

**UNIVERSIDADE ESTADUAL DO OESTE DO PARANÁ  
PROGRAMA DE PÓS-GRADUAÇÃO EM ADMINISTRAÇÃO  
MESTRADO PROFISSIONAL**

**WESTERN PARANÁ STATE UNIVERSITY  
PROFESSIONAL MASTER'S IN ADMINISTRATION**

**ESTRATÉGIAS DE DIVERSIFICAÇÃO DESENVOLVIDAS POR MEIO DA  
AGROINDÚSTRIA NAS PEQUENAS PROPRIEDADES RURAIS**

**DIVERSIFICATION STRATEGIES DEVELOPED THROUGH AGROINDUSTRY IN  
SMALL RURAL PROPERTIES**

**DAIANE ALINE TOMAZ SOBCZUK**

**CASCADEL**

**2022**

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SMALL RURAL PROPERTIES**

Dissertation presented in partial fulfilment of the requirements for the degree of **Master of Science in Administration** in the Department of Administration, Western Paraná State University. Dissertation Supervisor: Dr. Geysler Rogis Flor Bertolini

Dissertação apresentada ao Programa de Pós-Graduação em Administração (PPGAdm) – Mestrado Profissional, da Universidade Estadual do Oeste do Paraná, como requisito parcial para obtenção do grau de **Mestre em Administração**. Orientador(a): Dr. Geysler Rogis Flor Bertolini

**Cascavel**

**2022**

International Cataloging-in-Publication Data  
UNIOESTE Library System

Sobczuk, Daiane Aline Tomaz.

Diversification strategies developed through agroindustry in small rural properties / Daiane Aline Tomaz Sobczuk ; Advisor: Geysler Rogis Flor Bertolini; [Translation of Marcelo Henrique Chiochetta]. 2022.  
125 f.

Dissertation (Master's of Degree – Campus of Cascavel) – Western Paraná State University, Center for Applied Social Sciences, Graduate Program in Administration, 2022

[English version of: Estratégias de diversificação desenvolvidas por meio da agroindústria nas pequenas propriedades rurais]

1. Family Agribusiness. 2. Strategy. 3. Family Farming. 4. Rural Diversification.  
I. Bertolini, Geysler Rogis Flor. II. Chiochetta, Marcelo Henrique. III. Title.



**unioeste**

Universidade Estadual do Oeste do Paraná

Campus de Cascavel - CNPJ 08.803.370/0002-05  
Rua Universitária, 2069 - Jardim Universitário - Cx. P. 000711 - CEP 85819-110  
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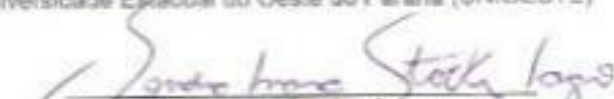
## DAIANE ALINE TOMAZ SOBCHUK

Estratégias de diversificação de renda das pequenas propriedades rurais de  
Medianeira PR

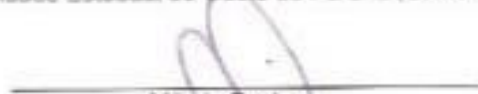
Dissertação apresentada ao Programa de Pós-Graduação em  
Administração em cumprimento parcial aos requisitos para obtenção do título de  
Mestra em Administração, área de concentração Competitividade e  
Sustentabilidade, linha de pesquisa Sustentabilidade, APROVADO(A) pela seguinte  
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Cascavel, 28 de junho de 2022

## ACKNOWLEDGMENT

To God, for life and for having put people in my path, whom I take as an example. To my family, who always supported and encouraged me to continue this journey. To my husband, André Sobczuk, who has been with me since the beginning of this journey, always encouraging me not to give up on my goal.

To the professors of the Postgraduate Program in Administration (PPGA) - Professional Master's, at the *Universidade Estadual do Oeste do Paraná*, who provided me with countless new knowledge.

To the advisor, Prof. Dr. Geysler Rogis Flor Bertolini, for his patience and mastery in conducting the guidelines, making it possible to complete this dissertation. To the members of the qualifying and defense examining boards, my sincere thanks for accepting the invitation and for the scientific recommendations, which contributed to the conduct and realization of this study.

To the colleagues of the Professional Master's in Administration class of 2020, with whom it was possible to exchange very valuable knowledge and for making the remote classes lighter and more relaxed, especially to my friend, Francieli Binotti, for the valuable friendship and strength given on this journey in which we share many special moments.

To the technicians of the IDR – Medianeira, rural producers, managers of family agro-industries, who made themselves available to assist me in their establishments and respond to this research.

To all who, in some way, contributed to the making of this study, I am very grateful.

Sobczuk, D. A. T (2022). *Diversification strategies developed through agroindustry in smallrural properties*. Dissertação de mestrado, Universidade Estadual do Oeste do Paraná, Cascavel, PR, Brasil.

## RESUMO

O desenvolvimento da propriedade rural não pode estar alicerçado apenas sobre atividades agrícolas tradicionais, constantemente submetidas a choques externos e tendências econômicas. É necessário diversificar os produtos e serviços que geram o sustento das famílias rurais. Dessa forma, o objetivo geral desta pesquisa é analisar o processo de implantação de estratégias de diversificação de sustento das famílias de pequenos produtores rurais do município de Medianeira-PR. A pesquisa foi realizada por meio de um estudo de caso de cunho qualitativo, descritivo e exploratório, sendo que se procedeu a partir de entrevistas estruturadas realizadas entre janeiro e abril de 2022. O campo de estudos são as propriedades familiares que diversificam sua produção por meio da agroindústria familiar; os atores pesquisados são seus gestores e o extensionista do IDR. Como principais achados da pesquisa, identificou-se que, na implantação da estratégia de diversificação do sustento rural, a motivação efetiva-se em torno da geração de renda, da permanência no meio rural e da oportunidade de ter melhor qualidade de vida, o que se viabiliza a partir do acesso que as propriedades têm aos capitais usados no processo. Os produtores também buscaram estrategicamente somar o conhecimento novo às tradições familiares com o intuito de criar novos produtos e serviços que são revertidos por intermédio da satisfação dos clientes. Os investimentos em pequenas inovações e a predominância da mão de obra familiar são aspectos relevantes para a implantação das estratégias nas pequenas propriedades rurais. Por fim, o desempenho da estratégia de diversificação de sustento por meio da agroindústria evidencia que o acesso ao capital natural, humano, social, físico e financeiro é fundamental para o desenvolvimento das pequenas agroindústrias familiares, além de que o conhecimento adquirido pelas famílias aprimora o negócio diversificado e a estratégia de diversificação promove o sustento; por consequência, há a permanência das famílias e de seus sucessores nas propriedades rurais.

**Palavras-chave:** Agroindústria Familiar. Agricultura Familiar. Diversificação Rural. Estratégia.

Sobczuk, D. A. T (2022). *Diversification strategies developed through agroindustry in small rural properties*. Master's degree dissertation, Western Paraná State University, Cascavel, PR, Brazil.

## ABSTRACT

Rural property development cannot be based solely on traditional agricultural activities, which are constantly subjected to external shocks and economic trends. It is necessary to diversify the products and services that generate the livelihood of rural families. Thus, the general objective of this research is to analyze the process of implementing strategies for diversifying the livelihood of families of small rural producers in the municipality of Medianeira-PR. The research was carried out through a qualitative, descriptive, and exploratory case study, based on structured interviews carried out between January and April 2022. The field of study is family properties that diversify their production through family agroindustry, and the actors surveyed are their managers and the IDR extensionist. As the main findings of the research, it was identified that, in the implementation of the rural livelihood diversification strategy, the motivation is around income generation, permanence in rural areas and the opportunity to have a better quality of life, which is made possible from the access that properties have to the capital used in the process. Producers also strategically seek to add new knowledge to family traditions in order to create new products and services that are reversed through customer satisfaction. Investments in small innovations and the predominance of family labor are relevant aspects for the implementation of strategies in small rural properties. Finally, the performance of the income diversification strategy through agro-industry shows that access to natural, human, social, physical, and financial capital is fundamental for the development of small family agro-industries, in addition to the knowledge acquired by families the diversified business and the diversification strategy promote the livelihood and, consequently, the permanence of families and their successors on rural properties.

**Keywords:** Family Agribusiness. Family Farming. Rural Diversification. Strategy.

## FIGURE LIST

|   |    |
|---|----|
| Figure 1. Diversified Conversion .....                                | 29 |
| Figure 2. Rural livelihood strategy framework .....                   | 34 |
| Figure 3. Research development stages .....                           | 49 |
| Figure 4. Characterization of the researched properties summary ..... | 79 |



## CHART LIST

|   |    |
|---|----|
| Chart 1 - Main theoretical streams and reasons for diversification.....   | 22 |
| Chart 2 - Description of rural properties participating in the research.....                                    | 48 |
| Chart 3 - Rural property characterization.....  | 50 |
| Chart 4 - Rural Livelihood Diversification Strategy .....   | 51 |
| Chart 5 - Composition of monthly income in Property A .....   | 60 |
| Chart 6 - Composition of monthly income in property B .....   | 65 |
| Chart 7 - Composition of the monthly income of Property C .....   | 70 |
| Chart 8 - Composition of the monthly income of Property D.....  | 74 |
| Chart 9 - Composition of the monthly income of Property E .....   | 77 |
| Chart 10 - Subjects' Description.....   | 80 |
| Chart 11 - Profile of managers of family agribusinesses in Medianeira-PR.....                                   | 81 |
| Chart 12 - Reasons to diversify and factors that facilitate and hinder the implementation of the strategy ..... | 87 |

## **LIST OF ABBREVIATIONS AND ACRONYMS**

|                |  |
|----------------|--|
| <b>BDTD</b>    | Biblioteca Digital Brasileira de Teses e Dissertações        |
| <b>CAPES</b>   | Coordenação de Aperfeiçoamento de Pessoal de Nível Superior  |
| <b>CEPEA</b>   | Centro de Estudos Avançados em Economia Aplicada             |
| <b>CNA</b>     | Confederação da Agricultura e Pecuária do Brasil             |
| <b>EMATER</b>  | Instituto Paranaense de Assistência Técnica e Extensão Rural |
| <b>IBGE</b>    | Instituto Brasileiro de Geografia e Estatística              |
| <b>IDR</b>     | Instituto de Desenvolvimento Rural                           |
| <b>MAPA</b>    | Ministério da Agricultura Pecuária e Abastecimento           |
| <b>PIB</b>     | Produto Interno Bruto  |
| <b>PNAD</b>    | Pesquisa Nacional por Amostra de Domicílios                  |
| <b>PR</b>      | Paraná   |
| <b>PRONAF</b>  | Programa Nacional de Fortalecimento da Agricultura Familiar  |
| <b>SEBRAE</b>  | Serviço Brasileiro de Apoio as Micro e Pequenas Empresas     |
| <b>SENAI</b>   | Serviço Nacional de Aprendizagem Industrial                  |
| <b>SIM/POA</b> | Serviço de Inspeção Municipal de Produtos de Origem Animal   |
| <b>UPF</b>     | Unidades de Produção Agrícolas Familiares                    |
| <b>UTFPR</b>   | Universidade Tecnológica Federal do Paraná                   |

## SUMMARY

|           |  |           |
|-----------|--|-----------|
| <b>1.</b> | <b>INTRODUCTION .....</b>  | <b>13</b> |
| 1.1       | SEARCH ISSUE .....   | 14        |
| 1.2       | OBJECTIVES.....  | 17        |
| 1.        | General.....   | 17        |
| 1.2.1     | Specific .....   | 17        |
| 1.3       | JUSTIFICATION AND CONTRIBUTION OF THIS TECHNICAL<br>PRODUCTION ..... | 17        |
| 1.4       | THESIS STRUCTURE .....   | 19        |
| <b>2</b>  | <b>THEORETICAL AND PRACTICAL REFERENCES .....</b>                    | <b>20</b> |
| 2.1       | BRAZILIAN AGRIBUSINESS .....   | 20        |
| 2.1.1     | Agroindustry Strategies and Competitiveness.....                     | 21        |
| 2.2       | RURAL DIVERSIFICATION .....  | 23        |
| 2.3       | STRATEGY FOR DIVERSIFICATION OF LIFESTYLES .....                     | 26        |
| 2.3.1     | The rural livelihood strategy framework .....                        | 30        |
| 2.4       | FAMILY AGROINDUSTRY .....  | 35        |
| 2.5       | RELATED STUDIES.....   | 39        |
| 2.5.1     | Rural Diversification and Diversification Strategies.....            | 40        |
| 2.5.2     | Family Agroindustry.....   | 41        |
| 2.6       | CONSIDERATIONS ON THE RELATED STUDIES .....                          | 43        |
| <b>3</b>  | <b>TECHNICAL PRODUCTION RESEARCH METHOD AND TECHNIQUES</b>           |           |
|           | <b>45</b>  |           |
| 3.1       | RESEARCH DESIGN.....   | 45        |

|          |  |            |
|----------|--|------------|
| 3.2      | FIELD OF STUDY .....   | 46         |
| 3.3      | DATA GATHERING .....   | 49         |
| 3.4      | DATA ANALYSIS PROCEDURES .....   | 53         |
| <b>4</b> | <b>RESULTS ANALYSIS AND DISCUSSION.....</b>  | <b>56</b>  |
| 4.1      | CONTEXT OF FAMILY AGROINDUSTRY OF MEDIANEIRA-PR.....                                 | 56         |
| 4.2      | RURAL PROPERTIES AND AGROINDUSTRY CHARACTERIZATION.....                              | 57         |
| 4.2.1    | Property A.....  | 57         |
| 4.2.2    | Property B.....  | 63         |
| 4.2.3    | Property C.....  | 67         |
| 4.2.4    | Property D.....  | 72         |
| 4.2.5    | Property E.....  | 76         |
| 4.3      | CHARACTERIZATION OF MANAGERS OF THE RESEARCHED<br>AGROINDUSTRY.....                  | 80         |
| 4.4      | RURAL DIVERSIFICATION STRATEGY .....   | 83         |
| 4.4.1    | Livelihood diversification.....  | 83         |
| 4.4.2    | Access and use of capital.....   | 87         |
| 4.4.3    | Elements that modify access to capital.....  | 93         |
| 4.4.4    | Elements that interfere with access to capital.....                                  | 95         |
| 4.4.5    | Rural diversification in the view of IDR extension workers.....                      | 97         |
| <b>5</b> | <b>CONTRIBUTIONS TO PRACTICE.....</b>  | <b>99</b>  |
| <b>6</b> | <b>FINAL REMARKS .....</b>   | <b>101</b> |
|          | <b>REFERENCES .....</b>  | <b>104</b> |
|          | <b>APPENDIX A – INTERVIEW SCRIPT – CHARACTERIZATION OF RURAL<br/>PROPERTIES.....</b> | <b>117</b> |
|          | <b>APPENDIX B – INTERVIEW SCRIPT – DIVERSIFICATION STRATEGY .....</b>                | <b>121</b> |

**APPENDIX C – INTERVIEW SCRIPT – DIVERSIFICATION STRATEGY.....124**

## 1. INTRODUCTION

Changes in the global and national economy, permeated by the great mobility of capital and transformations in traditional productive structures, have motivated important changes in different sectors, including agribusiness. In this context, agribusiness is challenged by competitiveness. To remain competitive, some aspects are crucial, such as the evolution in the level of information, professional management, the integration links between the production chains, technological innovations, and sustainability. However, the development of mechanisms that allow the generation of complementary income, derived from new business opportunities, is explained by the specialization, production scale, differentiated production processes and value aggregation, emerging due to the transformations that affect productive properties (Padilha, 2009).

For this, it is necessary to plan the future of the rural enterprise to make it more competitive. Strategy is a competitive form that aims to constitute a position that seeks profit and sustainability, since these positions can determine the competitiveness of a business. In turn, strategy is also considered as an integrated and coordinated set of actions and attitudes that explore essential competencies to obtain a competitive advantage (Hitt, Ireland, & Hoskisson, 2008).

Agribusiness organizations are constantly challenged by standards of competitiveness. Currently, the importance of agribusiness in the economic context of Brazilian and global society goes far beyond food production. The volume of resources that moves the number of jobs it generates and the prospect of an increase in world demand for food in the coming decades have made this sector increasingly competitive (Camara, 2019). Technological advances have made it possible to gradually increase productivity and competitiveness in the global scenario, as well as the diversification of crops, which culminated in the repositioning of rural producers in the face of the challenges faced in the sector (Kageyama, 2008).

Faced with this increasingly evolved and competitive scenario, small rural properties have played a relevant role, reinventing, and specializing themselves, which provides their gradual growth (Santana, 2014). These properties tend to diversify their activities, as diversification of livelihoods is a strategy often applied to deal with economic and environmental shocks, reducing inequality and providing greater security. According to Elis (2000), diversification is considered an important strategy to reduce the vulnerability of rural

families, through access to livelihoods. These means can be understood by the assets that involve natural, physical, human, financial and social capital, in addition to the intermediation of access to these assets, and the activities developed through access to capital.

Diversification tends to reflect positively on the family's livelihood, considering that, as these small rural properties manage to develop a diversified portfolio, they increase their income and, therefore, acquire greater security and stability for their business (Gautam & Andersen), 2016). Additionally, discussions around the diversification of activities to generate livelihoods for rural families have been increasingly present in academic studies; researchers have studied options capable of helping to understand the dynamics of possibilities that can be implemented to expand the income portfolio, contributing to more stable and thus more sustainable properties (Perondi, 2012; Gautam & Andersen, 2016).

Rural diversification strategies can be applied to different activities; There is a considerable number of studies highlighting diversification through rural tourism, such as the one developed by Padilha and Hoff (2011), who cite rural tourism as one of the alternatives that contribute to the application of strategies, but family agro-industries have also gained space as an alternative for diversifying rural livelihoods, in addition to keeping young people in the countryside by adding value to raw materials (Faoro, 2017; Passini, 2020; Bitencourt, Lochmann, Silveira & Schmidt, 2021).

According to the *Ministério da Agricultura, Pecuária e Abastecimento*–MAPA (2019), family agro-industrialization is understood as the processing and improvement of products from agricultural and livestock farms, ranging from simple processes, such as cleaning, classification, and packaging, to more complex processes. complexes that include caramelization and fermentation. It appears that there is a significant number of this type of enterprise in the country. This business model has provided economic, social, and cultural benefits for rural areas (Torrezan, Cascelli, & Diniz, 2017). However, the strategies implemented by these rural producers on their properties are little explored.

## 1.1 SEARCH ISSUE

Diversification can be understood and associated with multifunctionality, comprising the joining of several activities simultaneously performed by a single agent (Bezabih & Sarr, 2012). In addition, it is an indispensable tool for the survival and competitiveness of rural territories, guaranteeing biodiversity and generating growth based on new business

opportunities. Diversification, in fact, has been widely disseminated as a strategy by producers in developed or developing countries, not only aiming to reduce risks, but also seeking to increase family income (Che, Veeck, & Veeck, 2005; Bramley, & Kirsten, 2007; Vik & McElwee, 2011; Silva & Fernandes, 2014; Senger, Borges, & Machado, 2017).

In Brazil, rural families that own small properties tend to seek new alternatives to survive in the face of uncertainties, seeking to make their business viable. It should be noted that one of the biggest challenges of agricultural activity is the relationship with uncontrollable factors, such as the volatility of commodity prices, differences in productivity, the technology used, weather data and the cost of inputs (Nardelli & Macedo, 2011; Rochman & Salvado, 2014; Gasparin, 2018; Lima, 2018). These risks are aggravated for families that depend only on one activity, as such events further compromise the family income, and may even lead to the sale of the property and migration to the city, if it is not possible to reverse the damage caused by frustrations that may come to occur.

For growth to occur in regions with a predominance of small properties, it is essential that they stop being labeled as inefficient and unproductive. It is necessary to change the conception that only agriculture, based on a large scale can generate economic development and supplying the market. For this, rural producers cannot leave aside the possibilities of diversification with potential that are not exclusively agricultural (Teixeira, 2011).

Therefore, one of the alternatives implemented by small rural producers, as a form of diversification and as an option for adding value to the raw material produced by small rural properties, is the family agroindustry. In addition to strengthening traditions, agribusinesses must be sustainable and must be associated with the viability and longevity of the business (Rocha, 2019). In this way, it tends to play an important role in creating jobs, improving income, and producing healthy foods through production processes with appropriate sanitary standards (Silva & Prezotto, 2007).

This research was carried out in the county of Medianeira, which is in the southern region of Brazil, in the extreme west of the state of Paraná. The county has an estimated population of 45,812 people, of which 4,427 live on rural properties (IBGE – Instituto Brasileiro de Geografia e Estatística, 2010). In the city, there are 13 family agro-industries registered with the municipal service and the rural producer fair. The family agribusinesses of Medianeira produce milk derivatives, sausages, jellies, pasta and snacks, cornmeal, hominy, among other products.

These family agro-industries present themselves as an alternative to traditional markets, also allowing the creation/exploitation of new niches, which leverages the possibility



of improvement in earnings and, consequently, in the living conditions of families (Wilkinson, 2002).

Family agro-industries are present in 17% of the total agricultural establishments in Brazil, expressing their importance as a strategy for diversifying livelihoods, especially considering the average contribution of the monetary income of the *Unidades de Produção Agrícolas Familiares* - UPF. In this way, Passini (2020) studied the influence of rural agroindustry on the degree of sustainability of UPF in the western region of Paraná, through the dimensions of natural, physical, financial, social, and human sustainability, in addition to raising the importance of this enterprise in the social and economic context. Foguesatto and Machado (2017) argue that the production of family agro-industries contributes to increasing farmers' income and decreasing rural exodus. Foguesatto (2016) analyzed the perceptions of risks and the strategies adopted to manage them by decision makers in family agro-industries. Gomes (2016) sought to understand the profile of the rural producer who seeks agribusiness as an alternative for diversification. In the context of sustainability, Rocha (2019) assesses the sustainable performance of agribusiness by triangulating information between producer, extensionist and the municipal service. Conterato and Strate (2019) and Besen, Plein, Bortolanza and Serafim (2021) analyze diversification strategies in rural properties that develop agro-industrial activity.

Other authors focus their studies on the diversification of rural livelihoods. Gautam and Andersen (2016) assess the role of income diversification for the development and quality of life of rural families. Faoro (2017) analyzed properties that diversify rural livelihoods through tourism combined with agriculture and agribusiness, seeking to analyze the strategic process of family properties. Analyzing the evolution of capital, Poletto (2019) observes the trend of diversification of income sources. Padilha (2009) argues that it is necessary to diversify the list of products and services that generate the livelihood of rural units, with this, he focused his study on the elaboration and application of an analysis structure that allowed observing the development of the livelihood diversification strategy in the rural properties. Assan (2014) investigated the impacts of diversification and the strategies applied by families in Ghana to generate income. Senadza (2014) analyzed the determinants that influence the choice of livelihood diversification portfolio and, finally, Ternoski and Perondi (2014) address diversification strategies linked to pluriactivity.

To build a sustainable business, it is necessary to be aware of the strategies that will be implemented (Faoro, 2017). Considering the rise of rural agro-industries in the region, it is necessary to study the diversification strategies used by them and the way in which they were

implemented. In this way, families at risk of leaving their properties or who are interested in adding value to their primary products can use this experience to stay in rural areas.

Considering the above aspects, this study discussed the way in which the process of implementing diversification strategies was developed in five rural properties belonging to the city of Medianeira-Paraná, which have a family agroindustry installed. The city is prominent in the production and processing of food in the region and has encouraged rural development.

Based on these aspects, raised so far, the following research question that guided this study is delimited: **how is the process of adoption and implementation of strategies for diversifying the livelihood of families in rural areas developed?**

## 1.2 OBJECTIVES

### 1. General

To analyze the process of implementing strategies to diversify the livelihood of families of small rural producers in the county of Medianeira-PR.

#### 1.2.1 Specific

- a) Identify the reasons why producers diversify their production activities.
- b) Map the capital resources available by rural properties used in the rural diversification strategy.
- c) Survey the contexts that interfere and modify access to capital in the choice of strategy.
- d) Present the results of rural diversification strategies applied by the surveyed rural properties.

## 1.3 JUSTIFICATION AND CONTRIBUTION OF THIS TECHNICAL PRODUCTION

The constant transformations of food systems direct a potential for family farming to endorse the production and recovery of food systems for the well-being of the population, but it will also depend on the ability of family farming itself to promote new strategies, capabilities, and alliances (Berdegue, 2019).

Rural space is complex, and its understanding goes beyond the primary agricultural production process. It is necessary to analyze the rural space to detect its diversity, as new functions have been consolidated and incorporated into the strategies of rural families (Elesbão, 2014).

The western region of the State of Paraná has been following this trend of development of small properties. The existence of agro-industries in the region is evidence to be noted; they can be understood by numerous variables, starting from public policies that can encourage their implementation and strengthening, the interest of rural landowners, the aptitude and initiative to produce something new and different or good production practices, to ensure products and agro-industries competitiveness and viability. According to a study carried out by Besen et al. (2021), until 2018, the West of Paraná concentrated 35 family agro-industries, with emphasis on the municipality of Medianeira, which had 15 enterprises. Thus, the relevance of the present study is observed, as it is essential to study the implementation and development of diversification strategies that can help rural families, ensuring their permanence in rural areas and developing adequate public policies.

Thus, what can be observed is that family agroindustry forms the basis of small farm agriculture business as an activity that integrates different production systems, conquers profitable spaces, and is increasingly involved with other sectors, such as traditional and rural tourism, eco-agro-tourism, and leisure (EMATER, 2018). This scenario has provided opportunities for small properties to combine primary agricultural activities with at least one other activity, to increase their income (Davis et al., 2007).

However, the rural property depends on the access to the set of capitals - natural, physical, human, social and financial - to build a portfolio of diversified activities (Ellis, 2000; Schneider, 2010), which are mediated by factors that determine the strategy to be adopted on the property.

Given this context, the research sought to analyze the livelihood diversification strategies employed in rural properties in the city of Medianeira. We chose properties with different sizes, so that we evaluated how properties in different contexts were able to implement strategies for diversifying activities and rural livelihood.

From this study, rural managers will have the opportunity to carry out an analysis of the strategies used in their agroindustry, providing an opportunity to reassess their business and exchange information. To technical assistance organizations, the study provides data that can contribute to the discussion of public policies focused on the difficulties and opportunities of these rural landowners, directing assistance to help the weaknesses found.

In empirical terms, the reasons that led rural properties to diversify their productive activities were identified, mapping the necessary capital to make the diversification strategy viable, through the discussion of contexts that interfere and modify access to them; in addition, it seeks to delimit the diversified activities that small properties are developing. Finally, it is essential to evaluate the *performance* of the portfolio of activities developed by these small producers.

#### 1.4 THESIS STRUCTURE

Faced with this problem, this study was divided into seven chapters: introduction, theoretical and practical reference, research methods and techniques, context of family agro-industries in Medianeira-PR, analysis and interpretation of results, contributions to practice and final considerations.

In chapter 1, the introduction addresses a brief concept about competitiveness, strategies, and family agro-industries. It also includes the problem situation characterized by the evaluation of performance and the importance of diversification strategies through family agro-industries. Thus, the justification and structure of the report conclude that chapter.

In the second chapter, theoretical and practical references are presented, addressing issues related to Brazilian agribusiness, diversification and competitiveness strategies in rural areas and family agro-industries.

Within Chapter 3, research methods and techniques are detailed with research design, procedures for data collection and analysis, as well as limitations of research methods and techniques.

In Chapter 4, family agro-industries are discussed, what are their objectives, portfolio of products produced, where they are inserted, the characterization of the workforce used and the management of this enterprise.

In the fifth chapter, the analysis and interpretation of results from the analysis of the strategies developed are presented. In the sixth chapter, the contributions to practice are highlighted and, finally, in the seventh chapter, the final considerations are presented.

## 2 THEORETICAL AND PRACTICAL REFERENCES

### 2.1 BRAZILIAN AGRIBUSINESS

Brazil's economic growth is strongly linked to agribusiness through the development of its production chain. With its geographic extension and dynamic climate, the country stands out at world levels as a major competitor in the food supply. According to the *Ministério da Agricultura Pecuária e Abastecimento*-MAPA, the government agency responsible for managing public policies to encourage agriculture and livestock, agribusiness generates opportunities for small, medium, and large rural producers at all stages of the production chain, including serving families. consumers (Smalci, Silva, Fernandes, & Quel, 2020)

Agribusiness can be considered as the sum of the operations of producing and distributing agricultural supplies, processing, and distributing agricultural products and items produced from them. Thus, the concept of agribusiness permeates agricultural and livestock properties and is linked to both the suppliers of these products and their entire distribution chain and their buyers, considering that certain items are produced using agricultural inputs (Rochaman & Salvado, 2014; Correa, Kliemann, & Denicol, 2016).

Brazil is a world prominence in agribusiness, which is one of the most important sectors for the economy, as it corresponds, in 2021, to a record growth, representing 27.40% of the national Gross Domestic Product (GDP). It is estimated that the sector's share in the total Brazilian GDP could reach 30% in 2022, as pointed out by the *Confederação da Agricultura e Pecuária do Brasil* (CNA, 2022).

Because it is a very large country and has a unique variety of cultures, Brazil has a natural propensity for the development of some agricultural crops when compared to other countries in the world (Rochman & Salvado, 201). Among the main Brazilian agricultural products, soy (beans) is the flagship of agriculture; in second place is beef cattle, followed by corn (grains), dairy cattle and sugarcane, according to data from the *Centro de Estudos Avançados em Economia Aplicada* (CEPEA, 2022).

Another important factor is the generation of jobs since the sector absorbs practically 1 out of every 3 Brazilian workers. According to data from the 2015 *Pesquisa Nacional por Amostra de Domicílio* (PAD), 32.3% of the total 94.4 million Brazilian workers were in agribusiness (CNA, 2020).

The management of this sector demands continuous development in all the agents of the chain, both in the operations of production and distribution of supplies and in the production within the agricultural units, in the processing and distribution of agricultural products and the items generated from them. In this way, the rural producer, seeking the success of his organization, must be constantly updating his way of managing the entire process of which he is part of (Kapp, Moro, & Securato, 2013).

To consolidate itself as an increasingly competitive and excluding market, agribusiness must create alternative forms of income and work that aim to guarantee the sustainability of properties. The diversification of the productive portfolio can be a strategy, since it can reduce the risks of having only a single source of income for the property (Esau & Deponi, 2020).

Thinking about the diversification of production in agribusiness contributes to discussing and proposing sustainable actions to small properties, both in terms of the form of production and the livelihood and consumption of rural producers. The sustainable management of practices in the field leads us to put into practice environmental education, a key element for the environmental development of the community (Sauvé, 2005).

### 2.1.1 Agroindustry Strategies and Competitiveness

Within agribusiness, the decisions are complex and can take a significant period between the moment they are taken and the moment when the results appear. In this way, rural managers can use analytical tools to assist in the management and planning of rural properties, with the objective of minimizing this information asymmetry (Rodriguez & Sadras, 2011).

Diversification strategies provide opportunities for producers to reduce adverse effects, such as drought, for example, evidenced in the study by Wan, Li, Wang, Liu, and Chen (2016), who noted that, when implementing diversification strategies, Chinese farmers increased the resistance and resilience to drought of their crops, making the food supply system more stable. Production diversification is not only a useful strategy for managing disaster risk and improving social well-being, but also provides a new perspective for analyzing system vulnerability, as well as contributing to the economic and environmental sustainability of where it is applied, the latter being one of the concerns of the agricultural sector today.

Thus, finding a path that is linked to the various dimensions of diversification is relevant for the building of new alternatives capable of generating an increase in income and enabling the survival of rural property in a competitive way in agribusiness (Padilha, 2009). From the moment in which practices are sought to improve the performance of an activity, a means of production or any organizational process, strategy emerges as a base element to resist competitive environments. Therefore, strategy is a game, in which the strategist analyzes opportunities, planning to achieve his goals, making coherent, unifying, and integrative decisions capable of defining priorities in the allocation of resources (Bragança, Mainardes, & Laurett, 2015).

Hitt et al. (2008) emphasize that the diversification strategy is used to leverage the value of a business, improving its performance, and expanding its horizons. The authors consider that an enterprise can use the diversification strategy to improve, develop and explore economies of scope among its businesses. This practice creates cost savings when it shares its resources and capabilities, transferring essential competences within the corporate environment.

To contextualize the understanding of the reasons that encourage rural properties to diversify, Chart 1 presents the theoretical perspective of the reasons that lead to planning diversification strategies. It is possible to understand that the main reasons that cause the enterprises to diversify are efficiency, increase profits in a more stable way and reduce risks.

Chart 1 - Main theoretical streams and reasons for diversification

| <b>Theoretical Perspective</b>  | <b>Reasons for diversification</b>  | <b>Main theoretical currents</b>                                     |
|---------------------------------|---|--|
| Traditional management strategy | Firms diversify in a related way to create efficiency and direct synergy. The potential of these synergies includes:<br>- scale economy;<br>- scope economy;<br>Firms diversify to reduce risk and increase earnings stability. | Hoskisson e Hitt (1990);<br>Grant (1991);<br>Urdan e Rezende (2004); |
| Capital structure               | Diversified firms increase size and reduce the risk of bankruptcy, accessing the capital market and reducing the cost of financing.   | Berger e Ofeek (1995);<br>Kochhar e Hitt (1998);                     |

|                           |   |  |
|---------------------------|---|--|
| Agency theory             | Managers look for diversification strategies to reduce the risk of their jobs and increase the profits of the business.   | Berger e Ofeek (1995);<br>Hitt Ireland e Hoskisson (2002); |
| Resource-Based View – RBV | Firms with highly connected businesses lead to high performance, as they carry technological, marketing, or specialized management skills that will contribute to leveraging competitive advantage. | Peteraf (1993);<br>Robins e Wiersema (1995);               |

Source: Grzebielukas, Marcon, Mello & Alberton (2007, p.45).

Schneider (2009), when making a debate between the specialization and insertion of agribusiness, diversification, and rural development, considered that the second option brings positive reflexes for the development of small properties. Considering this shift in the approach of traditional variables such as productive capacity, geography, and entrepreneurial culture, understanding the factors that led the producer to decide to diversify and succeed in this task, it is possible to strengthen policies and strategies for the development of smallfamily properties and establish a new perception of agriculture in the region.

## 2.2 RURAL DIVERSIFICATION

Agricultural diversification is considered a mitigation strategy to prevent, reduce or eliminate the occurrence of negative impacts on production. Evidence indicates that production diversification helps to reduce poverty rates (Michler & Josephson, 2017), in adapting to climate change (Rodriguez et al., 2011, Osaki 2012, Kay, Edwards and Duffy, 2014, Chaddad, 2014; Bonilla, Braga, & Braga, 2020) and contributes to improving the food security of farmers (Waha et al., 2018; Adjimoti & Kwadzo, 2018).

The main objective that permeates diversification is to reduce cash flow variability due to price variation when participating in more than one market. For this, it is essential that the products have negative yield and price correlations, that is, the more the markets for each item produced move in opposite directions, the lower the risk to which the rural property will be exposed (Kay et al., 2014; Rădulescu, Rădulescu, & Zbăganu, 2014).

Lima (2018), in his study, also points out that, for fear of making mistakes, many producers concentrate their production in a single model, in this way, he sought to analyze income optimization and risk reduction, using combinations of diversification of activities to assist the management of rural property. The author concluded that, when the producerchooses to make a second crop, it helps to mitigate the risks of the property, showing that crop



diversification is the best way to manage risk, for the use of the largest number of activities results in better risk-return ratios.

This diversification process can happen in different ways and following different strategies. Diversification analysis allows producers to develop two or more agricultural activities on the same property and to complement their income. The reason for choosing the best diversification strategy is associated with efficiency gains and risk reduction (Maye, Ilbery, & Watts, 2009; Bonilla et al., 2020). When the more conservative and risk-averse producer perceives that income variability is greater in one activity than in another, he tends to allocate less time to the higher-risk one (Arslan et al., 2018).

In this sense, it is necessary to find a way to improve new alternatives, aiming to generate an increase in the income of rural producers, which is beneficial and important, as it provides the producer with the possibility of remaining acting in a context of increased agribusiness competitiveness. It is essential that producers diversify their activities, developing others that are unrelated to the current ones, in order to achieve financial security, stability in revenue measurement, reduction of the impact of seasonality, soil and water quality, among other reasons ( Padilla, 2009).

The way in which the producer uses the resources he has and preserves his land will have an impact on food production over the years. An ecological and fair management of these resources is necessary to ensure the food of the world population (Cazella, Bonnal, & Maluf, 2009). To continue generating wealth and making the property prosper, the producer has several forms of incentive, giving him the opportunity to produce more with more quality. However, it is observed that the diversification and professionalization of production are still little explored by the properties, since only a minority has access to some type of governmental incentive for the improvement, management, and cultivation of the products, which among them the aimed at horticulture, is mostly produced by small properties. However, if these producers had access, they could supply the region's demand to increase its profit and return (Bieger, Seibert, & Zan, 2012).

The economic and financial activity inherent to diversification is carried out not only in the context of the globalization of the world economy linked to the interpretation of capital and technology, but also, in times of crisis, as a preventive strategy tool. The effectiveness of diversification, according to Ilnitsky and Chikurova (2015), depends on timely guidance on the types of goods and services that have strong demand or are close to competitive levels. Furthermore, diversification can be the key to a significant decrease in dependence on agriculture and the development of new economic activities, thus creating new investments

and businesses; this contributes to the generation of income and employment, increasing the production of high added value, as well as improving the quality of human capital and finally helping to boost rural development (Maye et al., 2009).

This scenario has led producers to be pressured to adopt different strategies to expand and maintain competitive advantages in an environment permeated by uncertainty factors (Padilha, 2009). In this way, developing countries began to use diversification to react to unexpected events (Yéo, Goula, Diekkruger, & Afouda, 2016).

Within the European Union, diversification and rural development policy are based on the “axis approach”. This approach points to three alternative development paths for exploration. The first axis is related to competitiveness, it includes measures to enhance the knowledge and human capital of rural producers and the modernization of agricultural holdings. The second axis mentions the quality of the environment, which includes support for unfavorable areas. Finally, axis three is focused on quality of life and diversification, seeking to support the development of agrotourism activities, agro-industries and micro-enterprises related to the agricultural sector, as well as services provision to the community. The authors argue that “mixed” strategies should be prospected, which combine measures belonging to different axes, thus providing better results (Dries, Pascucci, & Gardebroek, 2012).

In Italy, Dries, Pascucci and Gardebroek (2012) sought to analyze the interconnection between the diversification strategies of Italian rural families and argue that diversification can be seen as a response by producers to adverse socioeconomic conditions that interfere with their ability to provide sufficient income to the farming family. External stimuli, such as a depressed economy or an insecure sociocultural context, were identified as key factors to explain the farmers' strategies.

The rural producer also has the option of diversifying the property without the new activity being linked to agribusiness. In these cases, he may choose to invest in stocks and bonds, invest in other areas, have a job not linked to agricultural activity in the off-season, that is, any activity outside his property that can contribute to the generation of resources (Kay et al., 2014).

Another option for diversification is to carry out the cultivation of agricultural activities in geographically distant locations, which helps to reduce risks. In this spatial diversification model, the aim is to reduce the climate risks of activities that have a positive correlation in the same location (Rădulescu et al., 2014).

Diversifying the period of sale of production is also a proposal of diversification, in which it is chosen to distribute, in a temporal way, the products; the producer staggers production and protects himself from market price variability by selling production at different times of the crop year. Olson (2010) also points out that this diversification strategy cushions financial risks, as it provides revenues distributed throughout the year.

In the context of the diversity of productive activities of family agriculture, the industrialization of agricultural products also stands out, seeking to add value to the raw material and the preservation of the property as a maintenance strategy in family agriculture, beyond the economic aspect, but as a way of reproducing a more complex and social vision. Within the social context, the activity can contribute to the construction of markets, social networks, and alternatives for the diversification of livelihoods (Wilkinson, 2002; Gazolla, 2012).

Diversification is a strategy to reduce the degree of external dependence on the production process, allowing farmers to have more efficient control and autonomy in their reproduction and development process (Ploeg, 2006). Producers understand that there are different trajectories of diversification, resulting from different strategies of social reproduction, chosen by each family, considering their trajectory (Passini, 2020).

### 2.3 STRATEGY FOR DIVERSIFICATION OF LIFESTYLES

At the end of the 1990s and beginning of the 2000s, studies showed a transformation of the Brazilian rural environment, becoming a multifunctional space of varied activities and based on social relations between different agents, diffused in a scenario of opening of new challenges and possibilities for its development. In view of this new context, an assessment was needed that went beyond the sustainability of the properties; from the point of view of agricultural production, it was necessary to broaden concepts and analyze the diversity of agriculture supported by different forms of income generation, technologies and markets (Abramovay, 2003; Carneiro & Maluf, 2003; Schneider, 2009; Karnopp, 2013).

Rural families began to seek to diversify their income through activities providing services related to rural housing, leisure, industrialization, etc. This diversity of activities, resulting from the efforts of rural producers to increase their profitability, is explained by Silva, Del Grossi and Campanhola (2002) as the search for new opportunities that value non- tangible goods, hitherto ignored.

This diversification strategy, linked to pluriactivity, is a phenomenon capable of providing the families of the families with the exercise of other activities, while still maintaining a connection with the rural space and various members of their livelihoods. Within the economic sphere, this strategy diversifies income, allowing for greater stability in cash flow, which also occurs in the environmental sphere, when smaller-scale and less aggressive processes operate (Perondi, 2007; Perondi & Schneider, 2012).

When evaluating the process of commodification in the Southwest region of Paraná, Perondi (2007) states that rural producers were strongly affected by strategic currents, which encouraged them to seek diversification. Starting from a framework, the author evaluates six generic possibilities, among them, specialization, endogenous diversification of commodities, endogenous diversification with rural industry, pluriactivity, social assistance and migration. In the sample composed of 100 family properties, eleven different trajectories were found that could be developed: 1) productive specialization; 2) endogenous diversification of commodities; 3) endogenous diversification with rural industry; 4) pluriactive + specialist; 5) pluriactive + endogenous diversification of commodities; 6) pluriactive + endogenous diversification with rural industry; 7) social assistance + specialist; 8) social assistance + endogenous diversification of commodities; 9) social assistance + endogenous diversification with rural industry; 10) social assistance; and 11) migration.

According to Elis (2000), diversification of livelihood and sustenance is defined as a process in which a family group builds an increasing diversification of the portfolio of activities and assets to survive and achieve a better standard of living. Diversifying livelihoods contributes to financial security and stability, reducing seasonality impacts.

Another relevant aspect, pointed out by Ellis (2000), is related to the state of vulnerability in which rural properties may find themselves if they exclusively perform a single activity. Therefore, developing new livelihood options, which are unrelated to current ones, can provide positive impacts for properties, contributing to their development. However, it is important to emphasize that diversifying strategies does not necessarily mean diversifying sources of income, however, it is an attempt to strengthen autonomy in terms of sustainability. (Conterato, 2008).

Efficiently diversifying is also related to the sustainability of activities in which rural families dedicate their skills, abilities, and physical resources to generate income or improve the quality and standard of living. In this context, families that do not develop such aspects become more vulnerable. On the other hand, families that develop such skills are considered

resistant, due to the ability to deal with future tensions (Assan, 2014; Bené, Frankenberger, & Nelson, 2015).

Diversification, in the view of Ellis (2000), gives real stability to production systems and provides autonomy to rural producers, especially in uncertain scenarios, by building opportunities. Having a range of opportunities tends to increase the robustness of the property, protecting against instabilities arising from losses or undesirable and unforeseen factors, or even stabilizing the variability and seasonality system over a period, which generates more stable business.

The analysis of the diversification of livelihoods implies what Ploeg (2008) determined as the constant struggle to strengthen the available resource base on the part of rural landowners and their ability to constantly fight for their autonomy and freedom. The author believes that farmers who innovate and react to deprivations and adversities create “spaces for maneuver” that help management.

In a situation of diversification, Ploeg (2008) argues that properties can opt for at least five management and resource conversion mechanisms. The first implies expanding the portfolio of products and results, reproducing diversified environments capable of reducing costs and reducing dependence on external inputs, reaching the second level. At a third level, diversified conversion provides agroecological or organic practices. Within the fourth level, properties can combine different types of occupations and access to rents, through pluriactivity. Finally, at the last level, the best-founded properties can increase their autonomy through individual or cooperative ventures, in such a way that they can expand their value production and aggregate wealth generation. Figure 1 briefly shows the scheme of this diversified conversion.

Figure 1. Diversified Conversion



Source: Made by the author (2022) based on Ploeg (2008).

Ellis (2000) indicates that the process of weakening farmers and their families obeys aspects of risks that form the so-called “hostile environment”, in which these agents need to mobilize their resources and skills (capital) to build strategies and alternatives that allow them to resist or adapt, according to the characteristics and intensity of the situation.

Ferreira (2013), in his study, argues that, based on detailed analyzes of the social processes and meanings of this new rural environment, farmers are valuing the opportunities available in their rural spaces and putting into practice diversification strategies on their properties. The author highlights the relevance of the rural scenario when the family can seek development for its activity.

This broader view of the rural family is essential for the development of the property's economy, since, according to Perondi (2007), small rural properties are responsible for a large part of the world's food production and have faced constant challenges to achieve greater profitability. and sustainability, which has compromised the continuity of the activities of these small producers.

To reduce exposure to these risks, producers need to seek to expand their income portfolio, being challenged to find new alternatives and this is only possible if they have access to physical, natural, human, social and financial capital (Ellis, 1998; Reardon & Berdegué, 2006; Padilha, 2009; Padilha & Hoff, 2011; Senadza, 2014; Faoro, 2017).

In a globalized view, rural diversification has been widely adopted by developed and developing countries, aiming not only to reduce production risks, but also to increase agribusiness income generation (Barbieri & Mahoney, 2009). Diversification in the United

States is advocated as an alternative against fluctuations in productivity (Che et al., 2005; Bramley & Kirsten, 2007). European countries also advocate diversification and do so through the production of their main agricultural activity, that is, rural diversification is used as an important business strategy tool for small and medium-sized farmers (Vik & McElwee, 2011).

Wan et al. (2016), when discussing diversification in drought-stricken areas in China, point out that this livelihood and income diversification strategy is not only a useful strategy in terms of risk management and improvement of social well-being, but also a tool that can offer a new perspective on the vulnerability, resilience, and adaptive capacity of the rural social ecosystem.

Education is also an important strategy for rural families; Rahman and Akter (2014), when carrying out their study with Bangladeshi families, pointed out that investment in education is an alternative income in rural areas, as it promotes opportunities that go beyond those offered by rural properties. Studies carried out in Ghana also share this strategy, which is seen as key to complementing non-agricultural incomes (Senadza, 2014). In this sense, encouraging the ability to diversify makes the rural property adopt a non-agricultural activity as a strategy to expand its income portfolio (Hoang, Pham & Ulubasoglu, 2014).

Encouraging the improvement of knowledge is an important tool for the development of new ideas and practices. Corral and Reardon (2001), when analyzing the rural environment in Nicaragua, considered that families that have more intellectual and technical knowledge tend to perform autonomous work within their property, which attributes to the rural livelihood diversification strategy through the application of knowledge in daily practice which, consequently, expands the family's income base.

Based on these assumptions, Ellis (2000) developed an analysis framework capable of directing micro-policies to reduce rural poverty, as well as to assess the local impact of macro-policies. This structure combines the natural resource base in the face of human interference.

### 2.3.1 The rural livelihood strategy framework

According to Ellis (2000), the five categories of assets that make up the livelihood platform of rural properties can direct their strategies and provide property diversification. The livelihood platform consists of five assets, which are:

- a) **Natural Capital:** covers natural resources, including land, water and biological resources that are used by people to create the means of survival. This capital is related to the environmental resources available in a property, which can be separated into renewable and non-renewable. Natural capital is depleted according to the extraction rate of the individuals who use it (Ellis, 2000).
- b) **Physical Capital:** this asset is created through economic production processes, which are: buildings, irrigation canals, roads, tools, machines, among others. Physical capital is defined as a production good present on the property. Ellis (2000) argues that technological advances have allowed the substitution of natural resources for physical resources and contributed to the reduction of pressure on natural resources. Structural assets facilitate the diversification of livelihoods and provide better working conditions.
- c) **Human Capital:** is related to the work available for the development of livelihoods, including education, health, and skills. The development of this asset takes place based on the incentive to education and training, as well as through the skills that are acquired by the very activity that develops within the property (Ellis,2000).
- d) **Financial Capital and its Substitutes:** this asset corresponds to the monetary amount to which the family unit has access. This reserve includes amounts from savings from other periods, as well as access to credit in the form of financing. The fundamental attribute of this type of asset, in the form of money, is its fungibility, that is, the ease with which it can be applied in different forms of use (Ellis, 2000).
- e) **Capital Stock:** This asset tries to capture the effects of the individual or family unit's relationships with the community in which it is inserted and its access to livelihoods. The livelihood strategies are composed of activities capable of creating the means of survival of individuals and family units, being divided into activities based on natural resources and activities based on non-natural resources. Social capital includes social resources and assets (Ellis, 2000; Niehof, 2004).

Access to the livelihood platform, called available capital, is mediated by two factors classified as endogenous and exogenous. Ellis (2000) classifies endogenous factors as:

- a) **Social relations:** are related to the positioning of the rural family and its ownership within the society. It comprises factors such as gender relations, class, age, religion, ethnicity, beliefs, and their respective interactions. These social



relationships develop the family unit and facilitate access to the livelihood platform, transforming it into a livelihood strategy.

- b) **Institutions:** refer to formal rules, conventions and informal codes of conduct that generate limits to human interactions, also known as regularizing patterns of structured behavior within society.
- c) **Organizations:** are formed by groups of individuals who form with the same purpose and aim to achieve certain goals. We can mention non-governmental organizations, associations, private companies, government agencies and the administrative institutions of local governments.

However, endogenous factors can be modified depending on the context in which they occur, that is, when there is a change in the livelihood platform, strategies can also change. In this context, activities can be included or excluded, or even combined with other activities linked to rural areas.

The second group of factors, the exogenous, can modify access to capital, being represented by **trends or shocks**. Trends refer to elements such as population, technological changes, migration, relative prices, and macroeconomic policies. In contrast, external shocks are related to pests, droughts, diseases, civil wars, and floods. Both factors cannot be controlled by individuals and have consequences for the viability of the family unit support (Ellis, 2000).

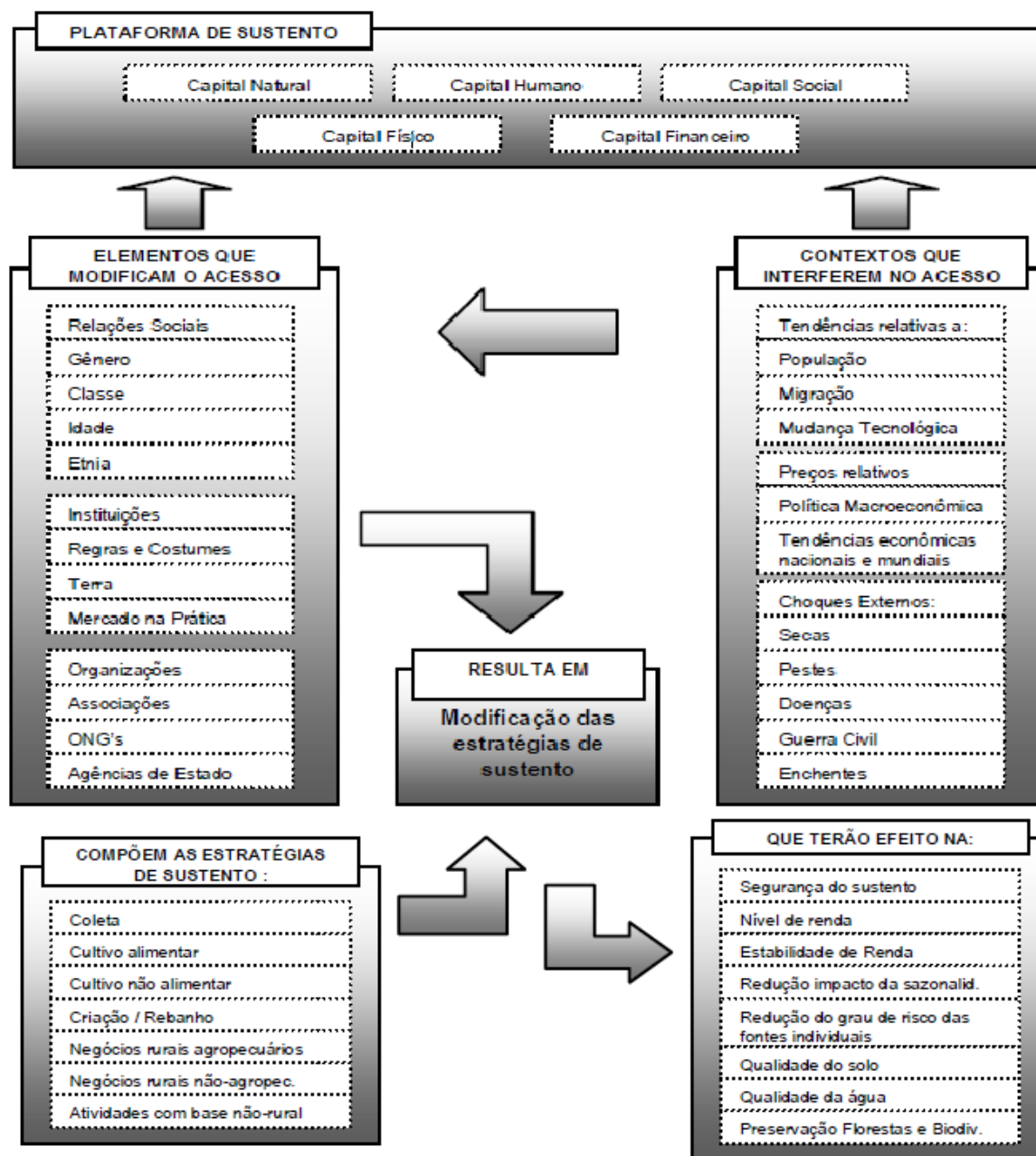
Also, in the discussion of exogenous factors, the interrelationship between assets, mediation of processes and livelihood activities are methods that change over time, as these changes, concerns and pressures occur, resulting in new emergency options influenced by trends and events, which vary in their degree of exogeneity in relation to local circumstances. Ellis (2000) argues that the set of assets available to the individual or family unit, together with social factors and exogenous trends, results in the adoption and adaptation of elements of the strategy.

Changes in rural livelihood diversification strategies may affect the family unit or rural producer in terms of security, income stability, reduction of the impact of seasonality of productive activities on family income, for example. In the environmental sphere, effects on water quality, soil, forests, and their biodiversity can be perceived. It is noteworthy that the choices of strategies that will be applied can have negative or positive effects on the rural family, depending on the strategy that will be chosen.

Based on these considerations from the studies by Ellis (1998, 2000), Padilha and Hoff (2011) developed a framework for the evaluation of policies and initiatives for the development of rural livelihood strategies (Figure 2). The framework contributes, in a decisive way, to consolidate the “diversification of livelihoods” as a new analysis tool. It suggests that the analysis of livelihoods starts from the access and use of the livelihood platform, which corresponds to the goods available to rural properties, also called resources or capital, which can be modified by a set of factors that are called external shocks.

The scheme also demonstrates that the modification of access to the livelihood platform will lead to changes in livelihood strategies, which may include, exclude, or diversify both activities linked to rural property and activities that are not linked to the rural environment, but generate income. In addition, changes in strategies will impact both specific aspects of the family unit and environmental issues.

Figure 2. Rural livelihood strategy framework



Source: Made by Padilha (2009), based on Ellis (2000).

It is pertinent to emphasize that diversification is a heterogeneous social and economic process, which opens a range of pressures and possibilities within the rural economy (Ellis, 2000). The importance of local contexts and the direction of policies for circumstances in these spaces are highlighted. Discussions on the subject serve as guidance in designing micro-policies for poverty reduction in rural areas and in assessing the impact of macro-policies, which refer to interventions that affect livelihood options and strategies at sectoral and local levels.

The framework, developed by Ellis (2000), was applied to a series of studies carried out in countries such as Tanzania, Uganda, and Malawi, analyzing the issue of rural livelihoods related to diversification in the promotion of a particular sector (Ellis & Mdoe, 2003; Ade Freeman, Ellis, & Alisson, 2004), focusing on the determination of public policies that can contribute to the development and generation of income in rural areas. In Brazil, some studies use this knowledge base to analyze the rural environment and the strategies applied to contain poverty, migration, and seasonality in rural areas (Padilha, 2009; Faoro, 2017).

The understanding of the theoretical discussions, which contributed to the development of the framework, can cooperate with the approximation of this contribution to other possibilities of use, in this case, the strategy of diversification in small rural properties. However, it seeks to explain the usefulness and function of diversity to encompass and operationalize the livelihoods approach, stressing the ability to diversify livelihoods, a factor that creates diversity in social and economic processes and pressures families to diversify their means of survival, as well as their location (Ellis, 2000).

In this way, the framework contributes to the understanding of a different view of the diversification strategy, that is, there are other ways of approaching diversification that are not restricted to competitiveness factors, which contributed to the objective of this study in terms of investigation of livelihood diversification strategies in small rural agribusiness properties, specifically in the study of properties that develop family agroindustry.

## 2.4 FAMILY AGROINDUSTRY

The *Ministério do Desenvolvimento Agrário* points out, in its estimates, that, in 2008, there were approximately 35 thousand agro-industrial enterprises that benefited and/or transformed some type of raw material. In Brazil, the representation of agro-industrial activities in rural areas is expressive. They are seen as an alternative for diversification and aggregation of value to the raw material, capable of strengthening the relationship with the colonial product, providing the integration of rural family members, and playing an important role in the social context (Perondi, 2007; Gazolla, 2012; Matei, 2015).

Family agro-industries can be classified as formal and informal organizations in which the management and decision-making of such activities involves the family context, which assume and play different roles as agents that make up a complex production system. In this

way, individuals can be involved in processes that range from primary production to the commercialization stage (Matei, 2015).

Pelegri and Gazolla (2008) conceptualize the family agroindustry as an activity in which the transformation of agricultural products is carried out, and these activities build the history of those involved in the process. These activities, according to the authors, result in the appreciation of the local rural environment, through folklore, gastronomy, and tourism. In addition, these organizations reproduce themselves based on three principles: i) economy focused on small-scale processing of primary products; ii) decentralized agro-industrialization model, that is, such enterprises are scattered in different locations; iii) the development of these activities provide, in addition to the formal aspects of production and marketing, cultural, social, and ecological features.

The industrialization of primary production on family farms arises from the knowledge and needs of producers to feed themselves and conserve their products, from the use of surpluses, and when there is an unfavorable price scenario for a given production. Thus, the rural producer recognizes the agro-industrial activity as a way of adding value to the production and the diversification of the supply chains, as a determinant that adds in the productive processes. It is not the solution to all the problems faced by rural properties, but it is an alternative that contributes to an increase in family income, generates jobs and occupations for the rural population, helping to break migratory flows. It provides the construction of a set of economic, social, and cultural factors that interact with the decision-making process on the part of rural families (Mior, 2005; Pelegri & Gazolla, 2008).

The family agroindustry is a strategy to promote the development of this category, through the transformation of raw material into typical or differentiated products, which allow the insertion of these farmers in the market and make their ventures viable from products with added value (Zerbato, 2013; Kasmin, Passini, & Boico, 2019).

Vieira (2012) and Rinaldo (2014), when visiting agro-industrial establishments, found that producers have sought this alternative of diversification as a way to add income to the family and to protect themselves from unfavorable price conditions of the agricultural production; thus, with more income and employment, they can, through this activity, add between 100% and 150% of the value of the raw product, thus providing more reasons to opt for the activity.

Such an option of diversification in family farming is seen as an alternative rural development strategy, a product of actions and daily practices of the families themselves to provide solutions to problems they experience (Gazolla & Pelegri, 2010).

According to Matei and Silva (2016), small family agribusinesses have different characteristics from a medium or large company in the sector; its activity is based on diversification, multifunctionality and the verticalization of the production processes of the property, in the search of cost reduction, in the development of strategies to remain in the market, guaranteeing the reproduction of its family structure.

Wenz (2010), when studying the heterogeneity of agro-industries, traces the profile of two groups of agro-industries. In the first, there are the agro-industries that establish themselves as supplementary income, with the characteristic of operating informally or, at most, meeting municipal requirements; they are responsible for the elaboration of more artisanal products and sales are carried out within the local market, using social relationships, and bringing consumers closer to the products. On the other hand, the second is composed of agro-industries that make up the main activity and income of the property; they operate according to the legislation, so that the standardization of the product and its commercialization go beyond the region in which they are inserted.

The implementation of small and medium-sized agribusiness depends on the support of federal, state, and municipal programs, which integrate a range of actions and public services, such as assistance and technical training related to the entire production chain, social organization, and management of the rural enterprise (Prezotto, 2002).

Besen et al. (2021) considered, in their study, that the demand for natural products on the rise allows horizons of great potential, but, for this end, the planning and appropriation of techniques and procedures cannot be disregarded by agribusinesses. For this, it is necessary to seek strategies, invest in training and form alliances to assume an innovative role in family production processes.

Bitencourt et al. (2021) discussed the characteristics of family agribusinesses of meat products. From this discussion, the authors found latent problems with small agribusinesses, such as the lack of economies of scale, the availability of capital, raw materials, and the standardization of products. But, on the other hand, there are countless opportunities for this follow-up, with the help of government credit programs and support for the possibility of producing food with added value.

Factors such as these provide opportunities for families to remain in the countryside with quality of life. Savoldi (2010) pointed out, in his study, that small rural agribusinesses are one of the alternatives for reversing unfavorable social consequences in rural areas. In this context, there is, in this space, not only agricultural activities, but pluriactivity, which drives small industry, promoting social and economic inclusion.

These factors provide the longevity of properties; Thus, Quadros (2012) analyzed the participation of young people in the countryside, involved with family succession, in all activities carried out in the agro-industries, from the production of raw materials to the commercialization of products and administration of the enterprise. The work carried out in south coast of Santa Catarina showed that the permanence of young people and subsequent family succession depends on the intensity of their participation in the activities that agribusinesses develop and on conditioning factors, such as motivation, satisfaction, autonomy, affinity, and remuneration for the service provided.

It is important to emphasize that family agro-industries have a significant role in the perspective of sustainable development with the preservation of natural resources, in which the amount of waste generated is much lower than that carried out by large industries in the sector. Most agro-industries absorb the waste produced in their production process and transform it into other derivatives, such as fertilizer and animal feed. Therefore, investment in public policies in this sector is an alternative capable of preserving the environment (Wesnz & Trentin, 2005).

For these agro-industries to continue growing and generating income, some public policies have been developed. Since 1996 the government decided to collaborate with rural family development and launched the *Programa Nacional de Fortalecimento da Agricultura Familiar* – PRONAF, created to promote production development. With the creation of PRONAF, the State recognizes the legitimacy of family farming and invests with the objective of reducing poverty, social and economic inequality, in addition to food insecurity (Matei, 2015). Later, the PRONAF agro-industrial line was created, which financed rural agro-industries. Investment possibilities range from beneficiation, storage, and processing to the commercialization of rural property products, both agricultural and non-agricultural (Alves, 2014; Bianchini, 2015). This aid contributes to the planning of agro-industries, providing opportunities for the development of growth strategies and the competitiveness of family agro-industry, through the availability of credit with differentiated interest rates.

The aggregation of value by agro-industries is an important rural development strategy, as the control of the main links in the production chain is under the direction of the farmers. Corroborating this statement, Lima and Cunha (2011) highlight the importance of adding value to family production through agroindustry, as an alternative to keeping the family in the countryside and generating opportunities to increase the income of the property; thus, it is evident that this process generates work and income and incorporates family labor.

The agro-industrial activity is also part of the history and culture of family farmers, as it emerges from the practice based on their historical knowledge, improving their ways of doing and producing. The search for healthy foods related to cultural aspects, as well as contact with nature, gives visibility to products with differentiated quality attributes, creating new market opportunities, mostly accessible to small family producers. This makes possible to create networks that expand the possibilities of learning and access to inputs and information (Molina et al., 2014; Santos, 2018; Conterato & Strate, 2019).

## 2.5 RELATED STUDIES

We sought to analyze, through Brazilian scientific production, the theme of rural diversification and the development of agro-industries as a form of diversification. A systematic review of theses, dissertations and articles was carried out, with a survey realized by the *Biblioteca Digital Brasileira de Teses e Dissertações* - BDTD, in the catalog of theses and dissertations of the *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* - CAPES and on the catalog of Web of Science and Scopus. The time of the search took place from 2009 to 2021, contemplating the most recent production on the subject. The words used for the search were: rural diversification; diversification of livelihoods; family agroindustry; family agroindustry and diversification strategies. This survey was conducted from July 2021 to March 2022.

Bibliographic research was used to identify studies carried out on rural diversification and family agro-industries. Among theses and dissertations, a total of 10,035 works were presented. After this selection, new filters were applied, in which family agriculture, family agroindustry, income and livelihood diversification and rural development were searched. Finally, works published by journals in the areas of administration, accounting and economics were selected; applied all filters, 14 works were selected.

The survey of scientific publications and dissertations, which involve the themes already mentioned, evidenced the lack of studies that involve these subjects jointly. However, the approach of these themes, in an isolated way, also brings contributions to the formation of lines of research still little explored by the scientific environment, thus providing that subjects and relationships capable of adding knowledge and information to the rural producer can be addressed.



### 2.5.1 Rural Diversification and Diversification Strategies

Padilha (2009), in his thesis, sought to observe the development of the livelihood diversification strategy in rural properties, which diversify through rural tourism. The results identified that the motivation for applying the diversification strategy is based on income generation and permanence in the property; Another point observed is that, when the producer adds his previous knowledge to the assimilated knowledge and applies it to the new business, new products and services are created. Finally, the performance of the diversification strategy closes the analysis by showing that access to natural, human, social, physical, and financial capital is an essential condition for the success of rural tourism, in addition to the fact that knowledge develops and improves the diversified business, and the diversification strategy can provide sustenance, in addition to keeping families on their properties.

Assan (2014) investigated the nature and extent of impacts of livelihood diversification in Ghana, households' strategies for wealth accumulation, survival, and resilience to impoverishment. The author concluded that the overall impact of diversification and formal intervention strategies to alleviate poverty in the smallholder economy is limited and unsustainable, with survival being the most likely outcome of diversification.

In the context of income strategies adopted by rural families, Senadza (2014) examined and analyzed the determinants of family income portfolio choice; the results indicate that the characteristics of households, location and infrastructure play a relevant role in the adoption of the property income strategy. Education is a key determinant in the adoption of the income strategy, because through it, new alternatives are created, which go beyond the property; this rise to information implies access to credit and the means of production.

Ternoski and Perondi (2014) addressed diversification strategies related to pluriactivity and identified that diversification of livelihoods expresses pluriactivity, allowing properties to have higher income levels. In this way, the farmer with a more diversified source of income presents a lower vulnerability and a greater total and agricultural income.

Livelihood diversification is also seen as a commonly applied strategy to deal with economic and environmental shocks. In Nepal, Gautam, and Andersen (2016) assessed the role of livelihood diversification on household economic well-being. Through semi-structured interviews, 15 indicators were incorporated that measured the effect of diversification on the well-being of rural families. The authors concluded that the family member's ability to

diversify into a high-return sector depends on the antecedent level of resources and tangible and intangible assets. They also highlight the need for interventions to help reduce rural poverty, generating targeted opportunities for the most disadvantaged.

Through the application of a *framework*, Faoro (2017) evaluated the difficulties faced by rural producers with their small properties in the face of external shocks, economic trends, and the evolution of capital: human, physical, financial, social, and natural. When identifying the reasons that led to the diversification of activities on the properties, the author noted that tourism in rural areas has shown itself to be a new source of income and opportunities, allowing producers to remain in the countryside, with tourism being a viable alternative of diversification. However, it points out that migration and bureaucratic legislation are the main factors that interfere with access to capital in the diversification process.

Poletto (2019), in his study on family farming and its development in Southwest Paraná, argues that agriculture faces a growing process of modernization and technical and financial integration. To analyze this process, he sought to follow the modernization trajectory of a group of farmers, analyzing the evolution of capital: human, physical, financial, social, and natural. A trend towards diversification of income sources can be observed, especially non-agricultural ones; In addition, most families modernized their properties using rural credit operations. As for productive strategies, families have diversified their production and specialized their activities. Regarding the vulnerability of agricultural income, health problems are the reason some families gave up on their activities. Finally, on the issue of succession, the author emphasizes that non-agricultural income opportunities allow young people to stay in the countryside.

### 2.5.2 Family Agroindustry

For family ownership to achieve consolidation, it is important for the producer to create autonomous marketing channels for their products. Gomes (2016) sought to understand the profile of the family farmer who consolidates his agroindustry, he analyzed the role of actors and motivational factors in the process of agroindustry development and how producers build their marketing channels. The author found that interactions with different actors - social/governmental/non-governmental local and/or geographically distant - makes it possible to exchange different resources, both material and immaterial, consolidating strategies that

provide greater autonomy in the development of the activity and in the construction of more autonomous commercialization channels.

Foguesatto (2016), when evaluating family agro-industries and the perceptions of risks and strategies adopted, emphasizes that the risk considered most relevant are related to the country's economic situation, inflation/deflation, and the variation in the price of the product produced. Among the management strategies that must be applied, information on new technologies, use of technical assistance information and care with the balance of adequate liquidity are key points for the growth of agribusinesses.

According to Foguesatto and Machado (2017), in Rio Grande do Sul, the main reason for the implementation of agribusinesses as a diversification strategy was the search for expanding the income of families. This proposal has made it possible for the family to have the economic viability to remain in the countryside, adding value to the raw material, which prevents their migration to the city.

Within the economic, social, and environmental spheres, Rocha (2019) evaluated the sustainable performance of family agro-industries in Cascavel, in terms of producer, extensionist of the *Instituto de Desenvolvimento Rural - IDR*, and of the inspector of the *Serviço de Inspeção Municipal - SIM*. Among the results analyzed, it can be considered that family agro-industries still need many adjustments to become fully sustainable in the environmental, economic, and social dimensions.

When researching a family agro-industrial productive arrangement, Conterato and Strate (2019) observed that public policies to promote implementation and reinforcement to this type of business, are strategies that can further support and strengthen family farming, encourage the construction and access to new market niches, the creation and development of new products, diversifying production activities, in addition to encouraging family succession and generating income. This greater autonomy of producers facing the market constitutes a social innovation, a strategy for rural development in small properties

Household products have used the diversification of their livelihoods as a survival strategy transforming agricultural production in the family unit into achievements in agricultural agro-industries, which have a great capacity for value action. In this way, Passini (2020) evaluated the degree of sustainability of family farms in western Paraná, through the dimensions of natural, physical, financial, social, and human sustainability. The research showed that there is a positive relationship between the existence of agro-industry in rural properties at the level of sustainability of the financial, physical, and environmental

dimensions, with no differences in the social and human dimensions, when the groups with and without agro-industry are analyzed.

Besen et al. (2021), when studying rural family agro-industries, located in the western region of Paraná, argue that this type of business is an important strategy of social reproduction and rural development for small family properties, which provides the diversification of activities and adds value to the agricultural enterprises. In addition, the authors argue that the continuity of the agroindustry within the property will depend on the ability of producers to maintain and improve this form of organization and, thus, strengthen the emergence of new production chains.

## 2.6 CONSIDERATIONS ON THE RELATED STUDIES

This chapter made it possible to combine concepts on rural diversification, rural diversification strategies and livelihoods; also pointed out the contributions, functions, and importance of family agroindustry. In addition, it broadly addressed existing studies on rural diversification and livelihoods and how agro-industrialization has been consolidated as a diversification strategy in the context of family farming.

It was possible to verify the contributions that characterize rural diversification, being a practice that has contributed to the security of livelihood on the property, providing an increase and stability of the income level of rural families, in addition to reducing the impact of seasonality and reducing the degree of risk from individual sources. Diversifying sources of income and activities on rural properties is an attempt to strengthen autonomy with important consequences in terms of sustainability.

In the context of family agro-industries, it was possible to verify some characteristics of this type of diversification strategy, such as the processing and transformation of raw material from the rural property, the predominance of family labor, the creation of an alternative for income generation and occupation for the rural population, in addition to being highlighted as an alternative capable of uniting the knowledge of generations in order to seek sustainable development and develop a healthier production system.

Among the tools used by the studies already published, it was found that the way of analyzing the strategies of rural diversification, in the most diverse enterprises, is carried out more broadly by the analysis of shocks and trends and by the five assets, both jointly and as isolated, being called capitals or aspects: natural; physicist; human; financial and social. This

methodology was applied in five correlated studies to analyze rural diversification through rural tourism and agro-industries, which is the object of study of this research.

### 3 TECHNICAL PRODUCTION RESEARCH METHOD AND TECHNIQUES

The methodology represents the logic of the processes to be followed during the development of a research project, explaining, in detail, the techniques, types and research instruments used, to also cover the foreseen time and the way considered for the data analysis and processing (Kauark, Manhães, & Medeiros, 2010).

In this section, the methodological procedures that were approached to carry out this study are presented, such as the research design, the procedures for collecting and analyzing data and the limitations of the research methods and techniques, which were used to achieve the objectives.

#### 3.1 RESEARCH DESIGN

Considering the objectives already exposed, this dissertation was based on a qualitative approach. According to Flick (2009) and Severino (2017), this approach is oriented towards the analysis of concrete cases in their temporal and local particularity, starting from the activities and expressions of individuals in their local contexts, which opens space for analysis of variables and dynamic processes. In addition, it is qualitative, as it seeks to contextualize the perception of phenomena that cover human aspects and their social relationships found in different environments.

In the first phase of the research, a study was carried out to identify ways of analyzing diversification strategies that could be applied in family agro-industries. This first phase is characterized by **exploratory** research, due to the researcher's lack of knowledge about the research question, with the objective of, based on the bibliographic survey and interviews with professionals who live with the researched environment, provide greater familiarity with the problem, making it the most explicit. In this way, it was necessary because it is a new topic or because it has never been approached with a certain sample or group of people (Gil, 2010; Prodanov & Freitas, 2013).

It is also **descriptive** research, following the parameters proposed by Gil (2010), since it sought to identify the reasons why family farmers diversify their productive activities, mapping capital available by rural families and used in the rural diversification strategy of the rural property; thus, there is a survey about situations that interfere and modify the access to

capital, in order to provide an understanding of the results of the rural diversification strategies implemented.

The strategy adopted to achieve the general and specific objectives of this research was the case study, since, according to Yin (2015), it is an empirical study that investigates a current phenomenon within its real-life context and addresses a situation in which there will be more variables of interest than data points. In addition, it benefits from early development of theoretical propositions to guide data collection and analysis.

The case study can be limited to one or several units. These units can be defined as individuals, organizations, communities, institutions, or events. Therefore, this research is characterized as a case study, since it has as an integrated evaluation of family agro-industries in the city of Medianeira (Yin, 2015). And, in the case of this research, five rural properties that have the family agroindustry were studied with the intention of understanding the diversification of livelihood in the rural environment of each one. Understanding arises from the analysis of data obtained from the rural producers interviewed and from the interviewer's experience during data collection, generating an integrated assessment.

In this research, family agro-industries were studied to analyze rural diversification strategies of rural properties through agro-industry in the municipality of Medianeira-PR; the data were collected from the managers of the family agribusinesses and from the technicians and extension workers of the IDR, through a structured interview. The data collection period took place between January and April of 2022.

The study was limited to family agro-industries located in diversified properties, not covering all family farming enterprises in the municipality; in addition, it involved only the city of Medianeira-PR, not expanding to the region.

### 3.2 FIELD OF STUDY

Qualitative research, according to Creswell (2007), takes place in a natural setting, that is, the researcher goes to the place where the participant is to conduct the research. In this research, the main scenario was the rural properties that have the family agroindustry as a form of diversification in Medianeira-PR, as visits were made to these properties for data gathering.

The field of study was the properties that have the family agroindustry, and the researched actors were their managers. Five (5) family properties were surveyed that have

agroindustry as a form of diversification in the rural property, in a total of 13 registered in the *Secretaria da Agricultura* and/or in the *Feira do Produtor Rural*. The *Feira do Produtor Rural* brings together several producers in the municipality; this space is destined to the commercialization of colonial products produced by these farmers. The relevance of the interview with managers is that these agents are the main sources of information regarding the rural enterprise, which are closely linked to management and to what involves rural property and agribusiness.

Thus, of the registered agro-industries, seven fit the established criteria, but only five accepted to participate in the research. The study was delimited following the established criteria:

- a) Family farms that diversify their sources of income by exploring more than one activity on the property.
- b) The size of the rural property should be no more than 50 hectares. This option was based on the need to analyze different contexts, to determine whether the same strategy would serve all properties or if each one would have to adapt it to its particularities.
- c) The family farms should have access to the capital mentioned by Ellis (2000), being human, related to labor; physical, the social capital that captures the individual's relationships; the financial related to the monetary amount of the rural family and the natural capital that includes natural resources. These capitals are essential for the implementation of diversification strategies on rural properties.
- d) The activities should be performed mainly by the rural family.

Based on these criteria and the collection of information from family agro-industries, of the 13 agro-industries, six were discarded for not being part of diversified production properties and five properties were selected to be part of the research.

The research object of this study and the subjects interviewed in these selected properties are the managers and/or rural landowners. This choice concerns the need to obtain reliable information about the rural property, the beginning of activities and, above all, the implementation and development of diversification strategies. Thus, Chart 2 presents the properties with their respective area, as well as the activities developed and the survey respondents.



Chart 2 - Description of rural properties participating in the research

| <b>Properties</b> | <b>Area (ha)</b> | <b>Activities</b>   | <b>Surveyed</b>             |
|-------------------|------------------|---|-----------------------------|
| Property A        | 16               | -Dairy farming<br>-Family agribusiness of dairy products<br>-Corn and soybean planting                | Managers and/or responsible |
| Property B        | 5                | -Family pasta agribusiness<br>-Dairy Livestock<br>-Corn and soybeans planting                         | Managers and/or responsible |
| Property C        | 50               | -Dairy farming<br>-Family agroindustry of cornmeal and corn derivatives<br>-Corn and soybean planting | Managers and/or responsible |
| Property D        | 5,6              | -Family agro-industry, based on the production of pork derivatives<br>-Soybean and corn planting      | Managers and/or responsible |
| Property E        | 6                | -Family cheese agro-industry<br>-Corn and soybean planting  | Managers and/or responsible |

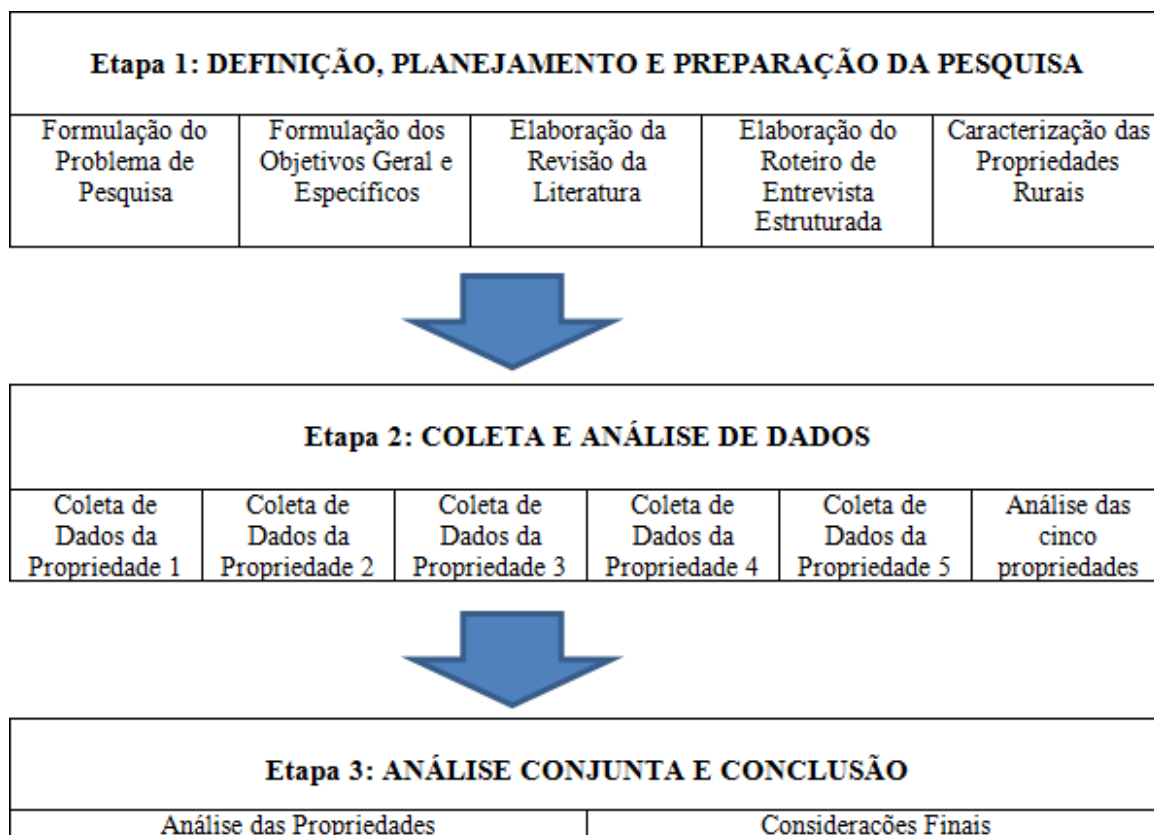
Source: Research data (2022).

To develop this research, steps were elaborated, which were covered in the development of the study. The first stage of this research includes the definition, planning and preparation, which is the initial part in which the question of the study is delimited. The general and specific objectives were elaborated. Then, the literature review was approached looking for theoretical elements that supported the proposed objectives.

Data collection and analysis corresponded to the second stage, in which the characterization of family farms where the analysis structure was applied was carried out, allowing us to understand the dynamics of the diversification strategy in rural areas. Data collection was carried out following a structured interview script.

In the last step, the joint analysis of the five properties was carried out to understand the dynamics of the rural diversification strategy existing in the properties that have the family agroindustry. The scheme, with descriptions of the study development stages, is illustrated in Figure 3.

Figure 3. Research development stages



Source: Made by the autor (2022).

Faced with the elaboration of the research scheme, delimitation of objectives and elaboration of the interview script, the next step is the data collection. According to Gil (2010), data collection, in a case study, is based on several sources of evidence, that is, it is a process of gathering information to prove a problem raised.

### 3.3 DATA GATHERING

Data gathering is the stage of the research where the application of the elaborated instruments and the selected techniques begins, with the objective of carrying out the data collection. There are several procedures for carrying out data collection that vary according to the circumstances or type of investigation, of which we can mention: interview, document collection, observation, measures of opinions and attitude, marketing techniques, tests, content analysis and life history (Marconi & Lakatos, 2010).

To achieve the research objectives, primary and secondary data were collected. According to Prodanov and Freitas (2013), the primary data are obtained by the research carried out by the researcher with the object to be researched. Also, according to Diehl and Tatim (2004), data gathering techniques from primary sources are related to interviews, questionnaires, observations, and forms; on the other hand, secondary data sources are related to existing data in archives, reports, indexes, and bibliographic sources.

To carry out the case study, primary data were collected between January and April 2022. Data gathering took place through the technique of interviews with a structured script, based on the *framework* of Ellis (2000), adapted by Padilha (2009), with closed and open questions to each manager of the researched agribusinesses and with the extensionist of the IDR. For Marconi and Lakatos (2010), the interview provides a methodical face-to-face dialogue, which provides the interviewer with the necessary information; In addition, the researcher can structure the research following a previously established script with pre-determined questions. The authors present that, when using structured interviews, the researcher creates greater freedom to be able to expand their knowledge in an adequate way and, thus, allow the exploration of subjects related to the research topic.

In the first part of the form applied to the properties, questions were considered that would provide a better understanding of the property and the implementation of diversification strategies through agroindustry. Thus, Chart 3 presents the categories of analysis and themes collected in the interviews and that were related to the characterization of rural properties (Appendix A), identifying the main aspects observed.

Chart 3 - Rural property characterization

| Category                               | Themes  | Observed Aspects   |
|--|---|--|
| <b>RURAL PROPERTY CHARACTERIZATION</b> | Identification and installation of the rural property | -Identification;<br>-Location;<br>-Specificities of the property area;<br>-Suitability/quality of facilities.  |
|  | Implementation of agro-industrial activity            | -Main motivation and/or influence of implementation;<br>-Process of implementing the activity on the property. |
|  | Labor occupancy data                                  | -Labor of the rural family;<br>-Hired labor.   |
|  | Formation and composition of income data              | -Income from productive activities (%);<br>-Income from rural tourism activity (%).                            |

|  |   |  |
|--|---|--|
| <b>RURAL PROPERTY CHARACTERIZATION</b> | Financial management and administration   | -Decision making, financial control and pricing;<br>-Origin of resources to develop rural tourism activity (%).  |
|  | Technical support   | -Process of technical assistance, facilities and difficulties.   |
|  | Divulgation   | -Concern about disclosing, costs involved<br>-Disclosure vehicles used.  |
|  | Effect of agro-industrial activity (on the life of the rural producer and his family) | - Degree of importance of agro-industrial activity;<br>-Main aspects of agro-industrial performance;<br>-Family tradition rescued;<br>-Main expected results for the rural family in relation to agro-industrial activity;<br>-Future plans for the activity;<br>-The property and its importance;<br>-Importance of group work and associativism for the development of agro-industries;<br>-Interest in association with other rural producers who develop agro-industry |
|  | Positive and negative points of the agro-industrial activity and enterprise           | -Open and free-answer questions;<br>-Reasons: (many services) or (decision making).  |

Source: Adapted from Padilha (2009)

The second part of the form presents the categories related to the rural livelihood diversification strategy, explaining the determination of analysis categories and themes, to identify the aspects, information and strategies implemented by the properties. Chart 4 shows the aspects observed by each category and the theoretical basis that gave rise to such categories (Appendix B and C).

Chart 4 - Rural Livelihood Diversification Strategy

| Categories                             | Themes                     | Observed Aspects                              | Theoretical Basis             |
|--|----------------------------|---|-------------------------------|
| <b>RURAL PROPERTY CHARACTERIZATION</b> | Livelihood diversification | The rural livelihood diversification strategy | Barret, Reardon e Webb (2001) |

Continuation Chart 4

|  |  |   |   |
|--|--|---|---|
| <b>RURAL PROPERTY CHARACTERIZATION</b> | Access and use of capital                      | - Natural<br>- Human<br>- Physical<br>- Financial<br>- Social<br>- Capital Identification | Ellis (2000)<br>Moser (1998)<br>Niehof (2004)<br>Padilha (2009)<br>Ploeg (2008)<br>Sen (2010) |
|  | Elements that modify access to capital         | - Social relationships<br>- Institutions<br>- Organizations                               | Ellis (2000)<br>Niehof (2004)   |
|  | Elements that interfere with access to capital | - Tendencies<br>- Shocks  | Ellis (2000)<br>Niehof (2004)   |

Source: Adapted from Padilha (2009)

During the interview and the on-site visit, it was possible to make some observations on the rural property and in the agroindustry, that is, it was possible to get in direct contact with the phenomenon of study, providing a broader exploration of the information (Appolinário, 2012). The observation modalities used according to the means were direct; according to the method, unsystematic (unstructured); according to the context of observation, naturalistic; and, according to the participation of the observer, participant. Observations, according to Yin (2015), can be formal and informal. In this research, the informal way was used, making direct observations throughout the visit, which generated additional useful information about the phenomenon studied.

The pre-test of the survey with rural properties was carried out between March 5th and 10th, 2022, being applied to two properties. This pre-test, according to Marconi and Lakatos (2010), allows the researcher to obtain an estimate of future results, being able to change hypotheses, modify variables and the relationship between them, thus, there is greater safety and precision for the execution of the research. With the application of the pre-test, it was found that there were no difficulties in applying the script, so it was validated and accounted for the analysis of the results of this research.

The interviews with the rural properties which develop the family agroindustry were carried out in the period of March and April 2022, with five family properties registered in the *Secretaria da Agricultura* of the Medianeira municipality and in the *Feira do Produtor Rural*, from the structured form with open and closed questions. Data collection was carried out in person with the rural families who owned the agro-industries. In addition, two extension workers were considered, so that the interview took place in January 2022, on the premises of the IDR.

The first contact with the respondents was by telephone, to check their availability to participate in the interview, and then the date of the visit to the property was scheduled. The city has 13 registered agro-industries, of which seven fit the research molds; one of the properties did not return the contact and another chose not to participate.

Regarding secondary data, the official websites of public agencies, books and scientific articles accessed from *Periódicos da Capes*, *Scopus*, *Web Of Science* and *Biblioteca Digital Brasileira de Teses e Dissertações*.

The structured interview and the visit to the property are necessary to fulfill the specific objectives “b” and “c”, gathering and mapping information related to available capital resources and the contexts that interfere and modify access to them.

### 3.4 DATA ANALYSIS PROCEDURES

The data analysis process involves several procedures, such as coding the answers and tabulating the data. Subsequently, together with the analysis, the interpretation of the data can also occur, which consists of establishing the link between the results obtained with others already known (Gil, 2010).

At this stage of data analysis, it is necessary to group and order the information logically so that the desired answers can be presented in a clear and objective way. It is noteworthy that, regardless of the data collection technique used, the objective of the data analysis and interpretation stage is to answer the proposed research problem (Prodanov & Freitas, 2013).

In the context of qualitative research, the researcher makes an interpretation of the data, identifying themes or categories that provide the interpretation of the phenomenon and the formulation of conclusions based on lessons learned that can still generate more questions to be asked. The researcher needs to adapt the data analysis from the most generic methods to point out types of qualitative research strategy (Creswell, 2007).

In the first phase of this study, a systematic review was carried out to analyze the studies already prepared and published on the diversification of sustenance, livelihoods, and family agro-industries. Through this analysis, several studies were found with evaluation methods that can be applied. The systematic review, according to Cordeiro, Oliveira, Rentería and Guimarães (2007), is a form of scientific investigation, which aims to gather, thoroughly evaluate, and conduct a synthesis of the results of primary studies. Thus, from this review, it

was possible to select categories of analysis of diversification strategies that can be applied in agribusinesses.

As for the technique of analysis of data collected from the interviews, the one chosen was the proposal by Bardin (2009). Content analysis, according to Bardin (2009), can become a set of communication analysis techniques, which enables the use of systematic procedures and of objectives for describing content from interviews and messages. Thus, it concludes that there are different steps that must be followed in this type of analysis, such as:

- a) **Pre-analysis:** seeks systematization so that the researcher can conduct successive analysis operations. Thus, the mission of the first phase is, in addition to choosing the documents to be submitted for analysis, to formulate hypotheses for the elaboration of indicators for the final interpretation.
- b) **Material exploration:** this step consists of the coding, classification and categorization operations of the data based on the rules formulated previously.
- c) **Transformation of Results and Interpretations:** in this phase, the results and information provided by the analysis are transformed from reference frames that facilitate the interpretation of the information.

Bardin (2009) considers that, to classify elements into categories, it is necessary to identify what they have in common, which allows their grouping. At this point, understood as the pre-analysis, the transcripts of the interviews were allocated according to the previously defined categories and themes, which is justified by the proposal to formulate an analysis with categories determined previously, without coding the data according to the properties searched.

In the second stage, understood as exploration of the material, we sought to obtain the first guidelines and impressions in relation to the content of the answers, that is, it was verified if the answers obtained from the properties were aligned with the objectives proposed by the study. Content analysis is a research technique that works with the word, allowing to produce, in a practical and objective way, inferences from the content of a text replicated to its social context. Thus, still in the material exploration stage, in operational terms relationships were established between the answers found and the chosen analysis structure, allowing to gather the research results.

Thus, it is the inference that gives the procedure theoretical relevance, as it collaborates, at least, with comparisons, since the purely descriptive information about the content is limited. A data from the interview is meaningless until it is related to other data and the link between them is represented by some theory. In view of this, the treatment of data

from rural properties, their interpretation and their results were grouped and related to theoretical aspects that allowed observing the development of livelihood diversification strategies in rural properties and the development and contribution of family agro-industries in this process.

In this sense, as it is qualitative research, the data analysis technique selected for the analysis of the material generated by the interviews was adequate, providing the interpretation and treatment of the collected data, to generate information and results that meet the objectives that were proposed in this study.

In the next chapter, the characterization of the context of family agro-industries in Medianeira-PR and the description of the rural properties that participated in the study are presented. Also, strategies for diversifying livelihoods of each property, access, and use of physical, human, social, financial, and environmental capital are covered, in addition to addressing the elements that modify and interfere with this access.



## 4 RESULTS ANALYSIS AND DISCUSSION

In this topic, the results of this research were presented based on interviews with managers and their families who manage and work in agro-industries. Objectively, the five rural properties were analyzed based on the following criteria: identification and insertion of rural properties, implementation of agro-industrial activity, data on the occupation of labor, data on the formation and composition of property income, financial management and administration, technical assistance, dissemination, effect of agro-industrial activity and activity bottlenecks.

The family agro-industries studied were analyzed based on their capital, trends, and shocks and, through the diversification strategies applied to rural properties and agro-industrial activities.

### 4.1 CONTEXT OF FAMILY AGROINDUSTRY OF MEDIANEIRA-PR

The industrialization of family farming production makes up the scenario as an option for diversifying activities, strengthening rural property, adding value to production processes, in addition to seeking to strengthen the actions of fixation and the permanence of the farmer in the field with his agricultural activities. Family agro-industry was established as the basis of rural family businesses and groups of farmers, as a new activity integrated into production systems. In addition, the activity has conquered spaces as an economic, profitable activity and has been increasingly involved with other sectors, such as traditional tourism, rural tourism, crafts, leisure, etc. Among the objectives of family agribusinesses, we can mention: the processing, transformation and/or industrialization of production, adding value to products, improving the income and quality of life of farmers, and generating jobs, employment, direct and indirect income (EMATER, 2018).

In Medianeira - PR, family agro-industries have generated income and added both financial and social value to rural producers. Currently, the city has 13 agro-industries. Establishments with animal origin products are registered and monitored by the *Serviço de Inspeção Municipal de Produtos de Origem Animal (SIM/POA)*. SIM/POA was created in 2003 by Municipal Law 028/2003, with the objective of assuring consumers the guarantee that the food was produced within the adequate hygienic-sanitary standards, but also as a way

of making possible micro, small and medium agro-industries (Secretaria Municipal de Agricultura, 2022).

Family agro-industries of the city use family labor, industrialize the raw material, mostly produced on the rural property itself and are distributed in several rural communities. Family agro-industries produce dairy products (cheese, curd cheese, ricotta, dulce de leche, cream, butter), sausages, fruit jellies, snacks (pasta, pastries, agnoline), cornmeal, hominy, among other products. These products are sold at fairs, bakeries, supermarkets and directly to consumers.

Most of the surveyed agro-industries sell part of their products at the rural producer's fair. The traditional small producer fair has been taking place for many years in the municipality and brings together a significant number of customers, every Wednesday and Saturday; is a form of association of small producers, in which each one acquires a “quota” or “stand” and exhibits the products produced within the rural property.

## 4.2 RURAL PROPERTIES AND AGROINDUSTRY CHARACTERIZATION

In this item, the identification of the diversified rural properties that have the family agroindustry in Medianeira-PR was presented. This identification consists of presenting the rural property, understanding the process of implementation of the agro-industrial activity and how the activity has been developed so far.

### 4.2.1 Property A

#### 4.2.1.1 Rural property identification and insertion

Located in the community of Linha Salete, in the countryside of Medianeira-PR, this property has 16 hectares, of which 14 are used for planting corn and soybeans and the rest consists of pasture and property improvements. The activities on this property began in 1983, when the family implemented the dairy activity to generate income.

The family consists of 4 people, 3 of whom actively participate in the routine of the property. In 2019, the family decided to diversify the property through the implementation of an agro-industry of dairy products, which relies on family labor to produce the products and

add value to the raw material. Now, the family sells these products only on their property or through direct delivery to the consumer.

#### 4.2.1.2 Implementation of agro-industrial activity and occupation of labor

Property A has been working with dairy farming for over 30 years, being a reference in milk production in the city, always investing in structure, genetics, and quality of raw material. The idea of agribusiness came up with the aim of adding value to the raw material, as the costs of dairy farming have increased in recent years and the price of the product has not followed this trend at the same level. So, one of the owners of the property started making cheese for the family; having everyone's approval, she started to offer and make it to some friends, who were promoting the product to other people. As a result, the demand increased and, from then on, the family began to dedicate itself more to the activity.

With the increase in orders, the family decided to increase its product portfolio, starting to produce, in addition to colonial cheese, seasoned cheeses, truffles and coalho cheese; also started the production of cream, butter, ghee, ricotta and curd cheese. Initially, deliveries were made with the family car and only once a week; a year and a half after the start of activities, the family decided to buy a car to help with the deliveries, so they started to carry them out at the customer's house three days a week.

Aiming to improve the quality of the products, the producers are investing in genetics, starting to have more Jersey breed matrices, which have a better milk for the manufacture of cheeses. A site to produce derivatives was built following all health norms and rules, as well as equipment was acquired to facilitate production. These investments were made slowly during these three years of agroindustry, seeking to maintain the financial balance of the business.

To help with the cost of deliveries and diversify the product portfolio offered to the customer, the family started selling eggs, jams and free-range chicken produced by neighboring producers. At certain times of the year, there is also the production of fruit pulp for juice, following the fruit cycle of the season.

The family agroindustry has the capacity to serve up to 100 customers per week, with a good part of these customers being fixed. Deliveries are currently made by rural producers every Wednesday, Friday, and Saturday. In busy seasons, close to festive dates and the end of the year, the family makes deliveries more times a week to be able to meet everyone and counts on the help of family members to be able to meet all orders.

The rural property had the technical assistance of the IDR, in which the technician followed, since the beginning, the implementation of the agroindustry. The city government assisted with the structural design and aided with the technical design. The agro-industry emerged with the family's own investment, and all the income from it was reinvested in the enterprise, not being necessary to seek resources in financial institutions.

Among the main difficulties faced in the initial phase of the agroindustry, the family mentions that the lack of adequate equipment for production generated a lot of work and inconvenience; In the beginning, the owners also did not have full control of scale production and had their workload doubled, but, little by little, the family adapted, looking for ways and resources capable of assisting this process.

Currently, the property has family labor; the couple's son, who has a degree in animal husbandry, and the father, who has a degree in administration, are responsible for the dairy activity, taking care of the production of raw materials and the delivery of products to consumers; the owner is responsible for the production of the cheeses and the process of creating new products. In addition, a neighboring couple assists the property in both agricultural and agro-industry activities.

All members of the family, who work actively on the property, underwent training promoted by the IDR, focused on good practices in the agroindustry, production of dairy products, pasteurization courses, cheese courses and training aimed at the administration and management of the family agribusiness. According to the couple's son and property manager, *“It is extremely important to be prepared to manage the rural property, and any knowledge that can be acquired and put into practice tends to bring positive results to the activity”*.

Producers defend that family labor is essential for the management of the business; according to the producer, *“you can further develop your agro-industry and make your property financially sustainable”*.

#### 4.2.1.3 Formation and composition of income and financial management data

According to the information provided by the owner family, it is observed that the expansion of the family's sources of livelihood is considered one of the main reasons for the implementation of diversification strategies. Regarding the income and productive activities of the rural family (Chart 5), about 20% comes from the agricultural production of corn and soybeans, 50% is generated by livestock activity with the production and sale of milk to a

cooperative and the rest is of the agro-industrial activity developed on the property. According to the producer's report, the sale of products at events and fairs corresponds to 5% of the income of the agroindustry; he also considers that the sale of products gains from other neighboring producers is a revenue from the agro-industry and that it corresponds to 2% of its revenue.

Chart 5 - Composition of monthly income in Property A

| <b>Activities</b> | <b>Activities description</b>   | <b>Income (%)</b> |
|-------------------|---|-------------------|
| Agricultural      | -Production of corn and soybeans  | 20                |
| Livestock         | -Production of milk to sell   | 50                |
| Agroindustrial    | -Production of dairy products; jellies and juices to the consumer through delivery.<br>-Sale of products for events<br>-Sale of products from other producers | 30                |
| Total             |   | 100               |

Source: Research data (2022)

It is verified that the family conciliate the traditional activities, agricultural and livestock, with the agro-industrial activity. These findings are in line with the study by Funk (2008), in which family farming uses this strategy to reduce the risks of total losses, rationalizing the use of labor and taking full advantage of the interaction between different activities.

In terms of financial management and administration, regarding decision-making on the property, it is observed that they are considered by the whole family. According to owner, *“all decisions are made together, as it is something that will be the children's future, so everyone must think together to make the business grow”*. One factor that the family recognizes that it should improve is its cash flow.; they consider this management control very important, but now, the property does not carry out cash control frequently, however, the producer always seeks to be aware of his production cost with each purchase of inputs made.

Regarding product pricing, this decision takes place through informal market research. The family says it is always attentive to the price trend practiced in the local market and recognizes that the price of its product does not consider a profit margin determined on top of its production cost. At the beginning of the agro-industrial activity, the initial investment came from livestock activity and, later, from the agro-industry itself. The latest investments made in the property, such as the acquisition of equipment and matrices, are being paid for with resources from the agroindustry itself.

The family explains that there are plans, to expand production capacity, acquire equipment that facilitates the work reducing manual strength, however, emphasizes that the investment will only be made after analyzing all the costs and feasibility of implementation. Among the plans, the family intends to implement a new product, yogurt, and to invest in the production of lactose-free food.

#### 4.2.1.4 Technical Assistance

The rural property receives assistance from the IDR, but it is not on a constant basis; whenever the producers need some assistance, the technicians aid, and the guidance received has speeded up the implementation and maintenance of rural property activities, especially regarding the bureaucratic part of the agroindustry on which the producers do not have much information.

The rural producer emphasizes the importance of this monitoring and guidance from the IDR, because, according to him, this assistance is essential to facilitate the everyday of the property and especially the agro-industrial activity; This is because the agro-industry is in the process of development, needing help to be able to grow and consolidate itself in the market with good products, in addition to becoming economically sustainable.

A factor that has facilitated the activities of the agroindustry and complemented the assistance of the IDR is the fact that the couple's son, who is also the manager of the property, has a degree in animal husbandry, thus being able to sign as the technical responsible for the agroindustry and take care of all the parts of raw material production. This contributes to reducing the cost of agribusiness, which would have to hire a professional to help.

#### 4.2.1.5 Divulagation tool and agro-industrial activity effects

The family emphasizes that its biggest marketing action is informal, carried out spontaneously by the consumers of its products. However, he sought help from a professional who is developing a logo and labels with information on each product, since, until then, the products did not have the identification of the agroindustry. Another publicity action, which is being implemented by managers, is the stickering of the vehicle used in the delivery of products; according to the producer's son, *“this visual marketing draws people's attention and promotes our products”*. In addition, after creating a logo, the family intends to promote the

products on social networks through *Facebook* and *Instagram*, recognizing that this form of dissemination, in addition to reaching a considerable number of people, has no cost.

Producers intend to publicize their products to serve a larger market niche, as they recognize that the agro-industrial activity has changed the reality of the family and added value and income to the property, and the diversification of activities has a significant role in expansion of rural livelihood and financial capabilities, which culminate in new investments in infrastructure, as observed in the property. Another positive point highlighted by the family, was learning about sales and customer relationships; according to them, this experience has contributed to the development and improvement of communication.

The agro-industrial activity also brought some negative points, namely the increase in family work, which was quite considerable. In addition, the “defaults” are another factor with which the family, until then, did not have much contact; In fact, they have been studying alternatives to expand payment methods that can reduce installment sales and reduce the defaults.

The rural family has been looking for ways to follow the market and take their products to a greater number of customers. The owner points out that the production of cheese and its derivatives is a tradition that comes from her parents who made a living from this activity; according to her, “*the agroindustry rescued these recipes, such as the seasoned and truffled cheese, which my mother made*”. Promoting agribusiness means taking this family tradition forward; with this, the rural family aims to gain more visibility, provide their children with conditions to continue the rural property with quality of life.

For the future, the agroindustry must acquire more equipment, among them, a packaging machine for packaging products with its logo and label, a pasteurizer and equipment that can facilitate the production of more by-products. The family has been studying a project for genetic improvement, acquiring matrices with genetics capable of improving milk quality and production capacity.

Regarding the environmental aspects, all the residue from the production of the agroindustry is reused in other activities. The residue from the production of cheeses and dairy products is used to feed cows, heifers, and calves. Rainwater is captured by a cistern and used to wash the agro-industry and its utensils. The rural family emphasized that they have been looking for ways to use their natural resources in a conscious and sustainable way.

Having integrated processes with sustainability within small properties provides the development of environmental, social, and economic improvements. However, public policies to support the insertion of rural producers in the agro-industrialization process are discussed.

Therefore, the debates on the subject indicate the need to study and create models of sustainable rural development. Thus, family agroindustry, in addition to contributing to the reduction of rural exodus, provides the idealization of a new model of sustainable development, which considers the rural environment integrated with environmental actions and not only related to rural production (Aguiar & Munaretto, 2016).

#### 4.2.2 Property B

##### 4.2.2.1 Rural property identification and insertion

Founded over ten years ago, the property is located on Linha Salete and is managed by two women. Before the construction of the agro-industry, mother and daughter already worked with the manufacture of some pasta and cakes, but on a smaller scale. The option to diversify activities through agro-industry was carried out on the initiative of the husband of one of the owners, as explained by her; her husband was a truck driver and, when he traveled to Paranaguá, he always took agnoline to an owner of a chain of hotels and steakhouses. The person who made the agnolini ended up stopping the production; it was at this point that he encouraged his wife and mother-in-law to try to sell. The idea worked and then, they became suppliers of this product to the hotel and steakhouse chain. Subsequently, the property owners began to sell their products from door to door, but also at the rural producer's fair and, later, to supermarkets in the city and region.

The rural property has 5 hectares, of which 4 are destined for the agricultural production of soy and corn and the rest for dairy farming and improvements. The husband of one of the owners is responsible for the agricultural activity and helps the dairy farming, so that the owners are dedicated to the family agroindustry.

The family agro-industry produces agnolini, pasta, baked pastry, pastry, risoles, pastry dough and bread. Currently, it supplies its products to eight supermarkets in the city and neighboring municipalities, as well as to the rural producer's fair, in addition to individual sales by order that are delivered to the customer's home.

##### 4.2.2.2 Implementation of agro-industrial activity and occupation of labor



According to the conversation with the rural family, the main motivation was the search for a source of extra income; according to the owner, if she had not started the agro- industry, she would have gone to the city in search of work to supplement her family income. With the increase in orders for the products, mother and daughter decided to build a place so that they could have more adequate facilities to produce on a large scale and acquire equipment to assist production.

To build the agro-industry, the owners sought financing from the Cresol Credit Cooperative through the *Mais Alimentos* program and had the help of IDR technicians, that guided on the norms in which the environment should be framed. Constantly, the technicians made visits and provided guidance that helped the family in the beginning of the enterprise. With this help, the producers were able to develop a logo, so that they could also place, in their products, tables with information on carbohydrates, fats, among other data that must be provided to the consumer.

Regarding the technical project, the owners reported that they did not have any guidance or assistance from the city hall and that they did not carry out a technical project for the implementation of the agro-industry. Health surveillance came into the agro-industry before it started production and, after that, they carry out an inspection/visit every year. Owners feel a lack of public policies that can help small producers to enter the market and remain in it, so that they can offer adequate conditions for production and its flow, not only from the agro-industries, but from the entire production chain.

One of the eases highlighted by rural producers was the insertion of their products in the market, reporting that they had no difficulties to sell them and that they always have considerable demand, especially in winter, which is the time of greatest sale for the agroindustry, having agnolini as a sales highlight. The agro-industry also supplies the municipality with pasta throughout the year, which is used for school lunches. The owners emphasize the importance of this partnership with supermarkets and school meals, claiming that this has contributed to the dissemination of the agro-industry.

The agroindustry relies on family labor, but in times of higher production, between the months of May and August, they rely on the cooperation of neighbors, which is a strategy that has contributed to service with quality and agility to customers. Labor is one of the difficulties faced by agribusiness; the daughter and owner reports that there are more supermarkets interested in their products and that the IDR has been talking to them to take their products to fairs and events in the region, but due to the lack of manpower, the agroindustry is unable to meet these requests. The property is far from the city and the road that gives access to it is not

in good condition, which makes it difficult to hire people to help with production. However, the owners emphasize that “family labor provides cost reduction and better management”.

As for training, the owners, through the IDR, participated in various courses and training aimed at baking, pasta courses and rural enterprise management. In addition, to set up the agroindustry, they participated in the “*Boas Práticas*” course, provided by SEBRAE. They point out that these formations contributed a lot to the growth of the business, as they did not have much experience with large-scale production and sales.

#### 4.2.2.3 Formation and composition of income and financial management data

If one of the main reasons for implementing diversification strategies in rural areas is the generation and expansion of sources of livelihood, the property, as shown in Chart 6, has agribusiness as the main source of income, accounting for 50 % of family income. Secondary activities are focused on grain production, milk production for sale to a dairy company and there is also income from the retirement of one of the owners. In this way, agribusiness emerges as a promising opportunity and a promoter of income generation and family permanence in rural areas.

Chart 6 - Composition of monthly income in property B

| <b>Activities</b> | <b>Activities description</b>  | <b>Income (%)</b> |
|-------------------|--|-------------------|
| Agricultural      | - Production of corn and soybeans  | 30                |
| Livestock         | - Production of milk for sale to a dairy company in the region                             | 15                |
| Agroindustrial    | - Pasta production<br>- Agnolini production<br>- Production of snacks<br>- Cake production | 50                |
| Others            | - Retirement   | 5                 |
| Total             |  | 100               |

Source: Research Data (2022)

It is clear, in the analysis, that the agro-industrial activity provided the permanence of the family in the rural environment, since, as reported by the owners, in past times, they had to think about working in the city to supplement the family income. The owners were able to take their venture and experience to fairs, workshops and training promoted by IDR; according to them, before the pandemic, the agribusiness was constantly visited by other rural producers, who intended to develop industrial activity on their properties.

The owners have a desire to make colonial lunches and cafes to promote their products and have another source of income, but they have not been able to idealize and put this desire into practice due to the lack of manpower. But on the other hand, little by little, and always in line with the management of the enterprise, they have invested in equipment capable of improving the quality of work and that can facilitate the production process.

In the analysis of management and financial administration, landowners always analyze and make decisions about the agro-industry together; when the decision involves the entire property, they involve the owner's husband. Regarding financial control, the owners do not carry out a periodic control and have some costs that end up not being fully accounted for.

To fix the price of the products produced by the agroindustry, the owners make a cost calculation and try to put the value of the product close to that practiced by the market. For supermarkets, pricing is different, as they buy in quantity, with a different price.

The agroindustry used financial resources from credit lines aimed at small rural producers. The construction of the agro-industry was financed, the last installment of which will be paid at the end of this year; the agro-industry also acquired a vehicle to help with deliveries, through the *Programa Mais Alimentos*, which facilitated the routine of the property and made it possible to transport the product in a more adequate way. In addition, a management strategy applied by the owners is that 20% of the agribusiness gains are returned in investment in equipment or infrastructure.

#### 4.2.2.4 Technical Assistance

According to data collected in the interview with the owners, when they need help, the family seeks guidance from the IDR technicians. According to the producers, without this aid, they would not have built the agro-industry for fear of investing; they also point out that “the technicians always encourage us, and this has contributed to the growth of the agro-industry”.

#### 4.2.2.5 Divulagation tool and effects of agro-industrial activity

The producers clarified that the dissemination of the agroindustry takes place through the exhibition of products at the rural producer's fair, informally by their customers, and based on social networks such as *Facebook* and *Whatsapp*. According to the owners' report, social networks leveraged delivery orders, so they have used this medium to publicize new products, due to the visibility they provide.

The agro-industrial activity is of high importance for the property, as it leveraged business and family income, as well as contributed to the development of rural property and landowners who gained a lot of experience and knowledge with customer service and rural management; in addition, it provided a better quality of life for the rural family.

Another positive point of the rural enterprise was the rescue of traditions; the mother and owner of the agroindustry always liked to make cakes and snacks and, little by little, taught her daughter, who began trying to learn. For the future of the agroindustry, they hope to continue investing in equipment that facilitates production and, thus, perpetuates the business they are so fond of.

In the analysis of the importance of other properties that have family agroindustry, the owners believe that the agroindustry brings benefits not only to the property, but also contributes to incentives to other rural families, who are interested in investing and staying in the rural environment.

In addition, the rural property is concerned with sustainability and with the correct disposal of waste produced by the agro-industrial activity; In this way, all organic waste is transformed into fertilizer used in the family's vegetable garden and other waste, such as paper and plastic, is classified and raised to the point of collection of recyclable waste.

### 4.2.3 Property C

#### 4.2.3.1 Rural property identification and insertion

The family was one of the first settlers of Medianeira, arriving in Paraná in 1962 and establishing its roots in the community of Linha Alegria. Founded in 2004, the mill is one of the activities developed by five brothers and their families.

Among the activities developed, there is the production of grains, dairy farming, and agro-industrial activity. With a total area of 50 hectares, the family allocates half of it to the production of grains used in the agroindustry and the other half goes to agriculture. Among the products offered by the agroindustry, the main one is cornmeal, accompanied by hominy and *canjiquinha*.

Agribusiness is well known in the region and has an annual production capacity of eight thousand kilos of food. Its products have the differential of being handcrafted and ground in stone, which provides a product of better flavor and quality.

#### 4.2.3.2 Implementation of agro-industrial activity and occupation of labor

Regional development programs are important tools to help small rural producers. The family started the agro-industrial activity through a program to produce organic products, promoted by *Itaipu Binacional*. This program encouraged the production of organic food and provided technical assistance to participating properties.

On the property of one of the brothers, there was a water-powered mill that was deactivated. This mill was set up in the 70's and served families in the region; with the growth of the city and the transport facilities, the mill stopped working, being disabled until 2004. Upon learning about the program promoted by Itaipu, the family decided to invest in the production of organic soy and corn that was destined for export. As the area destined for grain production was not large, one of the brothers saw the deactivated mill as an alternative to add value to the grains produced and increase the income of the families involved. With access to credit made available by Pronaf – Mais Alimentos, the brothers reactivated the mill and, from there, began to insert the product in the local market.

To carry out the technical project and reactivate the mill, the family had the technical assistance of professionals from the project promoted by Itaipu and of technicians from the IDR who instructed and facilitated the entry of the product into the local market. At this stage, one of the main difficulties faced by the family was the lack of experience to insert the product in the market; according to the project manager, *“everything was new to us, we did not have sales experience, which was our main difficulty at the beginning of the activity”*.

As it is a family business, all the work at the mill is family-owned, so that each family is involved in at least one of the agro-industry production processes, which range from the production of corn in the fields to the commercialization of the product with the supermarkets and grocery stores; this production chain involves 15 people. Agribusiness labor directly involves 3 people in production; another 3 people help with the delivery of products to customers and one of the owners' children, who has a degree in accounting, does all the accounting and administrative part of the mill; the other members work on part of the corn production used in the mill.

In addition to encouraging their children to seek training to manage and administer the family business, the owners emphasize that, at the beginning of activities, Itaipu provided various training and direct advice, which added a lot of knowledge. With the end of the project, they sought assistance from the IDR, which currently monitors the agroindustry.

As for family labor, the mill manager considers it essential; is one of the sources of support for the families involved and has paid for the college education of the children who actively work at the mill. One of the main strategies employed by the owners is the preparation and insertion of their children into the family's agribusiness, so that they can perpetuate the business, adding value and income. In this way, the mill manager argues that “*the activities carried out by the family provide our children with the option of working in their own business with possibilities for growth and also being able to carry out parallel activities.*”. One of the essential principles for the success of a company, according to Ferrari (2015), is the succession planning in advance, discussing it regularly. Many factors are crucial for a good succession: the selection and training of candidates, the strategic planning of succession, the successor's previous professional experience within the enterprise and, fundamentally, the involvement of the founders in succession planning and in the training of these new managers.

With the interest of the owners' children in leveraging the growth of agribusiness, the family sought credit to invest in infrastructure and equipment to increase production. In view of this, the renovation is in the final stage and will improve production capacity, as well as the quality of the product produced.

#### 4.2.3.3 Formation and composition of income and financial management data

Based on the concept that diversified activities enable the livelihood of the rural family and, consequently, the permanence of its members on the property, the absorption of family labor and the generation of employment are promoted, aspects that contribute to the formation and composition of income from activities and, in this case, in agricultural and industrial production.

In this sense, Chart 7 summarizes the information provided by the manager during the interview. These data encompass the income of the family group composed of the families of the five brothers and demonstrate the percentage of income of the three main activities developed, being dairy farming with the highest participation in income, followed by agricultural production and agro-industrial activity.

Chart 7 - Composition of the monthly income of Property C

| <b>Activities</b> | <b>Activities description</b>   | <b>Income (%)</b> |
|-------------------|---|-------------------|
| Livestock         | - Production of milk for sale to dairy companies in the region                        | 40                |
| Agricultural      | - Soy and corn production   | 30                |
| Agroindustrial    | - Production of <i>canjiquinha</i><br>- Production of hominy<br>- Cornmeal production | 30                |
| Total             |   | 100               |

Source: Research data (2022).

Dairy farming is the main activity developed, which is present in the properties managed by the five brothers. The agro-industrial activity is directly related to the family's agricultural activity, as the family's corn production is directed to the mill, where it is stored and dried to be later ground in stone to make cornmeal and hominy. The managers believe that, with the new investments and with the help of their children, agribusiness will occupy a larger share of the family conglomerate's livelihood in the coming years.

The decisions made in the property regarding financial control and investments are the responsibility of all family members, however, each of the brothers is responsible for an activity, but there is constant exchange of ideas between those involved. The financial control of the agroindustry is done by the son of one of the owners, who has a degree in accounting, who does all the accounting and administrative part of the enterprise. The agroindustry has control and management of its costs and makes the pricing based on these data, working with a percentage of gain suggested by the technicians of the IDR.

The investments made in the agro-industrial enterprise all come from the agro-industry and from a financing made to pay for the expansion of the mill; a percentage of the billing is destined for the payment of the financing and for the working capital. The concern with economic sustainability arises from the discussion on how to maintain efficient growth in the long term, given that the production role incorporates natural resources and is strongly influenced by the external environment in addition to capital (Stoffel, 2014).

In the interview, it was noticed the care that the family has with the financial and administrative part, having a cost and billing control of the activities developed by the conglomerate. Thus, this is a management strategy that provides control of the enterprise's profit margin and, from there, growth strategies can be traced.

#### 4.2.3.4 Technical Assistance

Currently, the only technical assistance received is from IDR professionals, but it does not occur constantly. Technicians only aid when the family requests. The agroindustry manager reported that he misses the assistance he received at the beginning of the venture, which was provided by Itaipu technicians who accompanied and helped the producer to manage the agroindustry.

#### 4.2.3.5 Divulagation tool and effects of agro-industrial activity

The dissemination of products is done informally by the consumers themselves. The family does not show concern now with the dissemination of their products, but reports that they are thinking about discussing this in the future, which is a goal to be discussed by the family.

When asked about the effects of agro-industrial activity in rural areas, the manager replied that the activity represents a high degree of importance for the family conglomerate, as it contributes to income generation, provides their children with the opportunity to stay in rural areas and work in something that, in the future, will be theirs, in a way that contributes to a better quality of life. A negative point reported by the manager is the lack of information, which can generate friction between those involved.

The agro-industrial activity provided the rescue of a family tradition started by the father, which, years later, was reactivated by the children, so that in the future there is the objective of transforming the mill into the main source of income, expanding its production, and taking its products to other regions of the country.

The family recognizes that family agro-industries are demotivated due to the lack of incentives and public policies; also reports that few technicians defend agro-industries and producers. In addition, there is a lack of infrastructure and quality roads, but it is believed that associations and the joining of forces by the sector can contribute to the development of agro-industries within the municipality.

The environmental issue is one of the concerns of the agroindustry, in this way, all the residue produced by the corn milling process is transformed into animal feed. With the new investments, the agroindustry will have a furnace to dry the grains, but, according to its manager, the firewood that will be used comes from dry trees on the property and will be used on a small scale, without considerably harming the environment. The agroindustry also hired



an agronomist and environmental engineer to help with sustainability issues, aiming to develop activities that can contribute to the environment on the family's rural properties.

#### 4.2.4 Property D

##### 4.2.4.1 Rural property identification and insertion

Founded in 2020, the family agroindustry is in the São Miguel Arcanjo community, about 4 km from the urban perimeter of Medianeira. The family has owned the rural property for over 40 years; according to the 42-year-old manager, the property was built by his father-in-law and the family produced grains and was dedicated to dairy farming before the agro-industrial activity.

With a total area of 5.6 hectares, the property allocates 3 hectares to the production of corn and soybeans; the rest is intended for livestock and property improvements. The agro-industrial activity is the main source of income for the property, which offers its customers various colonial products, including salami, lard, black pudding, crackling and ribs.

The main way of marketing the products is through the rural producer's fair, where the products are exposed every Wednesday and Saturday. The producer also sells his products in a bakery and in the agroindustry itself; In addition, the lard produced is sold to restaurants in the city. During the interview, the producer commented that he tried to place his products in supermarkets, but, due to the low price paid for them, the family chose to sell only at the producer's fair.

The idea of starting a business on the property came from the manager. Before dedicating himself to the agro-industrial activity, the manager worked in an industry in the city; due to his father-in-law's health problem, he chose to leave his job and dedicate himself to the activities of the property, which, until then, produced grains and milk.

##### 4.2.4.2 Implementation of agro-industrial activity and occupation of labor

The main motivation for the development of agribusiness was the idea of having another income option, giving visibility to the property, and improving the family's quality of life. This was possible through the diversification of the activities developed, as, in this way, the insecurities to which the property was exposed were alleviated. With the decline of dairy farming, the family left the activity, transforming a family tradition into a source of income.

As the family had no experience with the agro-industrial activity, they sought help from the IDR, which carried out the technical project and provided technical assistance. The city government did all the earthworks for the construction of the agro-industry and the construction was done with its own resources. Most of the agroindustry equipment was produced by the manager and his brother, who liked to work with welding and create equipment; this contributed to the reduction of the cost of implantation of the business.

During the interview, the manager highlighted that the main difficulty at the beginning of the project was adapting to the new work routine and managing the amount that should be produced, how much raw material was needed and how to put this product on the market. But this difficulty was overcome as the agroindustry continued producing its products.

Agricultural and agro-industrial activities are carried out with family labor, which includes the property manager and his mother-in-law. The manager's wife and daughter work in the city as a teacher and agronomist but help the agro-industry when necessary. The manager defends the importance of family labor on the property, mainly due to cost reduction. In addition to participating in the production process, the manager reported having worked with industrial maintenance, before undertaking all the maintenance of the agroindustry equipment, which is done by him, so that several costs involved in this process were reduced.

As for qualification and training, the owner mentioned that, since the implementation of the activity, he has participated in courses and training promoted by IDR. It was found, during the interview, that the owner and the family consider the work rewarding, since it gives them the opportunity to work in their own business, which has contributed to the development of the rural property.

#### 4.2.4.3 Formation and composition of income and financial management data

Another important aspect that motivates the development of livelihood diversification strategies on rural properties is the yield in terms of income improvement, which provides the livelihood of the rural family. The agro-industrial activity, as shown in Chart 8, has become one of the main activities of the property, which also has income from agriculture, public salary, and retirement.

Chart 8 - Composition of the monthly income of Property D

| <b>Activities</b> | <b>Activities description</b>                                  | <b>Income (%)</b> |
|-------------------|--|-------------------|
| Agriculture       | - Production of corn and soybeans                              | 25                |
| Agroindustry      | - Production of sausages<br>- Production of crackling and lard | 45                |
| Others            | - Wife salary (teacher)<br>- Retirement                        | 30                |
| Total             |  | 100               |

Source: Research data (2022).

If, compared with the other properties surveyed, it appears that the family combined traditional activities with more than one non-agricultural activity. These findings are in line with the studies by Barrett, Reardon, and Webb (2001), who argue that few properties manage to collect income through just one activity, having to combine primary and secondary and non-agricultural activities.

Regarding financial management and administration, it was found that the decision-making is the responsibility of the manager because he is more involved with the agro- industry, but he argues that it is necessary to share ideas so that the enterprise continues to grow, so, when necessary, he involves the family in this process.

According to the interviewee, the family is careful with financial control, keeping a cost monitoring to produce each product, but recognizes that it would need to have an even more detailed control. Agribusiness produced the raw material in the beginning, but, due to the increase in costs, it became more viable to buy from third parties; however, on the other hand, its cost may vary from week to week, as it follows the market price, thus making cost control more difficult.

Regarding the origin of the financial resources to develop the agro-industrial activity, the manager mentions that the profits that the family obtained are reinvested in the agro-industry and part is destined for family support, as well as improvements to the property.

#### 4.2.4.4 Technical Assistance

As for technical assistance, the manager explained that the family seeks the IDR, and that the institution always invites him to participate in courses and training. To sign as the technical manager of the agro-industry, the family has a partnership with a professional who supervises the agro-industry and guides the producer on good production and cleaning practices.

#### 4.2.4.5 Divulgarion tool and effects of agro-industrial activity

One of the important issues about the agroindustry is the dissemination of its products. In this way, the agroindustry uses this strategy by promoting its products in different ways, which go beyond the informal done by the client itself. The manager clarifies that the agroindustry has a Facebook page, in which it makes publicity posts, but also exposes the products at the rural producer's fair and has a partnership with a radio program, which advertises in the morning.

The manager reports that publicizing the agro-industry boosted sales, especially when he started publicizing on the radio program. He explains that *“many people listened to the radio program and went to the fair to buy my product and reported that they learned about the agro-industry through radio advertising.”* The investment in publicity and advertising is not high and the manager claims that it brings returns well above the cost he has with this item.

Regarding the effect of agro-industrial activity for the family, the manager considers it positive, since it leveraged the business and income of the family property, as well as provided the producer, who until then had worked in an industry, to work on his own business, no boss pressure and time control.

Through agroindustry, the family rescued a family tradition; the manager reported that his father always made lard and sausage and that his father-in-law also liked to get the family together to make salami. His brother, who died less than a year after the construction of the agro-industry, was the one who encouraged him to rescue these traditions and set up the agro-industry. He and the manager manufactured most of the equipment and thus started the family business.

It was verified, during the interview, that the family makes constant investments in the activities of the property and mainly in the agroindustry, aiming to increase its production capacity, cover more markets, increase the product portfolio and, consequently, the sales volume and revenue. When asked about plans, the manager intends to maintain the production structure and seek to consolidate his brand in the local market.

The family also considers that the existence of other properties with agro-industrial activity brings benefits to the local economy and provides a partnership between producers. The agroindustry has a partnership with another property that also develops this activity but is focused on the production of cheeses; the producer sells the cheeses from this other property at his stand at the rural producer's fair and argues that this partnership brings benefits to both

sides. In addition, the manager argues that the rural producer's fair is a form of association that contributes to rural development and provides more visibility to the small producer.

In addition to being concerned with the financial sustainability of the agribusiness, the family also preserves the environmental sustainability of the business. All waste produced by the agroindustry is reused; according to the manager, *“the bones are roasted and milled and then used as fertilizer for the citrus trees that I am investing to produce in the future, we also work to conserve our springs”*.

#### 4.2.5 Property E

##### 4.2.5.1 Rural property identification and insertion

The property was founded over 30 years ago and is managed by the couple of owners, and develops agricultural, dairy, and agro-industrial activities. Located on the Linha Cassol, in the interior of Medianeira, with a total area of 6 hectares, 4 of which are intended for grain production and two for pasture and improvements, the family has always produced and sold cheese in the city. In the last 5 years, they have dedicated themselves to the family agro-industry, producing colonial cheese, *queijo prato* and cheese in wine, with a maximum production capacity of 20 kg per day, all artisanal production.

The agroindustry supplies its products to markets, pizzerias, delivers directly to the customer and sells the products at the rural producer's fair, in partnership with the producer of property D.

##### 4.2.5.2 Implementation of agro-industrial activity and occupation of labor

The idea of investing in agribusiness came about more than 10 years ago; at the time the family sought the IDR to carry out a feasibility study for the implementation of an agro-industry but gave up on investing due to lack of technical support. A few years later, as the agricultural activity was not going well, the family considered the possibility of leaving the rural property and moving to the city. Afraid of not adapting to the new routine, the couple sought the support of their children and, together with the IDR, decided to seek again a feasibility study for the construction of a family agroindustry. The technicians went to the property and helped the producers to implement the agro-industrial activity, providing support

with the construction of the structure, access to credit with Pronaf, and monitoring the development of activities.

In the beginning, the owner reports that the lack of knowledge about labels, production practices and standards was the biggest difficulty faced by them: “*we were too afraid of doing something wrong, we suffered at first until we got the hang of it*”. The veterinarian and technical manager hired by the producers helped in this process, providing technical support and information on cheese production, hygiene practices and animal handling.

The property has the couple's workforce, who work full-time, and, at peak production times, their daughter helps on weekends. Before setting up the agro-industry the owner had already participated in courses promoted by the rural union, among them, one about hygiene from milking to the final stage of cheese production; by SENAI, she participated in training courses on cheese, in which she learned to make some recipes. Also, at UTFPR, the owners participated in courses on storage and packaging of cheeses for better quality.

The family labor, according to the owner, is the differential of its product; everything is handmade and colonial. According to her, with family labor, “*the cheese is perfect, just the way we want it, we feel safer to sell our product [...] if we hire someone, they may not make it in the same way and quality*”.

#### 4.2.5.3 Formation and composition of income and financial management data

As verified in the property, the agro-industrial activity has a decisive participation in the generation of income and in the permanence of the family in the rural environment. The agro-industrial activity corresponds to about 50% of the property's income; the rest is divided into 40% of agricultural activity and 10%, which comes from the couple's retirement.

Chart 9 - Composition of the monthly income of Property E

| <b>Activities</b> | <b>Activities description</b>     | <b>Income (%)</b> |
|-------------------|-----------------------------------|-------------------|
| Agriculture       | - Production of corn and soybeans | 40                |
| Agroindustry      | - Cheese production               | 50                |
| Others            | - Retirement                      | 10                |
| Total             |                                   | 100               |

Source: Research Data (2022)

It was observed that the agroindustry is the promoting activity that supports the family in rural areas, since, in past times, the family considered selling the property to seek

sustenance in the city. This reality has already been experienced by many producers who, due to different factors, suffer pressures that threaten competitiveness and permanence in the field. On the other hand, the family agroindustry appears as an alternative that can be undertaken by rural producers, regardless of the size of their property.

In the analysis of decision-making and financial management of the property, it was found that the couple makes all decisions together. Producers always seek to talk to their children to have new ideas and exchange opinions about the venture.

As for the financial control, the owner makes a rigid control of the cost of the property and especially of the agroindustry; according to them, *“all expenses are recorded, from the salt and rennet to the treatment for the cows, we also weigh the cheeses at the end of the day to see how much we produce and keep track of”*. The producer is the one who controls the costs and takes care of the financial part of the property, while the owner is responsible for the production of the agroindustry.

The producers studied until the fifth grade, but point out that, even with little study, they try to prioritize the financial control of the property; all costs are accounted for so that the final selling price of the products can be calculated. A part of the profit is reinvested in the agroindustry to keep it running smoothly.

#### 4.2.5.4 Technical Assistance

As for technical assistance, the owner praised the support and assistance that the IDR has provided to the property, as, in addition to sharing guidelines, the technicians have also taken other people to get to know the property and the agro-industry.

The difficulty reported by the producers, regarding technical assistance, is that the technicians did the construction project, and many things are not viable, making it difficult to carry out the activities daily. But, on the property, the family exchanged information with the technicians of the IDR and with the technician in charge of the agroindustry and they reached a consensus for the construction of the structure so that it would become something accessible and practical.

#### 4.2.5.5 Divulagation tool and effects of agro-industrial activity

The couple clarified that the promotion of their products is done by the customers themselves, who will disclose the products to other people. In addition, producers have no intention of publicizing their products in the media, as their production capacity is limited and, currently, production has been insufficient to meet all orders.

Agribusiness plays a very important role in the property, providing economic stability, income generation and adding knowledge. The family seeks to maintain the quality level of its products and its production structure in the long term.

The property has a partnership with Property D, which sells its products at the producer's fair; as the owner does not have time to go to the fair, she made a partnership with this other producer. according to her, *“we help each other, he comes to pick up our product here on the property and sells it for us at the fair, this helps both sides”*.

As for the environmental aspects, the owners emphasize that all waste produced is reused: *“the whey goes straight from the agro-industry to the animals' troughs, while the rennet packages are discarded for recycling”*. The veterinarian and technical manager of the property guides the producers so that nothing is discarded into the environment, reusing the maximum available resources.

Thus, after characterizing the properties of the families surveyed, Figure 4 summarizes the information presented and highlights the characteristics of each rural property.

Figure 4. Characterization of the researched properties summary

| Nº | Atividades agropecuárias                        | Área (ha) | Fonte de Renda  | Produtos da agroindústria                 | Motivações para implantação da agroindústria  | Mão de obra                                 | Gestão administrativa e financeira | Assistência técnica | Divulgação   |
|----|---|-----------|---|---|---|---|------------------------------------|---------------------|--|
| A  | -Produção de soja e milho<br>-Produção de leite | 16        | -Agroindústria<br>-Agropecuária                               | -Derivados do leite<br>-Geleias<br>-Sucos | -Agregar valor a matéria-prima<br>-Aumentar a renda familiar                          | -Familiar e (casal e um filho)<br>-Diarista | -Proprietário e seu filho          | -IDR                | -Clientes  |
| B  | -Produção de leite<br>-Produção de milho e soja | 5         | -Agroindústria<br>-Agropecuária<br>-Aposentadoria             | -Massas<br>-Salgados<br>-Bolos            | -Aumentar a renda familiar  | -Familiar<br>-Cooperação com vizinhos       | -Proprietárias                     | -IDR                | -Clientes<br>-Internet<br>-Feira do Produtor Rural           |
| C  | -Produção de milho e soja<br>-Produção de leite | 50        | -Agroindústria<br>-Agropecuária                               | -Fubá<br>-Canjica<br>-Canjiquinha         | -Agregar valor a matéria-prima<br>-Aumentar a renda<br>-Sucessão da propriedade rural | -Familiar                                   | -Proprietários e seus filhos       | -IDR                | -Clientes<br>-Feira do Produtor Rural                        |
| D  | -Produção de milho e soja<br>-Pecuária          | 5,6       | -Agroindústria<br>-Agropecuária<br>-Aposentadoria<br>-Salário | -Embutidos<br>-Torresmo<br>-Banha         | -Aumentar a renda<br>-Trabalhar em um negócio particular                              | -Familiar                                   | -Proprietário                      | -IDR                | -Clientes<br>-Feira do Produtor Rural<br>-Rádio<br>-Internet |
| E  | -Produção de milho e soja<br>-Produção de leite | 6         | -Agroindústria<br>-Agropecuária<br>-Aposentadoria             | -Queijos                                  | -Aumentar a renda   | -Familiar                                   | -Proprietário                      | -IDR                | -Clientes<br>-Feira do Produtor Rural                        |

Source: Made by the author. (2022)



#### 4.3 CHARACTERIZATION OF MANAGERS OF THE RESEARCHED AGROINDUSTRY

The subjects interviewed, in the five selected properties, were the owners or responsible for the rural property (Chart 10). Through these agents, it was possible to obtain reliable information about the beginning of rural property activities and, above all, the implementation and development of diversification strategies.

Chart 10 - Subjects' Description

| <b>Property</b> | <b>Participants</b>    | <b>Occupation</b> |
|-----------------|------------------------|-------------------|
| Property A      | -Owners couple<br>-Son | Administrators    |
| Property B      | -Mother<br>-Daughter   | Administrators    |
| Property C      | -Owner                 | Administrator     |
| Property D      | -Owner                 | Administrator     |
| Property E      | -Owners couple         | Administrators    |

Source: Made by the author (2022)

The profile of the interviewed managers was researched so that the administrators of the family agribusinesses surveyed are known, such as gender, age, education and how long they have been working with the family agroindustry. The research shows that three family agroindustries have women at the head of the administration. However, as observed during the interview, in agro-industries where the woman is not in charge of the administration, she helps or coordinates part of the production; this was verified at the time of the interview with the rural family, in which the attributions of each member within the rural property were specified. This information can be seen in Chart 11.

Chart 11 - Profile of managers of family agribusinesses in Medianeira-PR

| Gender |   | Age     |   | Education                    |   | Time in Agroindustry |   |
|--------|---|---------|---|------------------------------|---|----------------------|---|
| Male   | 5 | 20 - 30 | 1 | never studied                | 0 | 0 - 2                | 1 |
|        |   | 31 - 40 | 1 | Incomplete Elementary School | 3 | 3 - 4                | 3 |
|        |   | 41 - 50 | 0 | Complete Elementary School   |   | 5 - 6                | 2 |
|        |   | 51 - 60 | 6 | Incomplete high school       |   | 7 - 8                |   |
| Female | 4 | 61 - 70 | 1 | Complete high school         | 4 | 9 - 10               | 2 |
|        |   | 71 - 80 | 0 | Incomplete Higher Education  |   | 11 - 12              |   |
|        |   |         |   | Complete Higher Education    | 2 | Mais de 12 anos      | 1 |

Source: Research data (2022)

The research by Nichele and Waquil (2010) demonstrates the relevance of female participation in family agro-industries; according to the authors, 79% of family agro-industries in the region of Porto Alegre, where the research was carried out, are managed by women. Lutke and Costa (2019) demonstrate that, in addition to women occupying a more considerable space within family agro-industries, they also began to feel more empowered, since many did not have an effective participation in property management and income distribution. In this way, the agro-industrial activity promoted an increase in the financial autonomy and self-esteem of the women involved, providing quality of life for them and their families. But even though data from the 2006 and 2017 Agricultural Censuses showed an increase in the number of women in the management of establishments, from 12.7% in 2006 to 18.7% in 2017, the management of rural properties is still mostly male (Staduto, 2015; IBGE, 2020).

The age of the managers of the family agribusinesses surveyed ranges from 26 to 62 years, and most of them are around 41 years of age. During the interview with the managers and the rural family, it was noticed that, even though the children are not the main managers of the agroindustry, they help the management activities by controlling the cash, property accounting, sales, among others. The research by Quadros (2012) shows that, in the decision-making process in family agro-industries, the participation of all family members is perceptible, however, there is still a concentration of the decision-making process in the head of the family (father figure). The author also shows that agribusiness has generated a positive effect on the permanence and subsequent succession of young people in rural areas, by providing a certain autonomy, involvement in decision-making and satisfaction with the activities carried out. In this way, family agro-industries become a work alternative and

stimulus for young people who intend to remain on the property and, consequently, succeed their parents on the rural property.

What drew attention regarding the age of the managers is that, in four properties, the agro-industrial activity started after the age of 38. The justification of one of the managers was that he would like to leave the job he had in an industry in the city to dedicate himself to something within the property that would bring benefits to the family. In one of the cases, the manager stated that, before implementing the agroindustry, she considered going to work in the city, as she needed to add income for her family. In this context, this practice was common among the women of the community, but due to an encouragement from her husband, she decided to dedicate herself to something different, in this case, pasta and baked goods.

In the education item, all managers of the surveyed agribusinesses have some level of education. As can be seen, in the profile of the managers of rural properties, who have the family agroindustry as a form of diversification in Medianeira-PR, one has incomplete elementary school, five have completed high school and two have completed higher education. The manager with the least education is over 60 years old. According to Cunha and Costa (2012), in the past, people who lived in rural areas did not care about education; the priority was work with the crops and animals. But, as can be seen in this research, this conception is gradually being modified, so that rural producers and their families have sought to specialize, including through higher education courses.

Regarding the time they work in the family agroindustry, six of them have between one and six years, two managers of an agroindustry have overseen their property for 10 years, another manager has been managing the agroindustry on the property for more than 12 years. This manager, who has more time at the head of his agribusiness, is introducing his children and nephews into the activity and preparing them to continue leading the business later.

The initial stage of the interviews characterized the diversified rural properties that participated in this research, collecting information related to the area, activities developed, sources of income from the property, implementation of agro-industrial activity, product portfolio, motivations for implementation, labor, financial management, technical assistance, and dissemination of agro-industry products. These data contributed to understanding the process of implementation and development of agroindustrial activities within the rural property.

#### 4.4 RURAL DIVERSIFICATION STRATEGY

The diversification of rural incomes is one of the means by which many producers reduce the risk. It is understood as a form of self-assurance that reduces yield variability by selecting a portfolio of resources and activities that have low yield correlation. This strategy helps small producers to remain on the property and to increase sources of income and reduce rural exodus (Schneider, 2010).

In this topic, we analyzed, based on the proposed methodology, the collected data related to the diversification of the means of income, the access and use of capital and the elements that modify and interfere in the access to capital.

##### 4.4.1 Livelihood diversification

Regarding income sources diversification strategies, Ellis (2000) argues that diversification consists of a process that provides quality of life and well-being for the rural family through the development of new activities integrated to social factors and trends, which result in the adoption and adaptation of properties in the long term and, consequently, increase their income.

In turn, there are exogenous factors in this process such as pests, technological lag, volatility of product prices, climate, seasonality of production, among others, capable of generating uncertainties regarding the economic situation of the rural family. The property that develops only one activity will be in a situation of vulnerability, when afflicted by uncontrollable circumstances. In this sense, income diversification is presented as an effective strategy for rural producers to manage uncontrollable factors, since they can reduce these impacts and increase the ability to recover, stabilizing the rural property subsistence system (Wan et al., 2016).

In this way, diversification in Properties A, B, C and E was achieved through agro-industrial activity, finding, in the figure of their owners, the stimulus for their implementation. In these properties, the option for the agroindustry was motivated by the need to increase the property's income and add value to the raw material, which, mainly in properties A and E, was going through a period of low prices, in addition to allowing families to remain in the rural property. This fact confirms what was exposed by Foguesatto and Machado (2017), who

evidence the fact that rural properties are looking for alternatives that provide the economic development of the property and contribute to the reduction of the rural exodus.

These producers invested in colonial products, each with a differential capable of attracting customers. The son of one of the owners points out that “*there was a demand for colonial products, but there were few producers concerned with producing differentiated products to sell, it was a little noticed market in the city*”. Property A, seeing the opportunities in this market, invested in cheeses and sweets that were not found in local markets and fairs.

Property C also focused on an untapped niche market; the family worked with dairy farming and grain production, in a conventional way, however, an Itaipu project sparked the idea of directing grain production to organic. The family conglomerate started to produce organic soy and corn that were destined for export. With that, the manager reported that he began to perceive the business from another perspective:

I started reading about the subject and asked myself the following question: why are we producing quality organic products for export? We produce for others and not for us to consume, that's when I came up with the idea of reactivating the mill, so that we could consume this quality product here in our city, in our region. Another point was that with this activity we could have another source of income for our families and keep our children working on the properties (verbal information).

Another similarity between the rural properties surveyed is the desire of the owners to remain in the rural environment and the ability to find new alternatives to guarantee the family's livelihood and improve their well-being. This analysis culminates with the point of view of Ellis (2000), when referring that diversification converges with the purpose of survival and improvement of the standard of living.

Analyzing the reasons that drove the diversification of productive activities that contribute to improving the quality of life of the rural family, the manager of Property D declared that “*we saw in the agroindustry the possibility of working on something that was ours, setting our own hours, working our way, and we believed that the activity would add more value to the property*”. This report confirms the findings of the study by Besen et al. (2021), considering agribusiness as a strategy for social reproduction and development of rural families, adding value to the agricultural enterprise.

This experience lived by the properties surveyed also confirms the view of Ternoski and Perondi (2014), in the sense that the ability to diversify activities within a property result in its economic strengthening, providing greater financial stability and less vulnerability.

The results of the analysis, related to the motivation for implementing the diversification strategy contradict, in part, the study by Assan (2014), who mentions the impact of diversification strategies as limited, with survival being the motivation for diversification. In the properties surveyed, motivation is related to income generation, professional fulfillment, rural property development and improvement in the quality of life of families.

Starting from the motivation to undertake some factors that facilitated the implementation of the strategy of diversification of activities, in Properties A and E the access to the raw material of dairy cattle developed in the properties for many years, was crucial to implement the agroindustry. Another point highlighted by one of the owners was the fact of producing products with a distinct flavor: *“When we started just with cheeses, we could see that the customers would consume what we produced differently with quality because it was something new. The adhesion was very good”*. In addition, the support and incentive of the IDR, to set up the agroindustry, were also aspects that facilitated the implementation of the strategy and its improvement in both properties.

Family labor was pointed out by Properties B and C as one of the factors that facilitated the implementation of agro-industrial activity. Property C also points out that the fact that the mill already exists on the property, the production of grains belongs to the family's properties and the financial support of the Itaipu and Pronaf project were aspects that facilitated the development and implementation process of agribusiness on the property. Thus, it was noticed during the interview that the experience of the family meets the perception of Ferreira (2013), in the sense that the opportunities available on rural properties are valued by rural families, which put into practice diversification strategies and add value to the rural environment.

In Property D, among the factors that facilitated the implementation of diversification strategies, is the location of the property that facilitates locomotion and provides opportunities for the sale of products in the agroindustry itself, as reported by the manager: *“there are people from the neighboring city who always stop by before leaving, to buy our products and take them to other people there, it's in their way because it's close to the highway”*. The location of the property facilitates marketing strategies and creates greater interaction with the customer, who, in addition to buying the product, knows the agro-industry and the production method.

Regarding the difficulties faced, three properties pointed out that adapting to all standards was a challenge. One of the producers explains that *“it was necessary to build a*

*structure to meet all the standards*”; another manager argues that *“the city hall made a technical project with all the surveillance standards, and we didn't have much knowledge about the activity. We followed what they put in the project and today I see that we didn't need to have built such a large structure, we could have made a smaller investment”*. Another difficulty, reported by Properties B and C, is the lack of better roads to give access to rural properties and support from government officials who can defend agro-industries.

Relating the aspects pointed out by rural managers and the study by Neihof (2004), when mentioning the ability of families to avoid or reduce vulnerability and increase economic productivity, this does not depend only on the assets already acquired, but also on their capacity to transform assets into income and products effectively. According to the author, these assets can be transformed in two different ways: for the intensification of existing strategies and for the development of new diversification strategies.

In the analysis of properties, some answers converge to a common point: agricultural activities lost competitiveness in these properties, ceasing to be unique, presenting the agroindustrial activity as an alternative to increase income, reduce risk, make rural property viable and greater guarantee of economic stability. These results are identified by Barrett et al. (2001) as primary reasons, that means the agroindustry proved to be a promising alternative for rural development. In this way, the enterprise contributed to the reduction of risk, functioning as a defense mechanism against crises that put pressure on the agricultural sector. In addition, the establishment of complementary strategies between activities and the development of skills and talents is indicative that agricultural activities are being modified and offering more space for other activities that are not exclusively agricultural.

Regarding the factors that facilitated the beginning of the agro-industrial activity, the cultural wealth, the ability to communicate and the conviction that the enterprise would work, reflect on the promising development of properties and their agro-industries. As for the negative aspects, there is a lack of support from public policies and the lack of a structure for adequate access to properties. In this sense, it is observed that the feasibility of a diversification strategy in any type of enterprise requires the mobilization of resources or capital that are strategic for its realization.

Chart 12 makes a systematization that corresponds to the reasons to diversify, as well as the factors that facilitate and hinder the implementation of the diversification strategy. It is possible to visualize the reasons that led families to diversify their activities. The main factors mentioned were the need to remain in rural areas, increasing their financial income, in

addition to improving their quality of life. There is also a need to add knowledge, among other.

Chart 12 - Reasons to diversify and factors that facilitate and hinder the implementation of the strategy

| Property | Motives  | Facilitators  | Difficulties   |
|----------|--|---|--|
| <b>A</b> | -Need to increase income<br>-Add value to raw material   | -Feedstock<br>-Differentiated products<br>-Family tradition       | -Adjust to the rules                                   |
| <b>B</b> | -Need to increase income   | -Family workforce   | -Lack of infrastructure                                |
| <b>C</b> | -Need to increase income<br>-Add value to raw material<br>-Keeping the family in the countryside | -Family workforce<br>-Feedstock<br>-Support of the Itaipu Program | -Lack of infrastructure<br>-Lack of government support |
| <b>D</b> | -Need to increase income<br>-Better quality of life  | -Location<br>-Family workforce<br>-Family tradition               | -Adjust to the rules                                   |
| <b>E</b> | -Need to increase income<br>-Keeping the family in the countryside                               | -Feedstock<br>-Differentiated products                            | -Adjust to the rules                                   |

Source: Research data (2022)

Thus, according to Welrin et al. (2017), one of the reasons for diversifying activities is the perception of risks and uncertainties arising from the development of a single activity, as well as the optimal use of available resources.

#### 4.4.2 Access and use of capital

Access to the five capitals – natural, physical, human, financial and social – is essential for the implementation of the diversification strategy to be efficient (Ellis, 2000). Access to these capitals contributes to the development of productive activities on rural properties.

Natural capital is comprised of land, water, and biological resources, which are used by individuals as inputs in the generation of means of survival; this capital is also understood as an environmental resource or even as “environment” (Ellis, 2000). The properties surveyed use their resources to develop their activities and, on the other hand, contribute to their preservation.

The properties surveyed have as their natural capital the land where they grow grains, produce milk, and preserve the forest and native vegetation. The properties grow grain in the



flat areas and the more rugged terrain is used for dairy farming. Water is a resource used in large quantities by rural properties. Seeking their preservation, they capture rainwater through cisterns and, later, use this resource to wash the agroindustry. Properties B and D have an artesian well that provides water for the family and for productive activities; In addition, these properties work to preserve the springs and the banks of the rivers that flow through them.

This link between the rural property and the environment is essential for rural development. Corroborating the study by Freitas, Rambo, and Schneider (2014), active land depends heavily on the preservation of springs, rivers, native forests, soils, among other resources and, through this asset, other activities are developed on the property, such as agribusiness.

On property C, the manager reports that the river, which supplied water to the property, was damaged by pollution: *“we have a beautiful landscape with a waterfall, but because of people's lack of awareness, the water is unfit for consumption, we even thought about investing in rural tourism because of the landscape, but this made us give up”*. Property E also preserves its native vegetation area and has two water wells drilled more than 20 years ago, which continue to supply quality water to the entire property.

Analyzing natural capital from the perspective of its availability and use in the viability of the diversification strategy, the dimension of its attractiveness and use becomes evident. Therefore, according to the analysis of the natural capital of the properties, it can be inferred that, among the families, there is a consensus on the sustainable production and the conservation of the natural resources of their establishments, over the years, being essential to guarantee the quality of life, especially in rural areas, where “sustenance” comes from the exploitation of these natural resources. It is necessary for properties to look at their means of production and seek more sustainable alternatives, reinforcing Rocha's (2019) conclusion that there are still adjustments to be made in the process of family agro-industries so that they are fully sustainable.

The second capital is physical, which comprises improvements, machines, tools, and infrastructure. At the beginning of the rural enterprise, properties A, C and E had facilities that could be used for the family agroindustry, and it was necessary to expand or renovate to adapt to the norms.

Equipment and machines for production are the main items of physical capital, among which we can mention: tractors; planters; milkmaids; packaging machines; pasteurizer; stone mill; storage silos; grain dryer; cylinders, kneader, industrial oven; refrigerators, freezers, industrial mixers; hydraulic filler, pans, cold chamber, mixer, among others. All this

equipment is necessary to improve the condition of the infrastructure and its objective is to facilitate the agricultural work of the family property, making labor available for other activities or even improving productivity. In this sense, Ellis (2000) states that infrastructure facilities and equipment have a relevant impact on reducing vulnerability, contributing to increased mobility of resources and producers' sense of choice.

Owners also report that acquiring physical capital was a challenge at the beginning of the activity, due to the high cost, but they emphasize that they are essential to maintain productive activities and generate income for the family. It is noteworthy that the increase in capital available on the properties can be justified by the observations on the elaboration of projects for the acquisition of credit via Pronaf, through which three families acquired equipment for the agro-industrial activity. This reality is also evidenced in the study by Poletto (2019), who identified the increase in investment in technology through Pronaf credit lines, contributing to the permanence of the family in the countryside.

With increasing technological development in rural areas, Ellis (2000) warns that natural capital may be replaced by physical capital, due to technological advances, thus reducing the rate of depredation of natural capital.

As for infrastructure, four properties reported that road access could be better: *“we suffer from the poor conservation of the roads, we do not have polyhedral paving in most of the stretch and when it rains it is difficult to leave the property, we feel abandoned by the city hall”*. Producers are concerned about investing in infrastructure, so they have already sought investment from the government, but so far, they have not had a return; on one of the properties, the dirt road was renovated more than six years ago and is in poor condition.

Communication networks and power lines are classified by producers as reasonable and good, as some properties have internet and telephone service limited to a single company and the signal is not always of good quality. Power lines are still divided between two companies, Copel and Cerme, but on days of heavy rain and wind, the power service takes longer to normalize in most of the properties surveyed.

Another important capital for the diversification strategy is human capital. Sen (2010) establishes that the human aspect is essential in understanding the possibilities of making changes in the living conditions of individuals. For the author, education, health and information are elements called minimum in people's lives so that they can overcome contexts of risks and uncertainties, in addition to having consumer goods and basic infrastructure to survive; thus, they may be able to promote empowerment, having direct implications for the improvement of living conditions.

In the properties surveyed, human capital is made up of family labor. Properties A and C receive help from their children to carry out the activities of the property and agro-industry, both in administration and production. Both properties encourage the preparation of this capital and defend that education is one of the most relevant strategies for the success of the rural enterprise. According to property manager C: *“college provides theoretical knowledge and rural property enables the application of this knowledge in a family business that can bring countless benefits”*. This view reinforces Senadza's (2014) point of view, that education is a crucial item for the formulation of a livelihood diversification strategy, because through it, opportunities are created that favor access to information.

The concern with family succession made producers invest in the diversification of family property, to generate income to provide quality of life for future managers. The results of the study by Moreira (2018) contribute to this idea, pointing out that the greater the portfolio of capital and the amount of assets available, the greater the ease of keeping young people in the countryside. In this way, these assets and capital are used as strategies to mobilize generational succession in these small family properties.

On properties B, D and E, human capital is made up of family labor and partnerships formed with other rural producers; In addition, none of the three families has higher education, but they believe that training is essential to prepare them for the challenges of everyday life. This cooperation enables the growth and exchange of ideas; one of the managers reports that *“this partnership made me see that I need to improve my cash control. My partner has excellent cost control. The partnership brings benefits to me, because I expand my products, having more options for my customer”*. In property B, human capital was strategic at the beginning of the agro-industry activities, as it made it possible to reduce costs, developed communication and expanded the owners' view of their business. The managers emphasize that the challenge of this capital is to make the young person stay in the countryside and not migrate to the city; another point pointed out by property A is the lack of quality and specialized labor, which can interfere with the growth and longevity of the property.

It is noteworthy that human capital, composed of family labor, enabled the development of communication skills, expansion and strengthening of knowledge about management and development of new products, as well as activities for the managers of the five properties. Collaborating with the study by Padilha (2009), it is evident that the combination of prior knowledge with assimilated knowledge provides the development of new products and services. In addition, traditions made possible the intellectual exercise in

rescuing the historical memory of each property, providing investments in education aimed at the management of rural property and agro-industry, in addition to improving individual skills applied to the business. In this way, the access and development of human capital refer to the understanding that, in each property, resources that were within their reach were mobilized and accessed, which, according to demand, were, over time, enhanced, which resulted in the successful diversification of rural family income.

For diversification income to take place on rural properties, financial capital plays a notable role in building the portfolio of assets and strategies, mainly by converting into other forms of capital or consumer goods. Income and access to financial resources are relevant for the survival of families and for the expansion of opportunities (Sen, 2018).

To start the agro-industrial enterprise, three properties sought a line of financing from Pronaf; according to one of the managers, *“the interest was low, and we had a good payment term, without this line of credit we would not have started the agribusiness at that time”*. Financing with government resources has contributed to rural development and provides the rural producer with differentiated rates and terms, diluting the payment of the investment.

The other two properties surveyed implemented the agro-industrial activity through their own resources from agricultural and livestock activities. However, one of the properties obtained financing to diversify and improve other activities on the rural property, such as the shed built to house the matrices that supply the raw material.

Through the interviews, it was possible to identify that the Pronaf credit lines were essential for the properties to develop their productive activities. The low interest rate, compared to that practiced by other lines of financing, and the payment term are aspects that facilitated its adhesion. However, it was found that the smaller properties showed a greater dependence on this line of credit, because they have less of their own resources to invest in the implementation of diversification strategies on the rural property.

The properties have, based on Pronaf, modernized their processes, acquiring equipment and implementing easily accessible technologies. This line of credit has provided greater development for small properties, confirming the trend pointed out by Poletto (2019) that most small properties have been modernized by making use of these low-interest operations subsidized by the federal government.

The last capital, the social, was also significant in the process of making the strategy of diversification of livelihood viable in the rural properties surveyed. This capital involves the relationships of the individual or family unit within the community in which it is inserted (Ellis, 2000).

According to the owners, the families have a good relationship with the community, maintaining links with associations, local communities, churches, cooperatives, rural workers unions and with the Rural Producer Fair; one of the managers is also president of the cooperative of small rural producers. This capital, as evidenced by Moser (1998), is represented by the reciprocity that exists between communities and family units, which strengthens the trust derived from social bonds.

When producing for the local market, in short commercialization circuits, producers establish a close relationship with their customers, direct consumers and expand their learning about the functioning of the market. This relationship is loaded with lessons learned, reflecting a greater concern of rural producers to listen to consumer demands and meet their expectations, producing quality and healthy products (Padilha, 2009; Molina et al., 2014).

This greater autonomy of properties confirms the hypothesis of Conterato and Strate (2019), which considers producer autonomy facing the market as a social innovation capable of improving livelihoods. This is possibly related to the fact that the families surveyed produce food with specific characteristics of their family, typically from the locality in which they are inserted and produced in an artisanal way (Pereira dos Santos, 2018). This conclusion also confirms the idea defended by Gomes (2016), that the social environment provides the opportunity for producers to create their marketing channels linked to their reality.

The managers emphasize that the diversification of income and livelihoods, as stated in the Bebbington studies (1999); Ellis (2000) e Ploeg (2008), It is a strategic process that families use to motivate a more stable situation with the objective of improving their quality of life, including reducing the influence of adverse conditions caused by crises and overcoming the difficulties imposed by problems or limitations in their productive activities.

Regarding the identification of needs and difficulties for the implementation of the diversification strategy, human capital is what most concerns property managers. They point out that there is some difficulty in terms of manpower; in some cases, the rural enterprise could grow in potential, but it is limited to skilled labor. Another item mentioned by families is access to credit, as they are afraid of losing Pronaf credit lines, since, according to producers, external financing lines have very high interest rates, which can make investments unfeasible.

The strategy of diversifying sources of income and the level of security achieved by rural properties are also made possible by the identification of capital needs, which, when used, help to achieve a certain level of financial stability (Niehof, 2004). It is important to emphasize that the capital that could not be used in the income diversification strategy, in a

way, did not threaten the composition of products of the properties. However, the ease of access to capital, which has not been achieved, can contribute to achieving a more secure and robust financial stability.

#### 4.4.3 Elements that modify access to capital

Due to the complexity of processes within the agribusiness sector, managers must be prepared to seek ways to make their business viable and achieve an adequate level of sustainability or a competitive standard that is self-sustainable to keep up with the world scenario. Based on the idea that rural properties are pressured by external and internal forces, which influence the coordination of their activities, some aspects are linked to the modification of access to capital in the process of the diversification strategy through agroindustry. Thus, the elements that modify access to capital, according to Ellis (2000), are: social relations, institutions, and organizations. These elements are related to social class, sex, age, ethnicity, religion, formal rules, codes of behavior and forms of association.

Access to **natural capital** is modified due to bureaucracy and obstacles created by legislation related to rural areas, but one of the properties believes that zeal with the environment is justified, as it is necessary to preserve natural resources so that properties can continue using it. In the results presented in the study by Faoro (2017), the bureaucratic obstacle is also cited as a factor that modifies and interferes with access to capital, which is often an obstacle in the diversification process. The IDR technician justifies that there are procedures that are necessary for the development of activities and that the institution does everything possible to assist and facilitate the bureaucratic procedures that are within thereach of the institution.

One of the properties considered investing in rural tourism, but, due to the bureaucracy with licenses and compliance with the legislation applicable to the sector, they gave up. Therefore, these bureaucratic obstacles modify access to natural and financial capital, limiting the exploitation of property and preventing its expansion.

As for the **physical capital**, its access is modified mainly by the lack of conservation and lack of maintenance of the municipal roads. Two properties reported that, on rainy days, they stopped delivering products from the property because they had no way to leave the house; in one of the reports, the producer mentions the neglect of the municipal administration: *“we move a good part of the city's economy and even, so we are not seen by*

*the government, this situation is shameful*". This infrastructure problem affects practically all activities in the production chain of the properties surveyed and hinders the development of the sector.

The lack of skilled and accessible labor makes it difficult to access the human capital of the properties. As a result of the rural exodus, families have difficulties finding labor that resides close to the rural property; thus, to adapt to this scenario, families have sought cooperation. Thus, in properties D and E, **human capital** modifies access to capital, because, according to managers, they practice cooperation to develop their business. The owners of property E do not have the help of hired labor and, if it were not for the partnership with another property to market their cheeses, they would not be able to sell them at the rural producer's fair, because, as the fair starts at 5 pm morning, would coincide with the milking time of the cows. This action confirms Niehof's (2004) idea that the level of security of the family unit's livelihood is the result of the processes that occur within the unit itself, according to the resources it develops to remain in the market.

The rural properties surveyed report that the difficulty related to access to human capital modifies the **financial capital** of the rural property. Two properties mention the lack of labor as a limiting factor for their growth and expansion. One of the producers reports that: "*My wife and I have already decided that after we can no longer play, the only alternative will be to close the agroindustry, because we don't have anyone to work, we are investing only to maintain and not to grow more*".

Regarding **social capital**, the data collected in the five properties surveyed did not demonstrate interference caused by aspects related to sex, religion, social class, and age.

However, in terms of organizations and institutions, formal rules modify access to capital necessary for the diversification strategy process. One of the producers reports that "*the process of legalizing products and agribusiness is full of little things, and often the employees themselves do not know how to pass on information*". The hired labor also generates changes; according to one of the managers "*as we are family producers, we cannot have hired labor, otherwise it will harm us later to retire, among other things*". Therefore, the analyzes carried out point to a relationship with the discussions by Ellis (2000), demonstrating that social relationships, institutions, and organizations are critical mediation factors for income generation, facilitating or hindering the performance of the capacity and choice of small producers rural.

#### 4.4.4 Elements that interfere with access to capital

Regarding access to available capital or resources, rural families can be modified by a set of factors, as well as being subject to trends or unexpected negative externalities, called external shocks (Ellis, 2000).

In this sense, it could be noted that, among the elements that interfere with access to capital, the properties surveyed mentioned trends related to rural exodus, the adoption of new technologies, economic trends, and price formation. These elements are present in the daily life of rural properties and, as pointed out by Niehof (2004) and confirmed by this study, each manager has created a strategy to try to minimize these interferences, using resources from the processes that occur within the family property.

Managers understand that the main element that interferes with access to humancapital is the migration mainly of young people to the city, resulting in the aging and reduction of the rural population. One of the managers claims that the difficulty of exploring the land efficiently and productively led families to migrate to urban centers, as staying on the rural property became unfeasible.

The managers of properties A and C comment that the lack of labor has been compensated with the evolution of equipment and technology, both in agricultural and agro-industrial activities. Agricultural machinery allowed families to reduce their dependence on labor; In addition, the equipment in the agro-industries facilitated the means of production and helped to increase the quantity produced. The IDR technicians report that, to overcome this lack of labor in rural areas, they have guided the adoption of new practices and encouraged some properties to invest in technologies accessible to small producers, with the help of programs such as the Pronaf and the *Banco do Produtor Rural*, for the acquisition of equipment and machinery.

In addition, the technological means of communication have become an important tool for the dissemination and commercialization of the products of three properties surveyed. But the cost of accessing this technology is still high for some properties, a factor that has limited technological investments.

Technological advances have also improved the quality of life of rural families, as machines and equipment have reduced manual work. This conclusion collaborates with the study by Gautam and Andersen (2016), advocating diversification of livelihood as an effect



with a direct impact on the well-being of the rural family, which generates opportunities for the less favored.

Families also reported that they do not regret having invested in the property and running rich, because, in addition to diversifying their income, with the significant increase in commodities, the value of land has increased the value of the rural enterprise. One of the producers mentions that: *“we even thought about selling the property, but luckily we didn't close the deal, we earned a lot more staying on it and cultivating our land”*. On the other hand, this increase in commodities also raised the production cost of producers in four agro- industries, increasing the price of the final product to the consumer. Thus, another element that interferes with access to capital is economic trends, which directly affect the cost of products and price formation.

This exposure to economic trends made properties strategically seek technical assistance to manage their activity, confirming one of the conclusions of Foguesatto (2016), who classifies the ability to face economic situations as a strategy, with management applied to new technologies and the use of technical information that became allies of the producers in this process of adaptation to the market.

In relation to external shocks, producers who have agricultural and livestock activities reported that the greatest concern is with possible storms, since the region, in the last year, suffered from climatic interferences that directly affected production, in addition to droughts and pests that can harm crops.

A common curiosity in the five properties was the fact that, even with the pandemic, which started in 2020, the demand and sales of their products have increased, by more than 50%; the producer of property E points out: *“I thought that with the pandemic there would be leftovers, but people kept calling asking for cheese, I was impressed, my sales increased significantly to the point of running out of product”*. The producer also believes that the value of natural capital, as well as artisanal products, is in a process of valorization: *“my products are made in a colonial and artisanal way, I don't use food preservatives and customers have been looking for healthier products, it's a growing market”*. However, it mentions that public policies are needed to encourage the expansion of conscious and sustainable production.

Agribusiness has modified the rural environment and provided a greater degree of sustainability for small properties, confirming the conclusions of Passini (2020), which proves the positive relationship of the existence of agroindustrial activity on rural properties and the level of sustainability of the financial, physical and environmental dimensions.

The existence of factors that modify income strategies, which translate into impacts for rural properties, can also be noticed in some circumstances, as factors that interfere with access to capital and impair the effective reach of income generation were identified. However, it was found that the greater the access to capital, the greater the ability to generate income and remain on the rural property, which highlights the importance of the ability to manage the relationships that facilitate this access and its transformation into income strategies into consistent “results”.

#### 4.4.5 Rural diversification in the view of IDR extension workers

In the five properties surveyed, the managers mentioned the IDR as an institution that has contributed to the development of their productive activities. In conversation with the technicians, they mention that the diversification of productive activities, especially on small properties, brings countless benefits to the rural family and local community. In addition, the diversification of activities and products is classified by the technicians in horizontal and vertical diversification, as mentioned by them: “*vertical diversification is when more activities are incorporated within the property and horizontal diversification, mainly in agro- industries, is product diversification*”. The institution seeks to help and advice on the development of rural properties, to provide producers with access to knowledge and information capable of changing the reality of the family.

As for the motivations that lead producers to diversify, the technicians mention the search for income generation and improvement in the quality of life, as unanimous reasons among rural producers. In addition, they share reports of properties that were resistant to diversification but, when put into practice, had a drastic change in way of life: “*the producer saw that even with only 3 hectares of land he would be able to generate income through diversification and be able to travel to the beach whenever he wanted, something he would never have done before*”. Another reported fact is that, through diversification, there was an opposite effect of migration; the children of producers are returning to the countryside to work on the property, investing in new activities or specializing in activities already developed.

The agro-industrial activity has grown in the region and the IDR has sought to be closer to the rural producer, encouraging, sharing knowledge, technically guiding, and helping producers in the bureaucratic part, especially in the agro-industrial activity, in which

producers do not dominate the bureaucratic procedures. Technicians report that “*agribusiness promotes the development of an activity that is not only agricultural, but it also makes the property develop alliances, have marketing skills and, above all, be able to improve their lives*”.

As for public policies, the technicians highlight the aid and projects developed by the government as facilitating factors in the development of small producers, citing the *Banco do Produtor Rural* as a facilitator of access to credit, which offers subsidies for the acquisition of solar panels and equipment for agro-industries and machinery in general.

Regarding the difficulties faced in the process of disseminating rural diversification strategies, the technicians cite the culture and the stagnant visions of some rural producers, who cling to past ideas and results that only large crops generate potential income for properties: “*we have difficulties to make the producer understand that he can introduce countless forms of diversification in the property that will generate income and that it is not necessary to have large areas to be economically sustainable*”. Even facing some barriers, the technicians report that the producers have looked to the institution to help the development of strategies capable of promoting the economic growth of the property and, in most cases, those who have sought this support are the younger public, which represents the succession of rural properties. These new managers have seen the diversification and specialization of activities to make small properties more promising, reducing exposure to risk and increasing the economic and environmental sustainability of the rural enterprise.

In the view of IDR technicians, some properties have very uneven terrain, making it difficult to produce grains. In this way, such properties have sought to diversify, through agro-industries and the production of fruits and vegetables, using the natural resource of their springs to produce and transform their products. Regarding human capital, they highlight that most small properties have only family labor, which is a factor that has limited the development of some properties. Finally, social capital, in the view of the technicians, is what adds value to rural enterprises, since the institution helps producers to insert their products in the market and, in this way, social currents are created by producers and the community.

## 5 CONTRIBUTIONS TO PRACTICE

This study demonstrated the importance of family agro-industries in the context of diversifying livelihoods for small rural properties. This importance goes beyond the common objective of all enterprises, which is the generation of profit, as it was noticed that these rural properties bring to their families something besides income, such as quality of life, family life and succession, expansion of security of the sustenance and preservation of existing resources on properties.

The diversification of the livelihood of small rural properties is an alternative that provides the development and aggregation of value to the rural enterprise. Agribusinesses are relevant for the sustainable development of these properties, as they generate employment and income; in this way, they contribute significantly to the permanence of families in rural areas. In addition, these rural establishments tend to strengthen when they receive assistance and technical assistance provided by institutions such as the IDR, which also offer producers courses and training to better manage their properties and agro-industries.

The practical contribution of this study is in providing information to the agencies that help rural properties in Medianeira-PR, such as the Instituto de Desenvolvimento Rural-IDR. The analyzes carried out can serve as support for the evaluation of the performance of rural properties and their family agro-industries, so that these institutions can assess the need for technical, environmental, social and financial support, and can take programs aimed at development to the properties of rural diversification, such as the Banco do Produtor Rural Paranaense, which makes resources available to small properties and has lines of credit aimed at family agro-industries. In addition, these institutions can seek actions focused on the problems faced by rural enterprises, with the mission of making them more sustainable from an environmental and financial point of view.

The difficulties reported by rural landowners can also help the formulation of public policies in the municipality, with the aim of mobilizing resources to provide rural producers with better infrastructure conditions of access roads, technical assistance for the commercialization of their products and development of programs that can encourage other producers to diversify their activities and thus remain on their rural properties.

The research also contributes by showing that rural properties have a lot of potential that can still be explored, as they are not producing at their maximum capacity. Three of the properties surveyed do not use their maximum production capacity; two of them do not use

the credit lines provided by the government to expand the agroindustry. One of the justifications presented by the producers is the lack of knowledge to explore new markets and especially the lack of manpower to work in the family agroindustry. It is noteworthy that, at the moment, rural properties limit their production to the local community, selling their products at the rural producer's fair, in supermarkets and directly at the customer's residence, except for two properties that also supply their products to neighbor city markets and for school lunches.

The theoretical contribution of this research comes from the study of strategies applied by family farms, which diversify their activities through family agroindustry, as there were no studies focused on diversification strategies based on these enterprises, here, in the region. Furthermore, this study theoretically contributes to the survey of rural diversification strategies, which can be replicated in family agro-industries in the region and in other properties that seek to diversify their productive activities.

The study collaborates with some suggestions of possible practices and solutions for the improvement of rural enterprises, as it was found that, in general, the family agribusinesses researched are sustainable, however, there are some points that can be improved in the environmental scope. One of the properties does not properly dispose of recyclable waste, claiming that there is no collection of recyclable waste, and, in the manager's view, there are no problems in burning this waste. In addition, the reuse of water should be a subject for technical assistance meetings, since, according to the research, only one property has a cistern to reuse water and none of them reuses water from agro-industrial activities. An alternative to raise awareness is through environmental awareness campaigns on rural properties, to assist and inform residents, in general, about the correct way to dispose of their waste.

Finally, it can be said that this study contributed to managers, as they can reanalyze their rural enterprise, checking where they need to improve to be more economically and environmentally sustainable; also, for public agencies, as they are able to verify the points in which they should reinforce assistance and allocate resources. In this study, the results specifically of the diversification of means of income and the focus on agribusiness as a diversification strategy are still found, enabling the analysis of capitals, in order to measure the reality of small family properties.

## 6 FINAL REMARKS

Understanding that agribusiness is increasingly challenged in terms of increased competitiveness, the sector and its production chains have been forced to review their strategies of action in an increasingly globalized market and exposed to uncertainties. Some producers cannot keep up with this flow and end up leaving their properties, but, on the other hand, some insist on staying in rural areas and develop strategies that generate income, as well as guarantee the subsistence of their families. Such findings can be seen in the phenomenon of family agro-industrialization, which provides its customers with quality colonial products.

Therefore, considering the reality of the small properties object of this study, an analysis structure was applied that allowed to evaluate the process of implantation of the strategies of diversification of the sustenance, in the small properties of the city of Medianeira, in a way that it was verified how the strategies of diversification used were implemented, especially in the agro-industrial activity.

Through interviews with managers and rural families, it was found that the need to increase income to remain on the property was the main reason that led producers to diversify their activities, confirming the results of Padilha (2009) and Ternoski and Perondi's (2014) studies. The family succession of the property and the search for a better quality of life were also mentioned as reasons to diversify activities, collaborating with the study by Gautam and Andersen (2016).

However, both rural properties adopted diversification strategies over the years, so that they created a portfolio of productive activities, which ensured not only their permanence on the property, but also better quality of life and well-being for the family. These research data corroborate the understanding of Ellis (2000), since they do not depend exclusively on income from agribusiness nowadays, because they have diversified their activities. In addition, rural producers strategically invest in the differential of their products, seeking to innovate to win more customers.

Access to natural, physical, human, financial and social capital was fundamental for the implementation of diversification strategies in the rural properties surveyed. In natural capital, land and water were cited by producers as essential for productive activities; in physical capital are the equipment and facilities. Human capital is composed of family labor present in all properties and the cooperation exercised by some of the properties surveyed; the financial capital was acquired by three properties through financing from Pronaf and the other

two properties invested resources from other productive activities. Finally, social capital showed that producers developed their communication and sales skills through agro-industrial activity and have invested in alternatives to be closer to their customers.

However, families recognize that there are factors that modify and interfere with access to these capitals. Bureaucracy was cited by producers as one of the factors that interfere with access to capital, limiting the development of family properties. In addition, most families pointed to migration, especially among young people, as the main factor that interferes with access to human capital. In this sense, two properties invested in their activities to keep their children in the countryside as a strategy and, together with the other properties surveyed, have used technological tools, which reduce the demand for labor and facilitate work. The lack of quality infrastructure is also a factor that makes it difficult to implement strategies in rural areas, limiting investments and the growth of activities.

As a result of the implementation of diversification strategies, family agroindustry is an important transformation strategy that has a decisive contribution to the composition of income in the family unit, making this activity even more important for the economy and the dynamics of family agriculture and, also, for rural development. This is because producers can count on an additional activity that does not have the need to expand agricultural areas, as the agro-industrial activity is “land-saving”.

In addition to the results already mentioned, others also drew attention in the research: the number of women who oversee the administration and production of the activities of the family property, being present in four properties surveyed, and the family succession undertaken by two rural properties, which have their children involved with the management and production of agribusiness. These actors are training themselves to manage their businesses, following market trends and developing innovative products.

This research achieved its purpose of contributing to filling the research gap related to the implementation of diversification strategies for the livelihood of rural families through family agroindustry, providing sustainability, but also contributing to influence leaders in decision making for the generation of instruments, policies, and other strategies to promote family agro-industry as a way of expanding family farmers' options to compose their livelihoods.

In view of the limitations of the study, it is possible to mention the difficulty presented by some interviewees in responding reliably to the script applied. This is because some managers did not feel comfortable sharing details related to financial aspects. In addition, it was found that some interviewees were limited to answering some questions with “yes” or

“no”. Still on the data, it is worth noting that most of the families interviewed exercised informal control over their income and expenses, recording data in notebooks or just in a folder to keep notes. Therefore, it appears that such a method can generate distortions of some data collected.

As a possibility for future studies, it is suggested to compare the sustainability of properties that use agroindustry as diversification and those that do not use. Another suggestion is regarding the capitals considered fundamental for the establishment of the strategy and the achievement of economic efficiency, with specific studies on the quantification of capital needs for the diversification strategy. For the social dimension, it is suggested to carry out studies focused on the importance of the work of women and young people and what is their influence on sustainability and development in family agro- industries.



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## **APPENDIX A – INTERVIEW SCRIPT – CHARACTERIZATION OF RURAL PROPERTIES**

### **RESPONDENT – Owner**

#### **1 IDENTIFICATION AND INSERTION OF RURAL PROPERTY**

##### **1.1 IDENTIFICATION**

- 1.1.1 Name of the Enterprise:
- 1.1.2 Owner Name:
- 1.1.3 Genre:  
        Male  
        Feminine
- 1.1.4 Age:
- 1.1.5 Number of members:
- 1.1.6 Year of start of agricultural activities:
- 1.1.7 Year of the start of the Family agro-industrial enterprise:
- 1.1.8 Type of initiative for Family agro-industrial development in rural areas:  
        Individual       Collective
- 1.1.9 Notes:

##### **1.2 LOCATION**

- 1.2.1 Street (Locality, road,):
- 1.2.2 Location (Neighborhood, Community,):
- 1.2.3 Location Reference:
- 1.2.4 Municipality and CEP:
- 1.2.5 Telephone: ( )
- 1.2.6 E-mail:
- 1.2.7 Notes:

##### **1.3 SPECIFICITY OF THE PROPERTY AREA**

- 1.3.1 Total area (land):            ha
- 1.3.2 Area destined for agricultural production:            ha
- 1.3.3 Area destined for agricultural production:            ha

1.3.4 Portfolio of products offered by the agribusiness of the property:

## **1.4 SUITABILITY/QUALITY OF FACILITIES**

1.4.1 Service capacity and how these products reach the consumer:

## **2 IMPLEMENTATION OF FAMILY AGROINDUSTRIAL ACTIVITY**

2.1 Main motivation influence of implementation:

2.2 Activity Implementation Process:

2.2.1 Did you have technical support? From whom?

2.2.2 Did you have a technical project?

2.2.3 How did you finance it?

2.2.4 Main difficulties encountered:

2.2.5 Notes/Comments:

## **3 LABOR OCCUPATION DATA**

### **3.1 RURAL FAMILY LABOR**

3.1.1 Agricultural Activity (indicate number of people, level of education, degree of kinship and sex):

3.1.2 Family agroindustry activity (indicate number of people, level of education, degree of kinship and sex):

3.1.3 Number of people by type of activity at the time of greatest movement in the agroindustry

| Time    | Agriculture | Agroindustry | Others |
|---------|-------------|--------------|--------|
| Full    |             |              |        |
| Partial |             |              |        |

3.1.4 Has anyone from the rural Family received training/qualification/technical advice for the agro-industrial activity?

3.1.5 Importance of Family labor in agro-industrial activity

### **3.2 CONTRACTED LABOR**

3.2.1 Agricultural activity (indicate number of people, level of education, degree of kinship and sex):

3.2.2 Agroindustrial activity (indicate number of people level of education, kinship, and sex):

3.2.3 Selection and training of the workforce

3.3.3.1 Form of Selection.

3.3.3.2 Level of qualification and training.

3.3.3.3. Concern about training.

3.3.3.4 Access to training.

3.2.4 What are the difficulties in managing hired Family labor?

## **4 TRAINING DATA AND INCOME COMPOSITION**

### **4.1 INCOME PRODUCTIVE ACTIVITIES %**

4.1.1 Livestock activity:

4.1.2 Agricultural activity:

4.1.3 Others (which ones):

### **4.2 INCOME FROM FAMILY AGROINDUSTRIAL ACTIVITY %**

4.2.1 Sale of Family agro-industry products:

4.2.2 Sale and products from other producers:

4.2.3 Sale at fairs:

4.2.4 Others (which) promote colonial lunches, cafes.....:

## **5 FINANCIAL MANAGEMENT AND ADMINISTRATION**

5.1 Decision making, financial control and pricing.

5.1.1 Who makes the important decisions related to Family agribusiness on the property?

5.1.2 How concerned is financial control?

5.1.3 What is the pricing process like?

5.2 Source of resources to develop agroindustry activity in rural areas %

|  |                                       |
|--|---------------------------------------|
| Resources of the agro-industrial activity: | Financing of a financial institution: |
| Agricultural resources:                    | Private financing:                    |
| Contribution or donation:                  | Pension resources:                    |
| Resources from other activities:           | Others (which ones):                  |

## **6 TECHNICAL ASSISTANCES**

6.1 Do you receive technical assistance? From whom?

6.2 Difficulties



### 6.3 Facilities

## 7 DISCLOSURES

7.1 Are there any concerns about promoting the products? Is there a cost survey involved?

7.2 What are the publicity/advertising vehicles used?

## 8 EFFECTS OF AGROINDUSTRIAL ACTIVITY ON FAMILY AGRICULTURE

8.1 Degree of importance of agro-industrial activity in rural areas for the Family economy:

( ) high

( ) medium

( ) low

8.2 Main aspects that the performance in the Family agro-industrial activity brought to the family.

8.2.1 Positives:

8.2.2 Negatives:

8.3 Is there any kind of Family tradition rescued with the adoption of Family agroindustry?

8.4 What are the main results expected by the rural Family in relation to the agribusiness activity in rural areas?

8.5 What are the plans for the coming years, with regard to the farm's Family agroindustry?

8.6 What is the importance for the business of the existence of other properties that have Family agroindustry in rural areas in your community/city/region?

8.7 Do you consider group work and *associativismo* important for the development of Family agroindustry?

8.8 Is there an interest in associating with other rural producers who have agro-industry on their properties?

8.9 Are actions taken to reduce the environmental impacts caused by the implementation of agribusiness? List these possible impacts.

## 9 POSITIVE AND NEGATIVE POINTS OF THE ACTIVITY AND ENTERPRISE

9.1 Free opinion response

## **APPENDIX B – INTERVIEW SCRIPT – DIVERSIFICATION STRATEGY**

### **RESPONDENT: OWNER**

#### **1 DIVERSIFICATION OF MEANS OF SUBSISTENCE**

##### **1 THE RURAL SUPPORT DIVERSIFICATION STRATEGY**

- 1.1 The idea of diversifying rural livelihoods, of exploring other activities in addition to those previously practiced, came from which member of the rural family?
- 1.2 Before opting for the rural Family agroindustry, what other activities were considered?
- 1.3 Reasons or factors that led the rural producer to implement the diversification strategy based on the development of an agro-industry in rural areas?
- 1.4 What factors facilitated the implementation of the diversification strategy (rural family agroindustry)?
- 1.5 What factors hindered the implementation of the diversification strategy (rural family agroindustry)?
- 1.6 Notes:
- 1.7 Comments:

#### **2 ACCESS TO USE OF CAPITAL**

##### **2.1 NATURAL (Restrictions, Vulnerability, Adaptation)**

- 2.1.1 Types:
- 2.1.2 Features:
- 2.1.3 Quality:
- 2.1.4 Category of renewable and non-renewable:
- 2.1.5 Comments:

##### **2.2 PHYSICAL (Restrictions, Vulnerability, Adaptation)**

- 2.2.1 Types (machines, equipment, improvements, rural family house, rooms, etc...):
- 2.2.2 Features:
- 2.2.3 Quality:
- 2.2.4 Infrastructure (access roads, power lines, water and communication):
- 2.2.5 Comments:

**2.3 HUMAN (Restrictions, Vulnerability, Adaptation)**

- 2.3.1 Family labor that Works in the family agribusiness of the property:
- 2.3.2 Qualification to work in the business:
- 2.3.3 Required Skills:
- 2.3.4 Comments:

**2.4 FINANCIAL (Restrictions, Vulnerability, Adaptation)**

- 2.4.1 Existence of own capital for investment in rural family agribusiness:
- 2.4.2 Origin of equity capital:
- 2.4.3 Third-party capital used:
- 2.4.4 Existing and accessible sources of third-party capital:
- 2.4.5 Comments:

**2.5 SOCIAL (Restrictions, Vulnerability, Adaptation)**

- 2.5.1 Describe how the family relates to the community:
- 2.5.2 Types of links with the community:
- 2.5.3 Participation in associations, committees, and cooperatives:
- 2.5.4 Positive points in relating to the community:
- 2.5.5 Negative points in relating to the community:
- 2.5.6 Comments:

**2.6 IDENTIFICATION AND NEED FOR CAPITAL**

- 2.6.1 Describe the process of identifying critical capital for the diversification strategy  
(family agroindustry)
- 2.6.2 Capital needed for diversification that could not be accessed/used
- 2.6.3 Comments:

**3 ELEMENTS THAT MODIFY ACCESS TO CAPITAL****3.1 SOCIAL RELATIONS**

- 3.1.1 Factors that modify access to capital (eg sex, caste, social class, age, ethnicity and religion).
- 3.1.2 Comments:

**3.2 INTITUTIONS**

3.2.1 Presence of formal rules, conventions, and informal code of conduct modifies access to capital.

3.2.2 Comments:

### **3.3 ORGANIZATIONS**

3.3.1 Groups of individuals modify access to capital (eg.: government agencies, administrative institutions such as local governments organizations, associations, and private companies).

3.3.2 Comments

## **4 ELEMENTS THAT INTERFERE WITH ACCESS TO CAPITAL**

### **4.1 TRENDS**

4.1.1 Population (eg.: local and national population density):

4.1.2 Migration (eg.: from rural areas to other rural areas or to urban centers):

4.1.3 Agricultural technology and its evolution over time:

4.1.4 Growth of non field activities in rural areas:

4.1.5 Prices:

4.1.6 National and international economic trends:

4.1.7 Macroeconomic policies and trends:

4.1.8 Comments:

### **4.2 SHOCKS**

4.2.1 Access to capital may be interfered with (eg: drought, flood, pests):

4.2.2 Comments:

## **APPENDIX C – INTERVIEW SCRIPT – DIVERSIFICATION STRATEGY**

### **RESPONDENT: IDR EXTENSIONIST**

#### **DIVERSIFICATION OF MEANS OF SUBSISTENCE**

##### **1.1 THE RURAL SUPPORT DIVERSIFICATION STRATEGY**

1.1.1 Reasons or factors that led rural producers to implement the diversification strategy based on the development of an agro-industry in rural areas?

1.1.2 What factors facilitated the implementation of the diversification strategy (rural family agroindustry)?

1.1.3 What factors hampered the implementation of the diversification strategy (rural family agroindustry)?

##### **1.2 ACCESS TO USE OF CAPITAL**

###### **1.2.1 NATURAL**

Which capitals area accessed:

###### **1.2.2 PHYSICAL**

Features and access:

###### **1.2.3 HUMAN**

Labor that Works in the family agroindustry on the properties:

###### **1.2.4 FINANCIAL**

Origin of capital for investment in rural family agribusiness:

###### **1.2.5 SOCIAL**

Describe how families relate to the community:

##### **1.3 IDENTIFICATION AND NEED FOR CAPITAL**

Describe the process of identifying critical capital for the diversification strategy (family agroindustry)

**1.4 ELEMENTS THAT MODIFY ACCESS TO CAPITAL**

Factors that modify access to capital:

**1.5 ELEMENTS THAT INTERFERE WITH ACCESS TO CAPITAL**

Elements that interfere with access to capital