The importance of financial controls for maximizing results for small rural entrepreneurs

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Abstract

Brazil's agricultural sector is crucial for the economy and global food security, encompassing about 41% of the country's total land area and housing over 5 million agricultural establishments. According to the Brazilian Confederation of Agriculture and Livestock (CNA), agribusiness contributed 23.8% to the Gross Domestic Product (GDP) in 2023, highlighting its diverse production of agricultural commodities. While technological advancements have boosted productivity, a significant gap exists between large and small producers. Large producers often benefit from technological progress, whereas small producers—a significant portion of family farming—face substantial challenges. Family farming accounts for 67% of agricultural activity and 80% of global food production, yet it struggles with financial management, lack of knowledge, and limited access to credit and technology. Efficient rural management is essential for optimizing resources, reducing costs, and enhancing productivity on small farms. Implementing financial management practices, such as budgeting, cost analysis, and cash flow control, can help small producers make better use of their resources and lower expenses. Public policies like the National Program for the Strengthening of Family Farming (PRONAF) and the Food Acquisition Program (PAA) aim to support these producers by providing financing and securing markets for their products. Family farming holds significant potential for sustainable practices. With the right support, it can continue to play a vital role in the Brazilian economy and global food security, fostering a sustainable and prosperous future for the agricultural sector.

Keywords: family farming, rural management, small rural producers, commodities.

A importância dos controles financeiros para maximização de resultados para pequenos empreendedores rurais

Resumo

O setor agropecuário no Brasil é vital para a economia e segurança alimentar global, ocupando cerca de 41% da área total do país com mais de 5 milhões de instalações agropecuárias. De acordo com a Confederação da Agricultura e Pecuária do Brasil (CNA), o agronegócio no ano de 2023 contou para o Produto Interno Bruto (PIB) uma alíquota de 23,8%, onde destaca-se pela produção de diversas commodities agrícolas. A evolução tecnológica tem aumentado a produtividade, mas há uma disparidade significativa entre grandes e pequenos produtores, pois, enquanto grandes produtores avançam tecnologicamente, pequenos produtores, que representam uma parte substancial da agricultura familiar, ainda enfrentam desafios significativos. A agricultura familiar, responsável por 67% da atividade agropecuária e 80% da produção alimentar global, enfrenta desafios como gestão financeira, falta de conhecimento e acesso limitado ao crédito e tecnologia. A gestão rural eficiente é crucial para otimizar recursos, reduzir custos e aumentar a produtividade nas pequenas propriedades. A gestão rural eficaz é vital para melhorar a produtividade e rentabilidade nas pequenas propriedades. A implementação de práticas de gestão financeira, como elaboração de orçamentos, análise de custos, e controle de fluxo de caixa, pode otimizar recursos e reduzir custos. Políticas públicas como o Programa Nacional de Fortalecimento da Agricultura Familiar (PRONAF) e o Programa de Aquisição de Alimentos (PAA) têm sido implementadas para apoiar esses produtores, oferecendo financiamento e garantindo mercados para seus produtos. A agricultura familiar tem grande potencial para práticas sustentáveis e com o apoio adequado, a agricultura familiar pode

continuar a contribuir significativamente para a economia brasileira e para a segurança alimentar global, promovendo um futuro sustentável e próspero para o setor agropecuário.

Palavras-chave: agricultura familiar, gestão rural, pequenos produtores rurais, *commodities*.

1. Introduction

The agricultural sector in Brazil plays a crucial role not only in the country's economy but also in global food security (Dossa; Segatto, 2010; Hopewell, 2013). With a total area of 851.48 million hectares, Brazil has 5,073,324 agricultural establishments, covering a total area of 351.28 million hectares, which is about 41% of the country's total land area (Costa et al., 2013; IBGE, 2017).

With the potential to produce food on a global scale and abundant natural resources, Brazil stands out as one of the world's leading agricultural producers, being a key supplier of agricultural commodities such as sugarcane, oranges, coffee, papayas, beans, soybeans, and pineapples (Contini; Martha, 2010).

Agribusiness is the most robust segment of the Brazilian economy (Moreira et al., 2016). According to the Brazilian Confederation of Agriculture and Livestock (CNA), in 2023, this sector accounted for 23.8% of the Gross Domestic Product (GDP). This significant contribution is not coincidental; over the past few decades, technological advancements and the adoption of innovations in the sector have led to the expansion of agricultural frontiers and increased productivity on rural properties. Consequently, Brazil has established itself as one of the world's largest "breadbaskets" (Basso et al., 2024).

However, the reality of the agricultural sector in Brazil is diverse. On one hand, some large producers have successfully implemented technological innovations on their farms, increasing productivity and improving their results (Moreira et al., 2016). On the other hand, small producers still face challenges in making these investments. Nevertheless, like large producers, small farmers play an essential role in Brazilian agribusiness. According to the 2017 Agricultural Census, there are about 5 million small rural properties in the country, and family farming accounted for R$ 131.7 billion, representing 23% of the total generated on Brazilian farms. This segment employs 10 million people, accounting for 67% of total agricultural activity (IBGE, 2017). The United Nations (UN) estimates that 80% of the world's food comes from this type of production (UN, 2024).

Family farming differs from other types of agriculture in that the management of the property is shared among family members, and the food produced serves as the primary source of income for these families. Success stories have been documented by Cavalli et al. (2020) during the COVID-19 pandemic, where family farming played a prominent role despite the serious health and financial issues affecting the world. Family farming is a central pillar in the agricultural landscape of Brazil's Midwest region, which is vast and economically significant. Representing a substantial proportion of the region's rural properties, family farming is vital for food production in Brazil, significantly contributing to food security, job generation, and economic development in rural areas (FAO, 2014).

However, many producers are not accustomed to identifying problems within their production processes. According to Buainain et al. (2014), notable issues include production management, lack of knowledge, people management, production and marketing, competition, high costs of maintaining and acquiring machinery, consumption and waste, climate, production costs, and the need for planning when seeking credit. Generally, producers tend to make decisions based solely on their experience (Piolli; Costa, 2008).

In this context, rural management is essential for the success of small rural producers, as it involves managing and administering the property with decisions that directly impact productivity, profitability, and product quality. Through efficient management, small producers can optimize resources, reduce costs, and enhance the efficiency of their production processes. Moreover, rural management allows for better organization of work, effective inventory control, planning of seasonal activities, and the adoption of appropriate technologies, contributing to improved outcomes for rural property/business (Oliveira et al., 2021; Almeilda et al., 2021).

Thus, this work aims to highlight the importance of financial management in small rural properties. This management involves planning, organization, and control of a business's financial resources, encompassing practices such as detailed budgeting, cost analysis, and cash flow management. A structured financial management approach enables the forecasting of revenues and expenses, identification of unnecessary costs, and increased profitability. The challenges faced in adopting this system, such as resistance to change and lack of financial knowledge among producers, will also be addressed. We seek to demonstrate that financial management is fundamental to the success of small properties, contributing to economic advancement and development in the agricultural sector through a systematic review of this relevant topic.

2. Materials and Methods

2.1 Systematic review and case study conducted

This work presents systematic bibliographic research with a case study conducted on a rural property located in Rio Verde, Goiás. According to Boccato (2006), bibliographic research aims to gather and critically analyze published documents on the research topic to update and develop knowledge and contribute to the research undertaking. It provides a comprehensive view of the current state of knowledge, facilitating the contextualization of research within the existing body of literature. By compiling information from various sources, we can better understand the concepts and theories that underpin the study.

The bibliographic research was carried out to assemble a diverse set of sources that would support the study in question. The process began with a clear definition of the research objectives, guiding the selection of relevant themes. Searches were conducted in academic databases such as Google Scholar, SciELO, Embrapa, Elsevier, and Web of Science, as well as in digital libraries of universities. For this work, we selected scientific articles, books, theses, and dissertations. The references were organized according to the standards established by ABNT, ensuring proper citation of each author. This process provided the necessary theoretical foundation for the development of the work. Key descriptors were used in Portuguese, English, and Spanish

We will also employ the case study, which is a qualitative research methodology involving the detailed analysis of a single case or a small number of cases. The primary objective is to explore the management of rural property within its real context, considering the factors that influence it. In his book "Case Study Research: Design and Methods," published in 2001, writer and social scientist Robert K. Yin defines the case study as a research strategy that addresses the questions of "how" and "why" and focuses on the real-life contexts of current cases.

In the case study, we identified the farmer as a small-scale producer who began his activities in 2000. An interview was conducted with the producer to understand his challenges on property and what measures were taken to overcome these obstacles. The interview lasted about four hours and was a dynamic dialogue that covered everything from soil preparation to grain sales. Data was collected on the results of the last harvests, investments, financial expenses of the property, and personal expenses, and the critical issue identified for the producer was the lack of financial management, which caused all the difficulties on the property. Following this, with the collected data, we proceeded to create financial management tools and inventory control for later application on the property. The materials, equipment, and methodologies used to develop the study must be systematically described. These aspects must be presented in such a way that other researchers who consult the article can reproduce it based solely on what was described in the article.

3. Literature review

3.1 Family farming

Family farming plays a fundamental role in Brazil. It is responsible for the country’s economic development, job creation, and the supply of products to Brazilian city markets. It contributes to a sustainable society and food security. Family farming is characterized by small rural producers who use family labor for property management. The production from these farms is diverse, encompassing various crops and often livestock. This form of agriculture is also marked by culture and tradition, with knowledge and practices passed down through generations (Guanziroli; Di Sabbato, 2014; Elias et al., 2019).

It is not an exaggeration to say that family farming is crucial in Brazil's agribusiness sector. This segment accounts for about 67% of all agricultural activity in the country (IBGE, 2017), and the United Nations (UN) estimates that 80% of the world’s food comes from this type of production. Characterized by small-scale operations managed and run by family members, family farming is predominantly focused on meeting domestic demand. As the majority of agricultural establishments in Brazil, this sector is essential for both production and job generation (Guanziroli; Di Sabbato, 2014).

According to the Brazilian Constitution, established by Law No. 11,326 in July 2006, a family farmer is defined as someone who engages in economic activities in rural areas and meets certain criteria, such as not owning a rural property larger than four fiscal modules, predominantly using family labor, and deriving most of the family income from agricultural activities conducted on the rural establishment (Del Grossi; Marques, 2010; Petrini et al., 2016).

Over the years, various public policies have been implemented to support family farming. Notably, the National Program for Strengthening Family Farming (PRONAF), created in 1995, aims to finance and support

investments for the implementation, expansion, or modernization of production structures, promoting income generation and better utilization of family labor. Another significant initiative is the Food Acquisition Program (PAA), established by Law No. 10,696 on July 2, 2003, which purchases products from family farmers to supply schools, hospitals, and other public institutions, ensuring a market for these producers (Mattei, 2015).

Despite its importance, family farming faces several challenges. A lack of access to credit is one of the main obstacles, hindering many farmers from investing in technologies and equipment that could improve productivity and product quality. The adoption of technology is crucial; advanced equipment can optimize planting and harvesting, while soil sensors assist in monitoring and enhancing productivity. Additionally, infrastructure such as roads and storage facilities directly impacts the marketing and value of products (Marques, 2004).

Financial management is another vital aspect that underpins all these areas. Without effective financial management, it becomes difficult for small producers to identify improvement opportunities that could enhance profitability (FAO, 2014).

On the other hand, family farming has great potential for sustainable practices, such as agroecology, which promote biodiversity, healthy soils, and climate resilience, while producing food for both the rural property and local markets (Gliessman; Fergunson, 2019). The adoption of sustainable management techniques can not only increase productivity and yields but also preserve the environment for future generations, empowering future farmers toward greener agriculture (Ewert et al., 2023).

Therefore, the family farming sector represents a crucial foundation for the rural economy and food security in Brazil. With adequate support from public policies and encouragement to adopt sustainable practices, this sector can continue to significantly contribute to the country's economic, social, and environmental development (Pronti; Coccia, 2021). Investing in family farming is investing in a sustainable future for Brazil, ensuring continuous food production, creating job opportunities, and preserving natural resources for future generations (FAO, 2014).

3.2 Financial management in agribusiness

Financial management in agribusiness is essential for entrepreneurs, aiming to ensure positive outcomes in agricultural activities. Historically, this management began in a rudimentary way, with farmers managing their finances, often inheriting land and resisting the adoption of new management practices. However, with industrialization and technological advancement, there has been a growing professionalization of the sector. To promote sustainable development in agribusiness, it is crucial to adopt tools such as agricultural accounting, cost-benefit analysis, and access to specific lines of credit, as highlighted in the report by the Brazilian Confederation of Agriculture and Livestock (CNA) on trends and challenges in the agricultural sector in 2023 (CNA, 2023).

In Brazil, agribusiness is a vital sector for the economy, representing a significant portion of GDP (23.8%) and national exports (42%) (CNA, 2023). This sector encompasses everything from input production to the distribution of agricultural products, including industrialization and marketing processes. However, the agribusiness chain is complex and includes production on rural properties, which still faces significant limitations affecting output, especially regarding efficient management and cost control.

The current challenges of financial management in agribusiness involve several critical aspects. Access to rural credit is a central issue: despite the existence of various financing options, many small and medium-sized producers still struggle to secure sufficient financial resources to invest in technology and infrastructure. Another crucial aspect is the optimization of cost and revenue management, essential for ensuring competitiveness in the market. Effective cash flow management, investments in innovation and agricultural technologies, as well as diversifying income sources, are indispensable practices for financial success in agribusiness (Barros et al., 2024).

To address these challenges, it is necessary to implement an action plan focused on three fundamental pillars: financial education, access to adequate financing, and the use of advanced technologies. Empowering farmers with financial management skills is vital for them to make informed and strategic decisions. Improving access to rural credit is also essential, with banks and financial institutions developing more accessible and flexible financial products tailored to the specifics of agribusiness. Government policies that encourage investments through subsidies and credit guarantees are equally important (Silva et al., 2010).

The adoption of precision technologies, such as digital agriculture and data analysis, can revolutionize financial management in the field. These innovations allow for more precise monitoring of agricultural operations, optimizing the use of inputs and increasing productive efficiency. Additionally, hiring qualified professionals to provide rural management services can be a valuable strategy (Bassoi et al., 2019).

Financial management is a crucial component of the growth of agricultural activity in the country. We observe a significant evolution in financial practices over time, but the complexity and inherent risks of the sector persist, requiring ongoing attention. A comprehensive action plan is necessary to tackle issues such as price volatility, access to credit, and efficient resource management. By investing in financial education, improving access to credit, and adopting effective management methods, agribusiness can develop and become more competitive. The implementation of these strategies will benefit not only individual farmers but also contribute to sustainable economic development (Fernandes; Déborah, 2024).

4. Results and Discussion

4.1 Interviews

The interview with the rural producer provided a comprehensive view of the challenges faced in managing the property over the years. The hesitance to address financial management indicates a possible lack of confidence or familiarity with financial control practices, a critical point that can impact the sustainability of the business.

The property, which started with 30 hectares and now has 40 hectares, demonstrates gradual growth, but an analysis of the last five years reveals significant gaps. The absence of inventory control, combined with limited cash flow and reduced profits, suggests an urgent need to implement more robust financial management practices (Kreusberg et al., 2013; Fauzi et al., 2022).

The producer needs to consider developing a financial plan that includes:

1. Detailed Cash Flow Management: Monitoring monthly inflows and outflows to identify periods of greater financial pressure and adjust spending accordingly.
2. Inventory Control: Implementing a system to manage inputs and products, helping to avoid waste and maximize profit.
3. Investment Analysis: Evaluating the viability of expenditures on machinery and other investments to ensure they provide a positive return.
4. Financial Management Training: Considering courses or consultancy services that can offer tools and techniques to improve financial control.
5. Debt Review: Seeking to renegotiate loans and financing to alleviate pressure on cash flow.

With a more structured approach, the producer can transform their financial management, improving the profitability and sustainability of their property. Based on the findings, alternatives were studied to enhance the producer's financial management, considering their limitations regarding the use of technological tools. Excel spreadsheets were developed with various options that could be applied in different contexts. These tools were designed not only for the rural enterprise but also for personal use, as personal withdrawals had not been tracked.

In summary, the interview with the rural producer highlighted the importance of structured and conscious financial management to ensure the sustainability and growth of the property. The identified difficulties, especially regarding cash flow control and lack of inventory monitoring, underscore the need for tools that assist in practical and effective decision-making. In this context, creating Excel spreadsheets emerges as a viable alternative, enabling the producer to not only organize their finances but also optimize the management of their rural enterprise.

The discussion of data should be based on technical-scientific articles published preferably in high-impact national and/or international journals. Citations of theses, dissertations, and papers published in conferences should be avoided whenever possible. The results obtained in the articles and technical notes must necessarily present associated statistical analyses.

4.2 Management tools

The introduction of Excel spreadsheets for financial control will allow for more effective organization of revenues and expenses. The producer will then be able to monitor their finances accurately, clearly identifying

spending patterns and sources of income. The use of these spreadsheets will enable the creation of detailed financial reports, facilitating the tracking of variations in costs and revenues. Furthermore, financial analysis will help identify unnecessary expenses and areas where costs can be reduced. The producer will have the capability to closely examine spending on inputs, machinery, and maintenance, leading to more informed decisions about cost-cutting and resource optimization (Affonso et al., 2015; Engel et al., 2019).

Considering that the property has a storage facility, the first step was to conduct a complete inventory of all items available in stock. Subsequently, an inventory control system was implemented using specific tools for this purpose. The main function of the storage facility is to store essential items for the repair and maintenance of agricultural equipment. With this system, the producer will effectively monitor stock levels, reducing waste and improving resource management efficiency. This will allow for a more precise definition of maintenance priorities, optimizing the management of the storage facility and promoting rational use of available resources.

The analysis of financial data will facilitate strategic decision-making within rural property. With reports and graphs generated by the spreadsheets, the producer will be able to assess the financial impact of different strategies, such as acquiring new equipment or expanding activities. Other researchers share similar views on this topic (Jasińska, 2017; Barbosa; Gimenes, 2020).

The implementation of Excel spreadsheets for financial control is an effective tool in financial management. However, its effectiveness depends on the user's ability to manipulate and interpret the data correctly. Therefore, training and/or supervision by a qualified professional is essential to ensure the effective use of these tools (Deponti, 2014).

Despite the benefits, some challenges may arise in the application of spreadsheets. Resistance to change and lack of familiarity with digital tools can be significant obstacles, especially for a producer accustomed to traditional financial control methods. Additionally, the ongoing maintenance and updating of the spreadsheets require constant commitment, which can present an additional challenge (Simon; Wolf, 2012).

The adoption of Excel spreadsheets for financial and inventory control can bring significant improvements in financial organization, cost reduction, investment control, and inventory management. However, the effectiveness of these tools requires adequate training and overcoming resistance to change, along with a commitment to data maintenance. The expansion of digital tool use and integration with more advanced technological solutions, along with financial education, is fundamental to maximizing results (Affonso et al., 2015).

The following details are the operation of the management tools. The first spreadsheet, dedicated to property management, includes various tabs that allow for detailed tracking of different aspects of the operation. The main tabs include input control, machinery expense management, investment planning, income tracking, results analysis, and inventory control. The second spreadsheet covers the management of the producer's finances. It is important to highlight that the data presented are fictional and serve only to illustrate the functionalities of the tools, not reflecting the producer's reality.

4.3 Inputs

This tab allows the producer to record all inputs used on the property. According to the producer, the quantity of inputs applied varies across different areas, as some require more attention with pesticides, soil amendments, and others. For this purpose, various tables have been created, each representing a specific plot defined by the producer.

After separating the areas into plots, the producer must enter data such as the type of product (e.g., herbicides and fertilizers), the quantity applied (in appropriate units such as liters, kilograms, or tons), and the cost per unit.

An example of a record might include two tons of lime at R$: 500.00 each, totaling R$: 1,000.00. This structure not only facilitates the control of spending on inputs but also allows for the analysis of the efficiency of their use, as presented in (Table 1).

After correctly entering the data, the system will automatically calculate the costs of each input, as well as the cost per hectare. Since the producer will define the exact number of plots in which the property will be divided, this section was initially configured with a standard of twelve plots. Thus, when consulting Table 1, the producer can efficiently view the total spent on inputs for each planting. This will facilitate cost analysis and contribute to more informed and precise resource management.

Table 1. Expense control for input parameters, measurement, quantity per hectare, unit value, and total value.

Input type	Unit	Qt/Hectare	Unit Price	Total Price (R$/ha)
Seed	Kg	7	R$ 50,00	R$ 350,00
Fertilizer	Ton	3	R$ 1.500,00	R$ 4.500,00
Limestone	Ton	2	R$ 500,00	R$ 1.000,00
Gypsum	Ton	7	R$ 1.000,00	R$ 7.000,00
Herbicides	L	20	R$ 20,00	R$ 400,00
Insecticides	L	5	R$ 20,00	R$ 100,00
Fungicides	L	7	R$ 60,00	R$ 420,00
Total				R$ 13.770,00

Note: Values in local currency (Real). Source: Authors, 2024.

4.4 Agricultural machinery and implements

This section has been developed to detail machinery-related expenses, freight costs to the customer, and labor associated with machinery when necessary. Costs are presented per hectare, and the producer must record the activities performed on the property and the corresponding unit of measurement for each expense. Different metrics have been adopted, such as liters (L) of diesel used in planting, harvesting, and fertilization operations; values in reais (R$) per ton ($t^{-1}$) for freight; and daily rates in R$ for labor, as demonstrated in (Table 2).

It is important to emphasize that this section is exclusively for recording machinery expenses and does not cover costs related to input used in planting or spraying. After correctly entering the data, the spreadsheet will automatically calculate the expenses per hectare for the machinery, as well as the freight cost in the case of harvesting.

Table 2. Harvesting, freight, planting, and production control parameters.

Harvest				
Specification	Unit	Qt/ Hectare	Unit Price	Total Price (R$/ha^{-1})
Diesel oil	LT	10	R$ 6,00	R$ 16,00
Maintenance	R$	-	R$ 3.300,00	R$ 3.300,00
Outsourced harvesting	SC	2	R$ 113,00	R$ 226,00
Total				R$ 3.542,00

Freight				
Specification	Unit	Vehicle capacity	Unit Price	Total Trip Value
Frete	R$/ Ton	74	R$ 150,00	R$ 11.100,00
Total				R$ 11.100,00

Planting and Controls				
Specification	Unit	Qt/ Hectare	Unit Price	Total Value (R$/ha^{-1})
Planting	LT	12	R$ 6,00	R$ 72,00
Spraying	LT	12	R$ 6,00	R$ 72,00
Fertilization	LT	12	R$ 6,00	R$ 72,00
Maintenance	R$	3	R$ 6.000,00	R$ 6.000,00
Labor	R$/ Day	5	R$ 200,00	R$ 1.000,00
Total				R$ 7.216,00

Note: Values in local currency (Real). Source: Authors, 2024.

4.5 Price variation of soybeans and corn

This section provides a feature to give the producer a quick and practical overview of the price variation of soybean and corn commodities, which are significant crops on their property. Links have been included that direct users to a website where they can check real-time prices of these commodities across all regions of Brazil (Table 3). This way, the producer can see the commodity prices and plan their sales or storage strategies based on feasibility and necessity.

Table 3. Variable production parameters for soybeans and corn in Brazil.

Updated grain price	
Soybean Price	https://www.noticiasagricolas.com.br/cotacoes/soja
Corn Price	https://www.noticiasagricolas.com.br/cotacoes/milho

Source: Authors, 2024.

4.6 Investments

The investments section has been designed to provide the producer with a practical overview of their investments, including the total amount, cost per hectare, and estimated time to pay off property investments. This section includes columns for the investment amounts, the years required to settle the debt (if being paid in installments), and the annual cost. Given that the producer receives income twice a year, the spending is planned

based on the harvests.

Additionally, the cost per hectare and, in the case of land leasing, the total area are included, as described in Table 4. In this section, the producer only needs to input the investment amount and the number of years it is being financed. Once all data is entered, the spreadsheet will automatically perform the calculations, allowing the producer to see the total investment amount, the annual total, and the cost per hectare.

Table 4. Parameters for agricultural investments, leasing, agricultural construction, water well drilling, and attributes.

Specifications	Investment value	Years	Cost/Year	Cost R$ ha/year	Total area
Machinery	R$ 600.000,00	6	R$ 100.000,00	R$ 2.272,73	50
Rental	R$ 500.000,00	2	R$ 250.000,00	R$ 5.000,00	50
Machinery Shed	R$ 500.000,00	3	R$ 166.666,67	R$ 3.333,33	50
Artesian Well	R$ 4.000,00	1	R$ 4.000,00	R$ 80,00	50
Fence and Gate	R$ 200.000,00	4	R$ 50.000,00	R$ 1.000,00	50
Total	R$ 1.804.000,00		R$ 570.666,67	R$ 11.686,06	

Note: Values in local currency (Real). Source: Authors, 2024.

4.7 Expenses and earnings

This section is designed to help the producer visualize their earnings from harvests and labor, especially if they also provide services to other enterprises. The producer needs to input the number of bags harvested and update the unit price per bag. To facilitate this update, links to real-time prices are provided, as mentioned in the section dedicated to machinery.

In the grain sales section, costs will be calculated based on all the information recorded in the previous sections of the spreadsheet, considering the sum of all expenses and the resulting difference. To provide a clear view, conditional formatting is applied: positive values will be highlighted in green, while negative values will appear in red (see Table 5).

These are the only sources of income for the producer. Costs associated with harvesting for third parties include expenses for fuel and equipment maintenance, which should be entered manually. This section does not contain formulas. After the data is entered, the calculations will be performed automatically.

Table 5. Parameters for positive and negative values related to grain sales and third-party harvesting.

Specifications	Md	Unit Price	Production/ha	Total area (ha^{-1})	Total	Costs	Difference
Sell grains	Sc	R$ 113,00	90	50	R$ 508.500,0	R$ 608.414,67	-R$ 99.914,67
Harvest for third parties	Sc	R$ 113,00	2	1000	R$ 226.000,0	R$ 100.000,00	R$ 126.000,00
Total			92			R$: 708.414,67	

Note: Values in local currency (Real); Md = Measure, and Sc = Sack. Source: Authors, 2024.

Finally, after correctly filling in all the information, the user reaches the summarized results section (Table 6 and Figure 1). This part of the spreadsheet is designed to provide an overview, where all the reported expenses and

earnings are compiled. It offers a dynamic and innovative visualization approach, presenting all the information from the previous tabs aggregated and divided by hectare, along with a graph illustrating the percentages of the main expenses. In this section, the producer will not need to input any data, as it is exclusively for visualization. The calculations and graphs will be generated automatically based on the entries made in the aforementioned tables.

Table 6. Summary parameters of expenses on inputs, harvest, investments, and other agricultural services.

Type	Price
Inputs	R$ 14.370,00
Harvesting	R$ 14.642,00
Others services	R$ 7.144,00
Investiments	R$ 7.272,73

Note: Values in local currency (Real). Source: Authors, 2024.

Here is Figure 1, which presents data on the expenses incurred in agricultural property analyzed in this study. The largest expenditures are related to harvesting and inputs. These two parameters indeed show high costs due to the prices of chemical, biological, and synthetic products, as well as machinery parts or even entire machines. Moreira et al. (2016) observed similar results in our study, where the rural property demonstrated an organizational dynamic that utilized management mechanisms akin to the applied methods; in this case, the rural unit was a producer of vegetables.

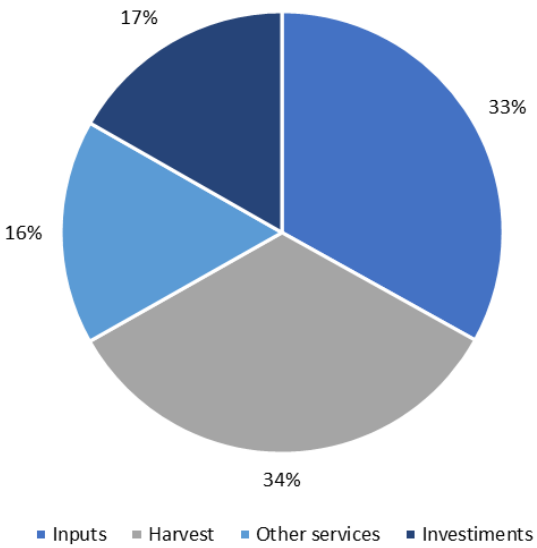

Figure 1. Data on Expenses: Inputs, Harvesting, Investments, and Other Services. Source: Authors, 2024.

4.8 Inventory control

Since the rural property under study has a warehouse, an inventory control system will be implemented to allow the producer to clearly and objectively visualize the available and unavailable materials. Table 7 is integrated into the same spreadsheet but operates independently from the others.

Initially, the producer should conduct an inventory to identify all items in stock. They must then register each item in the spreadsheet, specifying the product and the corresponding unit of measure. This will enable more efficient control over material needs, identify high-consumption products, and subsequently help avoid maintaining unnecessary items in stock, contributing to cost reduction.

In Table 7, the producer will need to record the description of the items, the unit of measure, and the values of entries and exits, while the other fields will be updated automatically. Each product must have its unit of measure properly recorded. In the sample provided, it is possible to observe the tool in operation, tracking the entries and exits of products.

All items must be entered into the table, as omitting any records may cause issues when a specific product is needed. Finally, the table has been conditionally formatted to ensure dynamic visualization: if the stock is zero, the item will be highlighted in red; if it is available, in green; and if there is an error in the entry of a product, it will appear in yellow, indicating the need to verify the stock for accurate counting.

Table 7. Description of products with respective units of measure, entries, and exits, as well as current stock and status in the agricultural property.

Product Description	Unit	Inputs	Saídas	Outputs	Status
Diesel oil	L	30	30	0	Zero Stock
Roundup	L	40	20	20	Sufficient Stock
Limestone	Kg	700	720	-20	Check Stock
Gepsym	Kg	800	61	739	Sufficient Stock
Urea	Kg	90	92	-2	Check Stock
Soybean seed	Kg	120	120	0	Zero Stock
Soy corn	Kg	100	50	50	Sufficient Stock
Tires	Unit	4	2	2	Sufficient Stock
Lubricants	Unit	5	5	0	Zero Stock
Whitelub	Unit	2	6	-4	Check Stock
Screws	Unit	100	20	80	Sufficient Stock

Source: Authors, 2024.

In the following Table 8, the inventory movement is recorded, capturing what is withdrawn from the warehouse, along with a history to assist the producer in tracking all movements throughout the month and year. This table includes the item description, the nature of the movement (entry or exit), and the unit value of each item, and will automatically calculate the total value spent, providing a historical record of the movements made as mentioned.

Table 8. Parameters on product description, movement, quantity, unit value, total value, and movement history within the agricultural property.

Date	Description	Movement	Qt	Value	Total Value	Movement history
06/12/2024	Gypsum	Exit	500	R$ 2,00	R$ 1.000,00	Soil with gypsum deficiency applied on 06/11/2024
06/12/2024	Limestone	Exit	200	R$ 3,00	R$ 600,00	Soil with gypsum deficiency applied on 06/11/2024
06/13/2024	Tires	Exit	1	R$ 2.000,00	R$ 2.000,00	The truck tire burst on 06/12/2024
06/14/2024	Lubricants	Exit	1	R$ 10,00	R$ 10,00	It was used on the shed doors on 06/13/2024
06/15/2024	Whitelub	Exit	2	R$ 10,00	R$ 20,00	It was used to prevent rust on machines 06/14/2024

Note: Values in local currency (Real). Source: Authors, 2024.

4.9 Personal financial control

In addition to the property management spreadsheet, an auxiliary spreadsheet for tracking the producer's expenses and those of their family has been created (Table 9). This is essential, as there are often financial withdrawals made by the producer that are not adequately monitored, leading to a lack of control over personal finances. To determine the monthly withdrawal amount, it is necessary to calculate the average expenses from the last twelve months (1 year) and apply this value to the actual profit of the property during that period.

Once the withdrawal amount is defined, it is important to record in the spreadsheet the salary, deductions, fixed bills, and other monthly expenses. The first section of the spreadsheet is dedicated to expense tracking, where revenue forecasts, deductions, and their types, as well as different sources of income, will be entered. Additional categories of expenses and revenues can be included as needed by the producer.

Table 9. Income regarding the designation, forecast, deductions, and type of withdrawal/tax accounted for and deducted within the agricultural property.

Revenue			
Denomination	Prediction	Discounts	Type
Wage	R$ 40.000,00	-	Withdrawal
INSS	-	R$ 4.400,00	Tax
IRRF		R$ 10.800,00	Tax
Salário Líquido		R$ 24.800,00	

Note: Values in local currency (Real). Source: Authors, 2024.

After entering the projected revenues and the corresponding deductions, the calculation of net salary will be performed automatically. This value is essential for filling out the other tables throughout the rural unit’s records. The next step is to register fixed expenses (or fixed costs) (Table 10), such as basic sanitation, energy, internet, and monthly vehicle financing installments, among others.

For items with variable costs, such as water and sanitation, both the projected expenses and the actual values have been included, using conditional formatting. In this case, the value will be highlighted in green if it is below the forecasted amount and in red if it exceeds the estimated value. It is essential to record all fixed expense items projected for the next month, specifying the type of expense, whether it is installment-based, the current installment, and the payment method used, whether by bank slip or credit card installment. After entering all the projected fixed expenses, the calculation will be performed automatically. In this case, the producer should consider the actual expenses, as projected expenses are merely forecasts for the following month.

Table 10. Parameters of expenses, projections, and payment types within the agricultural property.

Fixed expenses						
Denomination	Tipe of Expense	Prediction	Real	Difference	Plot	Payment type
Water	Residential accounts	R$ 250,00	R$ 300,00	-R$ 50,00	Fixed	Saneago Ticket
Energy	Residential accounts	R$ 250,00	R$ 200,00	R$ 50,00	Fixed	Enel Ticket
Internet	Residential accounts	R$ 100,00	R$ 100,00	R$ 0,00	Fixed	Dominet Ticket
Phone plan	Others	R$ 200,00	R$ 250,00	-R$ 50,00	Fixed	Tim Ticket
Cell Phone	Others	R$ 270,00	R$ 250,00	R$ 20,00	7ª	Credit card
Motorcycle	Financing	R$ 1.500,00	R$ 3.000,00	-R$ 1.500,00	1ª	PAN Ticket
Car	Financing	R$ 800,00	R$ 820,00	-R$ 20,00	1ª	BV Ticket
Total		R$ 3.370,00	R$ 4.920,00	-R$ 1.530,00	-	-

Note: Values in local currency (Real). Source: Authors, 2024.

For the detailed expenses section, Table 11 presents, in its simplified essence, the data that the producer must specify for each expense. It is necessary to indicate the type of expenditure, such as food, leisure, and clothing, among others, as well as the current installment if it is an installment-based expense, and the corresponding amount. This table will allow for more precise control of individual expenses, assisting in personal financial planning. After entering the detailed expenses, the calculation of the amounts will be performed automatically. All expenses must be recorded, regardless of the amount, for more accurate control.

Table 11. Detailed parameters regarding the producer's expenses and their descriptions.

Detailed variable expenses			
Especification	Tipo de Gasto	Parcela	Valor
Localização	Travel	4ª	R$ 176,27
Faculty	Education	Monthly	R$ 600,00
Netflix	Leisure	Monthly	R$ 39,90
Campeão	Food	Single	R$ 199,85
Big launches	Food	Single	R$ 38,00
Drogasil	Others	Single	R$ 21,99
Total			R$ 1.076,01

Note: Values in local currency (Real). Source: Authors, 2024.

To enable the producer to clearly and objectively visualize the available balance for expenses throughout the month, Table 12 presents the “auto-sum” formula and conditional formatting. This table allows the remaining balance to be automatically updated as entries are made, visually highlighting it to facilitate financial monitoring.

Table 12. Monthly balance available for expenses in the agricultural property.

Balance difference
R$ 36.600,68

Note: Values in local currency (Real). Source: Authors, 2024.

The previously mentioned amount will then be automatically updated as expenses are recorded throughout the month and subsequently over the year (or years) of data. To provide better visibility, conditional formatting has been set up as follows: when the salary is below 20% of the net salary, the cell will turn yellow; below 10%, it will turn red; and above 20%, it will turn green. This way, the producer can more clearly track the status of the monthly budget, facilitating the management of remaining resources.

Additionally, it is important to include Table 13, which pertains to savings based on the net salary of the rural unit during the assessment. Various experts recommend that you should set aside 10-20% of your monthly salary to build an emergency fund (Exame, 2022; Barbato et al., 2022).

Table 13. Savings are based on the net salary generated in the agricultural property.

Economy
R$ 8.000,00

Note: Values in local currency (Real). Source: Authors, 2024.

In our results, we were able to maintain the producer's savings at up to 20%. Finally, to provide a visual alternative for the producer, Figure 2 presents the percentage of each type of expense recorded in the previous tables. This simplified and easy-to-understand chart evaluates the distribution of expenses, allowing for an intuitive and immediate analysis of the allocation of financial resources throughout the evaluated month.

It is an automatically updating chart that relies exclusively on the information entered in the "type of expense" column of the aforementioned tables. The legend, positioned next to the chart, corresponds to all the types of expenses added, and the chart is adjusted whenever a new entry is made. To maintain accuracy, the producer must correctly specify the type of expense with each record, thereby ensuring an updated and accurate view of the distribution of expenses on their agricultural property.

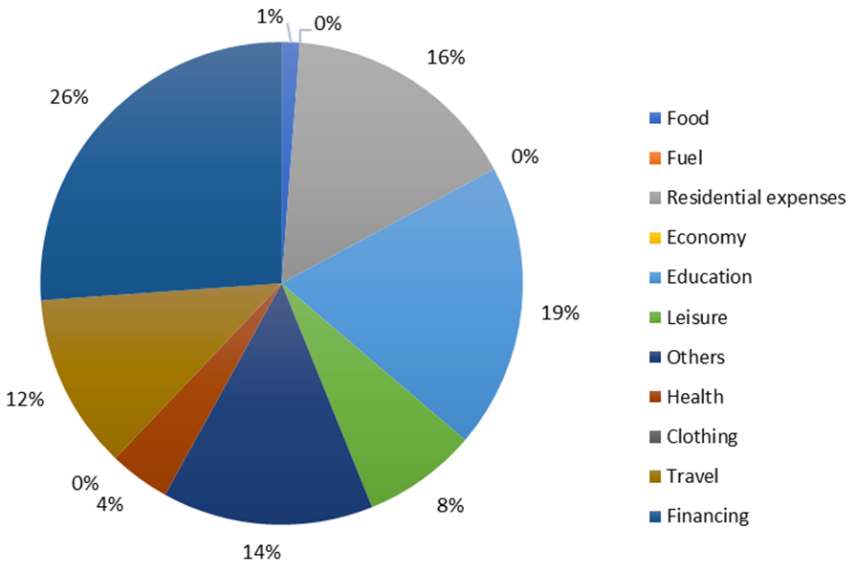

Figure 2. Data generated on the expenses incurred by the agricultural property. Source: Authors, 2024.

5. Conclusions

The importance of management tools in controlling expenses is undeniable. By adopting them, the rural producer gains a clear and precise view of their finances, which facilitates strategic decision-making. With effective monitoring of expenses and revenues, it is possible to plan and execute investments more securely and assertively. This financial predictability not only minimizes risks but also maximizes growth opportunities.

Additionally, the use of these tools contributes to more professional management, facilitating access to credit and business partnerships. In a competitive market, the ability to present clear and well-structured financial reports can be decisive in negotiations with financial institutions and suppliers. Therefore, investing in financial management tools is a fundamental strategy to ensure the success of rural enterprises, resulting in greater operational efficiency and the building of a solid and promising future.

These tools are developed in accessible language, taking into account the difficulties faced by producers. Before implementation, it is essential to hold meetings to explain each table and its purpose in detail. The reality experienced by one producer reflects that of many others in the sector, making these tools indispensable for financial control and business leverage. When used properly, they can transform the management of rural finances, contributing to sustainable growth and competitiveness in the market.

Moreover, there is a vast field for new research on this topic. Future studies could investigate the effectiveness of different management tools in various rural contexts, as well as compare traditional and digital approaches. Research could also explore the impact of financial education on the adoption and use of these tools, analyzing how specific training can enhance their effectiveness. Another relevant aspect is the adaptation of management tools to meet the needs of both small and large properties, maximizing their benefits. This ongoing investigation process will not only enrich existing knowledge but also contribute to the development of increasingly effective and accessible solutions for rural producers.

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7. Authors' Contributions

Warlei Alves Vieira Filho: development, data collection, writing, submission, and publication. *Gislaine Mendes Furtado*: advisor, project corrections, data assessment, article corrections, and post-correction assessment.

8. Conflicts of Interest

No conflicts of interest.

9. References

Abramovay, R. (1998). Agricultura familiar e desenvolvimento territorial. *Revista da Associação Brasileira de Reforma Agrária*, 28, 1-21, 1998.

Affonso, E. P., Hashimoto, C. T., Sant'Ana, R. C. G. (2015). Uso de tecnología de la informacíon en la agricultura familiar: Planilla para gestión de insumos. *Biblios – Revista de Bibliotecología y Ciencias de la Información*, 60, 45-54. https://doi.org/10.5195/biblios.2015.221

Agustini, C. A. (2009). Gestão financeira nos micro e pequenos empreendimentos no contexto do agronegócio: uma abordagem de desenvolvimento sustentável. *Revista da Micro e Pequena Empresa*, 3(1), 3-24.

Almeilda, J. A. S., Feitosa, N. A., Carvalho e Sousa, L., Silva, R. N. O., Morais, R. F., Monteiro, J. M., Sousa Júnior, J. R. (2021). Use, perception, and local management of Copernicia prunifera (Miller) H. E. Moore in rural communities in the Brazilian Savanna. *Journal of Ethnobiology and Ethnomedicine*, 17. https://doi.org/10.1186/s13002-021-00440-5

Barbato, N., Murakami, R. G., Costa, B. A. (2022). O papel da educação financeira no mundo globalizado. RIT – Revista Inovação Tecnológica, 12(2), 62-78. https://www.rit.openjournalsolutions.com.br/index.php/rit/article/view/79

Barbosa, A. C. S., Gimenes, R. M. T. (2020). Costs and financial feasibility of niágara grape growth in low rural

properties. *Custos e @gronegócio OnLine*, 16.

Barros, E. V. M. O., Machado, L. D. L., Ferreira, R. M. (2024). Gestão financeira no agronegócio: desafios e estratégias no contexto global. *Revista de Gestão e Secretariado*, 15(8), e3934. https://doi.org/10.7769/gesec.v15i8.3934

Basso, M. F., Neves, M. F., Grossi-de-Sa, M. F. (2023). Agriculture evolution, sustainability and trends, focusing on Brazilian agribusiness: a review. *Frontiers in Sustainable Food Systems*, 7. https://doi.org/10.3389/fsufs.2023.1296337

Bassoi, L. H., Inamasu, R. Y., Bernardi, A. C. C., Vaz, C. M. P., Speranza, E. A., Cruvinel, P. E. Agricultura de precisão e agricultura digital. *TECCOGS – Revista Digital de Tecnologias Cognitivas*, (20), 17-36.

Breitenbach, R. (2013). Gestão rural no contexto do agronegócio: desafios e limitações. *Desafio Online*, 2(2).

Campos, M. M., Zander, N. A pequena produção rural e as tendências do desenvolvimento agrário brasileiro: Ganhar tempo é possível?. 1ª Ed., Brasília: Centro de Gestão e Estudos Estratégicos (CGEE), 2013.

Cavalli, S. B., Soares, P., Martinelli, S. S., Schneider, S. (2020). Family farming in times of Covid-19. *Revista de Nutrição*, 33, e200180. https://doi.org/10.1590/1678-9865202033e200180

Costa, C. C. M., Almeida, A. L. T., Ferreira, M. A. M., Silva, E. A. Determinantes do desenvolvimento do setor agropecuário nos municípios. *Revista de Administração*, 48(2), 295-309. https://doi.org/10.5700/rausp1089

Del Grossi, M. E., Marques, V. P. M. A. Agricultura familiar no censo agropecuário 2006: o marco legal e as opções para sua identificação. *Estudos Sociedade e Agricultura*, 18(1), 127-157. http://www.redalyc.org/articulo.oa?id=599964689004

Deponti, C. M. (2014). As "agruras" da gestão da propriedade rural pela agricultura familiar. *Redes – Revista do Desenvolvimento Regional*, 19(1), 9-24. http://www.redalyc.org/articulo.oa?id=552056836002

Dossa, A. A., Segatto, A. P. (2010). Pesquisas cooperativas entre universidades e institutos públicos no setor agropecuário brasileiro: Um estudo na Embrapa. *RAP - Revista de Administração Pública*, 44(6), 1327-1352. https://doi.org/10.1590/S0034-76122010000600004

Elias, L. P., Belik, W., Cunha, M. P., Guilhoto, J. J. M. (2019). Impactos socioeconômicos do programa nacional de alimentação escolar na agricultura familiar de Santa Catarina. *RESR – Revista de Economia e Sociologia Rural*, 57(2), 215-233. https://doi.org/10.1590/1806-9479.2019.171266

Engel, W., Schaurich, L. C., Paula, G., Engel, G. R. (2019). Custos de produção de suínos (fase de cria) em uma propriedade rural familiar do oeste do Paraná. *Brazilian Journal of Development*, 5(9), 14994-15016. https://doi.org/10.34117/bjdv5n9-095

Ewert, F., Baatz, R., Finger, R. (2023). Agroecology for a sustainable agriculture and food system: From local solutions to large-scale adoption. *Annual Review of Resource Economics*, 15, 351-381. https://doi.org/10.1146/annurev-resource-102422-090105

Gliessman, S., Fergunson, B. G. (2019). Keeping up with agroecoloogy movement: priorites for agroecology and sustainable food systems. *Agroecology and Sustainable Food Systems*, 44(1), 1-2. https://doi.org/10.1080/21683565.2019.1675241

Grulli, B. S., Oliveira, E. M., Ross, G. L., Duarte, J. R., Gallo, J. M.. (2021). Gestão do risco nas pequenas propriedades rurais. A importância da gestão no agronegócio, 1-21.

Guanziroli, C. E., Di Sabbato, A. (2014). Existe na agricultura brasileira um setor que corresponde ao "Family Farming" americano? *Revista de Economia e Sociologia Rural*, 52(1), s085-s104. https://doi.org/10.1590/S0103-20032014000600005

Hopewell, K. (2013). New protagonists in global economic governance: Brazilian agribusisness at the WTO. *New Political Economy*, 18(4), 603-623. https://doi.org/10.1080/13563467.2013.736957

Jasińska, E. (2017). Land use efficiency on example of the transformation of rural properties. Environmental Engineering, 10th International Conference, Vilnius Gediminas Technical University, Lithuania, 27-28 April.

Kreusberg, F., Söthe, A., Toledo Filho, J. R. (2013). Sistema de informação contábil e gestão rural: estudo de propriedades da região de Itapiranga – SC. *Latin American Journal of Business Management*, 4(1). https://www.lajbm.com.br/index.php/journal/article/view/123

Landau, E. C., Guimarães, L. S., Hirsch, A., Guimarães, D. P., Matrangolo, W. J. R., Gonçalves, M. T. (2013).

Concentração geográfica da agricultura familiar do Brasil. 1ª Ed., Sete Lagos: Embrapa Milho e Sorgo.

Marques, P. E. M. (2004). Concepções em disputa na formulação das políticas públicas de apoio à agricultura familiar: Uma releitura sobre a criação do PRONAF. *Raízes – Revista de Ciências Sociais e Econômicas*, 22(2), 16-28.

Mattei, L. (2015). Políticas públicas de apoio à agricultura familiar: o caso recente do PRONAF no Brasil. *Raízes – Revista de Ciências Sociais e Econômicas*, 35(1), 6-20. https://doi.org/10.37370/raizes.2015.v35.421

Moreira, A. C. S. S., Melo, J. F. M., Carvalho, J. R. M. Gestão de custos em uma propriedade rural do ramo de hortaliças. *Custos e @gronegócio On Line*, v. 12, n. 2, p. 298-232, 2016.

Moreira, V. R., Kureski, R., Veiga, C. P. (2016). Assessment of the economic structure of Brazilian agribusiness. *The Scientific World Journal*. https://doi.org/10.1155/2016/7517806

Neto, F. B. M. Do campo à mesa: Sistema de comercialização e logística para pequenos produtores rurais. Natal, Universidade Federal do Rio Grande do Norte, 2023.

Oliveira, A. S., Soares-Filho, B. S., Oliveira, U., Van der Hoff, R., Carvalho-Ribeiro, S. M., Oliveira, A. R., Scheepers, L. C., Vargas, B. A., Rajão, R. G. Costs and effectiveness of public and private fire management programs in the Brazilian Amazon and Cerrado. Forest Policy and Economics, v. 127, p. 102447, 2021. https://doi.org/10.1016/j.forpol.2021.102447

Oliva, F. A., Vieira, M. A. (2016). Gestão financeira de propriedade de agricultura familiar. *Revista Colloquium Agrariae*, 12, 49-54.

ONU – Organização das Nações Unidas. Nações Unidas Brasil. (2024). Mundo joga fora mais de 1 bilhão de refeições por dia, aponta índice de desperdício de alimentos da ONU. Disponível em: https://brasil.un.org/pt-br/264451-mundo-joga-fora-mais-de-1-bilh%C3%A3o-de-refei%C3%A7%C3%B5es-por-dia-aponta-%C3%ADndice-de-desperd%C3%ADcio-de Acesso em: 16 de Out.

Petrini, M. A., Rocha, J. V., Brown, J. C., Bispo, R. C. (2016). Using an analytic hierarchy process approach to prioritized public policies addressing family farming in Brazil. *Land Use Policy*, 51, 85-94. https://doi.org/10.1016/j.landusepol.2015.10.029

Piolli, A. L., Costa, M. C. (2008). Public participation and rural management of Brazilian waters: an alternative to the deficit model. *Journal of Science Communication*, 7(4), 1-8. https://doi.org/10.22323/2.07040201

Pronti, A., Coccia, M. (2021). Agroecological and conventional agricultural systems: comparative analysis of coffee farms in Brazil for sustainable development. *International Journal of Sustainable Development*, 23(3-4), 223-248. https://doi.org/10.1504/IJSD.2020.115223

Santos, B. C. (2022). A importância da gestão financeira para o pequeno produtor agrícola. Palmas, Centro Universitário Luterano de Palmas.

Schneider, S. (2009). A diversidade da agricultura familiar. 2ª Ed., Porto Alegre: Editora da UFRGS.

Silva, N. P., Francisco, A. C., Hatakeyama, Silva, M. C. G. (2010). A importância do empreendedor rural para capacitar, desenvolver e equacionar estrategicamente os recursos sustentáveis, gerando renda e qualidade de vida. *e-CAP: Electronic Accounting and Management*, 2(2). https://revistas.utfpr.edu.br/ecap/article/view/11148

Simon, M. A., Wolf, D. B. (2012). Gestão ambiental em cooperativa agrícola. *Disciplinarum Scientia*, 13(1), 49-67. https://periodicos.ufn.edu.br/index.php/disciplinarumNT/article/view/1293

Soares, G. D. S. (2021). Gestão financeira no agronegócio brasileiro: uma análise da percepção dos produtores rurais. Brasília, UNB.

Taliarine, A. B., Ramos, D. J., Favoretto, J. R. (2015). A importância da gestão no agronegócio brasileiro. *Revista Perspectiva em Gestão, Educação & Tecnologia*, 4(8).

Zauzi, A., Sumiati, A., Susanti, S., Zulaihati, S., Respati, D. K., Mardi, M., Handarini, D., Aprianto, W. (2022). Computerized accounting training with local software to facilitate financial reporting for bumdes management in CISAAT Village, Subang (West Java). *IJEE – International Journal of Engagement and Empowerment*, 2(3), 304-316. https://doi.org/10.53067/ije2.v2i3.82

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