/todas-publicacoes-de-politica-agricola/agropecuaria-brasileira-em-numeros/agropecuaria-brasileira-em-numeros -October-2019. Accessed on: Jul 2020.

Brazil. Ministério da Agricultura, Pecuária e Abastecimento. Projeções do Agronegócio Brasil 2016/17a 2026/27. Projeções de Longo Prazo. Available: https://www.gov.br/agricultura/pt-br/assuntos/politica-agricola/todas-publicacoes-de-politica-agricola/projecoes-do-agronegocio/projecoes-2017-finalizado.pdf/view. Accessed on: Jul 2023.

Buainain, A. (2006). Agricultura familiar, agroecologia e desenvolvimento sustentável: questões para debate. IICA, Costa Rica. Available https://repositorio.iica.int/handle/11324/7555. Accessed on: Jul 2020.

CNA. Confederação da Agricultura e Pecuária do Brasil. Panorama do Agro. Available: <https://www.cnabrasil.org.br/cna/panorama-do-agro#_ftn1>. Accessed on: Jul 2020.

Cohen, B; Winn, M. I. (2007). Market imperfections, opportunity, and sustainable entrepreneurship. J*ournal of Business Venturing*, v. 22, n. 1, p. 29-49. https://doi.org/10.1016/j.jbusvent.2004.12.001

De Souza Ramos, J. R. N.; Santos da Silva, M.; De Almeida Neto, P. P. (2015). Limitações na responsabilidade socioambiental no agronegócio do oeste baiano. *Revista de Gestão Ambiental e Sustentabilidade – RGSA,* v. 4, n. 1, p. 30-45. https://doi.org/10.5585/geas.v4i1.233

Dean, T.; Mcmullen, J. (2007). Toward a theory of sustainable entrepreneurship: reducing environmental degradation through entrepreneurial action. *Journal of Business Venturing*, vol.22, no. 1, p. 50-76, 2007. https://doi.org/10.1016/j.jbusvent.2005.09.003

Elkington, J. (2012). *Sustainability, cannibals with knife and fork*. São Paulo: M. Books of Brazil.

EMF, (2013). Ellen MacArthur Foundation (EMF). Towards the Circular Economy, vol. 1 (2013). (Isle of Wight).

FAO. (2021) Organização das Nações Unidas para Alimentação e Agricultura. Rede Brasileira de Pesquisa em Soberania e Segurança Alimentar e Nutricional. Disponível em: https://www.fao.org/brasil/pt/. Access on: [Jun 2023].

Foster, A., Roberto, S. S., & Igari, A. T. (2016). Economia circular e resíduos sólidos: uma revisão sistemática sobre a eficiência ambiental e econômica. *Encontro internacional sobre gestão empresarial e meio ambiente, São Paulo*.

Gibbs, G. (2009). *Análise de Dados Qualitativos*. Porto Alegre: Bookman.

Gil, AC (2007). *Metodologias e Técnicas da Pesquisa Social*. 5. ed. São Paulo: Atlas.

Guimarães, J. C. F., Severo, E. A., & Dorion, E. C. H. (2022). Product Innovation: Path to Sustainable Competitive Advantage with Use of Environmental, Social and Governance Principles. Revista De Governança Corporativa, 9(1), e0117. https://doi.org/10.21434/IberoamericanJCG.v9i1.117

Haldar, S. (2019). Green entrepreneurship in the renewable energy sector–a case study of Gujarat. *Journal of Science and Technology Policy Management*, *10*(1), 234-250. https://doi.org/10.1108/JSTPM-12-2017-0070

Hockerts, K.; Wüstenhagen, R. (2010). Greening Goliaths versus Emerging Davids: Theorizingabout the role of incumbents and new entrants in sustainable entrepreneurship. *Journal of Business Venturing*, vol. 25, p. 481-492. https://doi.org/10.1016/j.jbusvent.2009.07.005

IBGE. (2020). Atlas digital nacional do Brasil. Available at: https://censo2022.ibge.gov.br/. Access on: [Jun 2023].

Kuckertz, A.; Wagner, M. (2010). The influence of sustainability orientation on entrepreneurial intentions: investigating the role of business experience. *Journal of Business Venturing*, vol. 25, p. 524-539.

Lawrence, A.; Weber, J. (2005). Post, J. *Business and Society*. New York: McGrawHill.

Malhotra, N. (2012). *Pesquisa de Marketing*: Uma Orientação aplicada. Porto Alegre: Bookman.

MAPA (2020). Ministério da Agricultura, Pecuária e Abastecimento. Projeções do Agronegócio Brasil 2016/17 a 2026/27. Projeções de Longo Prazo. Available: https://www.gov.br/agricultura/pt-br/assuntos/politica-agricola/todos-publicacoes-de-politica-agricola/projecoes-do-agronegocio/projecoes-do-agronegocio-2017-a-2027-preliminary-version-25-07-17.pdf. Access on: [Jun 2023].

Marconi M; Lakatos, E; (1995). *Metodologia Pesquisa Científica*. São Paulo: Atlas

Minayo, M. C. De S. (1994). *O desafio do conhecimento*: pesquisa qualitativa em saúde. 3 ed. São Paulo. Hucited/Abrasco.

Morgan, G. (1996). *Imagens da Organização*. São Paulo: Atlas.

Paulo, T. B. D. (2021). A sustentabilidade no agronegócio a partir de uma análise jurídica. Dissertação (Mestrado) - Universidade Nove de Julho - UNINOVE, São Paulo, 2021.

Paz, F. J., & Kipper, L. M. (2016). Sustentabilidade nas organizações: vantagens e desafios. *Revista Gestão da Produção Operações e Sistemas*, *11*(2), 85-85. https://doi.org/10.15675/gepros.v11i2.1403

Ribeiro, T. de L., & Antônio de Lima, A. (2022). Environmental, Social and

Governance (ESG): Mapeamento e Análise de Clusters. Revista De Governança Corporativa, 9(1), e0120. https://doi.org/10.21434/IberoamericanJCG.v9i1.120

Sachs, I. (1994). Estratégias de transição para o século XXI. In: Bursztyn, M. (Org.). Para pensar o desenvolvimento sustentável. São Paulo: Brasiliense, p. 29-56.

Schaltegger, S.; Wagner, M. (2008). Types of sustainable entrepreneurship and conditions for sustainability innovation: from the administration of a technical challenge to the management of an entrepreneurial opportunity. *Sustainable Innovation and Entrepreneurship*. Cheltenham: Edward Elgar, p. 27-48.

Schaper, M. (2002). The essence of ecopreneurship. *Greener Management International*, p. 26- 30.

Schumpeter, J. (1934) *The theory of economic development*. Cambridge: Harvard University Press.

Schymura, Luiz Guilherme (2023). Choque de renda de commodities explicou surpresas do PIB, mas vento está virando. Portal do IBRE. FGV. Available: https://portalibre.fgv.br/sites/default/files/2023-07/07Ce2023%20Carta%20do%20IBRE.pdf . Access on: [Jun 2023].

Sehnem, S. (2019). Circular business models: Babbling initial exploratory. *Environmental Quality Management,* 28(3), 83-96. https://doi.org/10.1002/tqem.21609

Shepherd, Da; Patzelt, H. (2011). The New Field of Sustainable Entrepreneurship: Studying Entrepreneurial Action Linking "What Is to Be Sustained" with "What Is to Be Developed." *Entrepreneurship: Theory & Practice*, vol. 35, no. 1, January, p. 137-163. https://doi.org/10.1111/j.1540-6520.2010.00426.x

Souza Filho, Hm. (2009). *Desenvolvimento Sustentável Agrícola*. In: Battle, MO (Coord.). Gestão Agroindustrial. v. 1 – 3. ed. – 3. reprint. –

São Paulo: Atlas, p. 665-710.

Souza, G. M. F. (2020). Empreendedorismo Sustentável: Estudo de caso na Associação de Agricultores de Hortifrútis Orgânicos na cidade de Juazeiro Do Norte–CE. *Revista Inteligência Competitiva*, vol. 10, n. 1, p. 16-35. https://doi.org/10.24883

United Nations Organization. World urbanization prospects: the 2014 revision: highlights. New York, 2014. https://www.un.org/en/development/desa/publications/2014-revision-world-urbanization-prospects.html. Access on:

USDA. (2020). United States Department of Agriculture. Production, supply and distribution. Available: https://www.usda.gov/nutrition-security. Access on: [Jun 2023].

VERGARA, S. C. (2000). Começando a definir a metodologia. *Projetos e relatórios de pesquisa em administração*, *3*, 46-53.
Yin, R. K. (2005). *Case Study*: Planning and Methods. 3. ed. Porto Alegre: Bookman.

Young, W.; Tilley, F. (2006). Can businesses move beyond efficiency? The shift toward effectiveness and equity in the corporate sustainability debate. *Business Strategy and the Environment*, no. 15, v. 6, p. 402-415. https://doi.org/10.1002/bse.510

Zahra, S. et al. (2009). A typology of social entrepreneurs: motives, search processes and ethicalchallenges. *Journal of Business Venturing*, vol. 24, no. 6, p. 519-532. https://doi.org/10.1016/j.jbusvent.2008.04.007

Żak, A. (2015). Triple bottom line concept in theory and practice. *Social Responsibility of Organizations Directions of Changes,* 387, 251-264. https://doi.org/1010.15611/pn.2015.387.21