UNIVERSIDADE FEDERAL DE LAVRAS

LUIZ FLÁVIO FELIZARDO DE MORAIS

SOCIAL MANAGEMENT METHOD APPLIED IN THE SOLUTION OF COLLECTIVE PROBLEMS

LAVRAS-MG
2023

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MÉTODO DE GESTÃO SOCIAL APLICADO NA SOLUÇÃO DE PROBLEMAS COLETIVOS

Tese apresentada à Universidade Federal de Lavras, como parte das exigências do Programa de Pós-Graduação em Administração, área de concentração Organizações, Gestão e Sociedade, para a obtenção do título de Doutor.

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APROVADA em 30 de Outubro de 2023.

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ACKNOWLEDGMENT

ABSTRACT

In the pursuit of authentic, effective, and inclusive societal deliberation, this thesis delves into social management, a paradigm that is based on characteristics such as dialog and emancipation. The practical exploration done here centers on the meat sheep industry and its challenges. With this industry as focus this thesis seeks to employ a participatory methodology to bring practice on social management, the Rapid Participatory Emancipatory Research (RPER). With the application of the RPER in the Meat Sheep Alliance of Florida (MSA) we focus on helping the members to understand and find paths to solve their own problems intrinsic to their sector. Based on this, the question that guides this work is, how can a social management method contribute to the identification and solution of collective problems related to an association of sheep farmers in the United States of America? To answer this question, the following objectives are presented: a) identify and study the current and past publications on social management and rapid participatory appraisals in rural settings; b) plan, design and develop a system to accelerate, centralize and publicize the RPER applications and; c) apply the RPER method in an association of farmers. This thesis consists of four research papers. In the first article, the international potency of the term "social management" is unraveled through a worldwide bibliometric analysis. The findings uncover the dominance of Chinese and Brazilians scholars using the term with different perspectives and brings enlightenment to the understanding of the term. The second article digs into participatory and rapid appraisal methodologies, underscoring their transformative role in rural research. These methodologies, dating back to the mid-1980s, have evolved and expanded in scope, touching diverse sectors and addressing issues like poverty, gender, and ethnic discrimination. This study was important to understand and explain the origins of the RPER and the challenges in actualizing genuine participation without reinforcing existing societal inequalities. The third article introduces a tool for the RPER application and organization. A software designed specifically on the techniques of the RPER methodology. This software, a confluence of various up to date technologies, seeks to bridge the gap in existing software tools, which predominantly cater to quantitative agricultural research. The tool's features bring benefits in the form of data transparency, centralized research documentation, automated report generation, and enhanced collaboration, positioning it as a potential notable change in participatory research. Finally, the fourth article presents an empirical case study on the Meat Sheep Alliance of Florida. By employing the principles of social management and the RPER methodology, including a thematic content analysis of the members' speech, the research unveils the multifarious challenges the alliance confronts, from predation and disease management to labor shortages. The findings not only offer actionable insights for similar agricultural communities but also enrich the discourse on cooperative actions, dialogical management, and agricultural education. In essence, this work is a comprehensive exploration of social management in an agricultural sector, emphasizing participatory methodologies, technological advancements, and empirical applications.

Keywords: Social Management. Participatory Methodology. Rapid Participatory Emancipatory Research (RPER). Thematic Content Analysis. Rural Community Empowerment. Collective Decision-making.

RESUMO

Na busca por uma deliberação societal autêntica, eficaz e inclusiva, esta tese se aprofunda na gestão social, um paradigma que se destaca pela essência da deliberação e se baseia em atributos como o diálogo e a emancipação. A prática realizada aqui se concentra na indústria de carne de ovelha e seus desafios. Com esta indústria como foco, esta tese procura empregar uma metodologia participativa para trazer a prática sobre gestão social, o Diagnóstico Rápido Participativo Emancipador (DRPE). Com a aplicação do DRPE na Aliança de Ovinos de Carne da Flórida, focamos em ajudar os membros a entender e encontrar caminhos para resolver seus próprios problemas intrínsecos ao seu setor. Baseado nisso, a pergunta que guia este trabalho é: como um método de gestão social pode contribuir para a identificação e solução de problemas coletivos relacionados a uma associação de criadores de ovelhas nos Estados Unidos da América? Para responder a esta pergunta são apresentados os seguintes objetivos: a) identificar e estudar as publicações atuais e passadas sobre gestão social e métodos rápidos ou participativos em ambientes rurais; b) planejar, projetar e desenvolver um sistema para acelerar, centralizar e divulgar as aplicações DRPE; e c) aplicar o método DRPE em uma associação de agricultores. Esta tese é apresentada na forma de quatro artigos de pesquisa. No primeiro artigo, a abrangência internacional do termo "gestão social" é desvendada através de uma análise bibliométrica global. As descobertas revelam o domínio de acadêmicos chineses e brasileiros usando o termo com perspectivas diferentes e trazem esclarecimento ao entendimento do termo. O segundo artigo se aprofunda nas metodologias de avaliação participativa e rápida, destacando seu papel transformador na pesquisa rural. Essas metodologias, que remontam à metade dos anos 1980, evoluíram e expandiram seu escopo, tocando diversos setores e abordando questões como pobreza, gênero e discriminação étnica. Este estudo foi importante para entender e explicar as origens do DRPE e os desafios em concretizar uma participação genuína sem reforçar desigualdades societárias existentes. O terceiro artigo introduz uma ferramenta para a aplicação e organização do DRPE. Um software projetado especificamente nas técnicas da metodologia DRPE. Este software, uma confluência de várias tecnologias atualizadas, busca preencher a lacuna nas ferramentas de software existentes, que atendem predominantemente à pesquisa agrícola quantitativa. As características da ferramenta trazem benefícios na forma de transparência de dados, documentação de pesquisa centralizada, geração automática de relatórios e colaboração aprimorada, posicionando-o como uma potencial revolução na pesquisa participativa. Finalmente, o quarto artigo apresenta um estudo de caso empírico sobre a Aliança de Ovinos de Carne da Flórida. Ao empregar os princípios da gestão social e a metodologia DRPE, incluindo uma análise temática do discurso das falas dos membros, a pesquisa revela os múltiplos desafios que a aliança enfrenta, desde a predação e gestão de doenças até a escassez de mão de obra. As descobertas não apenas oferecem percepções práticas para comunidades agrícolas semelhantes, mas também enriquecem o discurso sobre ações cooperativas, gestão dialógica e educação agrícola. Em essência, este trabalho é uma exploração abrangente da gestão social em um setor agrícola, enfatizando metodologias participativas, avanços tecnológicos e aplicações empíricas.

Palavras-chave: Gestão Social. Metodologia Participativa. Diagnóstico Rápido Participativo Emancipador (DRPE). Análise de Conteúdo Temática. Empoderamento de Comunidade Rural. Tomada de Decisão Coletiva.

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LIST OF ACRONYMS

ACID - Atomicity, Consistency, Isolation, and Durability

API - Application's Programming Interface

BM# - Board Member Number

BPM - Business Process Management

BPMN - Business Process Model and Notation

BR - Brazil

CRUD - Create, Read, Update, and Delete

CSR - Cochrane Systematic Review

DC - District of Columbia

DRPE - Diagnóstico Rápido Participativo Emancipador (RPER in Portuguese)

EI - External Inputs

ELF - External Logic File

ENAPEGS - National Meeting of Researchers in Social Management

EO - External Outputs

EQ - Inquiries

ExpM# - Experienced Member Number

FMD - Foot-and-Mouth Disease

FP - Function Points

FPA - Function Point Analysis

FSM - Functional Size Measurement

GUI - Graphical User Interface

HTTP - Hypertext Transfer Protocol

ICF - Informant Consensus Factor

ICT - Information and Communication Technology

IFAS - Institute of Food and Agricultural Sciences (at the University of Florida)

IFPUG - International Function Point Users Group

ILF - Internal Logic File

MAPP - Altadir's Method of Popular Planning

MG - Minas Gerais

MSA - Meat Sheep Alliance of Florida

NewM# - Newcomer Members Number

PA - Participatory Appraisal

PE - Participatory Epidemiology

PRA - Participatory Rural Appraisal

PSC - Poverty Scorecard

PUC - Pontifical Catholic University

RA - Rapid Appraisal

RAAIS - Rapid Appraisal of Agricultural Innovation Systems

RDBMS - Relational Database Management System

REST - Representational State Transfer

RPA - Rapid Participatory Appraisal

RPER - Rapid Participatory Emancipatory Research

RRA - Rapid Rural Appraisal

SMCE - Social Multi-Criteria Evaluation

SP - São Paulo

SQL - Structured Query Language

SSCI - Social Sciences Citation Index

UF - University of Florida

UFBA - Federal University of Bahia

UFLA - Federal University of Lavras

UFMG - Federal University of Minas Gerais

UFRGS - Federal University of Rio Grande do Sul

UFRN - Federal University of Rio Grande do Norte

UFRRJ - Federal Rural University of Rio de Janeiro

UFT - Federal University of Tocantins

UFV - Federal University of Viçosa

UI/UX - User Interface/User Experience

UK - United Kingdom

USA - United States of America

WOS - Web of Science

WYSIWYG - What You See is What You Get

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FIRST PART

1   INTRODUCTION

This thesis is based on social management with focus on the society's deliberative process for public decisions, analogous to the concept of deliberative governance developed by Dryzek (2010) which is based on an effective, authentic, inclusive, and consequential deliberation, central to democracy. From the ancient Greek and born from the junction of two words, democracy, *dēmos* that has the meaning of 'people' and –*kratia* which can refer to either 'power' or 'the act of governing.' Thus, since its origin, the word is intended to mean that the power emanates from people. However, to this day this word may not have been the most correct choice to define its actual application since it is not exactly the population that dictates government rules.

It is very clear to see the difference between a representative democracy, in which politicians are elected by the people to govern in their own interests, and a deliberative democracy, where the population is in fact heard and attended to. For Jaques Rancière (2006) what we call democracy is a state and government operation that is just the opposite. Parliamentary members that are eternally elected simultaneously or alternately to exercise municipal, federal, regional, legislative and/or ministerial functions to make the laws for themselves. Fraudulent party financing through public works contracts, businesspeople who invest huge sums in seeking electoral mandates, owners of private media empires who use their public functions to monopolize public media. In other words, there is an appropriation of the public thing by private entities or, alternatively, there is a monopolization of *la chose publique* (the public thing) by a strong alliance between the state and the economic oligarchies forming an almost impenetrable diarchy.

Fortunately, there remains potential for improvement, using Rapid Participatory Emancipatory Research[1] (RPER) (PEREIRA, 2017), a social management method, this work tries to help communities to identify what really is the will of society through dialogicity. The RPER consists of an intervention technique that allows qualitative and quantitative

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[1] The original name in Portuguese is Diagnóstico Rápido Participativo Emancipador (DRPE), which would suggest a translation to Rapid Participatory Emancipatory Diagnostic. However, in the English idiom the word diagnostic would refer to something around the health field, which is not the case. In addition, the words assessment and appraisal were also considered, but they were discarded because they suggested an act in which one person submits another to an evaluation, which also drifts away from the emancipatory process of the method.

information to be obtained in a short period. This information is then used to identify problems, their causes, and possible solutions, in the perception of the participants themselves, with the goal of promoting social change and development. RPER is an evolutionary step from the well-known education and extension practices of Rapid Rural Appraisal (RRA) (CHAMBERS, 1981) and Participatory Rural Appraisal (PRA) (CHAMBERS, 1994).

Another advance that is intended with the realization of this thesis is linked to the information and communication technologies (ICT) portion of this research. While information and communication technology (ICT) has been employed to enhance public participation in decision-making, as explored by Felizardo, Pereira, and Silva (2019), there is a lack of studies specifically exploring its use in addressing social issues with participatory techniques, especially in the agriculture domain. Technology is increasingly present and should not be ignored, but rather on the contrary, it should be used to improve the quality of life for humanity. The introduction and use of Information and Communication Technology can further enhance the application of the RPER method. Development of new software focused exclusively on the method can bring several advantages, such as, speeding up the application and obtaining the desired social results, organizing, and integrating the application data in addition to providing information, graphics, and mappings about the communities in a more dynamic and transparent way.

As mentioned, this thesis is based on social management, a relatively new paradigm committed to the promotion of the common good. Cançado, Pereira, and Tenório (2015) conceptualize it as a dialogical management action focused on the non-state public interest and its main categories are the Tocqueville (2003) enlightened self-interest[2], the Habermas (1981) public sphere[3] and, Freire's (2018) social emancipation[4]. The paradigm itself is similar to the concept of deliberative governance developed by Dryzek (2010) and his collaborators. Deliberative action incorporates policies and institutional measures to promote the common good. This is directly related to Habermas' (1991) conception of the deliberative policy

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[2] This concept implies that individuals are driven to act in ways that favor the broader community or collective good, understanding that such actions ultimately benefit themselves as well. For an in-depth exploration of the topic, refer to the study "Social management based on the language of law mediating the lifeworld and the system" by Campos and Pereira (2023).
[3] A forum where individuals come together to freely discuss and identify societal problems, and through that discussion, influence political action.
[4] A process of liberating individuals from oppressive social and political conditions. Freire emphasizes the crucial role of education in this process, advocating for a pedagogy that empowers individuals to critically analyze their circumstances and actively participate in shaping their own destinies.

process as the core of the democratic process. In order to try identifying and solve the collective problems, especially from a social point of view, we applied the RPER. Numerous empirical studies have already been conducted using the RPER method, including several in Brazil, some examples can be found in Teixeira *et al*. (2019), Pereira (2017), Teixeira (2017), Alcântara, Pereira, and Vieira (2018) and Teixeira Cruz (2017), Teixeira Cruz, Machado and Pereira (2020). Nevertheless, in light of her findings, do Carmo (2023) posits the importance for conducting empirical research across diverse contexts to assess the effectiveness of the suggested methodological structure in social management.

Reflecting the implications of social management theories, particularly in terms of addressing collective problems, the meat sheep industry, like other agricultural sectors, faces a myriad of challenges that can influence its sustainability, productivity, and profitability. One of the most significant issues is the availability of labor, a concern not unique to the meat sheep sector. As highlighted by Flynn Adcock, and Rosson (2015) immigrant labor plays a crucial role in the U.S. agricultural landscape, with a substantial percentage of the workforce in the meat processing industry comprising immigrants. Any changes in immigration policies can potentially disrupt labor availability, causing cascading impacts on production costs, market prices, and overall economic output. For instance, the dairy industry heavily relies on immigrant labor, accounting for 51% of its total workforce. A reduction in this labor force could lead to significant economic consequences, including a drastic increase in farm product prices as described by Flynn Adcock, and Rosson (2015).

Market dynamics also present challenges. The demand and supply balance for products like lamb and goat meat are influenced by various factors, including shifting consumer preferences, regional demand variations, and import structures. Karki *et al*. (2018) emphasize the growing demand for goat and lamb meat in the Southeastern U.S., attributing it mainly to the increasing ethnic population. However, local producers often grapple with marketing their products, especially in rural areas. Additionally, according to Ufer, Countryman and Muhammad (2020), the characteristics of lamb imports, such as product attributes and country of origin, have evolved over the past decade, leading to a necessary reliance on imports to meet domestic demand. Such market dynamics require adaptive strategies to ensure that meat sheep producers remain competitive and profitable.

Environmental concerns, regulatory issues, and land use competition further complicate the industry's landscape. The threat of urbanization poses significant challenges to agricultural land availability. As noted by Xie *et al*. (2023), if urban development continues at its current pace, the U.S. will witness a considerable loss of agricultural land by 2040. Such

urban expansion, particularly in fast-growing regions, can compromise the meat sheep industry's growth potential. Moreover, the sector must also navigate with potential conflicts with wildlife, such as livestock depredation by coyotes as studied by Mitchell, Jaeger, and Barrett (2004), and adapt to changing consumer preferences, like the increasing demand for specific packaging for fresh lamb meat as presented by Maza, Gracia, and Saied (2018).

Addressing these and other challenges requires a holistic approach and social strengthening, and for this we counted on the Meat Sheep Alliance of Florida (MSA) to apply the RPER. The Meat Sheep Alliance of Florida has its roots deeply embedded in the state's agricultural history. Formed in the late 1990s, its inception was driven by the passion and dedication of a handful of individuals, with a vision to bring together those with a vested interest in the meat sheep industry (MSA - FLORIDA, 2023). Ruth Taber, a long-standing member, and contributor to the Alliance, reminisces about the early days of the organization. In the late 1990s, Ruth and her husband moved to Florida with their sheep and soon crossed paths with Carol Postley, a well-known figure in the state's sheep industry. Carol, often referred to as "the sheep lady of Florida", had an invaluable collection - a shoebox filled with the names and contacts of sheep enthusiasts. It was then that Ruth, her husband, and Carol, took the initiative to sift through the contacts, reaching out and organizing the first group of members for the Alliance. This effort marked the formal beginning of the Meat Sheep Alliance around 1997. Later, other members propelled the Alliance's mission by initiating an online group, which became a vital communication link among producers. This digital platform ensured that members, whether new or experienced, had a space to discuss, learn, and grow (MSA - FLORIDA, 2023).

In its early days, the Alliance took a unique approach to fostering community and knowledge sharing. They organized sheep festivals, which ran for about six years. These events were much-awaited gatherings that brought together sheep enthusiasts from all corners of the state. However, despite their popularity among the members, the festivals struggled to generate enough revenue to cover costs. The immense workload, combined with the financial strain, and difficulty in marketing to bring people from outside the field, eventually led to the discontinuation of these events. Ruth fondly recalls the fun and camaraderie of those days, highlighting the dedication of a few key individuals, who shouldered much of the work. While the festivals were central events, the Alliance always had its members and their interests at its core. Over the years, the Alliance tried various initiatives to engage the public and promote the meat sheep industry. One such event was the lamb and wine pairing. It garnered significant attention in its initial years, but the recurring challenge was to innovate

and offer something new to the public every year. The geographical spread of the members within the state, added to the challenges, as many found it inconvenient to leave their farms for show-like events. Nowadays the main events are workshops focused on the producers themselves.

The journey of the MSA is one of commitment, camaraderie, and the collective ambition of its members. The organization, which started with a simple shoebox, has become an influential hub for sheep producers in Florida with over a hundred members. This transformation was spearheaded by dedicated individuals, who envisioned a network where producers could share insights about the nuances of sheep farming in Florida's unique climate. The Alliance welcomes all who share a passion for sheep farming. The board comprises eight members, including the president, vice-president, secretary, and treasurer. They place paramount importance on equipping its members with knowledge. Their website contains resources for both budding and seasoned sheep farmers. From understanding the diseases that can afflict sheep and mastering the basics of deworming to learning about hoof trimming and vaccinations, the MSA ensures that its members have access to comprehensive and credible information (MSA - FLORIDA, 2023).

Additionally, the MSA emphasizes the significance of FAMACHA scoring - a critical method to assess anemia levels in sheep and goats. Regular workshops on this topic and other essential sheep farming practices underscore the MSA's commitment to fostering an informed and successful sheep farming community. Their workshops, usually held monthly except during the summer, offer members an opportunity to socialize, share experiences, and relish delectable dishes prepared by the Alliance's in-house chefs. Furthermore, recognizing the importance of commerce in sustaining the sheep industry, the MSA offers a unique platform on their Facebook[5] group for members to buy or sell their sheep and sheep-related products. This initiative not only facilitates trade but also strengthens the bond among members. Another tool available to the members and outside community with rich information is the MSA website[6].

Based on all the considerations and challenges mentioned this far, the following guiding question for this study is raised: How can a social management method contribute to the identification and solution of collective problems related to an association of sheep farmers in the United States of America?

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[5] Meat Sheep Alliance of Florida | https://www.facebook.com/groups/272994906128260
[6] Meat Sheep Alliance of Florida | Website: http://themeatsheepallianceofflorida.com/

1.1 Goal and Objectives

1.1.1 Main Goal

The objective then, is to utilize the applied participatory methodology RPER to assist the members of the Meat Sheep Alliance of Florida in identifying their individual and collective challenges and in devising pathways and goals to address these issues.

1.1.2 Specific Objectives

Here is a list of proposed specific objectives in order to reach the main goal:

a) Research and analyze current and historical applications and publications related to social management internationally.
b) Examine the literature on rapid and participatory appraisals, with focus on their application in rural contexts.
c) Plan, design and develop an ICT system to centralize and publicize past RPER applications while enhancing and facilitating future applications.
d) Prepare and apply the RPER social management method in an association of farmers in the USA.

Each of these objectives corresponds to a scientific article, which collectively forms the core of this doctoral thesis.

1.2 Research Justification & Achievements

The realm of agriculture, particularly the meat sheep industry, is at a pivotal juncture, influenced by an intricate interplay of economic, ecological, and sociocultural factors. As the industry evolves, so do the challenges it faces. In Florida, the meat sheep sector, while beginning to grow, is struggling with a diverse array of issues ranging from predation and disease management to market dynamics, and labor shortage. Addressing these multifaceted challenges demands innovative approaches grounded in cooperative and participatory actions, where the stakeholders themselves become central to the problem-solving process. This research is justified by its focus on the Meat Sheep Alliance of Florida (MSA) - an organization that sits at the heart of this evolution in the state. By employing the Rapid

Participatory and Emancipatory Research (RPER) method, the study delves deep into the nuances of the industry's challenges, emphasizing the importance of community-driven dialogical interactions offering communication opportunities and setting the stage for practices that can be emulated globally.

Moreover, the contemporary agricultural landscape is characterized by a shift from technobureaucratic management styles to more participatory and dialogical approaches. Yet, there exists a noticeable gap in empirical research that translates these theoretical constructs into tangible practices, especially in niche sectors like the meat sheep industry in emerging regions. The state of Florida provides a unique backdrop with its distinct climatic conditions, demographic shifts, and market dynamics. Investigating the challenges and opportunities in this context becomes essential to foster a comprehensive understanding of how participatory governance can be effectively implemented, offering a justification for the study's focus on this particular region and industry.

Other justification and accomplishments are expected with the development of an ICT web system to record the data from RPER applications making available distribution and dissemination of results, transparency, the unification or centralization of the researches made using the method, the organization of data, the automation on the report generation, better communication and collaboration between team members, and data security with periodic backups.

Nevertheless, ultimately, the central premise of this thesis posits that the RPER method has proven to be aptly suited for social management practices. This is primarily because it enables communities to identify their challenges, discuss their root causes, and collectively derive solutions. In addition, the foundation of 'self-interest rightly understood' is consistently echoed in the dialogic process fostered by the RPER method, showing due respect to the associative capacity of the alliance members, recognizing that personal and collective well-being are intertwined. Drawing inspiration from Tocqueville's (2003) concept of 'civic virtue[7]', it is evident that individuals do not remain passive, waiting for the state to address their concerns. The initiative of farmers to collaborate, exchange information on health, nutrition, production, and product quality is a testament to this. Within the context of the association, this thesis demonstrates that the RPER method has effectively facilitated dialogue. Furthermore, from a Habermasian perspective, this thesis aligns with the three

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[7] Civic virtue, as Tocqueville's (2003), encompasses the active participation and commitment of citizens to the common good, emphasizing that a democratic society thrives when its members prioritize the interests of the community over individual desires.

major theoretical categories of social management: well-understood interest, the formation of public spheres (in this case on a smaller scale, but public spheres nonetheless), and social emancipation. With the outcome of such discussions culminating in the election of priorities by the members.

1.3   My Journey in Technology, Administration, Agronomy and Beyond

In the ever-evolving realm of technology, my journey has been a testament to the relentless pursuit of knowledge and innovation. From the early days of tinkering with QBasic to delving into the complexities of artificial neural networks, my story is woven from a tapestry of learning, growth, and significant contributions. I can begin by talking about the year 2003, a year not only marked by my 16th birthday but also by my first foray into programming. QBasic was my gateway into the world of coding, a realm that quickly became my passion and profession. This initial exploration was pivotal; it solidified my decision to pursue a bachelor's degree in computer science.

Throughout my academic career, I immersed myself in the diverse aspects of technology. From the nuances of hardware to the complexities of software, my educational journey was never confined to programming alone. My thirst for knowledge led me to a master's degree in computer science, focusing on Artificial Intelligence and Computational Mathematics, and was followed by an MBA in Project Management. Parallel to my studies, my professional path unfolded at the Federal University of São João del-Rei. There, I juggled multiple roles – from IT Analyst to Software Engineering Manager. My responsibilities ranged from system implementation to overseeing a team of developers. Each role brought its challenges and learnings, shaping my expertise in the vast domain of Information Technology.

The quest for a deeper understanding steered me towards a Doctoral Degree in Administration. Embarking on this degree at the University of Lavras marked a pivotal shift in my academic and professional trajectory. This decision was not just about furthering my education; it was a deliberate step towards exploring the interplay between technology and administration, which eventually led to the field of agronomy as well. As I delved into the field of Applied Social Sciences, I found myself fascinated by the practical applications of these disciplines, especially in aiding rural communities and associations. Initially focusing on water conservation, my research gradually expanded, encompassing broader socio-environmental themes.

The evolution of my project led me to a unique opportunity, a sandwich program that bridged my work between the Federal University of Lavras and the University of Florida. This program allowed me to spend part of my doctoral studies at each institution. It was a distinctive platform for gaining international research experience and for collaborating with a diverse group of scholars. This program not only broadened my academic horizons but also provided a rich tapestry of cultural and professional experiences. At the University of Florida, my engagement with the Meat Sheep Alliance of Florida was particularly transformative. Working with the Alliance, we applied participatory methods, a collaborative effort that underscored the importance of community involvement. This experience not only enriched my understanding of agronomic practices but also emphasized the significance of stakeholder engagement in creating sustainable solutions.

During my time in the sandwich program, I was deeply involved in a multitude of activities that contributed significantly to my growth as a researcher and a professional. One of my key projects was the development of the UF Silage Trial Database and a Truck/Car Reservation System. These systems demonstrated my ability to blend technical expertise with practical applications, offering valuable tools for agricultural and logistical management.

My participation in various meetings and events at the University of Florida provided invaluable insights into agricultural practices and community dynamics. Engagements with the Forage Team and the Meat Sheep Alliance, in particular, allowed me to observe and contribute to the workings of my research colleagues and agricultural communities. I also actively participated in various UF events such as IRB Training, Family Dairy Day, and the Ruminant Nutrition Symposium, each adding a layer of knowledge and experience to my academic pursuits. Engaging with local cultures and communities was an integral part of my journey. Participating in events like the Cattlemen Meeting Day and the Mariana Forage Worker's Tour, I gained insights into local agricultural practices and community dynamics. These interactions were invaluable in understanding the practical implications of my research and in forging lasting connections with the communities I worked with, particularly the Meat Sheep Alliance of Florida.

In my quest to apply theoretical frameworks effectively, I immersed myself in the works of Elinor Ostrom and Jürgen Habermas, for example. This endeavor was not just an academic exercise; it was about bringing these theories to life in the context of rural community development. Through these applications, I could bridge the gap between academic research and practical community needs. My involvement in interdisciplinary collaboration was another highlight of the journey. Collaborating with other Ph.D. students,

post-docs, attending seminars, and engaging in activities like soil harvest with advanced equipment such as Wintex 3000 and a weather station showcased my adaptability and eagerness to learn across different fields. These experiences not only broadened my academic scope but also enriched my personal and professional networks.

This chapter of my journey, filled with learning, exploration, and discovery, reflects my deep commitment to multidisciplinary research and my belief in the interconnectedness of technology, administration, and agronomy. My experience in the sandwich program is a testament to the power of collaborative, interdisciplinary research in driving sustainable and meaningful change, both in academic circles and in local communities. As I continue to explore new horizons in the fields of Computer Science, Administration and Agronomy, I remain committed to the ethos of learning, innovating, and contributing to a better world.

I welcome conversations and collaborations that resonate with my journey and areas of interest whether you are trying to get a similar experience or if you have anything to teach me. I hope that sharing this part of my thesis not only offers a glimpse into my own journey but also serves as a beacon of inspiration for those contemplating a similar path. The fusion of disciplines, the challenges encountered, and the triumphs along the way are more than just personal milestones; they are testaments to the transformative power of multidisciplinary studies and the boundless opportunities they present.

In closing, I extend an invitation to all aspiring scholars and professionals: let this narrative ignite your curiosity and embolden your aspirations. Whether you are drawn to the amazing world of technology, the dynamic sphere of administration, or the vital realm of agronomy, remember that the journey is as rewarding as the destination. Embrace the challenges, revel in the discoveries, and let your passion be the guiding light. May my story be a catalyst for your own explorations, encouraging you to forge your path, make your mark, and contribute to our collective understanding and betterment. Let us venture forth, driven by the knowledge that in the synergy of diverse disciplines lies the key to unlocking new horizons and crafting a brighter future for all.

1.4 Thesis Structure

This thesis is in a research paper format, so it is divided into two main parts. The first part will be composed of the introduction, some of the theoretical framework used, the methodologies, a conclusion, and the references for part one. The second part is formed by four research papers developed during the program that are directly related to this thesis. It is

important to note that some articles may differ in format and reference standards due to the specific rules of the journal to which they were submitted. Initially, in this introductory section, the contextualization of the theme was presented in conjunction with the objectives, justifications, and foreseen achievements. The second section presents a theoretical framework of the work, explaining concepts and bringing up important references to the themes used here. Some examples are social management, sheep industry history and challenges, and the Rapid Participatory Emancipatory Research (RPER) method. In section 3 the methodology used is presented explaining information about how the software development was carried out and also explaining the RPER application techniques, detailing the data collection procedures and how the analysis was done followed by a conclusion and the references used. In the second part we will present the following articles, each corresponding to a specific objective:

a) Exploring social management: an international bibliometric review of varied perspectives.

b) A Review of Participatory and Rapid Appraisal Approaches in Rural Research.

c) RPER Software - A Social Management Tool for Rapid Participatory Emancipatory Research: Planning, Design, and Implementation.

d) Social Management Method Applied in the Solution of Collective Problems: Case Study with the Meat Sheep Alliance of Florida.

2   THEORETICAL FRAMEWORK

This chapter will explain some of the theories and concepts used in this work. To organize the subjects, it is divided into three main sections: the social management theory being the first, sheep industry hurdles and history as the second, and the third and last section explain the theoretical framework surrounding the Rapid Participatory Emancipatory Research.

2.1   Social Management Theory

As mentioned, this section will explain the theoretical framework of social management, but for a better structuring, this section is then subdivided into three subsections, starting with the history of social management, moving to the epistemological paradigm construction of social management, and finalizing with the concepts of social management.

2.1.1 History of Social Management as a Research Topic

According to Felizardo *et al.* (2020) the first appearance of the term Social Management in the title of a Social Sciences paper was in 1967, in a Czech Journal named Czech Sociological Review. The paper was written in Czech and was originally entitled *Podstata společenského řízení*, or in English, the Essence of Social Management, published by Josef L. Porket, Bratislava Institute of Economics and Construction Organization (PORKET, 1967). According to the article, the essence of Social Management is the essence of the management of social organizations, and it stems from the nature of these organizations. Each social organization is essentially characterized by a specific purpose, aware of that purpose and consciously adjusted to reciprocal relations between its members. Therefore, it can be defined as the coordination of human efforts to achieve a defined collective objective. This coordination is never completed, but it is a constant process of adaptation to change, and for this reason it is also a dynamic phenomenon, not a static one. Since then, the term appears multiple times in titles of international papers indexed by either Web of Sciences Core Collection or SciELO Citation Index, more precisely 192 times until the beginning of the year 2020.

Another important analysis done by Felizardo *et al*. (2020) is related to the authorship of the articles published internationally about social management, the complete list can be seen in Table 1. It is notable that only one Chinese researcher, Zhang Z., appears among the top researchers. In contrast, there is a strong presence of Brazilian authors. Leading the group is José Roberto Pereira, followed by several others including Airton Cardoso Cançado, Luís Moretto Netto, Valderí de Castro Alcantara, Carlos Eduardo Justen, and Fernando Guilherme Tenório.

Table 1 – Most prolific social management authors on the international scene.

#	Authors	Number of publications	Frequency (authorships)	Frequency (articles)
1st	**Pereira**, José Roberto	9	2,43%	4,69%
2nd	**Cançado**, Airton Cardoso	4	1,08%	2,08%
2nd	**Moretto Neto**, Luís	4	1,08%	2,08%
2nd	**Zhang**, Z	4	1,08%	2,08%
3rd	**Alcântara**, Valderí de Castro	3	0,81%	1,56%
3rd	**Justen**, Carlos Eduardo	3	0,81%	1,56%
3rd	**Tenório**, Fernando Guilherme	3	0,81%	1,56%
	Total Authors Identified	371		
	Total Articles	192		

Source: Felizardo *et al*. (2020).

Pereira and Cançado have also been recognized as leading figures in the field of social management in the Brazilian context. This is highlighted in the comprehensive study conducted by Menon, and Coelho (2019), which focused exclusively on social management as a field of knowledge within Brazil and their findings can be seen in Table 2.

Table 2 – Most prolific social management authors on the Brazilian scene.

#	Authors	Number of publications	Current Educational Institution
1st	**Pereira**, José Roberto	49	UFLA
2nd	**Cançado**, Airton Cardoso	32	UFT
2nd	**Ferreira,** Marco Aurélio Marques	32	UFV
3rd	**Junqueira,** Luciano Antonio Prates	28	PUC-SP
4th	**Rigo,** Ariádne Scalfoni	27	UFBA
5th	**Teodósio,** Armindo dos Santos de Sousa	26	PUC-MG
5th	**Carrion,** Rosinha da Silva Machado	26	UFRGS
6th	**Paes de Paula,** Ana Paula	23	UFMG
6th	**Villela,** Lamounier Erthal	23	UFRRJ
6th	**Souza,** Washington José	23	UFRN

Source: Menon & Coelho (2019).

On a final thought Felizardo *et al*. (2020) reveals that out of the top ten most cited works among all the 192 published articles, Huq, Chowdhury and Klassen's (2016) work, with only three to four years being published, has been cited thirty-nine times. Paes de Paula's (2005) paper, which had thirty-five citations is the second most cited, followed by Irwin, Georg and Vergragt's (1994) work, with eighteen citations. In addition to Paes de Paula's work, many other Brazilian papers were among the top ten and all of these, despite having multi-language titles and abstracts, were fully published only in Portuguese, something that limits the reach of these works, a gap that this thesis is trying to cover. Table 3 displays the list of the top ten most cited articles.

Table 3 – List of most cited works on social management within the international scene.

Title	Authors (Year)	Journal	Citations
Social management capabilities of multinational buying firms and their emerging market suppliers: An exploratory study of the clothing industry	Huq, Chowdhury, Klassen (2016)	Journal of Operations Management	39
Administração pública brasileira entreo gerencialismo e a gestão social	Paes de Paula (2005)	Revista de administração de empresas	35
The social management of environmental change	Irwin, Georg, Vergragt (1994)	Futures	18
The anatomy of modern technology: prolegomenon to an improved public policy for the social management of technology	Hannay, McGinn (1980)	Daedalus	15
The social management of ambition	McClelland (1990)	Sociological Quarterly	13
Administração pública e gestão social: a produção científica brasileira entre 2000 e 2005	Hocayen-da-Silva, Rossoni, Ferreira Júnior (2008)	Revista de Administração Pública	11
Gestão social: reflexões teóricas e conceituais	Cançado, Tenório, Pereira (2011)	Cadernos EBAPE.BR	10
The bounded welfare pluralism: public–private partnerships under social management in China	Shi (2017)	Public Management Review	10
Aspectos estruturais da cooperação entre pesquisadores no campo de administração pública e gestão social: análise das redes entre instituições no Brasil	Rossoni, Hocayen-da-Silva, Ferreira Júnior (2008)	Revista de Administração Pública	8
Gestão social e esfera pública: aproximações teórico-conceituais	Oliveira, Cançado, Pereira (2010)	Cadernos EBAPE.BR	7

Source: Felizardo *et al*. (2020).

It is important to highlight that there is a limitation in the work of Felizardo *et al*. (2020), it is a quantitative analysis and refers to the uses of the term Social Management in all areas of applied social sciences. This includes for example the area of marketing and business as is the case of Huq, Chowdhury, Klassen's (2016) work. Therefore, it does not distinguish between different uses and meanings for the term social management. The article was limited to the amount of publications and citations and not a qualitative analysis of the content, which would definitely change the rankings, since there are examples of work that would not fit in the perspective of social management known and studied by Brazilian researchers. These different approaches can also be noticed by the lack of connectivity between Chinese and Brazilian authors, the two most dominant in this field according to the paper.

Oliveira-Ribeiro, Chim-Miki, and de Araújo Machado (2021) provide a more nuanced understanding of Social Management in the Brazilian context. They emphasize that Brazilian studies of the topic are diverse, using a variety of practices, approaches, and definitions without a consensus in the literature. This contrasts with international perspectives that consider it more broadly, encompassing various practices related to social aspects of

management. Moreover, their research highlights the evolution of Social Management in Brazil as a balance between theoretical foundations and practical applications, with a focus on societal participation and empirical case studies in public policy and citizenship territories. They also observe that Brazilian studies often emphasize the state and society's role in Social Management, while international studies recognize the significant role of firms in managing social aspects (OLIVEIRA-RIBEIRO; CHIM-MIKI; DE ARAÚJO MACHADO, 2021). Their study also underscores that Social Management remains predominantly endogenous with limited internationalization, an aspect our research endeavors try to address in this thesis.

Despite the fact that term appeared much earlier in the social sciences field, according to Cançado, Tenório, and Pereira (2011) and Tenório (2012), the main clue on how the term emerged came up from the text of Giorgio Rovida (1985) which deals with self-managed experiences in the Spanish civil war. Nonetheless, in Rovida's (1985) text, social management appears with the meaning of proletarian democracy for locals. However, the term is also used to describe the management of collective farms in the communist Soviet Union, also known as Sovkhoz. According to Cançado (2011), the main references on the social management concept construction as we work now are the publications of Tenório (2008a, 2008b, 2010, 2012), França Filho (2003, 2008), Fischer (2002), Fischer and Melo (2003, 2006), Boullosa (2009) and Boullosa and Schommer (2008, 2009). In this list, it is also important to include the own work of Cançado (2011), the book entitled "Social Management, epistemology of a paradigm" from Cançado, Pereira, and Tenório (2015), and, more recently, Tenório and Araújo (2020) and Davel, Xavier, and Cançado (2020). Finally, on the report of Alcântara (2015), Garcia (2016), and Menon (2016), social management have Fernando Guilherme Tenório, Airton Cardoso Cançado, José Roberto Pereira, Ana Paula Paes de Paula, França Filho and Tânia Fischer as its go-to reference researchers. In their bibliometric analysis, the three authors found that these names are the most cited in the field.

After the 1997 Course of Directives in Design and Management of Policies and Social Programs, promoted by the Inter-American Institute for Economic and Social Development (INDES), in Washington DC, Tenório expanded his perception about social management. In the following year, Tenório (1998) published the article entitled social management: a conceptual perspective, possibly the first Brazilian text that dealt with the subject. However, the term, even today, has been more associated with the management of social policies, third sector organizations, the fight against poverty and even the environment, than with the discussion and possibility of democratic, participative management. Nevertheless, recently, the concept of social management is understood as the dialogical management process where

decision-making is shared among the participants involved. In another work, Tenório (2008c) enunciates that the adjective "social" qualifies the noun "management" as a space for social relations where everyone has the right to speak, without any type of coercion.

Moving on within the years and considering especially the work of Cançado, Pereira and Tenório (2013), the authors claimed that social management was emerging as a possibility of constituting a specific scientific field of knowledge, a non-state management of the public's interest and aimed at the common good. Several Brazilian authors were considering the need for the epistemological construction of social management, a theoretical framework that allows the improvement of the management of organizational and interorganizational, more consistent theoretical and methodological references for social management. A gap deserved to be discussed, thus, the authors highlighted the demarcation criteria that served the reflective purposes regarding social management based on authors such as Chalmers, Feyerabend, Kuhn, Lakatos, Popper, Pedro Demo, Boaventura de Souza Santos with further comparisons with works from Alain Tourraine, Anthony Giddens, Brandura, Georg Lukács, Jürgen Habermas, Michel Foucault, Pierre Bourdieu and others. A small portion of this epistemology construction will be present in the following section.

2.1.2 Social Management Paradigm Epistemology

As previously seen, academic works in social management today involve a set of scientific articles, books, dissertations, thesis, and other bibliographic materials that are being produced in different education and research institutions with different theoretical approaches and empirical studies. Thus, controversies arose in the field related to issues such as "is it a paradigm or is it a research field?", "is it paradigmatic or multiparadigmatic?", "disciplinary or multidisciplinary/interdisciplinary?", "emancipator or ideological?", "an ideal or is it real?" among others. Discussions and attempts to answer the questions above are present in several works, some examples are Tenório (2005), Maia (2005), Cançado (2011), Araújo (2012), Alcântara (2015), Cançado, Pereira and Tenório (2015), Gerra (2015), Menon (2016), Persson (2016), and Alcântara (2018).

As an example of this kind of dispute, Araújo (2012) defends the concept of social management as multiparadigmatic, polysemic and a field under construction (in progress). He states that it is a field of knowledge under construction in a preliminary stage in which the multidisciplinary character prevails, tending to interdisciplinarity. On the other hand, Cançado (2011) and Cançado, Pereira and Tenório (2015) argue that social management has already

achieved much progress and has a consistent theoretical body approaching its first paradigm, or in other words, with specific theoretical foundations. In order to demonstrate that social management passes the criteria to be accepted as a science, the authors compare the maturity of social management with the criteria proposed by Popper, Kuhn, Lakatos, Feyerabend, Chalmers, Boaventura de Souza Santos and, Pedro Demo. This way, attempting to prove scientifically that social management is a field of knowledge that could be characterized as a science.

The academic debate about the divergences is still in progress as can be observed in the works of Araújo (2012), Cançado (2013) and Tenório and Araújo (2020) for example. However, in order to explain and reference the theories used to justify social management as a well-established field of scientific knowledge Cançado (2011) presents some arguments based on the criteria and authors mentioned above. This debate between different points of view is not the focus of this work, but in order to understand the relevance and the state of art of social management it is important to go through the comparisons made by Cançado (2011) and this is what will be presented in the next paragraphs.

Popper's (2005) proposal is centered on falsifiability and axiomatized systems. Thus, for the proposal to be considered science, it must be constituted in an axiomatic system and be susceptible to falsification. The axiomized system, based on the proposal for social management, according to Cançado (2011), is defined as follows: 1) Social management has the enlightened self-interest as its starting point if inside the solidarity and the sustainability context. 2) Social management takes place in the public sphere redefined by deliberative democracy, guided by subjective rationality action in the practical dynamics within the communities, which implies dialogicity and intersubjectivity, with interorganizations as a formal element of action. This context makes collective decision-making possible without coercion and based on intelligibility and transparency. 3) Social management aims at emancipation, which, if succeeded, enhances the enlightened self-interest, in a continuous social process. According to Popper (2005) to satisfy the falsifiability condition when presenting a theory, the means to refute it must also be presented so that it can be considered as scientific. In this case, the authors present ways for various possibilities to refute the theory, mainly in the form of discussion of theoretical categories, including academic debates already mentioned. This way, social management satisfies the conditions proposed by Popper (2005).

Kuhn's (2012) demarcation criterion is the acquisition of the first paradigm. After this condition is satisfied, the field is consolidated as a normal science for a given scientific

community, establishing its disciplinary matrix as its basis for solving problems. However, Cançado (2011) states that according to Coelho (2004), Fischer, (2002), Fischer and Melo (2006) and Vidal *et al.* (2006), Social Management is still in the pre-paradigmatic phase. Thus, if you consider Kuhn's (2012) demarcation criterion, social management cannot yet be considered as a field of scientific knowledge, although Cançado (2011) himself considers that it is very close to this. Perhaps, after these years, it has already reached the required level of maturity, but such analysis falls outside the scope of this work.

The demarcation criterion of Lakatos (1976) is similar to Kuhn's (2012), with some variations. Lakatos (1976) enunciates that a given field must be constituted of a scientific research program with a strong core, irrefutable by methodological option of the participants, negative heuristics, and positive heuristics. Despite pointing out all the items described above, Cançado's (2011) text establishes that to pass the Lakatos criteria social management relies on the interpretation of the academic community to understand whether his own work, or perhaps future works, represent a scientific research program.

Moving on to Feyerabend (1993), the author presents counter-induction as the path through which science develops. Counter-induction consists of presenting theories deliberately contrary to the established theories. According to the researcher, the most important formal properties of a theory are discovered by contrast and not by analysis. An example of counter-induction in social management is the contrast presented by Tenório (2008b; 2008d) between strategic management and social management. Thus, within the Feyerabendian perspective, social management can be considered as a field of scientific knowledge.

Chalmers' proposal (1993; 1994) is similar to that of Feyerabend (1993) in extent. For Chalmers (1993; 1994), the degree of fertility within each field of scientific knowledge is related to the amplitude of opportunities to develop that theory in a given practical or theoretical context in addition to the real possibilities it presents within the context of the available theoretical and experimental resources. Regarding the degree of fertility in social management, it is believed that there is a wide spectrum of opportunities. Social management proposes to make emancipation feasible in a notably unequal and excluding society. It also proposes to think about a nation project and a state model, capable of facing exclusion as a process (CARRION, 2007). The growing interest of researchers in the subject is the result of this degree of fertility that has been perceived by the academy and has become increasingly strong. Thus, the proposal for delimiting the field of social management meets the proposal of Chalmers (1993; 1994).

For Santos (2003), society is in a process of paradigmatic change according to the Kuhnian sense of the term. Science made the first epistemological rupture, which separated common sense from science, and this was done based on the natural sciences, laying the foundations for a technical application of knowledge. Now, according to Santos (2003), society is on the verge of a second epistemological breakthrough, which would bring science and common sense together again, the result of which would be an enlightened common sense and a prudent science. This second rupture would start from the social sciences and would provide the basis for an uplifting application of knowledge. In the proposal presented by Cançado (2011), social management is suitable for the second epistemological rupture, both in terms of means (democratization) as in terms of ends (emancipation). Thus, social management would be in accordance with the precepts of Santos (2003) and the second epistemological rupture.

Concluding the analysis of the demarcation criteria, Cançado (2011) compares social management to the criteria of Demo (2007), which is centered on questionability, that is, only what is debatable can be scientific. The discussion also joins other criteria such as: coherence, consistency, originality, objectification, intersubjectivity, having formal quality, and having political quality. Cançado (2011) then argues about all these topics and concludes by stating that the discussion around the demarcation criterion of Demo (2007) comes close to the Popperian one, because to falsify, it is necessary to discuss the arguments and statements, in this way, social management meets the requirements of Demo (2007). Table 4 summarizes the comparisons of social management regarding the aspects related to the demarcation criteria of each author presented in the last paragraphs.

Table 4 – Comparisons of social management aspects related to each demarcation criteria.

Authors (Year)	Demarcation Criteria	Comments	Result
Popper (2005)	Falsifiability.	The proposal for delimiting the field of Social Management is falsifiable.	Accepted
Kuhn (2012)	Acquisition of the first paradigm.	Social Management was still a pre-paradigmatic field but is moving towards the construction of the first paradigm. Some may consider that it already achieved it or is really close to.	Not Accepted
Lakatos (1976)	Constitute a Scientific Research Program.	Social Management, despite being on the way still does not have the necessary conditions for the constitution of a scientific research program.	Not Accepted
Feyerabend (1993)	There is no demarcation criterion, everything is accepted.	In order for the field to advance, counter-induction is recommended and its being widely done.	Accepted
Chalmers (1993; 1994)	There is no single concept of science.	The proposal for delimiting the field of Social Management has a goal of science and is fertility.	Accepted
Santos (2003)	1st Epistemological Rupture, that is, the break with common sense constitutes the basis for the second break, in which science dialogues with common sense, producing "enlightened practical knowledge".	The proposal for delimiting the field of Social Management has the characteristics of the second epistemological rupture.	Accepted

Source: Cançado (2011).

In addition to the academic discussions, as part of the natural process of knowledge construction, some criticisms of social management have also emerged over the years. Some examples are conceptual inconsistencies, political positioning, theoretical dilemmas, a theory that does not correspond with social transformations in practice, polysemy, endogenesis, lack of experiences that correspond to the normative assumptions and categories adopted by social management. Examples of such criticisms can be observed in the works of Boullosa and Schommer (2008; 2009), Pinho (2010), Araújo (2012), Guerra and Teodósio (2013), Araújo and Boullosa (2013), Pinho and Santos (2015a; 2015b), Persson and Moretto (2015), Alcântara (2015), Garcia (2016), Persson (2016), De Paiva *et al*. (2018) and Garcia *et al*. (2018). Still on the matter of criticisms, this work, by proposing to investigate and apply social management, meets the research agenda proposed by Alcântara (2015) and Garcia (2016). These researchers propose the development of empirical studies that relate practical cases to the normative concepts adopted in the social management field of study.

2.1.3 Social Management Concepts

In addition to the epistemological construction of the social management paradigm, Cançado, Pereira & Tenório (2013; 2015) present the dimension of social management related to the assumptions about the nature of social science according to Burrell & Morgan (2006). This association is summarized in Table 5 and is essential to understand the concept of the term social management and on what it is based.

Table 5 – Dimensions of social management related to Burrell & Morgan (2006) assumptions.

Dimension	Social Management Characteristic	Justification
Ontology	Nominalism	Collective decision making without coercion is based on intersubjectivity (dialogicity, transparency) and the construction of reality based on understanding.
Epistemology	Antipositivism	The social reality can and must be (re) constructed in the interest of its members and based on their perception, that is, the individual is in reality and acts on it, the researcher is also the subject of the research.
Human nature	Volunteering	If perception is due to the (re) construction of reality based on the interaction between people and their intersubjectivity without coercion, free will is a condition for this process.
Methodology	Ideographic	The ideographic method is based on the importance of allowing the subject to reveal his nature and characteristics during the research, an essential posture to analyze collective decision making without coercion based on understanding.

Source: Cançado, Pereira & Tenório (2013)

Based on the characteristics shown in Table 5, one can start talking about what social management means. When we talk about science and paradigm, we believe that the different points of view, practices, theories, and concepts related to social management represent an important plurality for the debates and consolidation of the field. In science, these variations come from different theoretical perspectives and the analytical instrument used. This plurality can be seen in Table 6, which reveals the authors who theoretically influenced the field of conceptualization on social management, what were their references and indicate their main contribution.

Table 6 – Social management field theoretical influences.

Authors	Reference in Social Management	Central Contribution
Alberto Guerreiro Ramos	Tenório (2008a); França Filho (2003; 2008); Cançado (2011); Schmitz Junior *et al.* (2014)	Debate on rationalities, substantive rationality and overcoming the unilateral view of the market.
Aníbal Quijano, Edgardo Lander, Fernando Coronil, Walter Mignolo and Enrique Dussel	Martins e Carrion (2012); Justen, Moretto Neto & Garrido (2014).	Discussions on science, Eurocentrism, coloniality and Latin America.
Anthony Giddens	Peres Junior (2013); Peres Junior, Pereira & Oliveira (2013)	Overcoming the dichotomies between micro and macro level; agency and structure through structuring theory.
Axel Honneth	Calado (2012); Bauer & Carrion (2016)	Theory of social recognition and power relations.
Bernardo Kliksberg	Cançado (2011); Cançado, Tenório & Pereira (2011)	Discussions on development, public policies, and social management.
Boaventura de Sousa Santos	Silva & Moretto Neto (2016); Pereira (2012); Justen, Moretto Neto & Garrido (2014)	Discussions on the third sector, knowledge and coloniality.
Hannah Arendt	Pimentel & Pimentel (2010); Cançado (2011); Araújo & Boullosa (2013); Oliveira & Cançado (2015)	Discussion on public and social spheres.
Hilary Putnam and Amartya Sen	Cabral (2007; 2008; 2011); Alcântara *et al.* (2015)	Debate on facts and values and overcoming the dichotomy. Discussion of capabilities and evaluation possibilities.
Jürgen Habermas	Tenório (2008d); Cançado (2011); Cançado, Pereira & Tenório (2013; 2015); Alcântara (2015); Garcia (2016); Teixeira Cruz (2017)	Debates about emancipation, deliberation, public sphere, dialogicity and rationalities.
Nancy Fraser	Persson & Moretto Neto (2015); Garcia (2016); Persson (2016)	Inequalities and power relations in the public spheres, conception of counter publics and relations between strong and weak.
Paulo Freire	Oliveira, Cançado & Pereira (2010); Pinheiro & Cançado (2014); Tenório, Kronemberger & Lavinas (2014)	Discussions on autonomy, emancipation, extension and dialogicity.

Source: Teixeira Cruz (2017).

Undoubtedly, one of the most important influences for the conceptualization of social management is found in Table 6 and goes by the name of Jürgen Habermas, this statement is corroborated by several studies such as Alcântara (2015), Garcia (2016), and Alcântara *et al*. (2019). Therefore, in order to facilitate the understanding of the concept of social management, this work will now address in more detail some of Habermas' works. More specifically 'The structural transformation of the public sphere' Habermas (1991) and 'The theory of communicative action', Volumes I and II Habermas (1981), which according to Alcantara *et al*. (2019) are the top three Habermas' most cited works as references in social management articles. Despite not being cited too much, another important work of Habermas that will also be included in the discussion is 'Habermas on law and democracy' Habermas (1998). In this context, Do Carmo, Pereira, and Rezende (2023) further elaborates on these

themes, emphasizing the intrinsic link between deliberative citizenship and social management as forms of political deliberative action that challenge market-oriented perspectives and foster social democracy, thus enriching our understanding of Habermasian concepts in practical applications.

According to Alcantara *et al*. (2019), Habermas' work named Structural Change of the Public Sphere is the most cited by articles in the field of Social Management. However, there are some issues, like an allusion to a concept of deliberative citizenship, which does not exist in the same way in the original work. Nonetheless, other texts address the public sphere as relevant to the field of Social Management. For example, Costa (2011) contextualizes and presents the emergence of the so-called public sphere narrated by Habermas. Then, the author analyzes that the concept of public sphere adopted in the article differs substantially from the historical bourgeois construction, since its meaning is precisely that of recognizing as legitimate and harboring the plurality of positions and manifestations. Other works carry out this kind of description about the formation of the public sphere as made by Costa (2011). Some examples are Oliveira, Cançado and Pereira (2010), and Oliveira, Vilas Boas and Pereira (2013). The critical point of discussions like this is that they considered only the 1962 text by Habermas and there is a lack of elements about how that (bourgeois) sphere can be considered a foundation for the concept of social management.

In a constructive criticism, Alcântara *et al*. (2015) indicates that on social management papers, there is little mention of Habermas' (1998) book entitled Law and Democracy, a work in which the concept of the public sphere appears reformulated and better elaborated by Habermas himself. In addition to that, in many texts, the public sphere concept appears as given and it is not critically debated nor is discussed the relevance of this category for each context, both historically and locally. On the other hand, Tenório (2005) presents the concept and moves towards expanding the conception of the public sphere in social management, precisely based on Habermas (1998) (Law and Democracy) where he says that the public sphere is the intersubjective and communicative space, in which people address their concerns through mutual understanding. According to him, the public sphere would be that social space in which the dialogical interaction between civil society and the State would take place by deciding on public policies. Additional views of the public sphere in social management including the perceptions found in Law and Democracy by Habermas (1998) can be found in the works of Persson (2016) and Garcia (2016).

The works Theory of Communicative Action - (Vol. I) and Theory of Communicative Action - (Vol. II) (HABERMAS, 1981) are also highly cited in texts about social

management. To initiate the examples we have it cited in the texts of Tenório (1998, 2005). Villela and Pinto (2009) refer to deliberative citizenship and communicative rationality. Justen, Moretto Neto, and Garrido (2014) highlight modernity as an unfinished project in a critical discussion on coloniality. Benson and Allebrandt (2014) argue that language is a source of integration while Garrido and Justen (2014) cite the concepts of communicative action and strategic relationship with the life-world and system. Angélico and Teixeira (2012) mention the concept of communicative action and are the only ones who make a discussion about the ideal speech situation. Justen and Moretto Neto (2012) in addition to conceptualizing communicative action and the consensus theory of truth also differentiate communicative and strategic action. It is also possible to find Habermas' theory of communicative action mentions in the texts of Magalhães *et al*. (2006), Villela and Maia (2009), Iizuka, Gonçalves-Dias, and Aguerre (2012) and Kronemberger and Guedes (2014).

Notwithstanding the fact that many authors cite Habermas' Theory of Communicative Action, Alcantara *et al*. (2019) identify an important absence in such texts, a critical lack of conceptual conclusion, that is, the diagnosis of the colonization of the life-world by the system. Thus, they recollect that, according to Habermas (1981), the critical reason for the development of Habermasian theory is to propose the use of the concept of communicative action as a key to the formation of theories. Therefore, achieve the structures of the life-world endowed with intrinsic meanings, and above all the threat that this life-world suffers from bureaucratic and economic imperatives, the dangers that arise from the fact that personal relationships, services, and lifetimes are increasingly becoming the object of management like commodities.

To conclude their work by Alcantara *et al*. (2019) still warns that it is necessary to be careful when reading and appropriating from Habermas's works, especially when it comes to its use in the applied social sciences. Habermasian concepts are fraught with controversies that have lasted for more than half a century. Thus, concepts such as communicative action, public sphere, emancipation, rationalization, discourse ethics, deliberative politics, are also carried by different criticisms and interpretations and cannot be taken uncritically. It is also important to point out that, even being aware of these risky situations, this work is not entirely free of such problems.

As recently stated by Tenório & Araújo (2020), social management arises, in opposition to strategic management, trying to achieve a fairer society. A society that is democratically articulated in the management of its interests, other than the interests of the market. In other words, from the perspective of a kind of management focused on calculation,

the authors insist on the possibility of another kind of management whether it is within the organizations or between organizations and society, the so-called social management. It is, therefore, the opposition to strategic management as it, according to Tenório (1998), tries to replace technobureaucratic, monological management by a participatory and dialogical management, one that the decision-making process is exercised amongst different social subjects. Furthermore, the decision-making authority is shared among the participants in the action using a dialogical managerial process. This seminal concept by Tenório (1998) is one of the most cited in the literature on this subject and it assumes Jürgen Habermas' communicative action and the deliberative democracy concept as its analytical premises. Since Habermas' work was already described in the previous paragraphs, it is left to explain some of the concepts behind deliberative democracy and governance.

The conceptualization and discussion of social management presented by Cançado, Pereira, and Tenório (2015) is related to the deliberative action that involves policies and institutional arrangements whose purpose is the common good. This perception has the same sense as deliberative governance proposed by Dryzek (2010). Similar to social management, Dryzek's (2010) concept of deliberative governance addresses elements of actions coordination and legitimacy via deliberation in the relations between market, state and the civil society, taking into account the communicative and democratic process. Therefore, it is arguable that Dryzek's concept of deliberative governance is considerably close to the concept of social management with the Habermasian approach and, therefore, the two concepts complement each other. It is notable that several deliberationist authors, from different generations, influenced the understanding of deliberative governance taking into consideration the differences in discursive aspects, in the legitimacy of collective decisions and in the different interests placed by the public sphere.

Hendriks (2006), for example, conceptualizes the deliberative system as a discursive space composed of different spheres arising from public conversations based on micro, macro, or mixed forms of deliberation. In this sense, Hendriks (2009) argues that deliberative governance is based on, or was inspired by, deliberative democracy and, therefore, decisions and actions are legitimized from a public process of rational debates or other forms of expression. For deliberationists, the term deliberation is related to the search for solutions when there are diverging interests and when it is necessary to seek legitimization for possible agreements. For this reason, some deliberative theories, such as Habermas', are related to the formation of the public sphere, which is part of an unstructured form of communication and involves public speeches by social movements, civil society associations, among others. In

this sense, Hendriks (2009) states that, for deliberative democrats, collective decisions cannot be based exclusively on the votes coopting but must come from a process of rational and public communication in which there is legitimacy via the deliberative participation of different actors with different perspectives. Still on this point, Habermas (2006) argues that legitimacy depends on transparency, equal opportunities, inclusion, exchange of arguments and publicity involving subjects capable of deliberating and participating in the processes of forming opinion and of the public will.

Dryzek (2000) explains that deliberation is part of a communicative process on a political issue in which social actors are informed into the matter and involved in it. In this context and according to Ferreira Silva, Alcântara, and Pereira (2016), Dryzek's (2010) concept of deliberative governance is related to the discursive representation of the public sphere and broadens the Habermasian perspective. To recap, according to Hendriks (2009), deliberative governance was inspired by deliberative democracy and refers to a process in which the public legitimizes decisions and actions. Thus, the concept is very close to that of deliberative citizenship referred to by Tenório (1998; 2005), as well as being close to the concept of deliberative public administration discussed in Carvalho *et al*. (2015).

The theoretical influences presented in Table 6, especially the studies by Jürgen Habermas and also the advances in the field of deliberative democracy, culminated in a diversity of concepts for social management. This diversity can be confirmed in the work of Garcia (2016) in which different concepts developed on social management are presented. Table 7 adapted from Garcia's (2016) work presents this multiplicity of ideas chronologically.

Table 7 – Multiple social management concepts.

Source	Concept
Tenório (1998, p. 16)	"[...] a more participative, dialogical management, in which the decision-making process is exercised through different social subjects".
França Filho (2003, p. 04)	"[...] a management method proper to organizations operating in a zone that is not of the market or the State, [...]"
Tenório (2005, p. 102)	"[...] social management as the dialogical managerial process in which decision-making authority is shared among the participants in the action (action that can occur in any type of social system - public, private or non-governmental organizations). The adjective social qualifying the noun management will be understood as the privileged space for social relations in which everyone has the right to speak, without any kind of coercion ".
Gondim, Fischer & Melo (2006, p. 07)	"[...] a relational act capable of directing and regulating processes through the broad mobilization of actors in decision-making, which results in intra and interorganizational partnerships, valuing decentralized and participatory structures, with the balance between rationality being the norm instrumental and substantive rationality, to at last achieve a collectively planned, viable and sustainable asset in the medium and long term ".
Cabral (2008, p. 25)	"[...] management that produces public goods and reproduces social values that allow the flourishing of this space articulated by the third sector"
Cançado (2011, p. 205)	"[...] a dialectical process of social organization proper to the public sphere, founded on enlightened self-interest, and which aims at emancipation".
Cançado, Tenório & Pereira (2011, p. 697).	"[...] collective decision-making, without coercion, based on the intelligibility of language, on dialogicity, on the understanding clarified as a process, on transparency as an assumption and on emancipation as the ultimate end."
Fischer (2012, p. 118)	"It can be concluded that the management of social development is a mediation process that articulates multiple levels of individual and social power".
Cançado, Pereira & Tenório (2013, p. 17).	"[...] dialogical managerial action specific to society and to non-state public interest aimed at the common good".
Araújo (2014, p. 88).	"Social management is a field of knowledge and practices related to the ways of managing interorganizations, territories and social relations, being guided by a social ideology and public interest, orchestrating different scales and types of power. The humanitarian logic of public and social interests prevails over the private, individual, and monetary interests ".
Freitas, Freitas & Ferreira (2014, p. 290)	"Social management, [...], refers to a process in which individuals themselves become social subjects, expressing, in language acts, their demands and desires, and bringing the State closer to the true meaning of the "social" that is moving together with public management ".

Source: Garcia (2016, p. 62) and Teixeira Cruz (2017, p. 22).

Moreover, with the objective of mapping the main researchers and the main conceptual references on social management, Menon (2016) conducted a study in which he gathered and systematized the main authors and their conceptual perspectives of social management. Table 8 adapted from the cited work presents these authors and their perspectives also chronologically organized.

Table 8 – Main authors and their conceptual perspectives on Social Management.

Source	Concept
Fischer (2002)	a transformative mediation process that: articulates multiple scales of individual and societal power; works on the identity of processes, reflecting and creating cultural guidelines; coordinates effective interorganizations; promotes collective action and learning; communicates and disseminates results; is accountable to society; reassesses and recreates strategies with the development process as its target and motivation, considering tangible and intangible, objective and subjective dimensions, which make up complex organizations and institutions.
Tenório (2005)	The dialogical managerial process in which decision-making authority is shared among the participants in the action (action that can occur in any type of social system - public, private or non-governmental organizations). The adjective social qualifying the noun management will be understood as the privileged space of social relations in which everyone has the right to speak, without any type of coercion.
Boullosa e Schommer (2008)	The process of building social management as an alternative for governance is based on the purpose of promoting advances in management practices for democratization in social relations, through participatory practices and engagement in decisions and practices, in bottom-up decision-making models, privileging the dialogical and relational dimension of management (TENÓRIO, 2002; 2004). By opposing management modes based on hierarchy, control and rationalization, social management would manifest one of its innovation potentials.
França Filho (2008)	Social management is configured as a space for the performance of civil society, being, therefore, a non-state public sphere. Social management is the mode of management practiced by organizations that are neither in the market nor in the State, but they often maintain partnership relationships with these spheres for the implementation and execution of certain projects. These organizations do not have economic objectives, and this is configured only as a means to achieve the main goal, which can be linked to culture, politics or ecology, according to the nature of the performance of each organization.
Pereira e Rigatto (2011)	[...] dialogical managerial process in which the conception, elaboration, implementation, and evaluation of policies is shared among the participants of the action in the public sphere, where everyone has the right to speak without any type of coercion and make democratic and deliberative decisions.
Cançado (2011)	Collective decision-making, without coercion, based on the intelligibility of language, dialogicity and clarified understanding as a process, transparency as an assumption and emancipation as the ultimate end.
Mendonça, Gonçalves-Dias and Junqueira (2012)	Its object of study is the management of social and environmental problems that need an intersectoral and interorganizational vision, considering its space of articulation in a context of constant democratic strengthening, where multiple actors share interests, visions, and actions within a territory.
Araújo (2014)	A field of knowledge and practices related to the ways of managing interorganizations, territories and social relations, being guided by a social ideology and the public interest, orchestrating different scales and types of power. Humanitarian logic, public and social interests prevail over private, individual, and monetary interests. The knowledge produced in the field of Social Management is born from inductive processes of participatory, horizontal, dialogical, and democratic management practices that can be developed in different types of organization. The frontier for its applications is defined by the expanding nature of the public sphere and the co-production of the public good.

Source: Menon (2016, p. 45-47) and Teixeira Cruz (2017, p. 25).

In addition to bibliometric aspects, Menon (2016) and Menon & Coelho (2019) identified that there are three moments of the generations and trajectory of research in social management. As indicated by these works, the first generation refers to the period from 1998 to 2004, when some researchers sought to define the concept of social management in an exploratory way. The second generation, from 2005 to 2012, is marked by the institutionalization of the Brazilian National Meeting of Researchers in Social Management

(ENAPEGS) and by the expansion of the number of researchers in the field. Finally, the third generation is characterized by the publication of works that aimed to consolidate the concept of social management. Following these lines, Teixeira Cruz (2017) believes that, based on criticism and different research agendas, the fourth generation of research in the field of social management has already begun and it is moving towards discussions on empirical experiences in the area, this thesis is one example of that. As a characteristic of the fourth generation, this work also dares to add the expansion of the theory to the English language bringing together the possibility to spread it on new frontiers beyond Latin America and Spain.

To conclude this section on social management concepts a statement by Tenorio and Araujo (2020) is assertive and needed. The authors stated that despite the concept of social management is already on the agenda of the Brazilian academy for quite some time, its understanding is not unanimous, and the concept is still not fully known in the Brazilian academy itself, let alone in the international context. Notwithstanding, the authors insist that social management, since the early 1990s, has been an opposition and alternative to strategic management. Thus, it is a schism, a heterodox perspective against the mainstream, a concept of resistance not taken as an end in itself or as a goal of politics, but as a beginning and as a possibility, as the relationship between oppression and resistance, with no appeal to the sense of maximum agency of the modern subject.

In this evolving discourse on social management, the insights provided by do Carmo *et al.* (2024) become particularly pertinent. Their study underscores the vital role of decolonial and Southern Epistemologies in shaping social management. They argue that Social Management, viewed through the lens of Southern Epistemologies, offers a decolonial and emancipatory perspective, essential for understanding and advancing social management in contexts like Latin America. This aligns with the fourth generation of social management research, as it embraces counter-hegemonic and diverse knowledge systems, furthering the idea that social management is a concept of resistance and an alternative to strategic management. Yet remains an evolving and unfinished discourse. This observation is clearly evident in the meta-analysis conducted by Aguiar-Barbosa and Chim-Miki (2020), which examines the evolution of the concept of social management. Their research reveals that, while the academic consensus on its key elements has grown, the field is still in a pre-paradigmatic phase, characterized by only moderate agreement on key terms.

Therefore, social management does not have a completely closed concept, the truth is that there are several academic conflicts that are important for its growth. However, it can be said that there is a common and convergent point in every work, and this is what this work

will be grounded on, social management is based on participation. In addition, it still has flexible delimitation, and it is built on the ideal Weberian type as described in Weber (2017). This meaning that it has a path to be followed as a guide, but the end possibly will not be fully achieved, where this path is conducted by some characteristics in a collective decision-making with the characteristics being no coercion, maximum transparency, intelligibility, dialogicity, aiming at emancipation, core characteristics we used during the application of this work.

2.2 Sheep Industry History and Challenges

In the broad scope of agriculture in the United States, sheep production has had a varied history. Conner (1921) relates that in the early history of the United States, several states initiated sheep farming primarily for wool production. In 1609, the industry began in Jamestown, Virginia, and soon spread to other areas including Massachusetts in the 1620s with the introduction of wool-rich breeds and around the same time, New York embraced sheep farming, albeit facing initial hurdles (CONNOR, 1921). The mid-1630s saw the advent of the industry in New Jersey and Delaware, spurred by Swedish settlers, while in 1683, Pennsylvania joined the endeavor through Quaker initiatives. Rhode Island too fostered sheep farming, additionally exporting sheep for breeding. Despite challenges, these states laid the groundwork for a self-sufficient wool production industry, as indicated by Connor (1921).

However, in recent decades there has been a considerable paradigm shift towards meat sheep farming owing to fluctuating market demands and economic factors, as noted by Jones (2004). Lupton (2008) reinforces that explaining that while in 1910, 57% of the income from sheep farming came from wool, this ratio changed drastically over the years, with wool accounting for less than 10% of the income by 2007. Meanwhile, lamb crops in the new millennium have been recorded to be higher than those in the 1920s, and the weight of dressed lambs increased from 18 kg to 32 kg from 1940 to the present (LUPTON, 2008). Florida's role in this transition is steadily evolving. While not historically a hub for sheep farming, recent scholarly attention has underscored the growth of the industry in this region, as of Karki *et al*. (2018). Facilitated by the state's unique climatic conditions that support year-round grazing, an increasing ethnic population, and ongoing urbanization of rural regions, mentioned by Xie *et al*. (2023), Florida is gradually transforming into a noteworthy player in the sheep and goat industry. Moreover, the shifting consumer preferences towards healthier, sustainable, and locally sourced products have further propelled this growth, as

noted in various studies, such as Collins and Reau (2013), Ivanović, Pavlović, and Pisinov (2016), Brouk *et al*. (2022), and Brouk (2023).

Yet, this growing industry faces a myriad of challenges, paramount among which is predation, a significant concern highlighted for example in Mitchell, Jaeger, and Barrett (2004). Farmers continually grapple with the threat posed by predators, such as coyotes, which necessitate vigilant monitoring and protective measures. Additionally, disease management remains critical, with conditions like scrapie and parasites representing a constant threat to flock health, some studies in this field are the ones of Baylis and Goldmann (2004), Arsenopoulos *et al*. (2021), Acín *et al*. (2021), and Fast and Groschup (2023).

Market dynamics further compound the challenges faced by meat sheep producers in the USA. As elucidated in studies by Maza, Gracia, and Saied (2018), the market for sheep meat is relatively small compared to other meats, leading to fierce competition and narrow profit margins. The industry also contends with a significant influx of imports, a scenario that requires strategic market navigation to maintain profitability, despite the increase of demand driven by the stream of ethnic population, as highlighted by Ufer, Countryman, and Muhammad (2020). Moreover, regulatory hurdles present another layer of complexity. Stringent regulations surrounding animal welfare, environmental standards, and health protocols sometimes impose substantial compliance costs, particularly on small-scale farmers (BOLDT *et al*., 2023). Further, according to Charlton and Kostandini (2021), the industry is experiencing a labor shortage, a trend echoed in wider agricultural narratives and pinpointed as a critical area of concern in sustaining the sector.

In the realm of agricultural practices, labor shortages have consistently posed significant challenges. For instance, Washington state faced an agricultural labor shortage of more than eight percent from 2011-2013, reaching its peak severity in 2016 across the Western United States (CLARK, 2017). This labor crisis extended beyond mere shortages; farmers contended with high labor costs, competition from other operations, and a general scarcity of available workers. While larger farms often had the capacity to mitigate the effects of regulations, smaller farms bore the brunt of the impact (BOLDT *et al*., 2023). As the U.S. dairy operations demonstrated, reported by Charlton and Kostandini (2021), even with technological advancements, it was challenging to entirely counterbalance the adverse effects of labor shortages.

Health-related issues in livestock farming, such as the threat of prion diseases[8] like scrapie, are a concern. As noted by Acín *et al.* (2021) and Fast and Groschup (2023), diseases like scrapie are fatal, neurodegenerative conditions affecting small ruminants. While they have been well-researched, understanding their transmission pathways, improving their detection, and managing their spread remain important. Alongside, parasitic infections continue to be a challenge. The wide distribution of resistant Haemonchus strains and complexities in disease diagnosis and control necessitate vigilant surveillance (ARSENOPOULOS *et al.* 2021). Furthermore, regulatory challenges add another layer of complexity. In Florida, unique regulatory structures have led to high costs for farmers, particularly in sectors like ornamental aquaculture. The restrictions surrounding animal care, drug use, and species cultivation often place smaller farms at a disadvantage, affecting their profitability (BOLDT *et al.*, 2023).

As the consumer landscape evolves, preferences are leaning towards locally produced, sustainable, and health-conscious products. The demand for goat meat, for instance, has seen an uptick due to its health benefits and its role in self-sufficient farming (COLLINS and REAU, 2013). However, alongside this positive trend, the industry faces the challenge of effective marketing. Tapping into niche markets such as health-conscious consumers and restaurants offering gourmet or ethnic foods could be very good for growth. Yet, the sector grapples with consumer education, lack of slaughter facilities, and the absence of organized markets, emphasizing the need for robust marketing strategies (COLLINS and REAU 2013).

In navigating these intricate challenges, there lies a promising avenue in cooperative actions grounded in social management principles. Through collective problem-solving and participatory governance, it is envisioned that a pathway to a more resilient and sustainable future for the meat sheep industry can be forged, a premise that forms the focal point of this research. In the evolving landscape of agricultural education and extension, there exists a noticeable gap in the detailed, real-world application of participatory and democratic methodologies, particularly in industries such as the meat sheep sector in emerging regions like the state of Florida.

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[8] Prion diseases, also known as transmissible spongiform encephalopathies (TSEs), represent a collection of lethal neurological conditions impacting humans and animals alike, and are characterized by a gradual deterioration of brain function. These diseases are caused by a conformational change of the cellular prion protein as stated by Acín *et al.* (2021).

2.3   Rapid Participatory Emancipatory Research (RPER)

This topic is related to the theoretical framework behind the RPER, despite being a method it is paramount to understand its origin, foundations and where it has been applied before. Information about these points is discussed in an organized manner in the coming sub-sections.

2.3.1 History and Origins of RPER

As suggested by Pereira (2017), it is very common to search for methods for Organizational Development. This kind of development presupposes the need for staff development involving courses, lectures, campaigns to improve the quality of life, training to increase employee motivation and increase productivity at work. Such methods generally use closed-ended questions to collect data or adopt strategies to assess and solve problems establishing cause and effect relationships in order to improve the "organizational climate". The biggest limitation of these methods is that they define a priori and superficially the problems to be solved, that is, the intervention in reality is a tutorial. In this sense, the agent external to the organization is the one who raises the problems and their causes and presents the solutions. The participation of members of the organization is limited to attending the presentation of the agent. These appraisal methods end up paralyzing reality at a certain moment, as if it were a photograph, and seek to capture only domesticated situations. In general, they are based on the functionalist approach of evaluating organizational reality.

However, in order to accurately check the reality of an organization, a community, small groups or a collective from the perspective of social management or democratic management, organizational change and sustainable development, it is necessary to use participatory methods based on dialogical processes of transformation of reality. It was with this aim in mind that the Rapid Rural Appraisal (RRA) (CHAMBERS, 1981) emerged. Later replaced by the Participatory Rural Appraisal (PRA) (CHAMBERS, 1994)

According to the studies of Flower, Mincher, and Rimkus (2000), the philosophical foundations of participatory rural appraisal strategies can be tracked down to activist adult education techniques, for example, those of Freire (1981; 1983; 1985) and the study clubs of

the antigonish movement[9] like the ones found in Coady (1939) or Delaney (1985). In this point of view, an effectively included and engaged local population is crucial for fruitful provincial or rural improvement. Robert Chambers, a critical exponent of PRA, contended that the methodology owes a lot to the Freirian topic. In one of his works Chambers (1997) mentioned that the poor and exploited individuals can and ought to be empowered to analyze their own reality.

During the first years of the 1980s, there was developing disappointment among specialists with both the reductionism of formal surveys, and the biases of common field trips. In 1983, Robert Chambers utilized the term rapid rural appraisal (RRA) to portray procedures that could achieve an "inversion of learning". In this case, to learn from rural individuals directly as observed in Chambers (2014). Two years after that, the first international conference to share experiences relating to RRA was held in Thailand, namely the 1985 International Conference on Rapid Rural Appraisal at the Khon Kaen University. This was trailed by a fast acknowledgment and utilization of techniques involving rural people in looking at their own issues, defining their own objectives, and monitoring their own accomplishments. As can be observed in Ngram (2020), by the mid-1990s, the term RRA had been supplanted by various different terms including Participatory Rural Appraisal (PRA).

According to Chambers (1993), the primary objectives of PRA are set around decentralization and empowerment. Decentralization involves the delegation of resources and decision-making authority, reversing the traditional centralization of resources and people. Empowerment refers to the process of enabling individuals, particularly those with limited resources, to gain more control over their lives. This empowerment allows them to improve their livelihoods by having ownership and control over productive assets, which is a crucial aspect of this endeavor. Decentralization and empowerment enable local people to exploit the diverse complexities of their own conditions, and to adapt to rapid change.

Even though it has been around the early 1980s, the field is not free of critics, Leurs (1997) for example, criticized the lack of a systematic evidence-based methodology. On the other hand, as of Chambers (1994), Castelloe and Gamble (2005) and Narayanasamy (2009), the basic technique include among other dynamics, role reversals, feedback sessions, surveying, sampling, social mapping, focus group discussions, semi-structured interviews, community mapping, Venn diagrams, matrix scoring, ecograms, and timelines. As stated by

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[9] The antigonish movement focused on providing adult education directly in workplaces and homes to foster economic cooperation and self-sufficiency. It emphasized establishing a self-sustaining cooperative system, utilizing education and cooperation for the common good. For more detail information please check Coady (1939) and Delaney (1985).

Robinson-Pant (1996), to guarantee that individuals are included from participation, these strategies abstain from the use of writing at every possible opportunity, relying rather on the use of oral or visual communication, for example with pictures, images and actual items.

2.3.2 RPER Theoretical Foundations

Based on the background mentioned on the last session and grounded in the perspective of critical theory, especially in the Habermasian perspective and on Paulo Freire's dialogical education emerged the Rapid Participatory and Emancipatory Research. According to the method's creator, Pereira (2017), RPER is not entirely characterized as an action-research or participatory research as it has the presence of an interdisciplinary team, external to the organization, using participatory techniques. Although, it uses such methods in the research process and in the construction of intersubjectivity. A rich insight of the interdisciplinary team role and importance can be seen in Pereira (2017, p. 23):

> In the RPER, the main role of the interdisciplinary team is to guide participants to identify their own problems, their causes and possible solutions, recognizing their demands within a principle of dialogical otherness. Thus, the participatory approach of this method is based on the knowledge, aspirations, and creative capacity of the participants, in addition to the involvement of other social actors. Therefore, in the methodological process of the RPER, a dialogical communicative action occurs and causes the commitment between the social actors involved. This gives the research a characteristic of a participatory development process and should not be interrupted, to the point of jeopardizing its goals. In addition to that, the interdisciplinary characteristics of the external team enables dialogic interaction with participants in correspondence to various aspects of their socioeconomic, political, cultural, and environmental reality. That makes it possible for the participants to identify problems, understand, register, and communicate properly. This happens because each member of the team transits in different areas of scientific knowledge in dialogue with the knowledge generated by the experience of the participants.

In general terms, the objectives of the RPER are focused on the bases of a process where the awareness of the participants allows them to move from a situation of dependency (also known as tutorial) to a sustained and emancipated situation as mentioned in the dialogical education perspective by Paulo Freire (2018).

The following objectives of the method stand out (PEREIRA, 2017, p. 24):

> a) To identify and analyze the participants' generated themes in order to motivate them methodologically to problematize their own reality, establish their priorities and evaluate the actions that they themselves can carry out with those that would be the responsibility of local, state or federal institutions.

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b) To collect information of qualitative and quantitative natures in order to develop action strategies for the participants.

c) Identify structural or potential organizational limitations of the participants.

The RPER adopts an educational approach distinct from the tutorial method, leaning heavily on participatory education as a strategic tool for social intervention to bolster its methodology. Oakley (2008), as referenced by Pereira (2017, p. 60), defines participatory education as an awareness-building process. Within this framework, participants gain the capacity to evaluate their circumstances, discern their challenges and root causes, and collectively chart out solutions, all without the interference of externally given tutorials. Pereira (2017, p. 60) elaborates, emphasizing that whether they belong to a community, cooperative, or environmental advocacy group, individuals should immerse themselves in understanding their social surroundings. This immersion draws inspiration from Paulo Freire's consciousness-raising method, which is intrinsically a cycle of reflective transformation, known as action-reflection-action. Pereira (2017, p. 60) points out that such strategies starkly contrast with tutorial interventions and are geared towards fostering a comprehensive awareness among all action participants, engaging them from the planning stage right through to the realization of set goals. A summary distinguishing these intervention methodologies is presented in Table 9.

Table 9 – Conventional Intervention (Tutorial) Versus Participatory Intervention.

Form of Intervention	Action social unity	Role of the external agent	Role of group members
Conventional	Non-differentiated community	**Tutorial** 1. Identify problems and their causes. 2. Establish the means to resolve them. 3. Assess the actions taken.	**Passive** 1. Perform the actions described by the external agent.
Participatory	Groups with common interests	**Educational** 1. Identify groups with common interests. 2. Promote the initial organization of the group. 3. Provide guidance in identifying problems.	**Active** 1. Identify problems and their causes. 2. Establish the means to resolve them 3. Assess the actions taken and seek new paths, if necessary.

Source: Alencar (1990) and Pereira (2017 p. 61).

The differences between tutorial and participatory intervention are based on Freire (2018). The author back then lists critical questioning regarding the characteristics of banking education. A summary of these questions can be observed in Table 10.

Table 10 – Banking model of education critical questioning.

Banking model of education	Critical questioning
1. The educator is the one who educates; learners are educated.	There is no dialogue if there is no humility. The "pronunciation" of the world, with which men constantly recreate it, cannot be an arrogant act.
2. The educator is the one who knows; the learners are the ones who do not know.	How can I dialogue if I alienate ignorance? That is, if I see it always in the other, never in myself.
3. The educator is one who thinks; learners do not.	How can I dialogue if I admit myself as a different man, virtuous by inheritance, but in front of others, mere "it", in whom I do not recognize other selves?
4. The educator is the one who says the word; learners are those who listen amenable.	How can I talk if I feel like I am a participant in a ghetto of pure men, owners of truth and knowledge, for whom all who are outside are "these people" or are "inferior natives"?
5. The educator is the one who disciplines; the learners are the disciplined ones.	How can I dialogue if I start out that the "pronunciation" of the world is the task of selectmen and that the presence of the masses in history is a sign of its deterioration that I must avoid?
6. The educator is the one who chooses and prescribes his opinion; learners are those who follow the prescription.	How can I dialogue if I close myself to the contribution of others, which I never recognize and even feel offended by it?
7. The educator is the one who acts; learners are the ones who have the illusion that they act.	How can I talk if I fear overcoming and if just thinking about it I suffer and agonize?
8. The educator chooses the syllabus; learners cannot have an opinion on it and are accommodated.	Self-reliance is incompatible with dialogue.
9. The educator identifies the authority of knowledge with its functional authority, which opposes the freedom of learners antagonistically; learners must adapt to the educator's determinations.	There is no dialogue if there is no intense faith in men, faith in their power to do and redo, to create and recreate, in their covetousness of "being more", which is not the privilege of some elect, but the right of men.
10. And finally, the educator is the subject of the process; learners are mere objects.	In dialogue, as a meeting point between men, there are no absolute ignorant, nor absolute gurus; there are men who in communion seek to know more.

Source: Pereira (2017, p. 63-64).

According to Pereira (2017, p. 66) RPER is therefore based on the type of participatory intervention and adopts participatory education as a strategy. This way, the interdisciplinary team puts into practice the communicative action when carrying out the research in a given reality with individuals and social groups with the objective of general social emancipation. To conclude this session it is possible to state that RPER is used in order to instrumentalize the concept of social management similar to other rationalities, such as participatory budgeting, participatory planning, action research. However, instrumentalize is a term that should be used with caution since one of the fundamental assumptions of the concept of social management is that it does not expose beforehand any type of instrumental rationality. Nonetheless, RPER has as its methodological assumption the participation of the community that will experience the research process in conjunction with the interdisciplinary team. In other words, it is an approach and intervention methodology that is not in a tutorial format but one that has the capacity to promote participation and commitment from those

involved. It is also important to stress that the application of RPER is, as the name says, emancipatory and this implies the exercise of citizenship and democracy. Everyone involved faces the challenge of speaking and listening, listening to understand, to share, to transform and, above everything else, to be.

3   METHODOLOGY

This research is split into two major methodological steps, the first involving the planning and creation of the software to assist in the organization and storage of the RPER data and the second part consisting of the RPER application itself. Due to the research's interdisciplinary nature, different phases will demand different methodological approaches. During the entire execution, both documental and bibliographic research will be done. Research of this kind will be of utmost importance to identify the conflict, acquire an initial understanding of the problem, and comprehend the current situation of the matter.

While integrating quantitative analysis and software development indicative of computer science's systematic principles, this research fundamentally aligns with a constructivist framework in both its epistemological and ontological dimensions. Epistemologically, it embraces the notion that knowledge is co-constructed through human interaction and experience, a perspective crucial for comprehending the dynamics of the Meat Sheep Alliance of Florida. This constructivist epistemology facilitates the understanding of the alliance's collective challenges and solutions by valuing the diverse perspectives of its members. Ontologically, the study adopts the stance that realities are continuously formed through social processes, resonating with the nature of social management. The synergy between constructivist epistemology and ontology fosters a coherent methodology, sensitively attuned to the complexities of human experiences and the socially constructed nature of knowledge and reality within the realm of social management.

3.1   Software Planning, Design & Development

In order to carry out the planning of the software proposed by this thesis, a software development life cycle model was used. According to ISO/IEC/IEEE 12207 (2017) this life cycle is a structure that contains processes, activities and tasks related to the development, operation, and maintenance of a software product, covering the life of the system, from the definition of its requirements until its ending. However, there is no absolute consensus on software development lifecycle models, according to Ehrler, Lovis, and Blondon (2019) traditional models are sequential and include models such as waterfall, spiral or V-shaped. The waterfall model was the chosen one for this study due to its great success, as stated by Bassil (2012). According to Munassar and Govardhan (2010), due to its success, the waterfall

model was and still is being used by many software development companies and industrial manufacturers as the main technique for planning, building, and maintaining their products.

The waterfall model was first introduced by Benington (1956) and later modified by Royce (1987). It supported all other models and created a solid basis for the requirements to be defined and analyzed before any development is made. Bennington's (1956) original waterfall model recommended that the software should be developed in the following stages: operational analysis, operational specification, design and coding specification, development and, finally, testing. Predicting that there could be difficulties and unforeseen circumstances, Royce (1987) improved this model to include feedback. So, at the end of each stage, feedback would be added so that each previous stage could be revisited. In addition, Royce (1987) also suggested a preliminary design stage. Figure 1, adapted from Ruparelia (2010) shows the diagram of the waterfall model used in this thesis.

Figure 1 – Waterfall Model Diagram for Software Development.
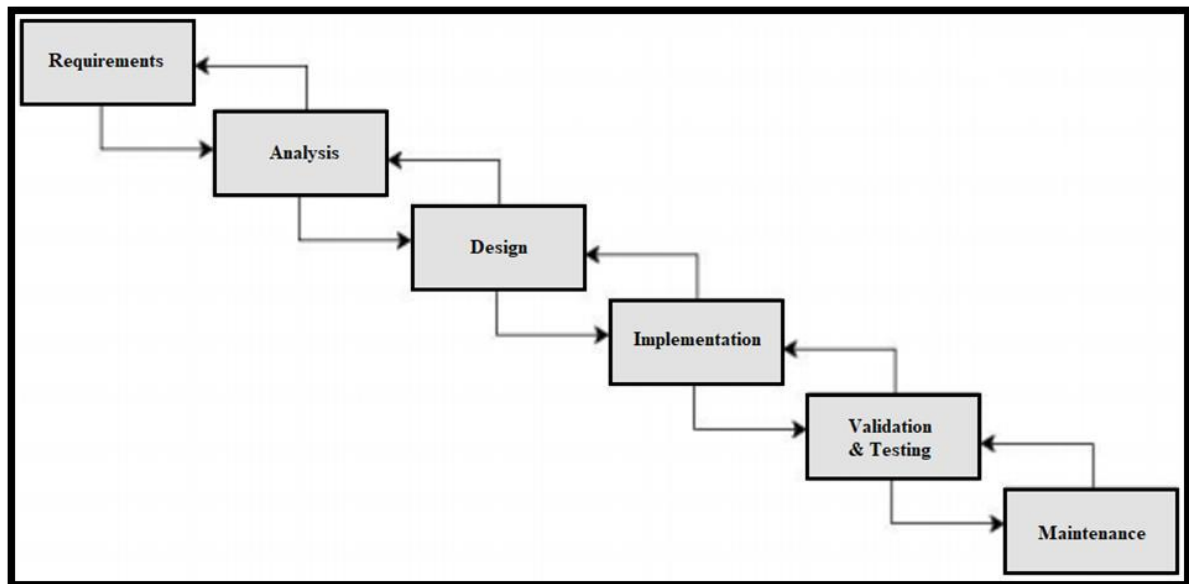
Source: Adapted from Ruparelia (2010).

A brief definition of each model's phases adapted from Bassil (2012) is presented here:

a) Requirements Phase - Also known as planning, or system requirements. As in research, this initial step consists of carrying out a preliminary analysis to raise the problem, the objectives and the needs or requirements of the software to be built.

The business prerequisites are recognized at this stage and an initial measurement of the software size should be carried out at this stage.

b) Analysis Phase - Or software requirements phase is a complete and comprehensive description of the behavior of the software to be developed. Here, functional and non-functional requirements are defined in more detail, including classes, their relationships, functions, software attributes, interface requirements and database requirements.

c) Design Phase - It is the process of planning and solving problems for a software solution, including the initial visuals. In this phase, the developers define the plan for a solution that includes algorithm design, software architecture design, graphical user interface design, among others.

d) Development Phase - This phase involves transforming business requirements and design specifications into a functional software product, such as a program, database, website, desktop application, or mobile application. It encompasses the actual programming and implementation work to create these concrete software components.

e) Validation and Testing Phase - It is the process of verifying whether a software solution meets the original requirements and specifications and if it fulfills the intended objective. In addition, the testing phase is the time to perform code debugging, in which errors and system failures are sought and corrected.

f) Maintenance Phase - It is the process of modifying a software solution after delivery and deployment to refine the output, correct errors and improve performance or quality.

The execution begins with the identification of the software requirements and the users' needs through the author's experience in software development and the knowledge of the RPER method. The target audience for using the software has already been determined and represents the entire interdisciplinary team responsible for applying the method. The Business Process Management (BPM) discipline was used to help map requirements. According to Weske (2007), this discipline includes concepts, methods, and techniques to support the representation and execution of business processes. The next section covers more details about this stage and about BPM.

After completing the initial software requirements phase using BPM a software measurement technique was necessary and the Function Point Analysis (FPA) was used. FPA

is a very complete technique for measuring software using only the system requirements even in the requirements planning and analysis stages. Another section will cover in more detail the procedure used to calculate the software size using FPA. The other steps such as the development stage itself will be carried out and presented in the research paper related to it alongside some pictures of the software graphical interface. Appendix A and Appendix B show the backend and frontend file structure of the code for the software and the complete code is on GitHub separated in backend[10] and frontend[11].

3.1.1 Business Process Modeling (BPM)

The business process modeling (BPM) approach has been applied in an increasing manner in the business scenario during recent years. As mentioned by Baklizky and Fantinato (2012) this discipline has shown itself as a powerful way to solve or contribute to the solution of a series of organizational problems, allowing the improvement of business processes and, consequently, improvement of the results obtained with them. The union of business management and information technology allowed the alignment between the processes and the strategic objectives. In BPM the main objective is to produce a description of reality, for example, the way in which a business transaction is carried out to understand it and, eventually, modify it in order to incorporate improvements. As a consequence, according to Rodríguez, Fernández-Medina, and Piattini (2007), it is important to have a notation that allows the essence of the business to be modeled as clearly as possible. This notation has the acronym BPMN or unabbreviated, business process modeling notation (BPMN). It is a Graphical notation for drawing business processes developed by the OMG consortium, a not-for-profit industry group. BPMN provides the capability of defining and understanding procedures through Business Process Diagrams (BPDs). BPMN aims to provide a standard notation that is readily understandable by all stakeholders as easily as possible. It is also intended to bridge the communication gap that frequently occurs between process designers and the implementation itself, optimizing the communication gap between the business rules and the information technology team. It has many elements, but for this study only a few elements will be necessary. Figure 2 exemplifies the basic elements of BPMN used on this thesis.

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[10] Backend Code: https://github.com/devfel/rper-backend
[11] Frontend Code: https://github.com/devfel/rper-frontend-web

Figure 2 – Core BPMN Design Elements Used on this Thesis.
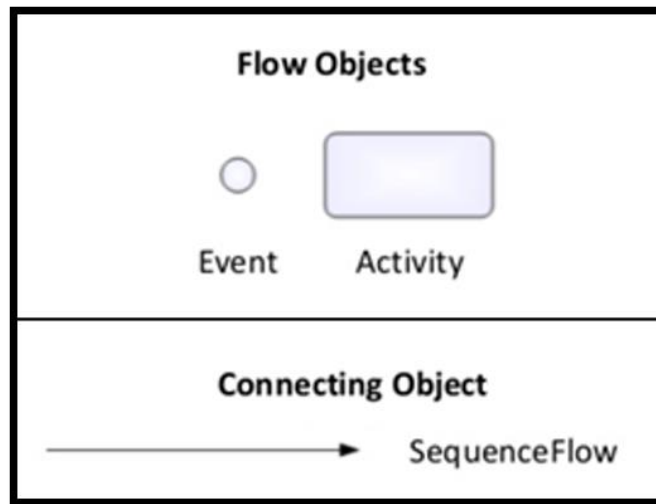
Source: Author.

Flow objects are compressed usually by the Event and the Activity. The activity is the core of the BPMN diagram, it is represented by a rectangle with rounded edges. It is the work that is performed within a business process. Event is a trigger or a result that "happens" during the course of a business process, usually all processes are initiated by a start event and finishes with an end event. The only connecting object used in this work will be the sequence flow which is used to show the order that activities will be performed in a process and is represented by a line with an arrow at its end. Each activity of the RPER application process will be mapped and with that, it is possible to identify the software functionalities that may assist each activity mapped. To facilitate the creation of the process chart in the computer the Bizagi BPMN Modeler will be used. Bizagi BPMN Modeler is a freeware application designed to assist in the generation of graphical diagram, document and simulate processes in the BPMN format.

3.1.2 Function Point Analysis (FPA)

Software metrics are defined as any type of measurement to a software system, process, or documentation, where specifications of the data collection functions are performed for evaluations and project performance. In software engineering, measurements make it possible to improve project management, reduce schedule frustration and evaluate process productivity. It also provides benefits regarding the identification of best development practices and guarantee quality of the product.

Metrics helps software developers to understand the technical process used to develop a system. Regarding the importance of metrics, Pimenta (2011) mentions a panic curve that can occur in development done without a metric system. This curve is described by a series of interdependent events, which culminate in postponing delivery, such as: lower quality control, greater number of errors, delays in the project, pressure to increase production, new people on the project, time acculturation, extended working hours and team wear.

Function point analysis, or simply FPA, is one of the functional size measurements (FSM) methods, which was introduced by Albrecht (1979) as a method to measure the amount of complexity and functionality in a software project. As explained by Rohayaniet *et al*. (2017), in the FPA procedure there are a variety of transactions to be accounted for, including the data received, sent or to be processed by the system and its access to internal and external databases. Despite accounting for these details, the analysis should be used only with the requirements raised by users and does not depend on technical details such as the choice of programming languages or the technologies that are going to be used. Therefore, function point analysis is a technique for measuring the dimension of the software that uses the functionality implemented in a system from the user's point of view.

To start using FPA, it is necessary to understand five concepts based on the Function Point Counting Practices Manual, as explained in the IFPUG (2004). The complexity and quantity of these five items individually are essential to perform the calculation of the number of function points of a software. Here we summarize them:

a) Internal Logic File (ILF): group of data or information logically related to the main function of storing data kept within the boundary of the application. This is the set of data present within the system.

b) External Logic File (ELF): similar to ILF but is referenced in the application as data recovery from another application. Access to a service from another application, for example, Google Maps or YouTube. This is the set of data from external resources or external applications.

c) External Inputs (EI): This is the process of capturing inputs from users like control information or business information and store it as internal/external logic database files.

d) External Outputs (EO): This is the process of sending out data to external users or systems. The data might be directly grabbed from database files or might undergo some system-level processing.

e) Inquiries (EQ): This process includes both input and output components. The data is then processed to extract relevant information from internal/external database files.

Figure 3 exemplifies the interaction between these elements, the application and the user.

Figure 3 – Interaction Between Elements on FPA.
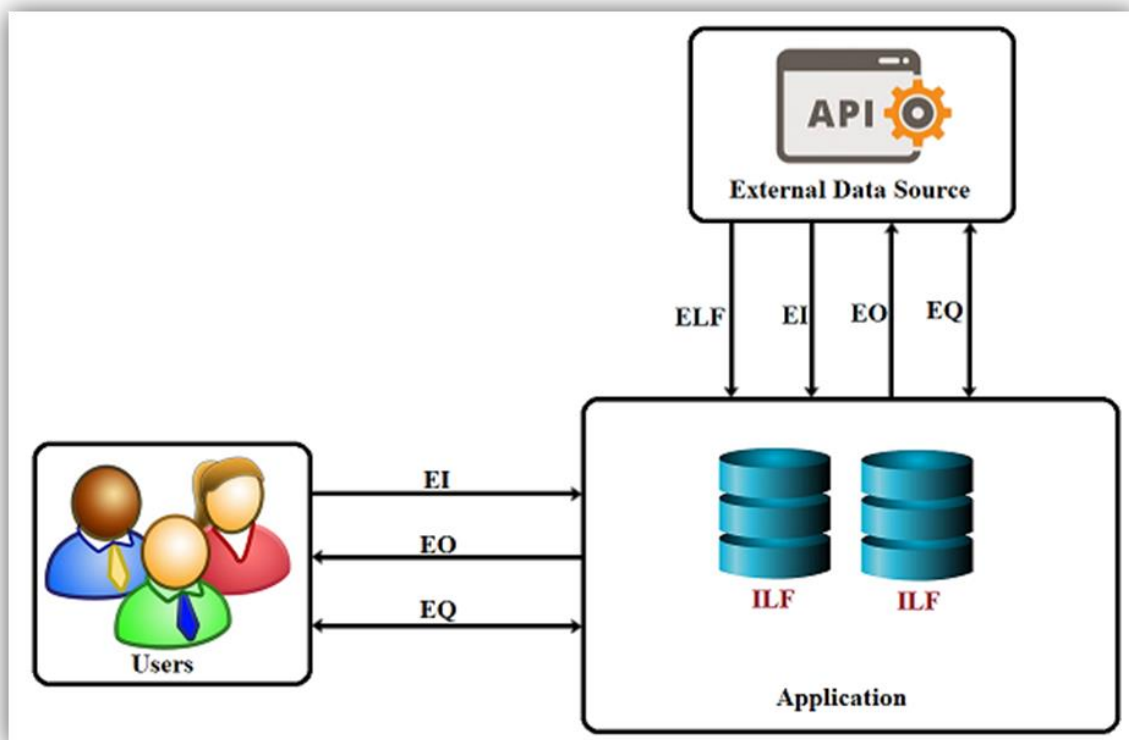
Source: Author.

Finally, the Function Point Analysis technique considers the effort required to produce the software in hours. Opposite to the function point count itself, this process is very subjective and depends completely on the definition of the programming language to be used and on the experience of the team members with the technology to be used. The results details of the BPM mapping and the FPA counting will be presented in the manuscript about the software.

3.2 RPER Method Application

The nature of research for this phase is of qualitative approach in essence, whose central focus is the phenomena and information related to it, such as the socio-historical contexts, testimonies and speeches of the actors involved in the phenomenon as described by Godoy (1995) and Minayo (2012). In addition, according to Teixeira Cruz (2017), in order to understand the discourses, actions and representations referring to the social world, in the qualitative approach, subject-subject relationships are prioritized. As mentioned earlier, this stage of the research comprises the application of RPER and will be explained in two subdivisions, the collection of data referring to the complete application of RPER and the Analysis and Interpretation of data. During data collection, all stages of preparation, documentary research, bibliographic research and participant observation are included, that is, even activities that will not necessarily be carried out in the field and are considered preparation steps. These steps are extremely important in order to recognize the field, acquire an underlying comprehension of the probable issues, and understand the current circumstances.

3.2.1 Collecting Data

This research intends to use primary and secondary data sources that will be collected through the application of the RPER which includes several techniques. Some examples are bibliographic research, documentary research, participant observation, semi-structured interviews, focus group, historical mapping, transect walk, Venn diagram, seasonal calendar, input and output, daily routine, the construction, reality and objective matrix, priorities election. Most of these techniques are already well known and established, nevertheless some details and explanations of how they work and in which way they were used in this project are revealed in the next paragraphs.

Bibliographic research was carried out using articles, books, theses, dissertations and other means of scientific disseminating. The search for theoretical foundation and empirical examples was done using popular databases and congresses, such as Scopus, Scientific Electronic Library Online (SciELO), Web of Science, among others. According to Yin (2014) and Godoy (1995), the participant observation is consistent with the qualitative and case study methodology. Although it is consistent, in order to be carried out with methodological rigor, it is important that the researcher has theoretical support before going to the field to conduct it correctly. Thus, participant observation is not a simple practice, as the researcher needs to manage and balance practical and theoretical.

Teixeira Cruz (2017) points out that there is no participant observation that is epistemologically neutral and the presence of the researcher always constitutes a participation and can have an impact on the life-worlds of the participating subjects and their interpretive processes, so the subjectivity and the role of the researcher as an analyst who integrates the discursive process. Unlike the non-participant observation, where according to Godoy (1995) and Haguette (1997), the researcher positions himself as a spectator of the process, always seeking objectivity, in participant observation the researcher is more interested in the dialogic and intersubjective processes of the subjects.

After the preparation steps, the RPER fieldwork begins. As a reminder, according to Pereira (2017, p. 23), RPER is a method based on instruments that provide social participation and is based on Habermas' communicative action and Freire's dialogic action.

> Its methodology is composed of a combination of participatory techniques that allows to obtain qualitative and quantitative information in a short time. It constitutes a methodological instrument for identifying problems, their causes and possible solutions based on the dialogical communicative action between the participants themselves, in order to reach a consensus among them. (PEREIRA, 2017, p. 23)

According to the theoretical foundation, the main objective of the RPER is to instigate that a certain group of participants to problematize the reality or phenomenon where they are inserted, identifying limitations and potentialities of the organization to which they belong and advance in the possible solutions to solve problems in a consensual and dialectic way.

The RPER fieldwork is carried out over a period of three to five consecutive days by an interdisciplinary team of about five researchers with different backgrounds. Before the fieldwork is carried out the group of researchers must have made contact with the organization where the method will be applied. It is important to know basic data of the organization such as: type, structure, who are its members, possible leaders, among other aspects. After this approximation between the application team and the organization, a date must be scheduled so the fieldwork can be applied. Table 11 represents a summary of the field activities to be carried out during application in the field.

Table 11 – RPER fieldwork stages and techniques.

Technique name	Technique Purpose
Presentation of the interdisciplinary application team and members of the community	Identify who the participants are (name, age, marital status, occupation, and other information).
Historical mapping	Draw a map of the location that represents the organization or social phenomenon in the perception of the participants.
Transect walk	The team must walk across the map drawn in the previous step to verify on the spot the description made by them, photographing and/or filming the landscape.
Venn diagram	Identify and evaluate public and private organizations that have importance and performance in the organization in the perception of the participants.
Seasonal calendar	Arrange all of the organization's activities during the previous year in a graph.
Input and output	Analyze the situation of the production system in relation to the market context that involves the economic activities developed by the organization.
Semi-structured interviews	Allow for the objective comparison of opinions, while also providing an opportunity to spontaneously explore topics relevant to that particular candidate. In addition, it requires the interviewer to have prior knowledge about the interviewee and the topic to be addressed.
Focus group	It aims to obtain qualitative information on the themes that generate collectivity and have as a principle a focused, previously determined discussion.
Daily routine	Identify day-to-day activities and the division of labor in the organization while planning future activities.
The Construction	Promote the critical reflection on the infrastructure owned in contrast to what is desired.
Reality and objective matrix	Identify problems, their causes, and possible solutions in the perception of the participants themselves.
Priorities election	Identify the social, economic, political, and technical-productive priorities of the participants through a democratic election.

Source: Adapted from Pereira (2017).

As defined by Pereira (2017), the method must be flexible in the sense that it is possible to choose and organize participatory techniques, group dynamics and the script for semi-structured interviews. So, it may not be necessary to apply all the suggested techniques, even other techniques may arise and may be inserted, although it is essential that the techniques are participatory and that they capture the reality experienced by the participants. On the other hand, all these sources for data collection are extremely important to build the textual research corpus and for Triviños (1987) and Flick (2009) they represent a triangulation of data collection that aims to increase the research's quality and validity. Yin (2014) mentions that data triangulation is related to the articulation of evidence and the research strategies, Flick (2009) adds by saying that it has the objective of producing knowledge at different levels, which means that they go beyond what is made possible by the approach and thus contribute to promoting research quality. The information collected does not overlap but is complementary in order to increase the reliability of the study and achieve the specific objectives.

Again, based on the context of the group where the RPER will be carried out, the application team makes the necessary adaptations to the application process. During the process of applying the RPER, information is collected by the participants in a collaborative manner. As reinforced by Pereira (2017), all participating subjects have the right to speak, as all the data about the problems and possible solutions are built collectively. Subsequently, this information will support the arguments and planning of actions that must be proposed by the participants themselves in a consensual way. Following the same lines, Teixeira Cruz (2017) explains that dialogue is important in social change, so participatory approaches that take on a dialogical and relational view of the subjects are linked to how social life is inter-subjectively and dialogically constructed. Thus, RPER is characterized as a method that aims at the emancipation of the participating subjects, in Habermasian terms. For this reason, it is considered as one of the methodological possibilities of investigating empirical cases on social management.

3.2.2 Case Studied

Before moving on to the procedures of data analysis and interpretation it is also important to know about the case where the data was collected. The RPER was done in the first week of February 2023, focusing on members of the MSA. The group part of the RPER was conducted at a ranch of one of the members, and each interview was conducted in each of the owners' properties in Florida, USA. The semi-structured interview questions and the consent form signed by the participants are located in Appendix C and Appendix D respectively.

The MSA, established in 1990, has been a beacon for the sheep industry in Florida. Not only does it champion the promotion of sheep production, but it also offers a wealth of knowledge and education to its members and the broader community. With an open membership policy that is not confined to Florida residents or sheep proprietors, the MSA organizes numerous educational and social events throughout the year. It is a tight-knit community of enthusiastic farmers who relish discussing their sheep-rearing experiences and collaborate to navigate the intricacies of livestock farming in the southeastern United States.

There is an annual membership fee of $25 that grants members – including their families and farm staff – unrestricted access to MSA's gatherings, workshops, and lunches. This modest fee opens doors to insights from seasoned producers eager to share their

expertise. The alliance also prides itself on its culinary skills, boasting an array of talented cooks within its ranks.

The inception of MSA can be traced back to 1999, as recounted by Mrs. Ruth Taber, one of the seasoned members where a humble shoebox at one of the sheep farmers in Ocala served as a directory, holding the details of Florida's sheep producers. This cluster of individuals discerned the value of networking and the dissemination of knowledge on efficacious sheep farming practices in the state. With the dawn of the digital age, they transitioned their interactions to online platforms, amplifying their reach. Central to MSA's ethos has always been education – a legacy it zealously upholds.

Today, MSA boasts a vibrant community of passionate shepherds, including some with over three decades of experience. Always ready to assist, encourage, and guide, they form the backbone of this alliance, which now has a large membership (MSA - FLORIDA, 2023). By integrating into the MSA ecosystem, members benefit from expert advice and become part of a well-informed sheep farming community. The funding for events organized by the Meat Sheep Alliance of Florida is usually sourced from annual membership dues, contributions from promoters, and support from associations such as the American Sheep Industry Association.

During our study, we collaborated with eight members from varied backgrounds within the MSA. The methodology comprises various techniques, including Semi-structured Interviews, Focus Groups, Transect Walks, among others. The members were chosen based on their experience, roles, and contributions to the MSA, ensuring a broad spectrum of perspectives. Although geographic constraints did limit some member participation, the depth and qualitative nature of our research ensured comprehensive insights. This study yielded a vast repository of data, with over 15 hours of recordings transcribed into more than 440 pages of in-depth discussions. To keep the participants anonymous and ease of reference, participants have been coded and renamed as Barbara Martin [BM1], Bethany Miller [BM2] (Board Members), Ethan Mason [ExpM1], Edward Moore [ExpM2], Eric Mitchell [ExpM3] (Experienced Members), and Nathan Morris [NewM1], Nicole Montgomery [NewM2], Noah Murphy [NewM3] (Newcomer Members). The interdisciplinary team applying the methodology is denoted as ITeam1 through ITeam4. One last addition we had was the utilization of an online survey so members that were not present in the RPER could participate with their votes (APPENDIX E).

3.2.3 Data Analysis and Interpretation

The data analysis and interpretation were done following the principles of RPER, that is, using content analysis, more specifically, thematic content analysis. This analysis is considered a fundamental phase of the research process because a large part of the information collected concerns cultural values, varying according to reality. This then requires special care and appropriate techniques to systematize the information that will be presented in the form of a report. The concept of content analysis is given by Bardin (1977) as a set of communication analysis techniques that uses systematic and objective procedures to describe the content of messages. According to this author, content analysis follows three phases: 1) pre-analysis, 2) material exploration, and 3) treatment of results, inference, and interpretation. The purpose of this analysis is to reveal the meaning of the ideas and values expressed during the research process by the participants.

During the process of carrying out the RPER, the interpretation of the ideas and values of the participating actors is further enriched by the discussion of the materials expressed by the interdisciplinary team and by the triangulation of information, which confers quality, validity and fidelity of the information to the researched reality. According to Pereira (2017) as a first step in the research, it is necessary for the interdisciplinary team to elaborate on the possible generating themes about the reality of the social group based on the secondary information gathered earlier. The objective is to form a framework of thematic references to develop the dialogical process and promote reflections on the practices of the participating actors themselves, as well as to serve as a basis for elaborating the historical context of the social group, focusing on the social, political, cultural, economic, environmental, and social dimensions.

Possible discrepancies between the real situation of the community and the thematic universe of its members must also be analyzed, putting into dialogue the information presented by the participants and the technical and scientific information of the interdisciplinary team. This methodological purpose is in line with what Santos (2003) proposes, when dealing with the second epistemological rupture, that is, the rupture of a new science, which will happen when scientific knowledge is put into dialogue with popular knowledge, in the sense of producing enlightened practical knowledge. RPER seeks to explore, qualitatively and quantitatively, the generating themes, considering them together and not in isolation, attributing a "holistic" characteristic to the process of gathering

information during the analyzes and evaluations. The set of generating themes forms the thematic universe of the participating actors or the community in focus.

According to Bardin (1977), part of the raw data, such as the secondary data obtained during the collection of information, must be organized before the analysis. When presented in tables, charts, graphs, figures or models, the data can be summarized, and the information provided for analysis highlighted. With regard to primary source of information, Alencar (1990) defines six sequential steps to organize it: 1) the information must be organized in reports and transcripts; 2) all reports must be read and reread in a very thorough and exhaustive manner; 3) comparisons must be made to identify similar reports; 4) comparisons result in different dimensions that should be classified with codes; 5) the concepts are organized into categories and classified among themselves; and 6) the interactive repetition of field-analysis work is carried out observing the analytical refinement. The complete content analysis categorization or thematization can be found in Appendix F.

After the fieldwork is complete, the interdisciplinary team must work on the systematization of all the information collected for the preparation of the final report, based on the index as a working hypothesis of Eco (1977) and based on some sort of commented summary of the final report made previously by the team. The final report is a fundamental document for the community to organize itself internally and be guided by strategic actions in the relationship with governmental, non-governmental and market organizations. Once the final report is ready, it is necessary to present it didactically to the community to continue the process of participatory education, in order to legitimize and validate the Report itself. We recommend a presentation prepared in the form of a booklet (or in our case, a website that was presented in person to the members - tinyurl.com/msarper), illustrated with photos, drawings, maps, dialogues, charts, graphs, tables, among other visual resources, to stimulate reflection on the process carried out so far and discuss new themes generators for the participatory planning stage.

3.2.4 RPER Methodological Summary

After reading and understanding how data collection and analysis is done, it is believed that it is important to make a summary of the RPER as a whole. Therefore, before closing this chapter and to facilitate the understanding for the readers, a summary of the RPER method will be presented. The methodological process of RPER, like the circular process of qualitative research, is formed by a combination of collective techniques with

individual sequential techniques articulated with each other in order to collect cumulatively information in a short period of time. As previously mentioned, the duration of the RPER application in the field is three to five days and the interdisciplinary team is composed of about five members. The following script described by Pereira (2017, p. 87-88) guides the RPER's methodological intervention process:

a) Formation and preparation of the interdisciplinary team.

b) Collection and systematization of secondary information about the community in focus and the historical context about the region where it operates.

c) Direct contact with the participating member of the community and communication about the work.

d) Elaboration of a semi-structured interview script.

e) Elaboration of the reference framework for generating themes with a roadmap for using the techniques that will compose the RPER.

f) Mobilization of social actors and the community.

g) Distribution of tasks to each member of the interdisciplinary team.

h) Fieldwork with the community following the methodological process using previously defined participatory techniques, including semi-structured interviews with key informants.

i) Pre-systematization, discussion, and interpretation, by the interdisciplinary team, of the information collected at the end of each day of fieldwork.

j) Systematization, analysis, and interpretation of all information collected.

k) Preparation of the final report.

l) Delivery of the Final Report and its presentation by the team, discussing the results with the community.

m) Evaluation of the final work.

It is important to reinforce that the technique is flexible, making it possible to choose and organize participatory techniques in order to capture the reality experienced by the participants. The script is shown in Figure 4 schematically and representing a circular process of participatory intervention.

Figure 4 – Methodological Process Stages of the RPER Intervention Technique.
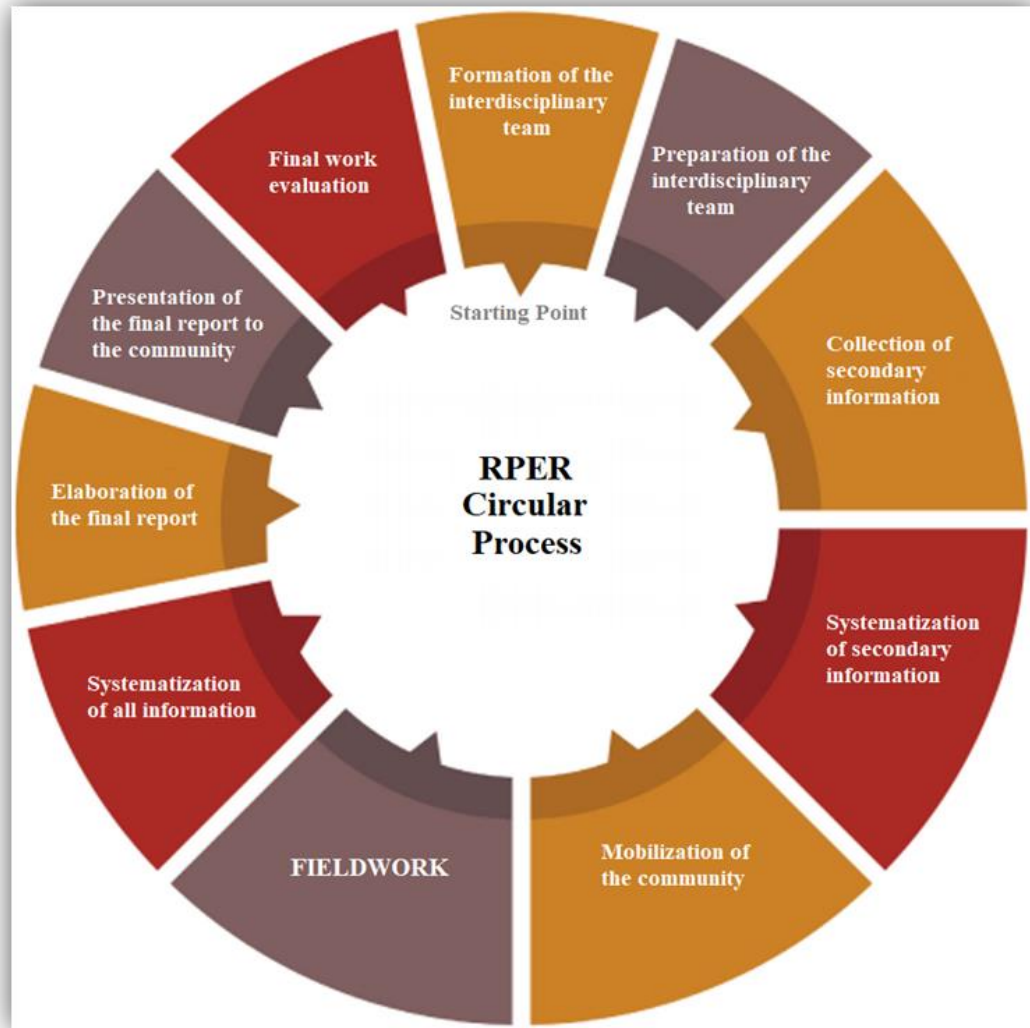
Source: Pereira (2017, p. 89).

3.2.5 Summary of the Thesis' Methodology

Figure 5 provides an overview of the research outline that had been carried out in this doctoral thesis.

Figure 5 – Summary of the Thesis' Methodology.

ARTICLE TITLE	1 - Exploring Social Management: An International Bibliometric Review of Varied Perspectives	2 - A Review of Participatory and Rapid Appraisal Approaches in Rural Research	3 - RPER Software - A Social Management Tool for Rapid Participatory Emancipatory Research: Planning, Design, and Implementation.	4 - Social Management Method Applied in the Solution of Collective Problems: Case Study with the Meat Sheep Alliance of Florida.	MAIN GOAL
Important Insights From Previous Work	-	From Article 1 – Base knowledge about Social Management, a pillar of the RPER participatory method.	From Article 1 - Important knowledge About Social Management, a pillar of the RPER. From Article 2 - Understood the methods that were used as fundaments of the RPER.	From Articles 1 and 2 - Important knowledge about Social Management and RPER fundament. From Article 3 - All the nuances of the RPER which helped the application in the MSA.	Utilize the applied participatory methodology RPER to assist the members of the Meat Sheep Alliance of Florida in identifying their individual and collective challenges and in devising pathways and goals to address these issues.
Main Methodology / Research Type	Bibliometric Analysis	Systematic Review and Clustering Analysis	Software Development	Case Study with Participatory Method Application	
Data Collection, Source, Tools Used	Web of Science Database CiteSpace Software	Web of Science Database CitNetExplorer Software	Requirements, Business Process Management	Challenges in the Meat Sheep Alliance of Florida Application of the RPER and its techniques	
Data Analysis	Identification of publication patterns, citation analysis, most prolific authors and countries.	Systematic review methodology and identify thematic clusters	Function Point Analysis, UI Design, Software Development	Thematic Content Analysis	

Source: Authors.

4   FINAL CONSIDERATIONS

This research journey, characterized by its multidisciplinary focus on technological innovation and an in-depth examination of social management practices in an agricultural environment, has made significant strides in advancing the application of the RPER method. By linking information technology with the realm of social management, we have managed to construct an application designed to bolster the RPER method, especially within rural communities.

Our software development process, rooted in a professional approach, led to the creation of a platform in the Social Management field. The comprehensive nature of this system was evident from its functionality and development time. Yet, its true value lies in its ability to support the RPER methodology at various angles and techniques. The details of the software offer users a seamless transition from a theoretical understanding to tangible insights. Additionally, the chosen waterfall model for development provides flexibility for system maintenance, ensuring adaptability to future demands and promoting community contributions. Furthermore, the application's potential benefits, such as report automation, enhanced collaboration, and the centralization of research, promise transformative socio-economic impacts, especially in rural community engagement and agricultural qualitative research enhancement.

Parallel to this technological endeavor, our exploration of the MSA examined several challenges and opportunities. The study underscored the community's cooperative spirit and the pressing need for enhanced communication and youth engagement. An exploration into the 'inside' and 'beyond the gate' dynamics revealed a multitude of issues, from animal care nuances to market dynamics and sustainable practices' urgency. This exploration, while rich in its findings, acknowledges the potential limitations posed by its participant pool. Future research endeavors could benefit from a different approach, whether it is by using similar methodology but encompassing other collectivities or perhaps adopting a more quantitative lens with a triangulation comparison on this study.

The software's potential, combined with the MSA study's insights indicate a promising future for the methodologies and theoretical foundations employed here. While there's room for enhancement in system capabilities, such as integrating artificial intelligence, the foundation laid encourages the construction of other systems and practices that amplify community driven and qualitative research. The MSA study, set against Florida's meat sheep industry backdrop, emphasizes the importance of cooperative actions and dialogical

management strategies. In culmination, this research endeavors to bridge the gap between technology and community-centric issues in a future where technology empowers agricultural communities, fostering cooperation, sustainable practices, and a unified vision for societal advancement.

In the culmination of this research, it becomes evident that the RPER method emerges as a potent tool for advancing and applying social management. Its strength lies in empowering communities to take ownership of their issues, facilitating meaningful dialogues about the underlying challenges, and collaboratively crafting solutions. The essence of Tocqueville's well-understood interest resonates throughout the RPER approach by the intertwined nature of individual and communal welfare, leading individuals to act in ways that benefit both themselves and society. This perspective aligns with Tocqueville's observations on the vitality of democracies. At the heart of his insights is the belief that a thriving democratic system thrives on active civic participation. This is manifested in the propensity of individuals to form associations and engage in collective endeavors, reinforcing community bonds and countering excessive individualism. The RPER method exemplifies this by promoting constructive dialogues, especially evident within the MSA. Their proactive approach, sharing insights on health, nutrition, production, and other sheep farming activities, showcases the active civic engagement Tocqueville deemed essential. This research further underlines how the RPER method seamlessly integrates into the Habermasian theoretical framework by: a) encompassing the theory of communicative action, where social order is maintained through mutual understanding and consensus achieved via communication, emphasizing the importance of rational dialogue in democratic societies; b) nurturing micro public spheres where individuals engage in rational-critical discourse to form public opinion; and c) fostering social emancipation.

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SECOND PART

ARTICLE 1 - EXPLORING SOCIAL MANAGEMENT: AN INTERNATIONAL BIBLIOMETRIC REVIEW OF VARIED PERSPECTIVES.

EXPLORING SOCIAL MANAGEMENT: AN INTERNATIONAL BIBLIOMETRIC REVIEW OF VARIED PERSPECTIVES

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Abstract

Within the field of administration the terminology social management has been used in different ways. In order to verify the different uses for the term and the international strength of the concept of social management developed by the Brazilian, a worldwide bibliometric analysis was done. As for methodology, it is worth mentioning that the database used was taken from the Web of Science website and the Software CiteSpace was utilized. In regard to results, it was possible to identify several Brazilian researchers in the list of authors with the most publications and some Brazilian papers in the list of most cited works. However, the Chinese dominate the quantity by country and different views of the social management term could be found among the most cited articles.

Keywords: Social Management; Bibliometrics; CiteSpace, Review.

EXPLORANDO A GESTÃO SOCIAL: UMA REVISÃO BIBLIOMÉTRICA INTERNACIONAL DAS VARIADAS PERSPECTIVAS

Resumo

No campo da administração, a terminologia gestão social tem sido usada de diferentes maneiras. Com o objetivo de verificar os diferentes usos do termo e a força internacional do conceito de gestão social desenvolvido pelos pesquisadores brasileiros foi realizada uma análise bibliométrica internacional do termo. Quanto à metodologia, vale ressaltar que as buscas foram realizadas no banco de dados do site Web of Science e foi utilizado o Software CiteSpace para análises. Em relação aos resultados, foi possível identificar vários pesquisadores brasileiros na lista de autores com mais publicações e alguns artigos brasileiros na lista de trabalhos mais citados. No entanto, os chineses dominam a quantidade por país e diferentes utilizações para o termo gestão social podem ser encontradas entre os artigos mais citados internacionalmente.

Palavras-chave: Gestão Social; Bibliometria; CiteSpace.

1. Introduction

The Portuguese expression *gestão social*, most commonly translated to social management, has risen to a concept that has been well established over the years. This idea is being widely used by Brazilian researchers, especially after Cançado's doctoral thesis (Cançado, 2011) confirming the assumption that Social Management constitutes a field of scientific knowledge with specific theoretical foundations. But the question that remains is whether this concept has effectively reached other regions of the planet or is it being overlapped by other concepts that use the same terminology?

With that in mind, the author's intentions here are to develop and explain a bibliometric analysis using data from the Web of Science in order to try and advance within the social management studies. The goal is to take a short step forward in relation to the work of Menon, and Coelho (2019), which covers the theme exceptionally well and very deeply, but restricting to Brazilian publications only. This work is also based on Silva, Prado, Alcântara, Tonelli, and Pereira (2018) bibliometric studies on Public Opinion and Garcia, Cruz, Machado, and Silva (2019) on deliberative democracy.

As mentioned, this article is based on social management, a relatively new paradigm that focuses on the society deliberative process for public decisions. This paradigm is committed to the promotion of the common good. Cançado, Pereira & Tenório (2015) conceptualize it as a dialogical management action focused on the non-state public interest and its main categories are the Tocqueville (2003) enlightened self-interest, the Habermas (1981) public sphere, and Freire's (2018) social emancipation. The paradigm itself is similar to the concept of deliberative governance developed by Dryzek (2010) and his collaborators. Deliberative action incorporates policies and institutional measures to promote the common good. This is directly related to Habermas' (1991) conception of the deliberative policy process as the core of the democratic process.

Academic works in social management today involve a set of scientific articles, books, dissertations, thesis and other bibliographic materials that are being produced in different education and research institutions with different theoretical approaches and empirical studies. Thus, controversies arose in the field related to issues such as "is it a paradigm or is it a research field?", "is it paradigmatic or multiparadigmatic?", "disciplinary, multidisciplinary or interdisciplinary?", "emancipator or ideological?", "an ideal or is it real?" among others. Discussions and attempts to answer the questions above are present in several works, some examples are Tenório (2005), Maia (2005), Cançado(2011), Araújo (2012), Alcântara (2015), Cançado, Pereira & Tenório (2015), Gerra (2015), Menon (2016), Persson (2016) and Alcântara (2018).

As an example of this kind of dispute, Araújo (2012) defends the concept of social management as multiparadigmatic, polysemic and a field under construction (in progress). He states that it is a field of knowledge under construction in a preliminary stage in which the multidisciplinary characteristics prevails, tending to interdisciplinarity. On the other hand, Cançado (2011) and Cançado, Pereira and Tenório (2015) argue that social management has already achieved much progress and has a consistent theoretical body approaching its first paradigm, or in other words, with specific theoretical foundations. In order to demonstrate that social management passes the criteria to be accepted as a science, the latter compares the maturity of social management with the criteria proposed by Popper, Kuhn, Lakatos, Feyerabend, Chalmers, Boaventura de Souza Santos and, Pedro Demo. This way, attempting to prove scientifically that social management is a field of knowledge that could be characterized as a science. The academic debate about the divergences is still in progress as can be observed in the works of Araújo (2012), Cançado (2013) and Tenório & Araújo (2020)

for example. This work however, these disputes are not the focus but rather has other objectives as listed in the next section.

2. Objectives

According to Prado et al. (2016), the elaboration of this kind of research aims to organize the trends of scientific production and to understand how a certain area of knowledge has been developing. Work of this type also proposes an analysis of the dynamics associated with the formation, maintenance, expansion or decline of some scientific fields (Bourdieu, 1994). Thus, the main goal of this article is to systematize trends in the field of social management based on the bibliographic material found on the Web of Science website database. For this, a worldwide bibliometric analysis was done using the term social management. During the analysis It was also considered to look for answers to the following questions:

- Are there other uses of the term social management outside Brazil, if so, how frequent are they?

- How strong is the concept of social management structured by Brazilian researchers compared to other usages of the term?

3. Theoretical Framework

Before starting talking about the findings of this work, it is important to do some theoretical background to what does social management means in the national Brazilian scenario, but that is no easy task. In addition to an epistemological construction of the social management paradigm, Cançado, Pereira & Tenório (2013; 2015) present the dimension of social management related to the assumptions about the nature of social science according to Burrell & Morgan (2006). This association is summarized in Table1 and is essential to understand the concept of the term social management and on what it is based.

Table 1 - Dimensions of social management related to Burrell & Morgan (2006).

Dimension	Social Management Characteristic	Justification
Ontology	Nominalism	Collective decision making without coercion is based on intersubjectivity (dialogicity, transparency) and the construction of reality based on understanding.
Epistemology	Antipositivism	The social reality can and must be (re) constructed in the interest of its members and based on their perception, that is, the individual is in reality and acts on it, the researcher is also the subject of the research.
Human nature	Volunteering	If perception is due to the (re) construction of reality based on the interaction between people and their intersubjectivity without coercion, free will is a condition for this process.
Methodology	Ideographic	The ideographic method is based on the importance of allowing the subject to reveal his nature and characteristics during the research, an essential posture to analyze collective decision making without coercion based on understanding.

Source: Adapted from Cançado, Pereira & Tenório (2013)

Based on the characteristics shown in table 5, one can start talking about what social management means. When we talk about science and paradigm, we believe that different points of view, practices, theories and concepts related to social management represent an important plurality for the debates and consolidation of the field. In science, these variations come from different theoretical perspectives and the analytical instrument used. This plurality can be seen in table 2, which reveals the authors who theoretically influenced the field of conceptualization on social management, what were their references and indicate their main contribution.

Table 2 – Social management field theoretical influences.

Authors	Reference in Social Management	Central Contribution
Alberto Guerreiro Ramos	Tenório (2008a); França Filho (2003; 2008); Cançado (2011); Schmitz Junior et al. (2014)	Debate on rationalities, substantive rationality and overcoming the unilateral view of the market.
Aníbal Quijano, Edgardo Lander, Fernando Coronil, Walter Mignolo and Enrique Dussel	Martins e Carrion (2012); Justen, Moretto Neto & Garrido (2014).	Discussions on science, Eurocentrism, coloniality and Latin America.
Anthony Giddens	Peres Junior (2013); Peres Junior, Pereira & Oliveira (2013)	Overcoming the dichotomies between micro and macro level; agency and structure through structuring theory.

Axel Honneth	Calado (2012); Bauer & Carrion (2016)	Theory of social recognition and power relations.
Bernardo Kliksberg	Cançado (2011); Cançado, Tenório & Pereira (2011)	Discussions on development, public policies and social management.
Boaventura de Sousa Santos	Silva & Moretto Neto (2016); Pereira (2012); Justen, Moretto Neto & Garrido (2014)	Discussions on the third sector, knowledge and coloniality.
Hannah Arendt	Pimentel & Pimentel (2010); Cançado (2011); Araújo & Boullosa (2013); Oliveira & Cançado (2015)	Discussion on public and social spheres.
Hilary Putnam and Amartya Sen	Cabral (2007; 2008; 2011); Alcântara et al. (2015)	Debate on facts and values and overcoming the dichotomy. Discussion of capabilities and evaluation possibilities.
Jürgen Habermas	Tenório (2008d); Cançado (2011); Cançado, Pereira & Tenório (2013; 2015); Alcântara (2015); Garcia (2016); Teixeira Cruz (2017)	Debates about emancipation, deliberation, public sphere, dialogicity and rationalities.
Nancy Fraser	Persson & Moretto Neto (2015); Garcia (2016); Persson (2016)	Inequalities and power relations in the public spheres, conception of counter publics and relations between strong and weak.
Paulo Freire	Oliveira, Cançado & Pereira (2010); Pinheiro & Cançado (2014);Tenório Kronemberger & Lavinas (2014)	Discussions on autonomy, emancipation, extension and dialogicity.

Source: Adapted from Teixeira Cruz (2017).

Undoubtedly, one of the most important influences for the conceptualization of social management is found in table 2 and goes by the name of Jürgen Habermas, this statement is corroborated by several studies such as Alcântara (2015), Garcia (2016) and Alcântara et al. (2019). Therefore, in order to facilitate the understanding of the concept of social management, this work will now address in more detail some of Habermas' works. More specifically 'The structural transformation of the public sphere' Habermas (1991) and 'The theory of communicative action', volumes I and II Habermas (1981), which according to Alcantara et al. (2019) are the top three Habermas' most cited works as references in social management articles. Despite not being cited too much, another important work of Habermas that will also be included in the discussion is 'Habermas on law and democracy' Habermas (1998).

Also according to Alcantara et al. (2019), Habermas' work named Structural Change of the Public Sphere is the most cited by articles in the field of Social Management. However,

there are some issues, like an allusion to a concept of deliberative citizenship, which does not exist in the same way in the original work. Nonetheless, other texts address the public sphere as relevant to the field of Social Management. For example, Costa (2011) contextualizes and presents the emergence of the so-called public sphere narrated by Habermas. Then, the author analyzes that the concept of public sphere adopted in the article differs substantially from the historical bourgeois construction, since its meaning is precisely that of recognizing as legitimate and harboring the plurality of positions and manifestations. Other works carry out this kind of description about the formation of the public sphere as made by Costa (2011). Some examples are Oliveira, Cançado and Pereira (2010) and Oliveira, Vilas Boas and Pereira (2013). The critical point of discussions like this is that they considered only the 1962 text by Habermas and there is a lack of elements about how that (bourgeois) sphere can be considered a foundation for the concept of social management.

In a constructive criticism, Alcântara et al. (2015) indicates that on social management papers, there is little mention of Habermas' (1998) book entitled Law and Democracy, a work in which the concept of the public sphere appears reformulated and better elaborated by Habermas himself. In addition to that, in many texts, the public sphere concept appears as given and it is not critically debated nor is discussed the relevance of this category for each context, both historically and locally. On the other hand, Tenório (2005) presents the concept and moves towards expanding the conception of the public sphere in social management, precisely based on Habermas (1998) (Law and Democracy) where he says that the public sphere is the intersubjective and communicative space, in which people address their concerns through mutual understanding. According to him, the public sphere would be that social space in which the dialogical interaction between civil society and the State would take place by deciding on public policies. Additional views of the public sphere in social management including the perceptions found in Law and Democracy by Habermas (1998) can be found in the works of Persson (2016) and Garcia (2016).

The works Theory of Communicative Action - (Vol. I) and Theory of Communicative Action - (Vol. II) (HABERMAS, 1981) are also highly cited in texts about social management, for example in the texts of Tenório (1998, 2006). Villela & Pinto (2009) refer to deliberative citizenship and communicative rationality. Justen, Moretto Neto and Garrido (2014) highlight modernity as an unfinished project in a critical discussion on coloniality. Benson and Allebrandt (2014) argue that language is a source of integration while Garrido and Justen (2014) cite the concepts of communicative action and strategic relationship with

the life-world and system. Justen and Moretto Neto (2012) in addition to conceptualizing communicative action and the consensus theory of truth also differentiate communicative and strategic action. It is also possible to find Habermas' theory of communicative action mentions in the texts of Magalhães *et al*. (2006), Villela and Maia (2009), Iizuka, Gonçalves-Dias and Aguerre (2012) and Kronemberger and Guedes (2014).

Notwithstanding the fact that many authors cite Habermas' Theory of Communicative Action, Alcantara et al. (2019) identify an important absence in such texts, a critical lack of conceptual conclusion, that is, the diagnosis of the colonization of the life-world by the system. Thus, they recollect that, according to Habermas (1981), the critical reason for the development of Habermasian theory is to propose the use of the concept of communicative action as a key to the formation of theories. Therefore, achieve the structures of the life-world endowed with intrinsic meanings, and above all the threat that this life-world suffers from bureaucratic and economic imperatives, the dangers that arise from the fact that personal relationships, services and lifetimes are increasingly becoming the object of management like commodities.

To conclude their work by Alcantara *et al*. (2019) still warns that it is necessary to be careful when reading and making appropriations from Habermas's works, especially when it comes to its use in the applied social sciences. Habermasian concepts are fraught with controversies that have lasted for more than half a century. Thus, concepts such as communicative action, public sphere, emancipation, rationalization, discourse ethics, deliberative politics, are also carried by different criticisms and interpretations and cannot be taken uncritically, especially not without even considering that Habermas recently claimed to be a product of the German culture in an interview to the El País newspaper (HERMOSO, 2018). It is also important to point out that, even being aware of these risky situations, this work itself is not entirely free of such problems.

As recently stated by Tenório and Araújo (2020), social management arises, in opposition to strategic management, trying to achieve a fairer society. A society that is democratically articulated in the management of its interests, other than the interests of the market. In other words, it is, therefore, the opposition to strategic management as it, according to Tenório (1998), tries to replace technobureaucratic, monological management by a participatory and dialogical management, one that the decision-making process is exercised amongst different social subjects. Furthermore, the decision-making authority is shared

among the participants in the action using a dialogical managerial process. This seminal concept by Tenório (1998) is one of the most cited in the literature on this subject and it assumes Jürgen Habermas' communicative action and the deliberative democracy concept as its analytical premises. Since Habermas' work was already described in the previous paragraphs, it is left only to explain some of the concepts behind deliberative democracy and governance.

The conceptualization and discussion of social management presented by Cançado, Pereira and Tenório (2015) is related to the deliberative action that involves policies and institutional arrangements whose purpose is the common good. This perception has the same sense as deliberative governance proposed by Dryzek (2010). Similar to social management, Dryzek's (2010) concept of deliberative governance addresses elements of actions coordination and legitimacy via deliberation in the relations between market, state and the civil society, taking into account the communicative and democratic process. Therefore, it is arguable that Dryzek's concept of deliberative governance is considerably close to the concept of social management with the Habermasian approach and, therefore, the two concepts complement each other. It is notable that several deliberationist authors, from different generations, influenced the understanding of deliberative governance taking into consideration the differences in discursive aspects, in the legitimacy of collective decisions and in the different interests placed by the public sphere.

Hendriks (2006), for example, conceptualizes the deliberative system as a discursive space composed of different spheres arising from public conversations based on micro, macro or mixed forms of deliberation. In this sense, Hendriks (2009) argues that deliberative governance is based on, or was inspired by, deliberative democracy and, therefore, decisions and actions are legitimized from a public process of rational debates or other forms of expression. For deliberationists, the term deliberation is related to the search for solutions when there are diverging interests and when it is necessary to seek legitimization for possible agreements. For this reason, some deliberative theories, such as Habermas', are related to the formation of the public sphere, which is part of an unstructured form of communication and involves public speeches by social movements, civil society associations, among others. Following this line of thought, Hendriks (2009) state that, for deliberative democrats, collective decisions cannot be based exclusively on the votes coopting, but must come from a process of rational and public communication in which there is legitimacy via the deliberative participation of different actors with different perspectives. Still on this point, Habermas

(2006) argues that legitimacy depends on transparency, equal opportunities, inclusion, exchange of arguments and publicity involving subjects capable of deliberating and participating in the processes of forming opinion and of the public will.

Dryzek (2000) explains that deliberation is part of a communicative process on a political issue in which social actors are informed into the matter and involved in it. In this context and according to Ferreira Silva, Alcântara & Pereira (2016), Dryzek's (2010) concept of deliberative governance is related to the discursive representation of the public sphere and broadens the Habermasian perspective. To recap, according to Hendriks (2009), deliberative governance was inspired by deliberative democracy and refers to a process in which the public legitimizes decisions and actions. Thus, the concept is very close to that of deliberative citizenship referred to by Tenório (1998; 2005), as well as being close to the concept of deliberative public administration discussed in Carvalho et al. (2015).

The theoretical influences presented in table 2, especially the studies by Jürgen Habermas and due to the advances in the field of deliberative democracy, culminated in a diversity of concepts for social management. This diversity can be confirmed in the work of Garcia (2016) in which different concepts developed on social management are presented. Table 3 adapted from Garcia's (2016) work presents this multiplicity of ideas chronologically.

Table 3 – Multiple social management concepts.

Source	Concept
Tenório (1998, p. 16)	"[...] a more participative, dialogical management, in which the decision-making process is exercised through different social subjects".
França Filho (2003, p. 4)	"[...] a management method proper to organizations operating in a zone that is not of the market or the State, [...]".
Tenório (2005, p. 102)	"[...] social management as the dialogical managerial process in which decision-making authority is shared among the participants in the action (action that can occur in any type of social system - public, private or non-governmental organizations). The adjective social qualifying the noun management will be understood as the privileged space for social relations in which everyone has the right to speak, without any kind of coercion ".
Gondim, Fischer & Melo (2006, p. 7)	"[...] a relational act capable of directing and regulating processes through the broad mobilization of actors in decision-making, which results in intra and interorganizational partnerships, valuing decentralized and participatory structures, with the balance between rationality being the norm instrumental and substantive rationality, to at last achieve a collectively planned, viable and sustainable asset in the medium and long term ".
Cabral (2008, p. 25)	"[...] management that produces public goods and reproduces social values that allow the flourishing of this space articulated by the third sector"

Cançado (2011, p. 205)	"[...] a dialectical process of social organization proper to the public sphere, founded on enlightened self-interest, and which aims at emancipation".
Fischer (2012, p. 118)	"It can be concluded that the management of social development is a mediation process that articulates multiple levels of individual and social power".
Cançado, Pereira & Tenório (2013).	"[...] dialogical managerial action specific to society and to non-state public interest aimed at the common good". "[...] collective decision-making, without coercion, based on the intelligibility of language, on dialogicity, on the understanding clarified as a process, on transparency as an assumption and on emancipation as the ultimate end".
Araújo (2014, p. 88).	"Social management is a field of knowledge and practices related to the ways of managing interorganizations, territories and social relations, being guided by a social ideology and public interest, orchestrating different scales and types of power. The humanitarian logic of public and social interests prevails over the private, individual and monetary interests".
Freitas, Freitas & Ferreira (2016, p. 290)	"Social management, [...], refers to a process in which individuals themselves become social subjects, expressing, in language acts, their demands and desires, and bringing the State closer to the true meaning of the "social" that is moving together with public management".

Source: Adapted from Garcia (2016, p. 62) and Teixeira Cruz (2017, p. 22).

Moreover, with the objective of mapping the main researchers and the main conceptual references on social management, Menon (2016) conducted a study in which he gathered and systematized the main authors and their conceptual perspectives of social management. Table 4 adapted from the cited work presents these authors and their perspectives also chronologically organized.

Table 4 – Main authors and their conceptual perspectives on Social Management.

Source	Concept
Fischer (2002)	a transformative mediation process that: articulates multiple scales of individual and societal power; works on the identity of processes, reflecting and creating cultural guidelines; coordinates effective in organizations; promotes collective action and learning; communicates and disseminates results; is accountable to society; reassesses and recreates strategies with the development process as its target and motivation, considering tangible and intangible, objective and subjective dimensions, which make up complex organizations and institutions.
Tenório (2005)	The dialogical managerial process in which decision-making authority is shared among the participants in the action (action that can occur in any type of social system - public, private or non-governmental organizations). The adjective social qualifying the noun management will be understood as the privileged space of social relations in which everyone has the right to speak, without any type of coercion.

Boullosa e Schommer (2008)	The process of building social management as an alternative for governance is based on the purpose of promoting advances in management practices for democratization in social relations, through participatory practices and engagement in decisions and practices, in bottom-up decision-making models, privileging the dialogical and relational dimension of management (TENÓRIO, 2002; 2004). By opposing management modes based on hierarchy, control and rationalization, social management would manifest one of its innovation potentials.
França Filho (2008)	Social management is configured as a space for the performance of civil society, being, therefore, a non-state public sphere. Social management is the mode of management practiced by organizations that are neither in the market nor in the State, but they often maintain partnership relationships with these spheres for the implementation and execution of certain projects. These organizations do not have economic objectives, and this is configured only as a means to achieve the main goal, which can be linked to culture, politics or ecology, according to the nature of the performance of each organization.
Pereira e Rigatto (2011)	[...] dialogical managerial process in which the conception, elaboration, implementation and evaluation of policies is shared among the participants of the action in the public sphere, where everyone has the right to speak without any type of coercion and make democratic and deliberative decisions.
Cançado (2011)	Collective decision-making, without coercion, based on the intelligibility of language, dialogicity and clarified understanding as a process, transparency as an assumption and emancipation as the ultimate end.
Mendonça, Gonçalves-Dias e Junqueira (2012)	Its object of study is the management of social and environmental problems that need an intersectoral and interorganizational vision, considering its space of articulation in a context of constant democratic strengthening, where multiple actors share interests, visions and actions within a territory.
Araújo (2014)	A field of knowledge and practices related to the ways of managing interorganizational, territories and social relations, being guided by a social ideology and the public interest, orchestrating different scales and types of power. Humanitarian logic, public and social interests prevail over the private, individual and monetary interests. The knowledge produced in the field of Social Management is born from inductive processes of participatory, horizontal, dialogical and democratic management practices that can be developed in different types of organization. The frontier for its applications is defined by the expanding nature of the public sphere and the co-production of the public good.

Source: Adapted from Menon (2016, p. 45-47) and Teixeira Cruz (2017, p. 25).

To conclude this section on social management concepts a statement by Tenorio e Araujo (2020) is assertive. The authors stated that despite the concept of social management is already on the agenda of the Brazilian academy for quite some time, its understanding is not unanimous and the concept is still not fully known in the Brazilian academy itself, let alone in the international context. Notwithstanding, the authors insist that social management, since the early 1990s, has been an opposition and alternative to strategic management. Thus, it is a schism, a heterodox perspective against the mainstream, a concept of resistance not taken as an end in itself or as a goal of politics, but as a beginning and as a possibility, as the

relationship between oppression and resistance, with no appeal to the sense of maximum agency of the modern subject.

Therefore, social management does not have a completely closed concept, the truth is that there are several academic conflicts that are important for its growth. However, it can be said that there is a common and convergent point in every work, social management is based on participation. In addition, it still has flexible delimitation and it is based on the ideal Weberian type as described in Weber (2017). This meaning that it has a path to be followed as a guide, but the end possibly will not be fully achieved, where this path is conducted by some characteristics in a collective decision-making with the characteristics being no coercion, maximum transparency, intelligibility, dialogicity and, aiming at emancipation.

4. Methodology

Among the different formats for a review, the present study is characterized as a bibliometric analysis of scientific articles, or simply bibliometry. Bibliometrics primarily uses quantitative techniques to analyze academic production through citations, co-citations, authorship, co-authorship, keywords, journals, evolution and distribution of the bibliography (Pinto, Serra, & Ferreira, 2014).

To organize the data collection, selection, and analysis this work uses an approximation of the bibliometric analysis framework developed by Prado et al. (2016), presented in table 5. The prerogative of this model is to clearly present to the reader each step and criteria adopted, and to avoid errors resulting from inappropriate procedures in data collection.

Table 5 – Organization framework of bibliometric analysis.

Stage - Procedures		Description
1 – Research Operationalization	1.1	Choice of scientific bases or journals
	1.2	Demarcation of the terms that represent the field

	2.1	Title (definition of terms)
	2.2	Use of double quotes
2 – Operationalization of the search	2.3	Filter 1: All types of documents
(Search and Filtering)	2.4	Filter 2: All Languages
	2.5	Filter 3: Every year available
	2.6	Filter 4: Delimitation by research area
	3.1	Download of references in electronic spreadsheet format
3 – Procedures for selection and	3.2	Download of references for CiteSpace software input
organization	3.3	Organization of analysis matrix in electronic spreadsheet
	3.4	CiteSpace data import for analysis
	4.1	Analysis of the volume of publications and time trends
4 – Scientific production analysis	4.2	Production analysis by country
	4.3	Analysis of article authorship (authors who publish most)
	4.4	Analysis of most cited articles

Source: Adapted from Prado et al. (2016).

According to the bibliometric analysis framework presented, the first step to operationalize the research was to choose the database, which in this case came from Thomson Reuters' Web of Science website. Two databases from the site were used:

1) Web of Science Core Collection (1945-present)

A world's leading database to search for scholarly journals, books, and proceedings in the sciences, social sciences, and arts and humanities (Clarivate, 2019).

2) SciELO Citation Index (2002-present)

A database that provides scholarly literature in sciences, social sciences, and arts and humanities published in leading open access journals from Latin American, Portugal, Spain, and South Africa (Clarivate, 2019).

It is important to emphasize that the delimitation for the use of the website Web of Science is justified by the fact that a standardization of the publications is necessary. Other than that, the reliability of the database was also an important factor (Pinto *et al*., 2014). The limits of using this type of tool were considered, but the database was chosen mainly due to the objectives of this work, which relates to the internationalization of the term social management.

Then the English term social management was defined as the search term. The term was surrounded by double quotation marks so that only results with the words in the desired sequence would appear. Then it was defined that the searches would find only productions that contained the term in the title of the publication. This was necessary so that only articles that really used social management as a focus were found. The search was done right before the beginning of the year 2020.

The following filters were used:

-All Types of Documents (article, conference, books)

-All languages - Many works in other languages were found because they had titles and abstracts in more than one language.

-All years - to detect older works and the growth of publications related to the term.

-Filter by Research Area - The only filter that was necessary to use was the research area filter. This is important because there was a lot of work not even related to Social Sciences in any matter and needed to be automatically excluded from the results. Thus, four research areas were selected; Public Administration, Business Economics, Social Science and Sociology and all the others were not included unless they had a combination with one of the selected areas.

The following results were generated:

- From Web of Science Core Collection

Search

used = "social management"

Results: 251

After filtering by research area:

Final Results: 155

Where:

62 for Public Administration;

Results: 155
(from Web of Science Core Collection)

You searched for: ti = "social management"
Refined by: RESEARCH AREAS: (PUBLIC ADMINISTRATION OR BUSINESS ECONOMICS OR SOCIAL SCIENCES OTHER TOPICS OR SOCIOLOGY)
Timespan: All years. **Indexes:** SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, ESCI.

50 for Business Economics;

33 for Social Sciences Other Topics;

24 for Sociology;

The category's sum (169) is greater than the total (155) because an article can be in more than one area.

- From SciELO Citation Index

Search used: ti = "social management"

Results: 49

After filtering by research area:

Final Results: 37

 Where:

06 for Public Administration;

32 for Business Economics;

00 for Social Sciences Other Topics;

07 for Sociology;

Similarly, the category's sum (45) is greater than the total (37) because an article can be in more than one area.

Finally, all the information was downloaded to be exported to Excel and CiteSpace.

5. Analysis and Results

5.1. Analysis of the volume of publications and time trends

The first analysis was done by showcasing a graph with the volume of publications found, Figure 1 shows the scientific production on social management over time. It is clear that the topic is on the rise, as the average growth rate was approximately 34.5%, compared to the average growth rate of science in general, which ranges from 8 to 9% according to Bornmann and Mutz (2015).
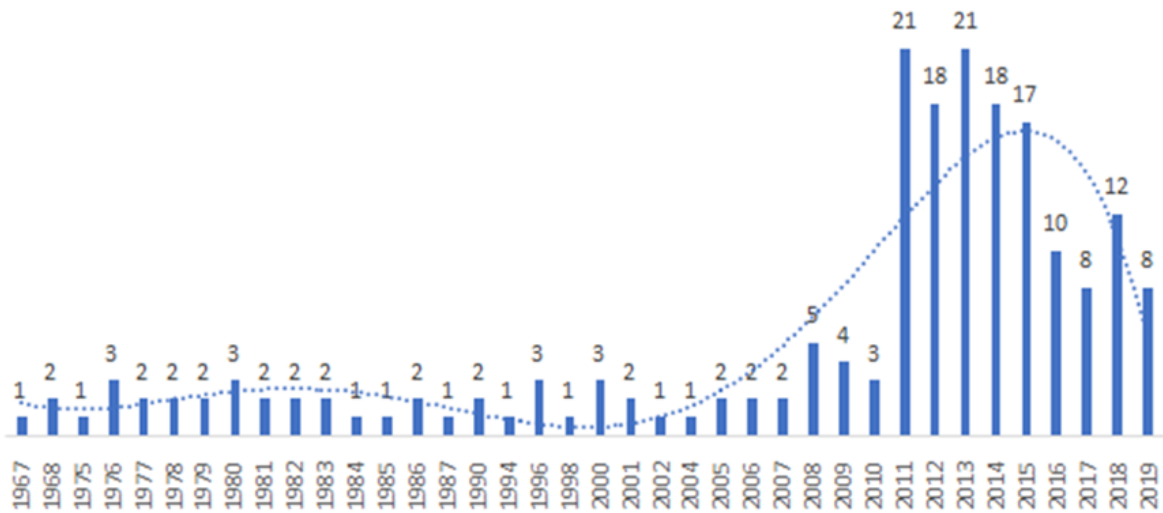
Figure 1 – Volume of publications and time trends.

Source: Elaborated by the authors, 2019.

The first work found was published in 1967 in a Czech Journal named Czech Sociological Review. The paper was written in Czech and was originally entitled *Podstata společenského řízení*, or in English, the Essence of Social Management, published by Josef L. Porket (1967), Bratislava Institute of Economics and Construction Organization. According to the article the essence of Social Management is the essence of the management of social organizations, and it stems from the nature of these organizations. Each social organization is essentially characterized by a specific purpose, aware of that purpose and consciously adjusted to reciprocal relations between its members. Therefore, it can be defined as the coordination of human efforts to achieve a defined collective objective. This coordination is never completed, but it is a constant process of adaptation to change, and for this reason it is also a dynamic phenomenon, not a static one.

Since then, the term appears several times in titles of international papers indexed by either Web of Sciences Core Collection or SciELO Citation Index, more precisely 192 times until the beginning of the year 2020. Despite the fact that term appeared much earlier in the social sciences field, according to Cançado, Tenório, & Pereira (2011) and Tenório (2012), the main clue on how the term emerged came up from the text of Giorgio Rovida (1985) which deals with self-managed experiences in the Spanish civil war. Nonetheless, in Rovida's (1985) text, social management appears with the meaning of proletarian democracy for locals. However, the term is also used to describe the management of collective farms in the communist Soviet Union, also known as *Sovkhoz.*

Regarding the quantity of publications, we can highlight the period from 2011 to 2015, with 95 international publications on social management. The years 2011 and 2013 were the most outstanding, with 21 articles each. Followed by 2012 and 2014 with 18 papers each, and 2015, with 17 published articles alone. After that period, the publication has gone down with an average of about 10 articles per year between 2015 and 2019. Figure 1 shows the complete history of publications on the topic. Despite having a decline in recent years, it is clear that the topic is on the rise with an average growth rate of approximately 34.5%, especially compared with the average growth rate of science in general, which ranges from 8 to 9% according to Bornmann & Mutz (2015).

5.2. Production analysis by country

Both table 6 and figure 2 presents information on the countries that stood out regarding the number of publications on social management. It is possible to notice that China and Brazil are the nations with the largest volume of publications on that subject. China represented with a total of eighty-three articles published, while Brazil has forty-two articles. While this is true and fact according to the data gathered, these countries usually have different approaches to the use of the term. Often the term is not used to refer to the concept of social management as studied by Brazilian Researchers. This different approach to the same term was kept on purpose to check divergent uses of the term and how strong the Brazilian concept is outside the country.

It is important to notice a line connecting Brazil and Spain and no connection between other countries. This link represents the expansion of the term beyond Brazil itself, such

expansion can and should be strengthened with partnerships and collaborative work. Even though other countries do not have this connection among themselves, it is possible to find a British work such as Irwin, Georg, and Vergragt (1994) where the term social management is considering a perspective on sustainable development which emphasizes citizen-led initiatives which somehow closely relates to the Brazilian concept. But as we progress with this analysis it will be possible to verify how Chinese approach diverge from what Brazilians understand of social management.

Table 6 – Publications by Country

Country	Volume of publications
China	83
Brazil	42
Spain	7
Russia	6
England	4
Venezuela	4

Source: Elaborated by the authors, 2020.

Figure 2 – Country network visualization.
Source: Elaborated by the authors, 2020.

5.3. Analysis of article authorship and most prolific authors.

In order to identify the most prolific authors in the field Table 7 was constructed and is presented below. All the authors that had published at least three papers on the subject were shown. Overall, 371 authors were identified and linked to a total of 192 articles analyzed (155 WoS Core and 37 WoSScielo). It is notable the strong presence of several Brazilian researchers including the ranking leader José Roberto Pereira. Following Pereira, the table also reveals other two Brazilian authors tied for second place, Airton Cardoso Cançado and Luís Moretto Netto with four publications each. Valderí de Castro Alcantara, Carlos Eduardo Justen and Fernando Guilherme Tenório also represent the country with three publications each. Among these authors only one Chinese researcher is found, Zhang with four publications. Table 8 was adapted from Menon and Coelho's (2019) work who did a study on social management as a field of knowledge exclusively in Brazil and also show Pereira leading the charts followed by Cançado.

Table 7 – Most prolific social management authors on the international scene.

#	Authors	Amount of publications	Frequency (authorships)	Frequency (articles)
1st	**Pereira**, José Roberto	9	2,43%	4,69%
2nd	**Cançado**, Airton Cardoso	4	1,08%	2,08%
2nd	**Moretto Neto**, Luís	4	1,08%	2,08%
2nd	**Zhang**, Z	4	1,08%	2,08%
3rd	**Alcântara**, Valderí de Castro	3	0,81%	1,56%
3rd	**Justen**, Carlos Eduardo	3	0,81%	1,56%
3rd	**Tenório**, Fernando Guilherme	3	0,81%	1,56%
	Total Authors Identified	371		
	Total Articles	192		

Source: Elaborated by the authors, 2020.

Table 8 – Most prolific social management authors on the Brazilian scene.

#	Authors	Amount of publications	Current Educational Institution
1st	**Pereira**, José Roberto	49	UFLA
2nd	**Cançado**, Airton Cardoso	32	UFT
2nd	**Ferreira,** Marco Aurélio Marques	32	UFV
3rd	**Junqueira,** Luciano Antonio Prates	28	PUC-SP

Source: Adapted from Menon & Coelho (2019).

5.4. Analysis of most cited articles

Table 9 points out the top ten most cited works among all the 192 published articles. In this sense, we highlight Huq, Chowdhury and Klassen's (2016) work, which in only three years since first published, has been cited 39 times. Right after there is Paes de Paula's (2005) paper, which had 35 citations, followed by Irwin, Georg and Vergragt's (1994) work, with 18 citations. Many other Brazilian titles were among the top ten, and all of them, despite having multi-language titles and abstracts, were only fully published in Portuguese. Huq et al. (2016) work, however, is a full English paper that does not focus on social management as Brazilians commonly use it. This is an indicative that even with the high amount of publication from Brazilian authors, and years of progress in the social management concept, the most cited article in the management area of Web of Science that contains social management in its title,

is not an article that could be fully considered for a research in the social management field of studies done by Brazilian.

Table 9 – List of most cited international works on social management.

Title	Authors (Year)	Journal	Citations
Social management capabilities of multinational buying firms and their emerging market suppliers: An exploratory study of the clothing industry	Huq, Chowdhury, Klassen (2016)	Journal of Operations Management	39
Administração pública brasileira entre o gerencialismo e a gestão social	Paes de Paula (2005)	Revista de administração de empresas	35
The social management of environmental change	Irwin, Georg, Vergragt (1994)	Futures	18
The anatomy of modern technology: prolegomenon to an improved public policy for the social management of technology	Hannay, McGinn (1980)	Daedalus	15
The social management of ambition	McClelland (1990)	Sociological Quarterly	13
Administração pública e gestão social: a produção científica brasileira entre 2000 e 2005	Hocayen-da-Silva, Rossoni, Ferreira Júnior (2008)	Revista de Administração Pública	11
Gestão social: reflexões teóricas e conceituais	Cançado, Tenório, Pereira (2011)	Cadernos EBAPE.BR	10
The bounded welfare pluralism: public–private partnerships under social management in China	Shi (2017)	Public Management Review	10
Aspectos estruturais da cooperação entre pesquisadores no campo de administração pública e gestão social: análise das redes entre instituições no Brasil	Rossoni, Hocayen-da-Silva, Ferreira Júnior (2008)	Revista de Administração Pública	8
Gestão social e esfera pública: aproximações teórico-conceituais	Oliveira, Cançado, Pereira (2010)	Cadernos EBAPE.BR	7

Source: Elaborated by the authors, 2020.

6. Final Thoughts and Future Work

In order to conclude this article, it is important to understand how this work can not only help researchers starting in the field of social management to orient themselves as well as

demonstrate the importance of expanding, collaborating and sharing knowledge with other regions of the world. It is crystal clear how the Brazilian works presented here had, and still have, great importance for the development of the whole concept of social management that serves as the foundation for the national meeting of researchers in social management (ENAPEGS). Not to mention the value for the entire network of researchers on the subject. However, we believe that the theory is already mature enough to be published in other languages, especially English, and also to appear more consistently in international journals and conferences. Analysis such as the production by country and the table showing the most cited work suggest that much need to be done for the Social Management field be seen internationally with the same strength as it is seen in the Brazilian scenario. On the other hand, the connection between Spain and Brazil already shows some progress towards the internationalization of the area.

As mentioned in the methodology, this work is not intended to be qualitative, and for that reason it does not focus on finding out what exactly is the term social management being used for. But rather to check if it is being used according to the theories developed mainly by Brazilian researchers on the subject. However, this can be considered a limitation of this work that could be better analyzed in future work. Another approach suggested as future work is the use of different databases to investigate even further the publications on the subject or even the use of the same methodology using different filters and fields of study.

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ARTICLE 2 - A REVIEW OF PARTICIPATORY AND RAPID APPRAISAL APPROACHES IN RURAL RESEARCH.

Preliminary Version - Manuscript Submitted

A REVIEW OF PARTICIPATORY AND RAPID APPRAISAL APPROACHES IN RURAL RESEARCH

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Abstract

Methods like Participatory Appraisal (PA), Rapid Appraisal (RA), and Rapid Participatory Appraisal (RPA) significantly enhance rural research through their collaborative, empowering, and inclusive nature. Those approaches focus on understanding and addressing local community needs, promoting strong, long-lasting partnerships that lead to more effective and impactful social research. Since first formalized in the mid-1980s, those methods evolved into multiple areas gaining scope and expanding geographic use. Our objectives in this reviewer to investigate how the research entities and thematic groups related to participatory and rapid appraisal are structured in rural research, summarize main achievements in methodological development and present prospective research paths for each cluster. The literature review and clustering analysis were guided by the Cochrane Systematic Review methodology and facilitated by the CitNetExplorer software. The search was performed on the Web of Science (WOS) database, with keywords "participatory appraisal," "rapid appraisal," and "rapid participatory appraisal", focusing on rural research, since it was first stated. Other highly cited articles not contained on the WOS database were added using CitNetExplorer. A total of 1520 manuscripts including peer-reviewed articles and book chapters were identified. We first created a group of 33 core publications with six interconnecting links. Those publications are the basis of the theoretical approach, spanning from the early developments by Chambers, into contemporary works of Hussain and colleagues on methodological rigor and application in different contexts. Then a clustering

analysis was performed to identify similarities or associations between papers connected through citations. A total of seven clusters were identified: foundations and theoretical perspectives on participatory approaches (Cluster 1, with 516 manuscripts); stakeholder participation and environmental management (Cluster 2, with 127 manuscripts); specific applications such as traditional agricultural practices and conservation (Cluster 3, with 72 manuscripts); ethnobotany and traditional medicinal practices (Cluster 4, with 58 manuscripts);participatory epidemiology in livestock health and veterinary practices (Cluster 5, with 56 manuscripts); rapid appraisal in health and social needs assessment (Cluster 6, with 50 manuscripts); and agricultural innovation systems, and sustainable rural development (Cluster 7, with 45 manuscripts). Over the years, the methodology evolved and was adapted to different forms of participatory approaches and topics, reaching indigenous communities, dismantling barriers to communication and fostering dialogue while creating substantial societal impact, especially in areas impacted by social issues such as poverty, gender, and ethnic discrimination. On the other hand, achieving genuine participation remains one of the main challenges. A significant discrepancy may arise between the rhetoric of participation and the actual outcomes of participatory approaches. For instance, on certain occasions, participation can reinforce existing inequalities, especially related to cultural, hierarchical, and political structures. Nevertheless, new opportunities emerge, with the expansion of use in different domains, such as the evaluation of implementation of alternative agricultural systems, and on veterinary, pharmacological and clinical research. Digital integration presents an opportunity to enhance data collection, interpretation, and dissemination processes. Given their potential for profound social effect, understanding those methods and their future trajectories is crucial for researchers, practitioners, and policymakers who work with this subject or need an outreach methodology.

1 Introduction

Participatory Appraisal (PA), Rapid Appraisal (RA), and Rapid Participatory Appraisal (RPA) represent three interlinked methodologies that have received considerable recognition within rural research in recent decades. These approaches are united by their collective ambition to involve local communities in the investigation process, thereby enriching the comprehension of local scenarios and endorsing sustainable solutions that are pertinent to the problems encountered in rural areas.

Participatory Appraisal (PA) emphasizes the dynamic participation of local communities in the investigative process, enabling them the opportunity to disseminate, amplify, and scrutinize their understanding of living conditions to bolster planning and execution (Cornwall & Jewkes, 1995). Various participatory instruments, including but not limited to mapping and modeling, transect walks, matrix evaluations, seasonal calendars, trend and change analysis, well-being and wealth ranking and grouping, and analytical diagramming, are utilized in this approach. PA has its roots in areas such as activist participatory research, agroecosystem analysis, applied anthropology, and field studies concerning agricultural systems (Chambers, 1994a).

Rapid Appraisal (RA) is oriented towards the hasty accumulation and assessment of information, with the objective of informing immediate decisions and actions (Beebe, 1995). This method employs diverse techniques, including semi-structured interviews, collective dialogues, and direct observation, to acquire data. The emergence of RA was driven by the necessity for proficient and economical methods of obtaining pertinent information, particularly in circumstances constrained by time and resources.

Rapid Participatory Appraisal (RPA) tries to combine the virtues of PA and RA, providing a comprehensive and time-efficient means for data collection and interpretation of local contexts (Chambers 1994a, 1994b, 1994c; Beebe, 1995). This method capitalizes on the principles of communal involvement and promptness, leveraging the cooperative characteristics of PA with the time-bound attributes of RA to create a more adaptable and efficacious research approach.

It's vital to recognize how methods like Participatory Appraisal, Rapid Appraisal, and Rapid Participatory Appraisal can make a huge difference in rural research. The strength of these approaches lies in their ability to be collaborative, empowering, and inclusive, they're not just about collecting data, but about working closely with local communities to understand their unique needs and challenges (Mosse, 1994; Nelson & Wright, 1995; Kothari, 2001). By crafting solutions that truly fit the local context, we're likely to see far better outcomes. Even more importantly, when local folks are actively involved in the research, they begin to trust and understand the process more. This can lay the foundation for strong, long-term partnerships between researchers and the community. Ultimately, this makes for research that's not just more effective, but has a more powerful and meaningful impact on society.

Robert Chambers is a seminal figure in the creation and promulgation of these approaches in rural research. His work has notably furthered the comprehension and employment of PA, RA, and RPA. In some of his influential paper, Chambers (1994a, 1994b, 1994c) characterizes Participatory Rural Appraisal (PRA) as an expanding collection of approaches and techniques that allow local inhabitants to exchange, augment, and examine their knowledge of life and circumstances, and consequently, to strategize and implement actions.

The research question this review paper intends to answer is: What is the organization of topics and thematic clusters within the domain of participatory and rapid appraisal in rural environments, and what are the prospective research paths for each cluster?

In order to tackle this research question, the main goal of the paper is to meticulously review and analyze the research subjects and thematic clusters related to participatory and rapid appraisal in rural research, so as to discern the existing state of knowledge and upcoming research trajectories on this subject. The specific goals of this paper are:

1) To carry out a systematic examination and integration of the prevailing literature on Participatory Appraisal, Rapid Appraisal, and Rapid Participatory Appraisal methods in rural research, with an emphasis on the influential contributions from scholars like Robert Chambers among others in the field.
2) To identify and analyze research themes and the core collection of documents within the domain of participatory and rapid appraisal in rural environment.

3) To identify and label thematic clusters in the field, employing a clustering analysis using the CitNetExplorer software.

4) To examine the current existing state of knowledge within each delineated thematic cluster, highlighting key findings in the literature for each group.

5) To explore the future research directions for each thematic cluster, anchored in the existing state of knowledge, deficiencies, and the evolving trends and hurdles.

Through the fulfillment of these objectives, this review paper aspires to provide a comprehensive overview of the research field in participatory and rapid appraisal in rural research. This could proffer invaluable perspectives to researchers, practitioners, and policymakers interested in comprehending and utilizing these methods in their endeavors.

In the subsequent sections of this paper, we will initially outline the methodological approaches utilized to undertake the bibliometric study and the systematic review, delineating the measures enacted to guarantee a rigorous and transparent procedure. Subsequent to this, we will present and evaluate the findings of this review, centering on the core publications in the research field and the thematic clusters. At the same time, within each cluster discussion we will explore potential future research direction, proffering recommendations for additional exploration and scrutiny within the field of participatory and rapid appraisal in rural research. Lastly, we will make final considerations about this work.

2 Methodological Procedures

The objective of this study was to examine the thematic evolution of the research field on Participatory Appraisal (PA), Rapid Appraisal (RA), and Rapid Participatory Appraisal (RPA) approaches in rural research. A bibliometric analysis was performed employing the CitNetExplorer software (Van Eck, & Waltman, 2014a), which facilitates the investigation of citation connections and the mapping of research domains via bibliographical data.

To confirm a systematic and transparent procedure, the Cochrane Systematic Review (CSR) guidelines were adapted, furnishing explicit and rigorous standards for the review of literature (Higgins & Green, 2008). The steps of the adapted methodology include formulation of research questions, Definition of search strategies, conduct the search, update strategies,

perform the data analysis, present the analysis of results. A similar adaptation was done and suggested by Araujo, Oliveira, and Correia (2021).

The Web of Science (WoS) database was utilized, as it is considered as a highly credible data repository extensively employed in bibliometric analyses across various disciplines (Dzikowski, 2018; Rossetto et al., 2018). The search was executed utilizing the terms "participatory appraisal," "rapid appraisal," and "rapid participatory appraisal", with a focus on rural research from 1999 to 2019.

To capture the relevant literature on participatory appraisal, rapid appraisal, and rapid participatory appraisal approaches in rural research, the search query was constructed as follows: (TS=participatory * appraisal) OR (TS=Rapid * appraisal) AND (TS=Farm* OR TS=Rural). This query was specifically designed to include a broad range of studies that encompass the key concepts and methodologies associated with PA, RA, and RPA, as well as their applications in various rural contexts, While this search approach may initially yield a more extensive range of results, some of which may not directly align with the intended research focus, subsequent filtering will be applied using a software tool for visualizing and analyzing publication citation networks. This will filter the results by identifying connecting clusters based on the citations that are more closely related to each cluster's theme, ensuring a more focused and relevant set of literature for analysis.

Initially, the database identified 1513 articles. To refine the search, only the publications from the main collection of the WoS database were considered. This core collection includes journals from the Science Citation Index Expanded (SCI-EXPANDED), the Social Sciences Citation Index (SSCI), and the Arts & Humanities Citation Index (A & HCI), ensuring a high quality of the retrieved articles. Furthermore, research papers that had not been published yet, often referred to as early access, were omitted due to generating problems in the utilized software. After these adjustments, a total of 1459 documents remained.

CitNetExplorer, or Citation Network Explorer, was utilized for data analysis, facilitating the quantitative analysis and visualization of citation connections within pertinent scientific literature (van Eck & Waltman, 2014b). The choice of this software was influenced by its capacity to deliver a chronological perspective of publications, highlighting the progression of

the theme and robust associations between publications in terms of citations (van Eck & Waltman, 2014a, 2014b).

The software enabled us to include documents with a high number of citations that were not included in the search for some specific reason, usually for not being indexed in the WoS database. This was possible with a functionality of the CitNetExplorer called "Include non-matching cited references", so all references that had at least 10 citations among all the works were included as publication to be analyzed, this raised the total number of documents to 1520.

Methods for examining core publications and clustering articles by year and proximity were employed to explore the central themes within the PA, RA, and PRA research area in rural research. A cut-off criterion for the most cited articles (core publications) was established using the h-index, conceived by Hirsch (2005), which combines an author's productivity with their impact, taking into account both the quantity of articles and citations.

Clustering analysis was applied to categorize publications in the research domain, focusing on groupings based on similarities or associations between papers connected through citations. This technique helps in discerning research topics in the literature and assessing the chronology and evolution within each identified cluster (van Eck & Waltman, 2017). A resolution parameter of 0.60 was chosen for all cluster analyses, regulating the dimensions of the generated clusters. In this context, an elevated parameter value correlates with a larger quantity of clusters (van Eck & Waltman, 2014b). The cluster size was set at ten publications, with clusters containing fewer publications than the specified minimum not being included.

The software's "drill down" function allowed for a more comprehensive investigation of an entire network and the exploration of sub-clusters. This tool was applied to examine main publications within each cluster (van Eck & Waltman, 2014b), identifying both the pioneering publications with top scores and the most contemporary articles in the network. An analysis of the titles, abstracts, and keywords of each cluster's publications was performed to identify the primary research subjects on PA, RA, and PRA in rural research, as explained in the following section.

The analysis provided an overview of the main publications and research topics within the field of PA, RA, and PRA in rural areas. By examining the citation relationships and clustering of publications, the study highlighted the evolution of the field since its origins. The findings revealed some key milestones and developments in PA, RA, and PRA approaches, as well as the emerging trends and future research directions.

In summary, this study utilized a bibliometric analysis to examine the thematic evolution of the research field on Participatory Appraisal, Rapid Appraisal, and Rapid Participatory Appraisal approaches in rural research. By adapting the Cochrane Systematic Review guidelines and employing CitNetExplorer software, the study identified main publications and research topics within the field. The analysis also provided insights into the chronological development of the field and suggested future research directions based on gaps found.

3 Presentation and Analysis of Results

3.1 The main publications in the research field

Initially we will examine the main publications on the topic that have the highest connection among themselves, referred to as core publications. A core publication is defined as one that has a minimum number of citation links, either incoming or outgoing, with other core publications. In this study, we chose a threshold of at least six links, this parameter resulted in a group of 33 publications. We selected this threshold to include the fewest possible documents while ensuring that it encompassed all documents with at least eleven (h-index) citations within the core publications. All these 33 documents are presented in Table 1, sorted by their citations count within the search. The network that they form is shown in the graph in Figure 1.

Table 1 – List of Core Publications.

Authors	Title	Year	Citations
chambers, r	the origins and practice of participatory rural appraisal	1994	174
chambers, r	participatory rural appraisal (pra) - analysis of experience	1994	112
chambers, r	participatory rural appraisal (pra) - challenges, potentials and paradigm	1994	90
chambers, r	Whose Reality Counts? Putting the First Last	1997	59
chambers, r	Rural Development: Putting the Last First	1983	46
mosse, d	authority, gender and knowledge - theoretical reflections on the practice of participatory rural appraisal	1994	27
nelson, n; wright, s	Power and Participatory Development: Theory and practice	1995	14
kothari, u	Power, knowledge and social control in participatory development in: B Cooke & U Kothari (eds) Participation: The New Tyranny? pp 139–152	2001	13
kapoor, i	the devil's in the theory: a critical assessment of Robert Chambers' work on participatory development	2002	13
mohan, g; stokke, k	participatory development and empowerment: the dangers of localism	2000	11
mosse, d	'People's knowledge', participation and patronage: operations and representations in rural development in: B Cooke & U Kothari (eds) Participation: The New Tyranny? pp 16–35	2001	11
williams, g	evaluating participatory development: tyranny, power and (re)politicisation	2004	10
white, l; taket, a	beyond appraisal: participatory appraisal of needs and the development of action (panda)	1997	5
michener, vj	the participatory approach: contradiction and co-option in burkina faso	1998	5
bar-on, aa; prinsen, g	planning, communities and empowerment - an introduction to participatory rural appraisal	1999	5
mercer, j; kelman, i; lloyd, k; suchet-pearson, s	reflections on use of participatory research for disaster risk reduction	2008	5
cronin, sj; gaylord, dr; charley, d; alloway, bv; wallez, s; esau, jw	participatory methods of incorporating scientific with traditional knowledge for volcanic hazard management on ambae island, vanuatu	2004	4
williams, g; veron, r; corbridge, s; srivastava, m	participation and power: poor people's engagement with India's employment assurance scheme	2003	3
kapoor, i	participatory development, complicity and desire	2005	3
kapoor, i	towards participatory environmental management?	2001	1
brett, ea	participation and accountability in development management	2003	1
cronin, sj; petterson, mg; taylor, pw; biliki, r	maximising multi-stakeholder participation in government and community volcanic hazard management programs; a case study from savo, solomon islands	2004	1
korf, b; oughton, e	rethinking the european countryside - can we learn from the south?	2006	1
korf, b	the geography of participation	2010	1
sinthumule, ni; mudau, nv	participatory approach to flood disaster management in thohoyandou	2019	1
quaghebeur, k; masschelein, j; nguyen, hh	paradox of participation: giving or taking part?	2004	0
hjortso, cn; christensen, sm; tarp, p	rapid stakeholder and conflict assessment for natural resource management using cognitive mapping: the case of damdoi forest enterprise, vietnam	2005	0
puri, sk; sahay, s; lewis, j	building participatory his networks: a case study from kerala, india	2009	0
smith, ta	the dominant/marginal lives of young tanzanians: spaces of knowing at the intersection of children's geographies and development geographies	2013	0
owais, s	from absolute poverty to participatory poverty assessment and back again? a critique of poverty scorecard through a case study from khyber pakhtunkhwa, pakistan	2020	0
hore, k; gaillard, jc; davies, t; kearns, r	people's participation in disaster-risk reduction: recentering power	2020	0
ware, a; laoutides, c	whose analysis? trial of a new participatory conflict analysis for do no harm/conflict-sensitive development planning	2021	0
hussain, mhag; ansari, ma; akram, m; ramzan, s	a critical analysis of participatory rural appraisal in social research: challenges for validity and reliability of field data	2022	0

Source: Authors.
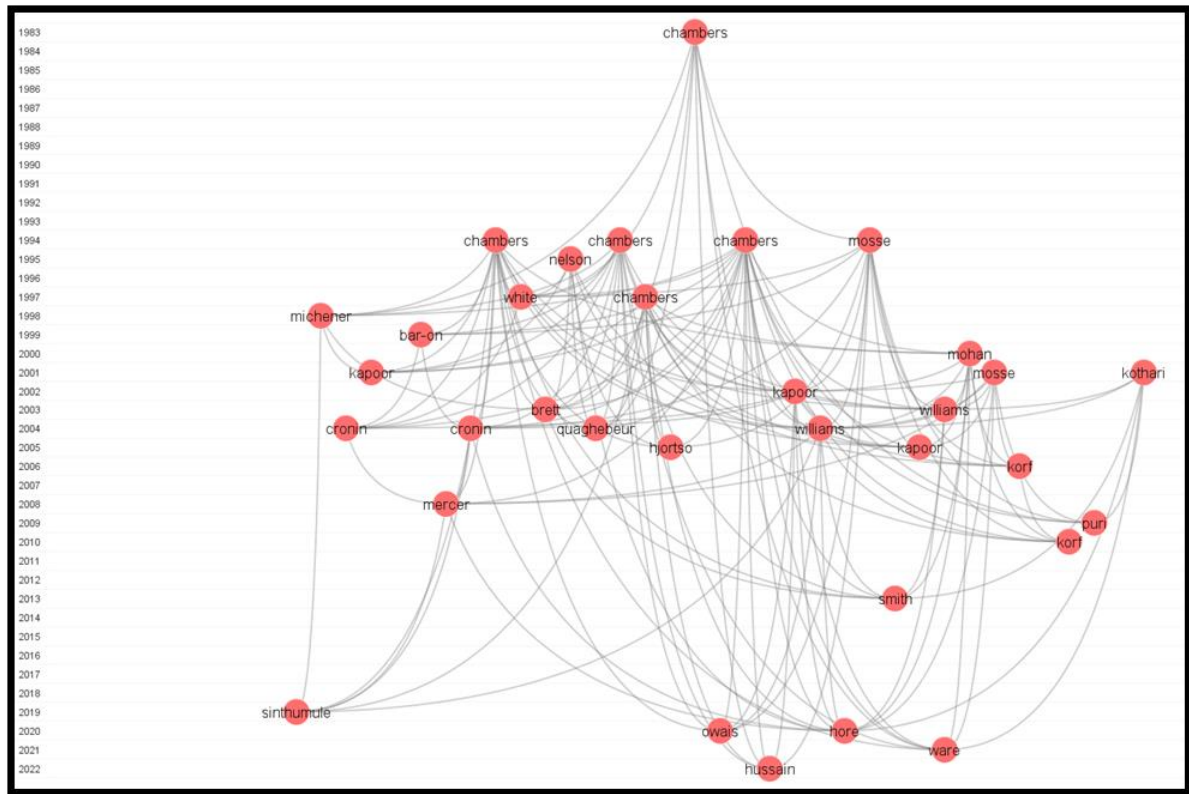
Figure 1 – Core Publications Network.
Source: Author.

This selection of works spans from the early development of the field in the 1980s, more specifically with the work of Robert Chambers, to more recent critical assessments of its effectiveness and underlying theory. The earliest core publication, "Rural Development: Putting the Last First" by Chambers (1983), laid the foundational principles for participatory rural appraisal, emphasizing the importance of including local communities in the decision-making process. Meanwhile, contemporary works such as Hussain et al. (2022) offer fresh perspectives on methodological rigor and the application of participatory approaches in various contexts. We will summarize documents, compare and categorize them while discussing the overarching themes that connect them.

The core selection represents a rich tapestry of insights, methodologies, and applications, reflecting the evolution and maturation of participatory and rapid appraisal approaches in rural research. From exploring the intricate dynamics of gender, power, and authority to embracing interdisciplinary applications in disaster management, conflict resolution, and education, these works collectively illustrate the transformative potential and enduring relevance of participatory methodologies. The convergence of themes, adaptability across

domains, and continuous critical reflection on participatory practices offer a vibrant and multifaceted view of a field that values inclusivity, collaboration, and community engagement.

Robert Chambers stands as a seminal figure in the field of participatory and rapid appraisal approaches, with his pioneering work laying the groundwork for subsequent research and practice. Chambers' influence is evident not only in the foundational principles he established but also in the chronology of his work and the substantial number of citations within the selected search. Robert Chambers' work is at the core of participatory rural appraisal (PRA), ranking one to five with his publications that span for over a decade. Starting with Chambers (1983), the author challenged conventional top-down development approaches, advocating for a participatory paradigm that prioritizes the perspectives and needs of rural communities. This publication, which received 46 citations among all selected documents of this review, became a cornerstone in participatory rural appraisal (PRA) literature. His most recent work in this core selection, Chambers (1997), further refined and expanded the PRA concept, emphasizing the importance of local knowledge and participatory methods. With 59 citations, this publication reinforced Chambers' role as a thought leader in the field. Chambers' other works, such as "Participatory rural appraisal (PRA): Analysis of experience" (Chambers, 1994b) and "Participatory rural appraisal (PRA): Challenges, potentials, and paradigm" (Chambers, 1994a), continued to shape the discourse on participatory methodologies, delving into the practical aspects, ethical considerations, and potentials of PRA. These works collectively received 182 citations within selected documents, reflecting his continued relevance and impact.

Chambers most cited work in this core collection and the most cited of all the documents is "The origins and practice of participatory rural appraisal" (Chambers, 1994a) with a total of 174 citations, this publication dig into the historical development and practical application of PRA. Chambers offers insights into the origins of PRA, highlighting the shift from conventional approaches to more inclusive, community-driven methods. The importance of Chambers' work transcends mere academic interest; it has influenced policy, practice, and the broader development discourse. His emphasis on inclusivity, empowerment, and community-driven approaches has resonated across disciplines, cultures, and contexts, making him a central figure in the participatory development landscape. The enduring legacy of Chambers' work is evident in its continued citation, adaptation, and critical reflection within

contemporary research and practice. His contributions serve as both a foundational reference and a source of inspiration for scholars, practitioners, and policymakers seeking to foster participatory, responsive, and sustainable development.

Nonetheless, the core publications encompass a wide array of themes and authors. Mosse's (1994) examination of authority, gender, and knowledge, the theoretical reflections on participatory appraisal are brought to the fore. Mosse's work engages with these themes elucidating the underlying factors that shape participatory processes. The critical assessment of gender and authority offers a nuanced understanding of participatory methodologies, acknowledging both their transformative potential and inherent challenges. The theme of gender is also featured in Owais (1998), where the author critiques the poverty scorecard (PSC) and argues that it furthers gender, class, and ethnic inequalities. Mosse also authored another document, offering a reflective perspective on participatory practices, exploring the potential and limitations of participatory approaches providing valuable insights into the dynamics of participation (Mosse, 2001).

Another sub-theme present with some reasonable recurrence is critiques and evaluations, Kapoor (2002), offers a pointed critique of participatory theories, dissecting its underlying principles and exposing potential pitfalls. Kothari (2001) and Korf (2010) investigate the interplay between power, knowledge, and social control within participatory practices. They analyze the dynamics of control and influence that shape participatory processes, revealing complex relationships that inform both practice and theory. Following a similar category, Williams (2004) and Michener (1998) provide insightful evaluations of participatory development. Williams assesses participatory practices and tries to answer the question if participatory practices represent the de-politicisation of development. Meanwhile Michener uncovers contradictions within participatory approaches and critically examines participatory development. Several other works, such as those by Mercer et al. (2008), and Hussain et al. (2022), and Owais (2020), further contribute to this sub-theme by reflecting on participatory research methodologies, offering critical analyses of PRA, and critiquing, for example, poverty assessment tools. Collectively, these publications contribute to a multifaceted understanding of participatory and rapid appraisal approaches. Their critiques and evaluations enrich the discourse, provoke thoughtful reflection, and inspire continuous refinement within the field.

The analysis of the core publications also reveals significant contributions from three notable sources, each hosting multiple representations: "world development," "development and change," "third world quarterly." These journals represent distinctive yet interrelated dimensions within the field of appraisals. The "world development" journal hosts four publications, all of which focus on various aspects of participatory rural appraisal (PRA) and are the most cited ones in this study. Chambers' trilogy of works published in 1994 (Chambers, 1994a; Chambers, 1994b, Chambers, 1994c) and Michener's (1998). In "development and change," two publications shed light on the complex dynamics of authority, gender, knowledge, and power within participatory processes (Mosse 1994; Williams et al., 2003). Finally, the "third world quarterly" houses five publications that collectively present a critical and multifaceted exploration of participatory development (Mohan, & Stokke 2000; Kapoor, 2002; Williams; 2004; Kapoor, 2005; Korf 2010).

The examination of participatory and rapid appraisal approaches takes an exciting turn with the emergence of recent core publications dating from 2019 onwards, the last five years. These contemporary works encompass a diverse range of themes, methodologies, and applications, reflecting the continuous evolution and dynamism of the field. In total, five core publications from 2019 or later are present in the dataset for core publications, each contributing unique insights and perspectives. As already mentioned, Owais (2020) took a critical stance in the analysis of poverty, specifically critiquing the poverty scorecard (PSC) and propose to supplement it with a participatory method. The most recent work, by Hussain et al. (2022), offers a critical analysis of participatory rural appraisal in the light of a personal research experience conducted on maternal and newborn child health.

The publication by Sinthumule and Mudau (2019) marked a significant theme of disaster management, particularly flood disaster management, using a participatory approach. Their work emphasizes the importance of involving local communities in disaster preparedness, response, and recovery. The participatory approach they proposed aligns with broader themes within participatory appraisal methodologies, offering a renewed perspective on community empowerment and resilience in the face of natural disasters. Still maintaining the disaster thematic, the work of Hore, Gaillard, Davies, and Kearns (2020) further amplify the role of people's participation on disaster-risk reduction. Their study identifies the need to center in-depth and critical considerations of power and power relations within participatory practice and debate.

And finally, we have Ware and Laoutides (2021), who brought conflict sensitivity into the discussion with a participatory conflict analysis approach. Their paper introduces a method that aligns with the "Do No Harm" principle, emphasizing ethical considerations and the importance of local context in conflict resolution. All these recent publications collectively signify a maturing and expanding field, embracing diverse applications and interdisciplinary insights. They show the enduring relevance of participatory and rapid appraisal approaches, while criticizing a research tradition that must continue to innovate and adapt.

In conclusion, the analysis of core publications from the last five years onwards complements and enriches this review. The contemporary works introduce fresh perspectives, methodologies, and applications, demonstrating the ongoing vitality and evolution of the field. The convergence of themes such as disaster management, poverty analysis, conflict resolution, and health with participatory appraisal principles testifies to the versatility and transformative potential of these approaches. The continued exploration and critical reflection show that the challenges are many, but the field promises a future filled with possibilities, driving forward a research agenda that values inclusivity, empathy, and collaboration.

3.2 Research topics analysis by clusters

Building upon our analysis, we now delve into the groups formed during our clustering process conducted using the CitNetExplorer (Van Eck, & Waltman, 2014). The clustering was performed with the software's standard parameters, barring the resolution which was adjusted to 0.60 to enhance precision and alignment with theoretical foundation. This exploration facilitates a detailed investigation into the various thematic clusters emerging from our corpus of publications on Participatory Appraisal (PA), Rapid Appraisal (RA), and Rapid Participatory Appraisal (RPA).

Each cluster presents a distinct, yet interconnected, research topic, contributing to the broader field of rural research and appraisal methods. Through a granular examination of these thematic clusters, we aim to uncover the research topics within each group, their interrelationships, their relevance, and their unique contributions to the field. The cluster-based approach allows for a comprehensive understanding of the diversity of topics and

perspectives within the field, capturing the complexity and richness of participatory and rapid appraisal research.

Furthermore, this exploration provides a platform for identifying and discussing future research directions within each thematic cluster. Anchored in the existing body of knowledge, the identified gaps, and the evolving trends and challenges in the field, our analysis seeks to chart potential pathways for future inquiry. This forward-looking perspective serves to guide scholars, practitioners, and policymakers in advancing the field of participatory and rapid appraisal in rural research. By integrating retrospective examination with prospective insights, we hope to illuminate the multifaceted landscape of rural research and appraisal methods, fostering continued innovation, dialogue, and growth within the field.

As we explore the clusters, we will pay particular attention to the most cited papers within each group. These key works are identified primarily by the local h-index of each cluster. By focusing on these influential papers, we aim to discover the foundational contributions that have shaped each thematic cluster's discourse. Moreover, as mentioned, we will also consider some of the most recent publications within each cluster's analyzed documents to trace and suggest future research that still needs to be done in the field. This analysis of high-impact publications provides a comprehensive view of each cluster, grounding our understanding in seminal works. The number of publications per cluster and the network with the 100 most cited documents in the entire network of papers is presented on Figure 2 and 3 respectively, each circle represents a work, and its color defines the cluster it belongs to.
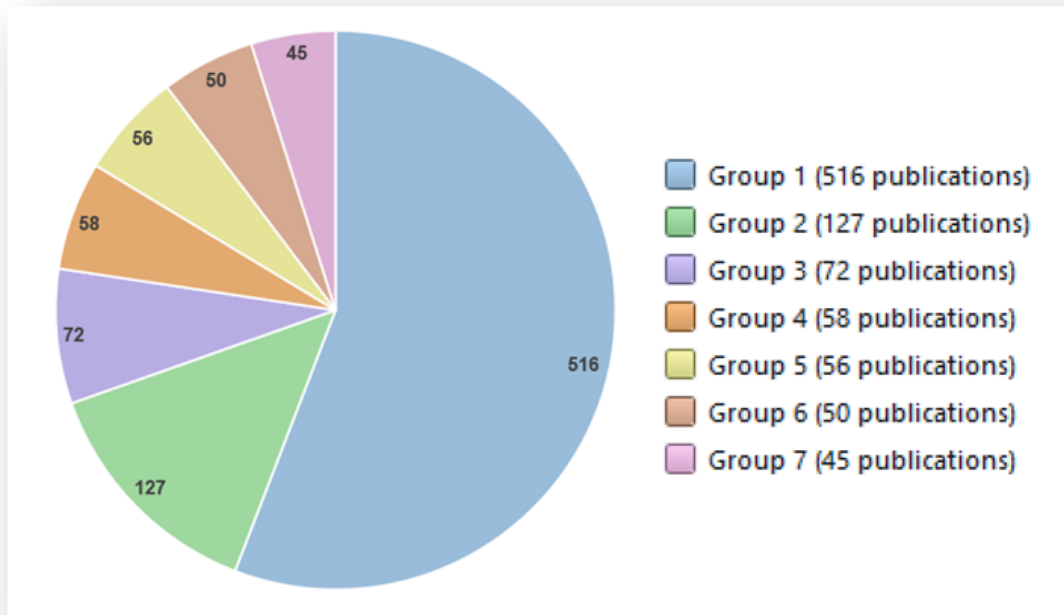
Figure 2 – Publication Quantity per Cluster Group.
Source: Author.
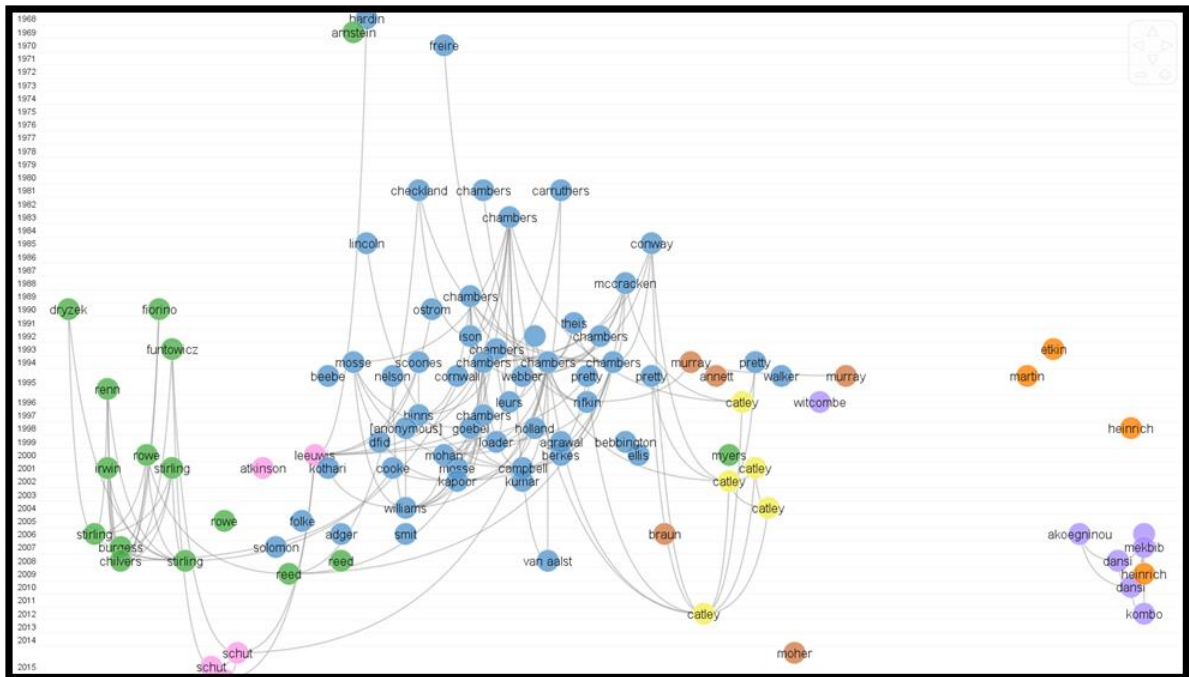
Figure 3 – 100 Most Cited Documents Network.
Source: Author.

Cluster 1 – Foundations of Participatory and Rapid Rural Appraisal and Theoretical Perspectives on Participatory Approaches

Table 2 – List of Publications Analyzed in Cluster 1.

Authors	Title	Year	Citations
chambers, r	the origins and practice of participatory rural appraisal	1994	174
chambers, r	participatory rural appraisal (pra) - analysis of experience	1994	112
chambers, r	participatory rural appraisal (pra) - challenges, potentials and paradigm	1994	90
chambers, r	Whose Reality Counts? Putting the First Last	1997	59
chambers, r	Rural Development: Putting the Last First	1983	46
chambers, r	Rural appraisal: rapid, relaxed and participatory	1992	43
mccracken, j; pretty, jn; conway, gr	An Introduction to Rapid Rural Appraisal for Agricultural Development	1988	27
mosse, d	authority, gender and knowledge - theoretical reflections on the practice of participatory rural appraisal	1994	27
ostrom, e	Governing the Commons: The Evolution of Institutions for Collective Action	1990	24
cornwall, a; jewkes, r	What is participatory research?	1995	23
pretty, jn	Participatory learning for sustainable agriculture	1995	22
chambers, r; pacey, a; thrupp, la	Farmer First: Farmer innovation and agricultural research	1989	20
cooke, b; kothari, u	Participation: The New Tyranny?	2001	20
theis, j; grady, hm	Participatory Rapid Appraisal for Community Development: A Training Manual Based on Experiences in the Middle East and North Africa	1991	16
pretty, jn	Participatory learning for sustainable agriculture	1995	16
campbell, jr	participatory rural appraisal as qualitative research: distinguishing methodological issues from participatory claims	2001	16

Source: Authors.
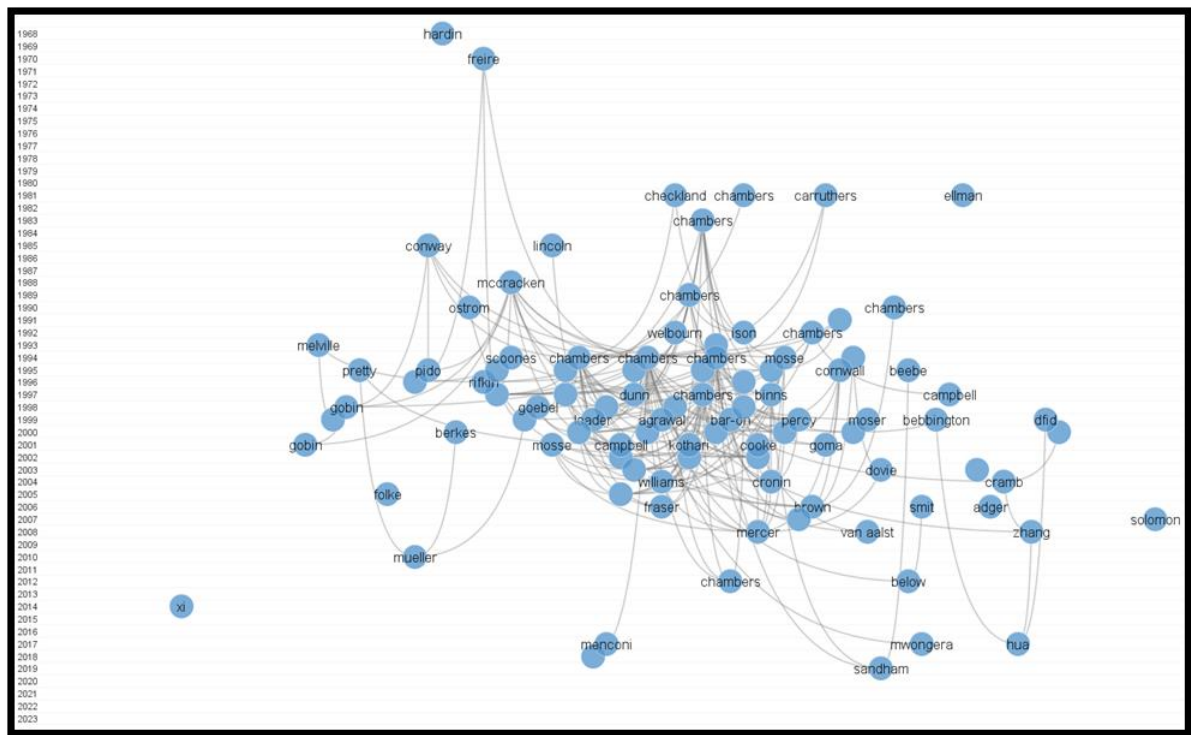
Figure 4 – 100 Most Cited Documents for Cluster 1 Network.
Source: Author.

For our initial cluster, we investigated the content of the most cited documents within the search and determined that the most fitting title would be "Foundations of Participatory Rural Appraisal and Theoretical Perspectives on Participatory Approaches". This title was chosen due to the predominant focus of the papers on the principles, practices, and theoretical basis of participatory methodologies in rural appraisal. This is the biggest and most relevant cluster

present in this review with over 500 works and the seminal works of Chambers in it. Some of these works, especially Chambers, were already mentioned in the core collection discussion, however we will broach them here once again given their importance. Table 2 lists the 16 analyzed work of this cluster, the cut was made using the h-index of the cluster considering the total local citation each document received from others in our search. Figure 4 exhibits the 100 most cited documents found in this cluster, note that this is a limitation of the software used where it shows a maximum of 100 documents in the network.

The works of Chambers (1994a; 1994b; 1994c), extensively delve into the origins and practice of Participatory Rural Appraisal (PRA). The author further unpacks the complexities and challenges inherent in the implementation of PRA, thereby providing a robust foundation for understanding the methodology's principles and execution. Moreover, the theme of participatory approaches is further emphasized in Chambers' (1997) seminal piece, "Whose Reality Counts? Putting the First Last". This work foregrounds the lived experiences of rural inhabitants, showing the importance of local community involvement in the appraisal process and bringing forth a theoretical perspective that values participation in rural development. In another document, the author makes a significant contribution by discussing PRA, emphasizing the importance of integrating local knowledge into planning and policy-making (Chambers, 1992). This work aligns with the broader discourse advocating a shift from expert-driven approaches to those informed by local insights. Being by far the most influential and prolific author in the list of selected papers for this analysis Chambers, in another work, advocates for a "farmer-first" approach that recognizes farmers as key innovators in agriculture. This perspective challenges traditional top-down models of rural development, calling for a radical reconsideration of the roles and capacities of local farmers (Chambers, Pacey, & Thrupp, 1989).

Chambers is not the only one that fosters the choice of name of the cluster and has relevant and highly cited content. Rapid rural appraisal is discussed in McCracken, Pretty, and Conway (1988), who describes it as a rigorous, cost-effective, and multidisciplinary approach that can help development workers better understand local problems while showing the potential for efficient data gathering methodologies that can meet the time-sensitive needs of rural development initiatives. Mosse (1994) adds to this discussion by exploring the limitations of PRA and examining how existing social relationships and power dynamics influence the construction of local knowledge during participatory exercises. Ostrom (1990)

critiques the state and market as solutions to common pool resource problems and presents empirical data on conditions under which these problems have been satisfactorily or unsatisfactorily solved. The theme of governance emerges strongly in her work investigating the management of common resources. This inquiry is crucial in the rural context, where collective resource management often forms the backbone of community survival and sustainability, Elinor Ostrom was so important that she went on to become the first Nobel Prize laureate woman in economics (Felizardo et al., 2023).

We also have Cornwall and Jewkes (1995), which examines participatory research strategies in health research and highlights the importance of local control over the research process. Pretty (1995) advocates for participatory learning methods in sustainable agriculture and calls for a new professionalism among agricultural professionals. Theis, and Grady (1991) which offers a practical contribution by providing guidelines for training in Participatory Rapid Appraisal for community development, and lastly, Campbell (2001) discussing the use of PRA as a qualitative research method in anthropology. This perspective broadens the potential applications of PRA, demonstrating its relevance and adaptability across various disciplines.

One document that did not make the h-index cut for this cluster but would be the next one and is worth mentioning is Freire's (1970) "Pedagogy of the Oppressed" with 15 citations. This work is a seminal piece in the field of education, with significant implications for rural research methods including Participatory Appraisal (PA), Rapid Appraisal (RA), and Rapid Participatory Appraisal (RPA). Freire's work, originally published in Portuguese, Freire's writings offer a groundbreaking educational perspective that counters the conventional top-down teaching models. He advocates for a participatory, dialogical approach to learning where the oppressed have the opportunity to reflect on their social reality, critically question it, and take action to transform it. This philosophy aligns closely with the principles of PA, RA, and RPA, which prioritize local insights and proactive involvement in both research and decision-making. Central to Freire's educational theory is the conviction that marginalized communities are not mere spectators of their societal circumstances but are empowered individuals able to reshape themselves.

Overall, this cluster of research papers and other sources offers valuable insights into the development and practice of participatory rural appraisal, rapid rural appraisal, and the importance of local knowledge and power dynamics in development processes. Future

research should focus on exploring innovative ways to integrate participatory approaches into policy-making and institutional structures while taking into consideration the precious information written on these seminal works present in this analysis. Since this cluster is focused more on the theories behind participatory methodologies the two paths for future research rely on improving the theory and applying them.

Cluster 2 – Stakeholder Participation and Environmental Management

Table 3 – List of Publications Analyzed in Cluster 2.

Authors	Title	Year	Citations
arnstein, sr	A ladder of citizen participation	1969	40
stirling, a	"opening up" and "closing down" - power, participation, and pluralism in the social appraisal of technology	2008	32
reed, ms	Stakeholder participation for environmental management: a literature review	2008	21
stirling, a; mayer, s	A novel approach to the appraisal of technological risk: a multicriteria mapping study of a genetically modified crop.	2001	17
funtowicz, so; ravetz, j	Science for the post-normal age	1993	15
stirling, a	analysis, participation and power: justification and closure in participatory multi-criteria analysis	2006	14
myers, n, et al.	Biodiversity hotspots for conservation priorities	2000	13
rowe, g; frewer, lj	Public participation methods: a framework for evaluation	2000	13
chilvers, j	deliberating competence - theoretical and practitioner perspectives on effective participatory appraisal practice	2008	12
fiorino, dj	Environmental risk and democratic process: a critical review	1990	11
renn, o; webler, t; wiedemann, p	Fairness and competence in citizen participation: Evaluating models for environmental discourse	1995	11
munda, g	Social multi-criteria evaluation: Methodological foundations and operational consequences	2004	11

Source: Authors.
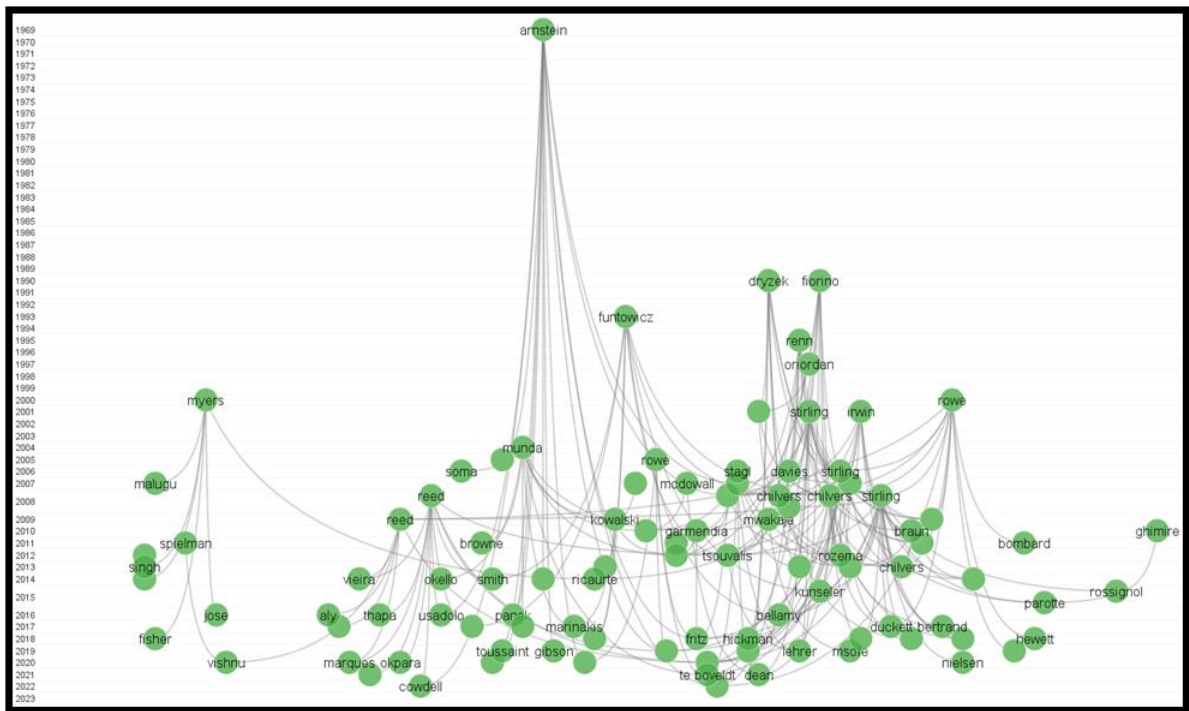
Figure 5 – 100 Most Cited Documents for Cluster 2 Network.
Source: Author.

Moving on with the analysis, in this second cluster we had a total of 127 documents and we considered 12 articles to analyze based on the h-index of 11 that this cluster had, this was due to an internal citation tie between the last three papers. This cluster addresses the topic of citizen participation in various fields, including environmental management, technological risk appraisal, and governance of science and technology. The papers discuss the importance of participatory methods, the effectiveness of public involvement, and the democratization of science. In analyzing these papers, several key similarities, differences, and major themes emerge. Table 3 and Figure 5 illustrate the 12 articles mentioned and the 100 most cited documents for this cluster respectively.

Arnstein's (1969) paper is the pillar of this cluster by being the oldest and most cited document present here. In fact, it is the second oldest paper of the entire collection of papers included in the 1520 documents, only "The Tragedy of the Common", by Hardin's (1968) is older. Arnstein's (1969) work offers a typology of citizen participation and provides examples from three federal social programs. The ladder model aims to provoke a discussion on the extent of citizens' power in determining plans and programs. Reed (2008) provides an extensive literature review on stakeholder participation in environmental management, discussing its development, typologies, benefits, limitations, and best practices. Funtowicz and Ravetz (1993) propose a new type of science, post-normal science, appropriate for high-stakes and high-uncertainty situations, which involves an extended peer community in the policy process. Myers et al. (2000) identify biodiversity hotspots to prioritize conservation efforts, offering a 'silver bullet' strategy for conservation planners. While in the same year, Rowe and Frewer (2000) publish their work providing a framework for evaluating public participation methods based on acceptance criteria and process criteria. Further into the years, Chilvers (2008) emphasizes the importance of considering the competence, expertise, and citizen-specialist relations within analytic-deliberative processes and warns against the "technocracy of participation."

Andy Stirling, with three papers, is the most prolific author present on the main publications of this cluster, on his most locally cited paper he delves into the shift from expert analysis toward participatory deliberation in the governance of science and technology, focusing on the role of power and the implications of normative, instrumental, and substantive imperatives in appraisal (2008). Stirling appears again with another of his work, presenting a novel

multicriteria mapping method for appraising technological risks, using genetically modified crops as a case study (2001). And finally, Stirling (2006) focuses on the relationship between participatory deliberation and quantitative analysis in environmental performance appraisal, examining the functions of appraisal in 'opening up' or 'closing down' wider policy discourses.

As for the three least locally cited papers selected, we have Fiorino (1990), which critically reviews environmental risk and democratic process, arguing that current practices fall short in fulfilling democratic ideals and suggests designing more effective procedures for citizen participation. Running next to it there is Renn et al. (1995) work, where they evaluate models for environmental discourse, stressing the need for fairness and competence in citizen participation. And, as the last paper analyzed for cluster two, we have a work from Munda (2004) exploring the concept of social multi-criteria evaluation (SMCE) as a framework for applying social choice to complex policy problems in the modern world. To answer his questions, Giuseppe Munda combines theoretical considerations with lessons learned from real-world case studies.

The methodologies employed in these papers range from typology development (Arnstein, 1969), literature reviews (Reed, 2008), multicriteria mapping (Stirling & Mayer, 2001), drawing on empirical research (Chilvers, 2008), and framework development (Rowe & Frewer 2000). These diverse approaches reflect the breadth of disciplines and perspectives involved in the study of citizen participation and stakeholder involvement. The texts emphasize the need for more transparent, inclusive, and democratic processes that consider a range of knowledge and values. Many of the papers also highlight the challenges and limitations of existing participatory methods, such as power imbalances, political and institutional constraints, and inadequate representation of diverse perspectives.

Looking closely at the articles in this cluster makes it easier to understand why the theme "Stakeholder Participation and Environmental Management" resonates profoundly with this cluster. Central to these articles is the exploration of participatory approaches and their significance in environmental management. Arnstein (1969) pioneered the discourse with his seminal work on the ladder of citizen participation, laying the groundwork for the engagement of stakeholders in decision-making processes. Stirling (2008) and Reed (2008), provide a more contemporary insight into the power dynamics of participatory processes in environmental management. These works, among others in this cluster, underscore the

instrumental role of participatory appraisal approaches in environmental management and also, the infusion of scientific and technological perspectives into the discourse, as seen in the works of Stirling (2001) and Funtowicz (1993), further enriches the narrative.

For future research, one major theme that emerges from this cluster that could be considered is the tension between expert-driven and participatory approaches to decision-making. We could also include a comprehensive exploration of the role of emerging technologies in shaping, enhancing, or disrupting traditional participatory models would be timely. In an era where information dissemination and stakeholder engagement can occur instantaneously through digital platforms, understanding the implications, challenges, and opportunities presented by these technologies becomes critical. Some other suggestions are longitudinal studies to track the outcomes of participatory decisions over time to gauge their long-term effectiveness and sustainability, and feedback mechanisms to build effective feedback loops into participatory processes, ensuring that stakeholders can see the tangible outcomes of their participation, fostering trust and continued engagement.

Cluster 3 – Traditional Agricultural Practices and Conservation

Table 4 – List of Publications Analyzed in Cluster 3.

Authors	Title	Year	Citations
akoègninou, a; van der burg, wj; van der maesen, ljg	Flore analytique du Bénin	2006	13
mekbib, f	Infra-specific folk taxonomy in sorghum (Sorghum bicolor (L.) Moench) in Ethiopia: folk nomenclature, classification, and criteria	2007	13
dansi, a; adoukonou-sagbadja, h; vodouhe, r	diversity, conservation and related wild species of fonio millet (digitaria spp.) in the northwest of benin	2010	11
witcombe, jr	Participatory approaches to plant breeding and selection	1996	10
adoukonou-sagbadja, h; dansi, a; vodouhe, r; akpagana, k	indigenous knowledge and traditional conservation of fonio millet (digitaria exilis, digitaria iburua) in togo	2006	8
dansi, a; adjatin, a; adoukonou-sagbadja, h; falade, v; yedomonhan, h; odou, d; dossou, b	traditional leafy vegetables and their use in the benin republic	2008	7
kombo, gr; dansi, a; loko, ly; orkwor, gc; vodouhe, r; assogba, p; magema, jm	diversity of cassava (manihot esculenta crantz) cultivars and its management in the department of bouenza in the republic of congo	2012	7
daudi, h; shimelis, h; laing, m; okori, p; mponda, o	groundnut production constraints, farming systems, and farmer-preferred traits in tanzania	2018	7

Source: Authors.
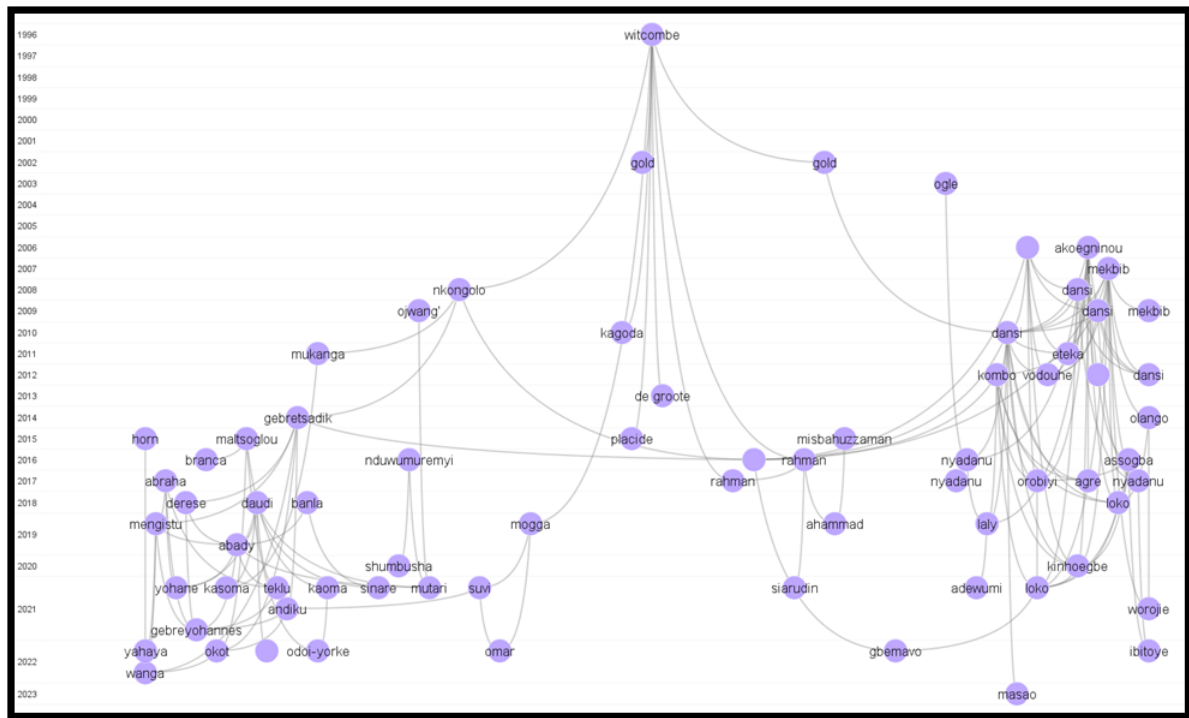
Figure 6 – Cluster 3 Entire Network.
Source: Author.

This cluster aims to analyze research papers focusing on various aspects of plant taxonomy, conservation, and crop breeding in different regions. The total number of papers here was 72 and we included 8 of those in our analysis following the same h-index method applied in the other clusters so far. The cluster's name, "Traditional Agricultural Practices and Conservation", came from most papers discussing in detail traditional methods in agriculture. For example, Mekbib's (2007) explores the traditional taxonomy and classification of sorghum in Ethiopia, a technique that has been in use for hundreds of years. Witcombe (1996) discusses participatory approaches in plant breeding, a traditional technique often used in marginal areas. Similarly, Kombo et al. (2012) focuses on traditional management of cassava cultivars in the Republic of Congo. Thus, these papers clearly highlight traditional agricultural practices. The focus on diversity and conservation of plant species, particularly those significant to local cultures, economies, and food security, is another shared theme. Table 4 reports all the publications analyzed in this cluster and Figure 6 represents the totality of documents in the network that forms cluster 3.

Akoegninou, Van der Burg, and Van der Maesen's (2006) research provides a comprehensive overview of the flora in Benin, offering detailed information on the taxonomy, distribution, habitat, and uses of various plant species. It is also the most internally cited paper of this

cluster tied with Mekbib's (2007), which takes a closer look at sorghum, focusing specifically on Ethiopian farmers' knowledge of this crop's taxonomy and classification. Similarly, Dansi et al. (2010) investigate the diversity and conservation of fonio millet in Benin, while Witcombe (1996) highlights participatory approaches to plant breeding and selection, aiming to address the needs of low-resource farmers in marginal areas. Furthermore, Witcombe's piece is the oldest one present in the cluster, a fact that is easy to observe in the cluster network image.

In a consistent trend, Adoukonou-Sagbadja et al. (2006) examine the indigenous knowledge and traditional conservation methods related to fonio millet in Togo while Dansi et al. (2008) investigate traditional leafy vegetables in Benin, exploring their diversity, uses, and cultural significance. Kombo et al. (2012) assesses the diversity and management of cassava cultivars in the Republic of Congo, while Daudi et al. (2018) examines groundnut production constraints, farming systems, and farmer preferences in Tanzania. Moreover, some of the authors are present in multiple papers, Alexandre Dansi for example is a prolific and influential author in the field and is present in four of the eight papers selected for analysis.

Across these studies, there are notable similarities in their focus on indigenous knowledge and taxonomy, highlighting the importance of understanding traditional plant classification systems and conservation methods for maintaining crop biodiversity. Additionally, all papers employ participatory research appraisal surveys and other qualitative research methods, emphasizing the importance of engaging with farmers directly to gather valuable information on crops and local farming practices. On the other hand, these studies differ in the specific crops they address, ranging from sorghum and fonio millet to leafy vegetables, cassava, and groundnuts. This reflects the diverse range of crops that contribute to food security and agricultural livelihoods across various regions. Furthermore, the research papers vary in terms of their geographical scope, covering mainly different African countries such as Benin, Ethiopia, Togo, Congo, and Tanzania which at the same time demonstrate a significant cross-continental scholarly interest in this field. This variation allows for future comparative perspective on the challenges and opportunities for crop conservation and improvement in different contexts. For example, while some papers focus on specific crops and regions, further research could explore how the insights gained might be relevant to other crops and contexts. Another interesting approach could be achieved if more emphasis would be placed on integrating traditional knowledge with modern plant breeding techniques and

understanding how to leverage the potential of both approaches to develop well-adapted, resilient, and productive crop varieties.

Cluster 4 – Ethnobotany and Traditional Medicinal Practices

Table 5 – List of Publications Analyzed in Cluster 4.

Authors	Title	Year	Citations
martin, gj	Ethnobotany: a methods manual	1995	23
heinrich, m; ankli, a; frei, b; weimann, c; sticher, o	Medicinal plants in Mexico: Healers' consensus and cultural importance	1998	12
heinrich, m; edwards, s; moerman, de; leonti, m	Ethnopharmacological field studies: a critical assessment of their conceptual basis and methods	2009	11
etkin, nl	Ethnopharmacology: biobehavioral approaches in the anthropological study of indigenous medicines	1988	10
kim, h; song, mj	analysis and recordings of orally transmitted knowledge about medicinal plants in the southern mountainous region of korea	2011	6
lans, c; brown, g	observations on ethnoveterinary medicines in trinidad and Tobago	1998	5
dilshad, smr; najeeb-ur-rehman; iqbal, z; muhammad, g; iqbal, a; ahmed, n	an inventory of the ethnoveterinary practices for reproductive disorders in cattle and buffaloes, sargodha district of pakistan	2008	5
song, mj; kim, h	ethnomedicinal application of plants in the western plain region of north jeolla province in korea	2011	5

Source: Authors.
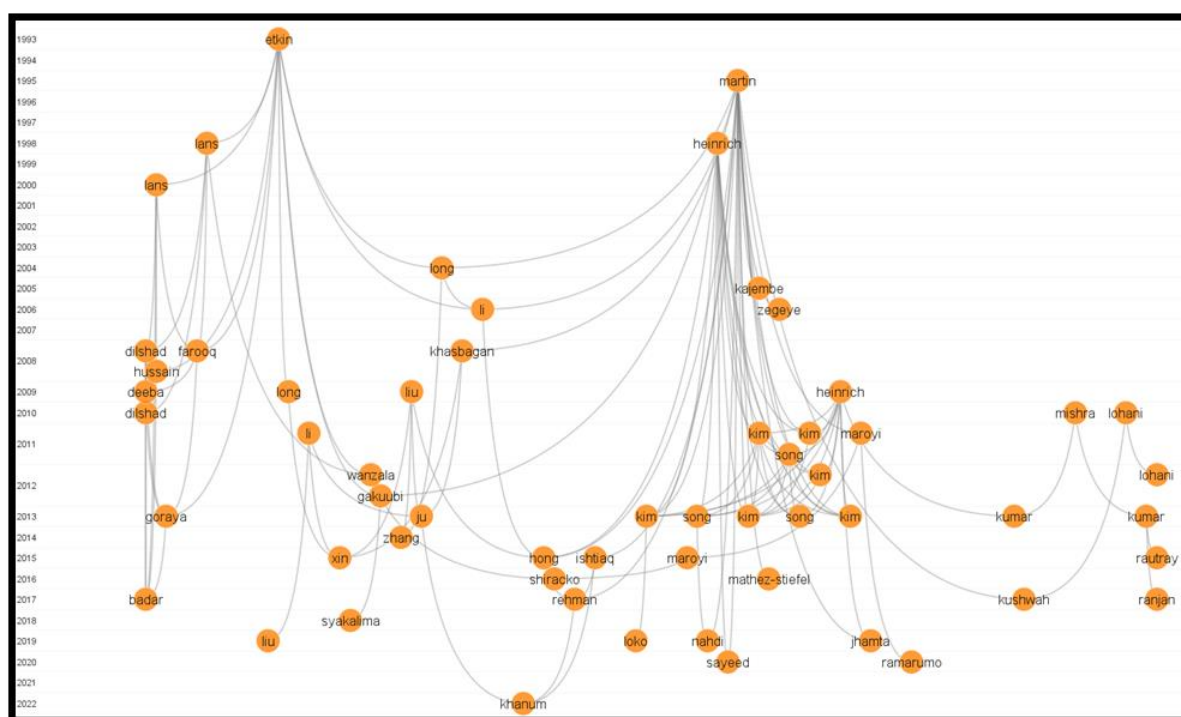
Figure 7 – Cluster 4 Entire Network.
Source: Author.

This cluster comprises a total of 58 documents, of which 8 works were analyzed. The choice of the cluster's name, "Ethnobotany and Traditional Medicinal Practices," is derived from the common thread running through the documents. The works of authors like Martin, Heinrich, Etkin, and Song, amongst others, feature prominently in this cluster, shedding light on the intricate web of connections between human cultures and the plant kingdom. The selected

documents provide a rich canvas of the field's history and developments, with diverse geographic and cultural contexts. These papers delve into various topics, such as the methodologies and conceptual bases of ethnobotanical and ethnopharmacological field studies, the oral transmission of medicinal plant knowledge, and ethnoveterinary practices. The studies spotlight the importance of preserving indigenous knowledge, highlighting the pressing need to document and protect this wisdom from extinction due to cultural erosion and biodiversity loss. Table 5 provides a detailed rundown of the 8 principal works reviewed in this cluster, while Figure 7 illustrates the network formed by all the documents incorporated in this cluster.

To start our analysis, we will talk about Martin (1995) work, who provides a comprehensive manual of ethnobotanical methodology, highlighting the importance of local people's involvement in the study of their traditional knowledge of plants and animals. The manual promotes a more ecological and quantitative approach to ethnobotany and ethnozoology, compared to the earlier descriptive and list-based approaches, it is the most internally cited document in the entire cluster and the second oldest one. Few years later, Heinrich et al. (1998) investigated the medicinal plants used by four indigenous groups in Mexico using quantitative methods with a particular focus on healer consensus and cultural importance. The study identifies a high consensus for gastrointestinal illnesses and culture-bound syndromes among the groups. While the specific plant species used vary, the paper suggests that the widespread use of some species may be due to the multiple transfers of species within Mexico. From the same first author, Heinrich et al. (2009) offers a critical assessment of ethnopharmacological field studies, discussing their conceptual basis, methods, and overall standards. The review analyzes 40 field studies published in 2007 and 2008, emphasizing the need for clear conceptual and methodological standards, as well as quantitative information in ethnopharmacological research.

Etkin (1988), is the oldest document of this cluster and paves the way for a series of documents. It discusses the biobehavioral approach in ethnopharmacology, arguing that a proper study should embrace a multidisciplinary and ecological perspective, encompassing taxonomic classifications, sociocultural contexts, constituent analysis, pharmacologic activities, and impact on human health. On the other hand, Kim and Song (2011) focuses on the orally transmitted knowledge of medicinal plants by indigenous people in the southern mountainous region of Korea. The study identifies 217 medicinal plant species and calculates

the informant consensus factor (ICF) for various ailment categories. The authors emphasize the urgency of preserving indigenous knowledge due to the rapid decline of traditional practices in Korea. Also in Korean territory, the same authors investigate the ethnomedicinal application of plants in the western plain region of North Jeolla Province. The study identifies 183 plant species with 626 use-reports for various ailments, with the highest ICF values for muscular-skeletal disorders, cuts and wounds, and respiratory system disorders (Song & Kim, 2011).

In another continent, Lans and Brown (1998) presents observations on ethnoveterinary medicines in Trinidad and Tobago, specifically for poultry. The study uses a modified Rapid Rural Appraisal technique to gather data from various stakeholders and identifies 12 plant species for treating common poultry production health related problems. As for Dilshad et al. (2008), they conduct an inventory of ethnoveterinary practices for reproductive disorders in cattle and buffaloes in the Sargodha district of Pakistan. The study documents 66 plant species for treatment, with various dosages, methods of preparation, and indications. The richness of ethnoveterinary practices in the area warrants further validation through controlled studies.

The methodologies employed include ethnobotanical inventories, informant consensus factor calculations, participatory rural appraisal techniques, and in-depth interviews with local healers and community members. The findings reveal a rich diversity of medicinal plants used by indigenous communities, highlighting the importance of preserving this knowledge and validating their potential uses through scientific research. Many of the papers in this cluster rely on participatory and or rural appraisal methodologies to collect ethnobotanical and ethnomedicinal knowledge from local communities. These methods enable researchers to gather valuable information while actively involving local people in the research process, fostering collaboration and promoting knowledge exchange.

Some of the papers in this cluster focus on methodological discussions, emphasizing the importance of engaging local people in research, while others document medicinal plant knowledge and ethnoveterinary practices in various regions. Nonetheless, several opportunities for further research emerge, for example, there is a significant gap in the quantitative analysis and validation of the effectiveness of indigenous botanical knowledge. Despite Heinrich's and Kim and Song's use of the informant consensus factor to indicate the

homogeneity of ethnobotanical information (Heinrich et al. 1998; Kim & Song, 2011; Song & Kim, 2011), there is rich area for future pharmacological and clinical research taking into account the actual effectiveness of these practices. Furthermore, the research provides extensive insights into the ethnobotanical practices in specific regions like Mexico, Korea, and Pakistan (Heinrich et al. 1998; Kim & Song, 2011; Dilshad et al., 2008; Song & Kim, 2011) but lacks a comparative analysis of these practices across different cultural contexts. Such comparative studies could provide insights into universal patterns in plant selection and usage, if any, and how cultural and ecological factors shape these practices.

Cluster 5 – *Participatory Epidemiology in Livestock Health and Veterinary Practices*

Table 6 – List of Publications Analyzed in Cluster 5.

Authors	Title	Year	Citations
catley, a; alders, rg; wood, jln	participatory epidemiology: approaches, methods, experiences	2012	15
catley, ap; mohammed, aa	the use of livestock-disease scoring by a primary animal-health project in somaliland	1996	11
catley, a; okoth, s; osman, j; fison, t; njiru, z; mwangi, j; jones, ba; leyland, tj	participatory diagnosis of a chronic wasting disease in cattle in southern sudan	2001	8
catley, a; osman, j; mawien, c; jones, ba; leyland, tj	participatory analysis of seasonal incidences of diseases of cattle, disease vectors and rainfall in southern sudan	2002	7
catley, a; chibunda, rt; ranga, e; makungu, s; magayane, ft; magoma, g; madege, mj; vosloo, w	participatory diagnosis of a heat-intolerance syndrome in cattle in tanzania and association with foot-and-mouth disease	2004	7
catley, ap; aden, a	use of participatory rural appraisal (pra) tools for investigating tick ecology and tick-borne disease in somaliland	1996	6

Source: Authors.
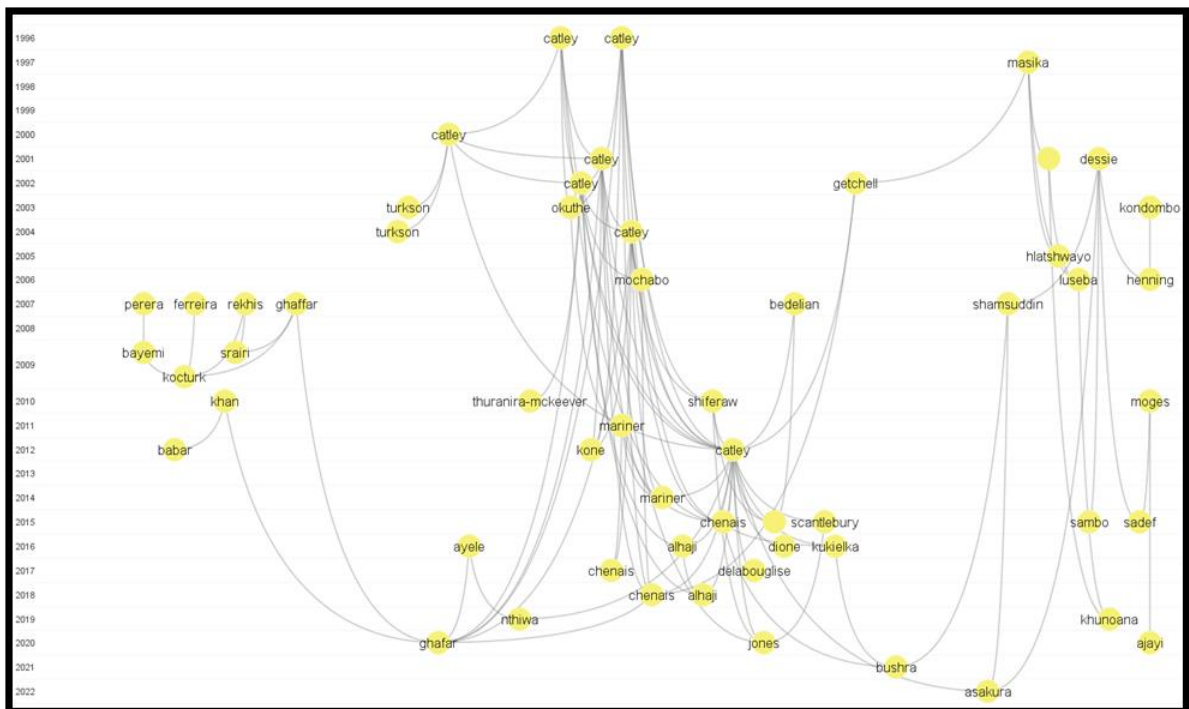
Figure 8 – Cluster 5 Entire Network.

For this next cluster, we decided to label it as "Participatory Epidemiology in Livestock Health and Veterinary Practices" which emanated from the dominant thematic discourse in the papers selected. Some documents center around the principle of participatory epidemiology (PE), an evolving branch of veterinary epidemiology, which seeks to enhance the engagement of animal keepers in the analysis of animal health issues, design, and assessment of disease control strategies. The documents, totaling 56, reveal fascinating insights into how participatory techniques are employed in different cultural and geographical contexts, dealing with a multitude of animal health challenges. For this review, we focused on 6 seminal works that use participation and its applications in livestock health. As usual, the h-index was applied for the paper selection. Table 6 lists the six publications which made the cut, while Figure 8 provides a visual representation of the entire network formed by the documents in this cluster, illustrating the interconnectedness of the themes and subjects.

An interesting fact in this analysis is that all the documents share the same first author, Andrew Catley, marking a consistent thread of inquiry into the practice and expansion of participatory methodologies in veterinary epidemiology. His works establish a strong foundation for other researchers to understand and apply these techniques in diverse contexts. For instance, Catley's pioneering effort in using livestock disease scoring in a primary animal-health project in Somaliland paved the way for subsequent studies, allowing them to build on this foundational understanding and broaden its application (Catley & Mohammed, 1996). Despite the unique focus of each document, the unifying factor remains Catley's persistent efforts to incorporate and validate local knowledge into mainstream veterinary practice, contributing significantly to participatory practices in the field.

The first paper by Catley, Alders, and Wood (2012), the one with the most internal citations, provides an overview of participatory epidemiology, its origins, approaches, methods, and applications. The paper highlights the importance of engaging animal keepers in the analysis of animal disease problems, and the design, implementation, and evaluation of disease control programs and policies. This review sets the stage for the rest of the research papers in this cluster by offering a general understanding of PE and its applications. Catley and Mohammed (1996) describe an informal livestock-disease scoring technique used to gather information on pastoralists' perceptions of animal-health problems in Somaliland. They propose this

technique as a valuable addition to the Participatory Rural Appraisal (PRA) toolkit, which could help veterinarians plan primary veterinary programs in developing countries. The paper demonstrates a practical application of PE, showcasing how the inclusion of local knowledge can improve veterinary programs.

In the third paper, Catley et al. (2001) investigates a chronic wasting disease in cattle in southern Sudan using both participatory-appraisal (PA) methods and conventional veterinary investigation methods. By comparing the findings from both methods, they show that there is a significant overlap between local knowledge and modern veterinary knowledge. This paper serves as a bridge between the first and the following papers in terms of methodology, emphasizing the importance of validating local knowledge with conventional veterinary diagnostics. Catley et al. (2002) utilizes a seasonal calendar method to understand local perceptions of seasonal variations in cattle diseases, disease vectors, intermediate hosts, and rainfall in southern Sudan. They demonstrate the reproducibility and validity of the method and discuss its potential applications in veterinary epidemiology. This study expands the range of participatory methods and tools available for studying animal health issues, reinforcing the need for a holistic understanding of disease dynamics.

Moving on the next paper, Catley et al. (2004) explores the association between a heat-intolerance syndrome in cattle and foot-and-mouth disease (FMD) in Tanzania. By employing participatory appraisal methods like matrix scoring and proportional piling, they find an association between FMD and heat-intolerance syndrome in one group of informants (pastoral Maasai) but not in another (agropastoral Sukuma). The findings highlight the importance of context and local knowledge in understanding livestock diseases and demonstrate the value of participatory methods in investigating disease associations. Lastly, Catley and Aden (1996) use participatory rural appraisal tools like matrix scoring, once again, and seasonal calendars to study tick ecology and tick-associated health problems in livestock in Somaliland. They discuss the potential applications of these techniques and demonstrate the usefulness of participatory methods in gathering data on tick ecology and tick-borne diseases.

As it is perceptible, the methodologies used across these papers share a common theme: the incorporation of participatory methods to understand and address animal-health issues. The papers vary in their application of PE, ranging from the design of veterinary programs to the investigation of specific diseases or syndromes. While the papers offer valuable insights, a

potential gap in the research is the limited exploration of how these participatory methods could be adapted and applied in different cultural contexts and animal populations. Overall, this cluster of research papers highlights the importance and potential of participatory epidemiology and participatory practices in veterinary research, disease surveillance, and control programs, underscoring the value of engaging local knowledge and perspectives to improve animal health outcomes. They are related to Participatory Rural Appraisal (PRA) and Rapid Rural Appraisal (RRA) in the sense that they emphasize the use of participatory methods to engage local communities in understanding and addressing livestock health issues, including the techniques use such as seasonal calendar and matrix scoring for example.

The studies exemplify the benefits of incorporating PRA and RRA methodologies into veterinary research and animal disease management. By actively involving local animal keepers and stakeholders in the data collection and decision-making processes, the studies demonstrate that participatory methods can yield valuable insights that may otherwise be overlooked by conventional veterinary diagnostic methods. In this way, these papers highlight the synergistic potential of combining participatory methods with more traditional approaches, promoting a more comprehensive understanding of animal health issues and facilitating the development of culturally appropriate and context-specific solutions. Future research suggestions include further improvement of the methods and their application in different fields and geographic locations.

Cluster 6 – Rapid Appraisal in Health and Social Needs Assessment

Table 7 – List of Publications Analyzed in Cluster 6.

Authors	Title	Year	Citations
murray, sa; tapson, j; turnbull, l; mccallum, j; little, a	Listening to local voices: adapting rapid appraisal to assess health and social needs in general practice	1994	17
moher, d; et al.	Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement	2015	11
annett, h; rifkinm s	Guidelines for rapid participatory appraisals to assess community health needs: A focus on health improvements for low-income urban and rural areas	1995	10
braun, v; clarke, v	Using thematic analysis in psychology	2006	10
murray, sa; graham, ljc	practice-based health needs assessment - use of 4 methods in a small neighborhood	1995	7
pepall, e; james, rw; earnest, j	guidelines for conducting rapid participatory appraisals of community health needs in developing countries: experience from tulikup, bali	2006	6

Source: Authors.
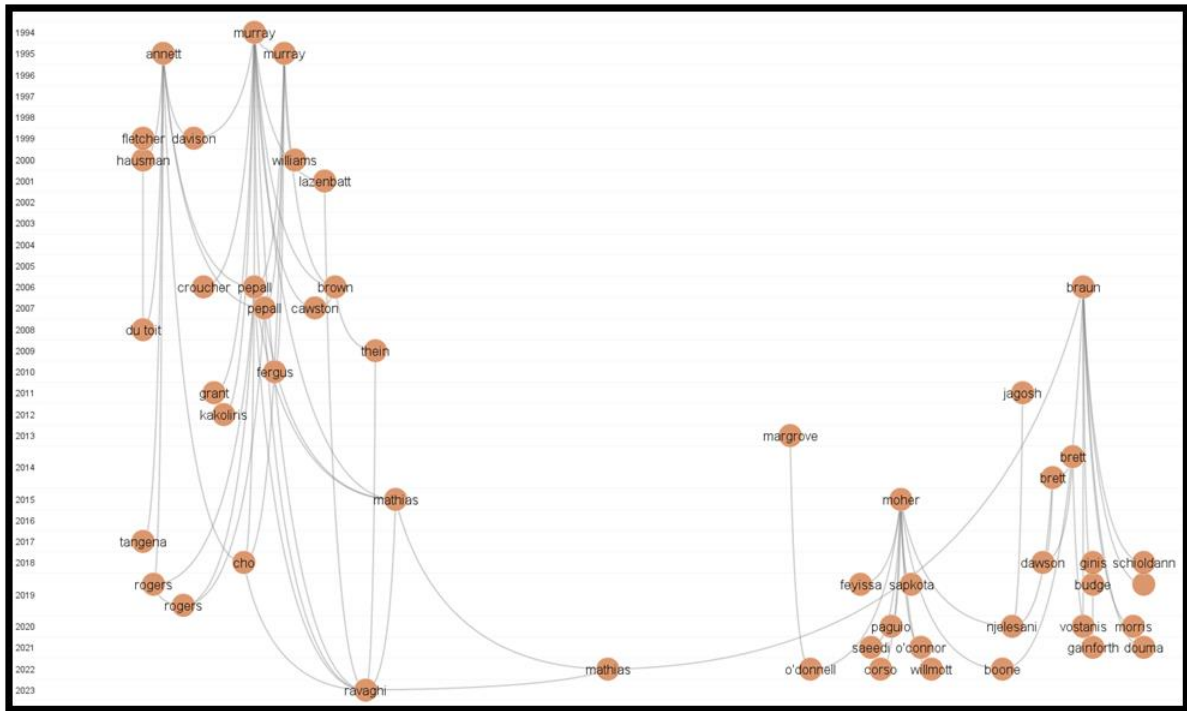
Figure 9 – Cluster 6 Entire Network.
Source: Author.

In this sixth cluster of our analysis, the papers revolve around a theme that we called "Rapid Appraisal in Health and Social Needs Assessment". The title arises from the common thread that binds some of the documents together with emphasis on rapid appraisal methods, primarily within healthcare settings and social needs analysis. The documents, which total 50, provide a compelling look into the use of rapid and participatory appraisal techniques for community health evaluation and systematic review practices. In particular, they explore how these methods can be used to define and address health needs, foster community participation, and facilitate effective and efficient healthcare provision. For this analysis, we honed our focus on six central works, using the h-index for the selection process. Table 7 lists these selected publications, and Figure 9 offers a graphical picture of the entire document network within this cluster, showcasing the interlinkage of the themes and subjects discussed.

In their work, Murray et al. (1994) explores the use of rapid appraisal in defining the health and social needs of a community and formulating joint action plans between residents and service providers. His research methodology employs a comprehensive primary care team, and utilizes a blend of existing documents, interviews, and firsthand observations. This interdisciplinary strategy not only supplements quantitative methods of needs assessment but also aids in pinpointing areas that require immediate change. On a similar note, Annett et al.

(1995) discusses guidelines for rapid participatory appraisals, specifically focusing on an urban primary health care project in Tanga, United Republic of Tanzania. The guidelines provide a framework for the participatory assessment of health needs as perceived and defined by the community. Although limited in scope, the methodology has proven to be effective in unveiling previously unknown aspects of community life. Both Murray et al. (1994) and Annett et al. (1995) discuss the significance of rapid appraisal techniques in understanding the health and social needs of a community. While Murray emphasizes the value of an interdisciplinary approach, Annett highlights the importance of participatory assessment. Their works collectively indicate the potential of these methods in fostering a more nuanced understanding of community health and social needs.

Murray and Graham (1995) examine four distinct methods to identify health needs within a community. Their objective is to establish practical guidelines for conducting health needs assessments at the practice level. The research gathers data through rapid participatory appraisal, postal surveys, analysis of small area statistics, and the compilation of practice-held information. The authors propose that an extended primary care team, bolstered by public health support, can effectively evaluate health and healthcare needs in a neighborhood. They achieve this by employing a blend of quantitative and qualitative methodologies. They further suggest that certain methods may be more fitting for assessing specific health needs or potential service provisions. Their work emphasizes the importance of methodological diversity in health needs assessment, highlighting the need for a tailored approach based on the unique needs of each community.

Pepall et al. (2006) emphasize the use of rapid participatory appraisal (RPA) methodology to assess community health needs in developing countries. The paper presents practical guidelines for planning, implementing, and communicating RPA activities based on the authors' experience conducting an RPA in Tulikup, Bali. In contrast, Moher et al. (2015) focus on the development of a reporting guideline, the Preferred Reporting Items for Systematic reviews and Meta-Analyses for Protocols 2015 (PRISMA-P 2015). The 17-item checklist aims to facilitate the preparation and reporting of a robust protocol for systematic reviews, enhancing the understanding, appraisal, and detection of methodological modifications and selective reporting. Building on the work of Moher et al. (2015), future research could explore how the PRISMA-P 2015 guidelines are being implemented and how they could be further improved to enhance transparency and reporting in systematic reviews.

Lastly, there is a discussion on the use of thematic analysis in psychology on Braun and Clarke (2006). The authors provide clear guidelines for conducting thematic analysis in a deliberate and rigorous manner, outline potential pitfalls, and discuss the disadvantages and advantages of the method. Given the discussion of this thematic analysis, research could further explore how this method can be applied in the context of health needs assessment, and how it compares to other qualitative methods.

The body of research examined here highlights the importance of employing a diverse set of strategies when attempting to comprehend the health and social needs of various communities while giving emphasis on rapid appraisal and participatory techniques. While certain studies concentrate on the creation of guidelines for assessment and data gathering, others delve into the effectiveness of different methodologies in specific contexts or offer advice on reporting and analysis. However, there are some noticeable gaps in the research including the necessity for more evidence regarding the effectiveness and suitability of these participatory methodologies. During our document review, we suggested potential avenues for future research. In summary, this cluster stresses the need for thorough, systematic, and flexible methodologies when attempting to address the health and social needs of each particular community.

Cluster 7 – Agricultural Innovation Systems and Sustainable Rural Development

Table 8 – List of Publications Analyzed in Cluster 7.

Authors	Title	Year	Citations
schut, m; klerkx, l; rodenburg, j; kayeke, j; hinnou, lc; raboanarielina, cm; adegbola, py; van ast, a; bastiaans, l	raais: rapid appraisal of agricultural innovation systems (part i). a diagnostic tool for integrated analysis of complex problems and innovation capacity	2015	16
schut, m; rodenburg, j; klerkx, l; kayeke, j; van ast, a; bastiaans, l	raais: rapid appraisal of agricultural innovation systems (part ii). integrated analysis of parasitic weed problems in rice in tanzania	2015	13
atkinson, r; flint, j	Accessing Hidden and Hard-to-Reach Populations: Snowball Research Strategies	2001	12
leeuwis, c	reconceptualizing participation for sustainable rural development: towards a negotiation approach	2000	11
schut, m; rodenburg, j; klerkx, l; hinnou, lc; kayeke, j; bastiaans, l	participatory appraisal of institutional and political constraints and opportunities for innovation to address parasitic weeds in rice	2015	8

Source: Authors.
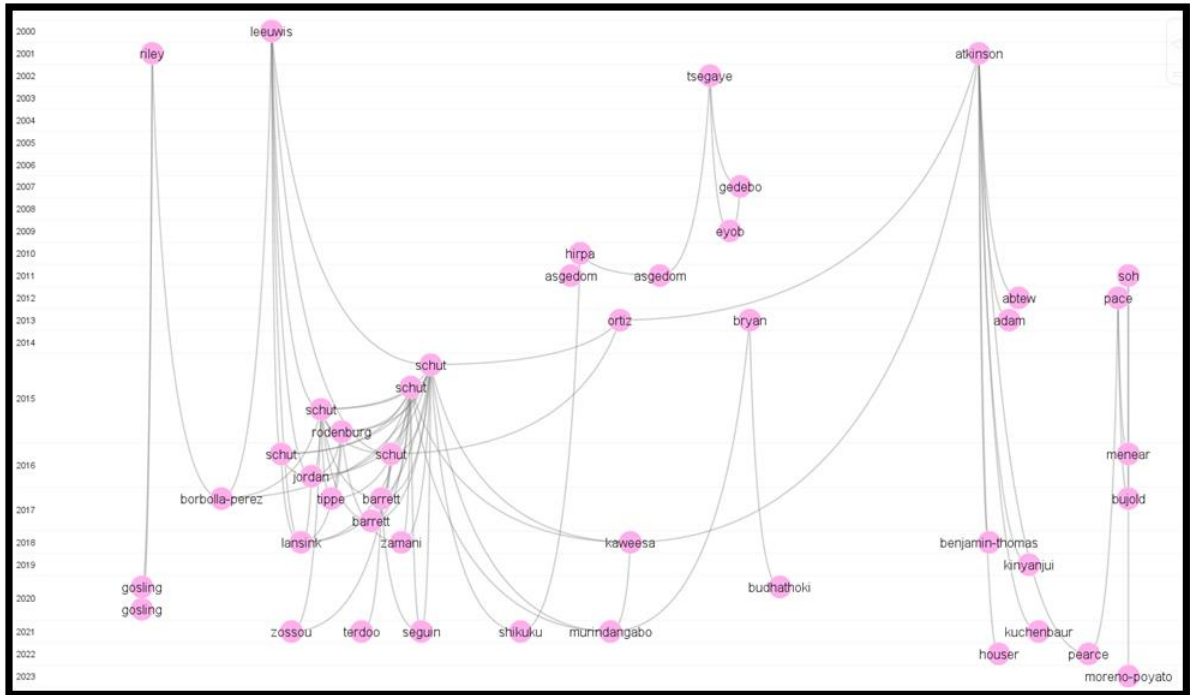
Figure 10 – Cluster 7 Entire Network.
Source: Author.

In the seventh and last cluster of our analysis, there are 45 documents in total, with a concentrated analysis performed on 5 works. The common thread uniting these documents is the exploration of innovative systems and methodologies in agriculture, such as Rapid Appraisal of Agricultural Innovation Systems (RAAIS), participatory approaches, and the use of snowball research strategies for accessing hard-to-reach populations. Emphasis is placed on sustainable rural development, with specific attention to complex agricultural issues. Papers in this cluster offer in-depth discussions on both specific and generic entry points for innovations and underline the importance of collaboration and continuous stakeholder engagement for achieving sustainable solutions. The name chosen for the cluster was "Agricultural Innovation Systems and Sustainable Rural Development", which is an accurate reflection of its content, as it encapsulates the critical themes developed by the papers. In Table 8, the five publications selected for deeper analysis are listed. Figure 10, on the other hand, graphically illustrates the entirety of the document network forming this cluster.

Schut et al. (2015) introduced Rapid Appraisal of Agricultural Innovation Systems (RAAIS), a diagnostic tool designed to analyze complex agricultural problems and assess the innovation capacity of agricultural systems. RAAIS employs an integrated approach, taking into account various dimensions of problems, interactions across different levels, and the constraints and

interests of different stakeholder groups. This study emphasized the value of combining multiple qualitative and quantitative methods and insider-outsider analyses for triangulation and validation. The authors applied RAAIS to parasitic weed problems in the rice sector in Tanzania and Benin, demonstrating its potential and offering recommendations for further development. In a subsequent study, Schut et al. (2015) implemented RAAIS to identify specific and generic entry points for innovations addressing parasitic weeds in rain-fed rice production in Tanzania. The authors found that parasitic weeds generally receive little attention in agricultural research, training, and education curricula, with crop protection policies mainly focusing on controlling pests and diseases. The study proposed specific entry points for innovation, such as raising awareness among farmers, extension and crop protection officers, and policymakers. Generic entry points included enhanced collaboration and interaction between stakeholders across different levels to address structural constraints in the agricultural system.

With yet another work on parasitic weed, Schut et al. (2015), and his collaborators investigated institutional and political constraints and opportunities for innovation to address parasitic weed problems in rice using participatory appraisal. The study found that most constraints related to broader crop protection and agricultural systems rather than being specific to parasitic weeds. A lack of capabilities, resources, and access to credit were identified as major constraints. The authors recommended raising awareness among key stakeholders, improving input and service supply, and enhancing agricultural education and training curricula.

Atkinson & Flint (2001) explored snowball research strategies, an unconventional sampling method, for accessing hidden and hard-to-reach populations. While violating the principles of conventional sampling, snowball sampling offers advantages for studying vulnerable and more impenetrable social groupings. The author acknowledged the limitations of snowball sampling, such as the potential exclusion of 'isolates,' but argued that advances in quantitative applications and an increasing need for ascending methodologies make it a valuable tool for studying hidden populations and complementing other research methodologies. At about a similar time Leeuwis (2000) examined the concept of 'participation' in sustainable rural development and proposed a negotiation approach as an alternative to conventional planning, decision-making, and social learning processes. The author argued that basing participatory

development efforts on negotiation theory requires new modes of analysis and different roles, tasks, and skills for facilitators.

In summary, these studies highlight the importance of innovative methodologies, such as RAAIS, and approaches like snowball sampling, to better understand and address complex agricultural problems. This cluster had the most recent work among the most cited works and in fact the time span from the papers in this cluster start from 2000 with the Leeuwis work and has several 2023 papers. Although focused on different aspects, they all emphasize the need for integrated approaches and collaboration among stakeholders. Furthermore, these papers underline the significance of understanding the broader context of agricultural systems and the value of applying novel diagnostic tools and methodologies to address specific and systemic challenges in agricultural innovation. As for future research, one take is that future agronomic studies should focus on identifying local weed rice systems. They, for example, should align solutions with existing farming systems in the region and consider future changes in demographics and environmental conditions. Another recommendation would be the use of methodologies like RAAIS for the analysis of other types of complex farming issues.

4 Final Considerations

In this review paper we presented a comprehensive examination of the organization of topics and thematic clusters within the field of participatory and rapid appraisal methodologies in rural research. The findings highlight the richness of this research area, elucidating the core collection of the field and the key seven thematic clusters that include: foundations of participatory rural appraisal and theoretical perspectives on participatory approaches; stakeholder participation and environmental management; traditional agricultural practices and conservation; ethnobotany and traditional medicinal practices; participatory epidemiology in livestock health and veterinary practices; rapid appraisal in health and social needs assessment; and agricultural innovation systems and sustainable rural development. As we navigate through the topic, we observed that the implications are profound. They highlight the need for continuous exploration and evolution of these methodologies, especially when considering the many challenges that come with using them. These include ensuring meaningful community participation, empowerment and dealing with the complexities of integrating traditional knowledge and practices with more modern approaches.

Given the breadth and depth of the thematic clusters identified in this study, the potential avenues for future research or applications of the reviewed methods are numerous. During each cluster analysis we suggested how future research could delve into the exploration of specific subtopics to enhance our understanding of the field. Moreover, there is scope for applying the methodological approach and software used in this study to other research domains and in different ways. For instance, the cut metric for the papers to be analyzed in more depth could be switched from the H-index we used to a filter that includes only the most recent papers. This could provide a temporal perspective on the development and evolution of participatory and rapid appraisal research, highlighting even newer trends and emerging challenges. Additionally, future research could explore innovative ways to integrate participatory and rapid appraisal methodologies with digital technology, given its increasing prevalence in rural settings. This could potentially revolutionize data collection, analysis, and dissemination processes, thereby enhancing the efficiency and impact of rural research.

The implications of this review paper extend beyond the realm of academia, offering invaluable insights for practitioners and policymakers working in rural development. It reaffirms the significant societal impact that can be achieved through the thoughtful

application of participatory and rapid appraisal methodologies, reinforcing their centrality in rural research. The domain of participatory methodologies is undergoing continuous evolution, with modifications to these methods being proposed globally. A good example is the Rapid Participatory and Emancipatory Research (RPER), put forth by Pereira (2017). This methodology has been used in Brazil, other Latin American nations, and most recently, in the United States. Another notable instance is the Altadir's Method of Popular Planning (MAPP; Matus, 2007). The ongoing advancement of these methodologies is crucial to align with the societal perspectives that are changing at an unparalleled speed. In conclusion, while this review has made clear the vast richness landscape of participatory and rapid appraisal methodologies, it has also opened the door to many new research paths. It is the hope that future studies will continue to build upon this foundation, pushing the boundaries of our knowledge, and contributing to the transformation of rural research for the betterment of rural communities worldwide.

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ARTICLE 3 - RPER SOFTWARE - A SOCIAL MANAGEMENT TOOL FOR RAPID PARTICIPATORY EMANCIPATORY RESEARCH: PLANNING, DESIGN AND IMPLEMENTATION.

RPER Software - A Social Management Tool for Rapid Participatory Emancipatory Research: Planning, Design and Implementation

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RPER Software - A Social Management Tool for Rapid Participatory Emancipatory Research: Planning, Design and Implementation

ABSTRACT

Theoretical framework: This study is grounded in Social Management, a paradigm that focuses on society's deliberative process for public decisions. It also employs the Rapid Participatory and Emancipatory Research (RPER) method, an adaptation of rapid and participatory appraisals, to apply social management in rural contexts.

Research objectives: Identify the requirements, plan, design, assess the complexity, and implement a system to support the RPER application.

Methodology: The waterfall model for software development lifecycle was used to carry out the system's planning. The discipline of Business Process Management (BPM) was necessary for the requirements mapping and the Function Point Analysis (FPA) technique to measure the software complexity from a user perspective.

Results: The RPER application process was fully mapped, and several features that could be implemented for the software were uncovered. These functionalities address practically all the steps involved in the method's application. In addition, the software measurement was completed, and 542 function points were found. After this, the design for the graphical user interface was then created. Finally, the software was developed using technologies such as Express for building the back-end RESTful API with Node.js, React library to create the front-end's componentized user interface, TypeScript as the main programming language and PostgreSQL as the relational database.

Originality: It is notable that some software has already been used to try and promote social participation in public matters. However, studies specific to the use of information and communication technology (ICT) to resolve social issues, and, at the same time, dealing specifically with participatory techniques are non-existent. There is an overflow of software tools designed to support quantitative research in the agriculture field, yet there remains a notable deficiency in software tailored to assist qualitative research and practices.

Theoretical and practical contributions: The use of a web system on participatory approaches can bring advantages. In the theoretical side, this research might provide insights into these methods' evolution. It will also provide a foundational framework for understanding the intersection of ICT and participatory techniques, paving the way for future research in this area. Some other more practical benefits include the wider distribution and dissemination of results, data transparency, the unification or centralization of the research made using the methods, the organization of data, the possibility of automation on report generation, better communication and collaboration between team members, and data safety with periodic backups. Nonetheless, the software could serve as a platform for preparing new researchers with help and tips section for each of the methods' techniques.

Keywords: Agricultural Information Systems; Rural Community Engagement; Information Technology; Participatory Software Design; Social Management.

1. INTRODUCTION

Social Management is a relatively new paradigm that focuses on society's deliberative process for public decisions. This paradigm is committed to the promotion of the common good. It is conceptualized as a dialogical management action focused on the public interest (Cançado, Pereira, Tenório, 2015, p.101) and its main categories are the well-understood public interest (Tocqueville, 2003), the public sphere (Habermas, 1991), and social emancipation (Freire, 1985). The paradigm itself is similar to the concept of deliberative governance developed by Dryzek (2010) and his collaborators. Deliberative action incorporates policies and institutional measures to promote the common good.

Araújo (2012) describes Social Management as a multi-paradigmatic and polysemic field, suggesting that it's still evolving and highlighting its multidisciplinary nature. On the other hand, Cançado (2011) and Cançado, Pereira, and Tenório (2015) strongly argue that Social Management has made substantial progress over the years. They emphasize its well-established theoretical foundations and to validate its standing as a genuine science, they compare its maturity to the standards set by renowned scholars like Popper, Kuhn, Lakatos,

and others. Through this comparison, they show that Social Management indeed fits the characteristics of a recognized scientific field. Social Management's concept remains open to some degree of interpretation due to academic debates that shape its evolution. Despite this, a central theme present is its emphasis on participation and adherence to Weber's (2017) ideal type suggesting a guiding path characterized by transparent, inclusive, intelligible, dialogical, coercion-free, and emancipatory collective decision-making.

A fitting example to elucidate the application of Social Management concepts is in the agriculture field. The famous Hardin's "Tragedy of the Commons" dilemma (Hardin, 1968) suggests that individuals, acting in their own self-interest, will inevitably overuse shared resources, leading to depletion or ruin. In the context of agriculture, this might manifest as depleting water resources, over-farming, or over-grazing, resulting in land degradation. Ostrom (1990) offers a more nuanced perspective, arguing that communities can, and often do, develop cooperative mechanisms to manage and sustain common resources effectively. Ostrom's principles, such as clearly defined boundaries, collective choice arrangements, and effective monitoring, could be applied to rural agricultural settings to prevent over-exploitation and ensure sustainable use.

Implementing such principles requires a holistic approach, and this is where a method of Social Management can be employed. The Rapid Participatory and Emancipatory Research (RPER; Pereira, 2017; Teixeira, Alcântara, Garcia & Pereira, 2019) consists of intervention techniques that allows qualitative and quantitative information to be obtained from a collectivity in a short period. This information is then used to identify problems, their causes, and possible solutions, with the goal of promoting social change and sustainable development. The RPER method has been the foundation of several empirical studies, some of which focus on agricultural communities and water related issues in different countries and regions (Teixeira, Cruz, Machado, & Pereira, 2020; Teixeira et al., 2019; Pereira, 2017; Alcântara, Pereira, & Vieira, 2018; Teixeira Cruz, 2017; Pereira, 2001; Teixeira, Marques, & Pereira, 2017; Pereira, & Little, 1998). As stated by Pereira (2017, pg. 76), this method was tailor-made to systematically address the intricate realities of social groups like rural land reform settlements, associations, and agriculture related cooperatives, for example. The RPER represents a progressive evolution from the classic Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA) methods, merging foundational principles from both and focusing on critical theory and participatory strategies to apply the concepts of Social Management.

Information and communication technology (ICT) has been used to try and promote social participation in public matters by enhancing societal well-being with platforms that empower communities to address challenges and participate directly in public decision-making processes (MySociety, 2013; Walravens, 2015; Peña-López, 2017; Felizardo, Pereira, & Silva, 2019). However, to the best of our knowledge, studies specific to the use of ICT to resolve social issues that support participatory techniques, especially in the agriculture domain, are non-existent. In agricultural research, there is a strong trend toward developing software and hardware tools for quantitative application and research. For example, tools have been developed for high-throughput phenotyping and seed quality testing (Tu et al., 2023), as well as for identifying soil-constrained areas in row crop fields (Orton, McClymont, Page, Menzies, & Dang, 2022). Hyper spectral imaging-based plant phenotyping is another area of focus (ElManawy, Sun, Abdalla, Zhu, & Cen, 2022), and the examples are many (Kim, 2021; Paccioretti, Córdoba, & Balzarini, 2020; Jacquin et al., 2019; Álvarez, Oliva, & Valera, 2012; Zapata et al., 2012). Despite showing significant advancements with all these tools for the agriculture field, there remains a glaring deficiency in software solutions specifically tailored to assist qualitative research and participation methods.

The use of a web system on participatory approaches, particularly the one proposed in this work, can bring several advantages. From a theoretical perspective, it not only provides insights into the evolution of these participatory methods, but also establishes a foundational framework that bridges the gap between ICT and participatory techniques, setting the stage for subsequent research in this domain. Practical benefits include the wider distribution and dissemination of results, data transparency, the unification or centralization of the research made using the methods, the organization of data, the possibility of automation on report generation for faster feedback for the community, better communication and collaboration between team members, and data safety with periodic backups. Nonetheless, the software could serve as a platform for preparing new researchers with help and tips section for each of the methods' techniques.

The primary objective of this work is to identify the requirements, plan, design, assess the complexity, and implement a system to support the Rapid Participatory and Emancipatory Research (RPER). The software can receive input from users, deal with separate roles like project coordinators, team members and visitors and generate automated report documents. All the technologies used for implementing the software are open-source and freely available, including the software itself, which is in a public repository of a cloud-based service for

version control. In this manuscript, we bring the theoretical framework and development process of the software, discuss functionality and utilization strategies, and propose potential directions for subsequent research in this field.

2. THEORETICAL FRAMEWORK

2.1 Social Management

Even though the term social management's first appearance in the social sciences field was in the 1960s (Porket, 1967), as reported by Felizardo et al. (2021), the most recognizable reference came from the text of Rovida (1985), which deals with self-managed experiences in the Spanish civil war (Cançado, Tenório, & Pereira, 2011; Tenório, 2012). Nonetheless, in Rovida's (1985) text, social management appears with the meaning of proletarian democracy for locals. However, the term is also used to describe the management of collective farms in the communist Soviet Union, also known as Sovkhoz.

According to Cançado (2011), the main references on the Social Management concept construction are the works of Tenório (2008a, 2008b, 2010, 2012), França Filho (2003, 2008), Fischer (2002), Fischer and Melo (2003, 2006), Boullosa (2009), and Boullosa and Schommer (2008, 2009). In this list, it is also important to include the own work of Cançado (2011), the book entitled "Social Management, the epistemology of a paradigm" from Cançado, Pereira, and Tenório (2015) and, more recently, Tenório and Araújo (2021) alongside Davel, Xavier, and Cançado (2020). Academic work in social management is extensive and involves a set of scientific articles, books, dissertations, thesis, and other bibliographic materials that are being produced in different education and research institutions with different theoretical approaches and empirical studies, thus, controversies arose in the field.

As an example of this kind of dispute, Araújo (2012) defends the concept of Social Management as multi-paradigmatic, polysemic, and a field under construction. He states that it is a field of knowledge in a preliminary stage in which the multidisciplinary character prevails. On the other hand, Cançado (2011) and Cançado, Pereira, and Tenório (2015) argue that Social Management has already achieved much progress and has a consistent theoretical body approaching its first paradigm, or in other words, with specific theoretical foundations.

In order to demonstrate that Social Management passes the criteria to be accepted as a science, the authors compare the maturity of Social Management with the criteria proposed by Popper, Kuhn, Lakatos, Feyerabend, Chalmers, Boaventura de Souza Santos and, Pedro Demo. This way, attempting to prove scientifically that social management is a field of knowledge that could be characterized as a science. The academic debate about the divergences is still in progress, as can be observed in the works of Araújo (2012), Cançado (2013), and Tenório and Araújo (2021), for example.

As recently stated by Tenório and Araújo (2021), social management arises, in opposition to strategic management, trying to achieve a fairer society. A society that is democratically articulated in the management of its interests, other than the interests of the market. It is, therefore, the opposition to strategic management as it, according to Tenório (1998), tries to replace technobureaucratic, monological management with participatory and dialogical management, one that the decision-making process is exercised amongst different social subjects. The distinctions between these management approaches are highlighted by other numerous scholarly works (Pimentel, 2014; Cançado, Villela, & Sausen, 2016; Tenório & Araújo, 2021; do Carmo et al., 2023). In social management, the decision-making authority is shared among the participants in the action using a dialogical managerial process. This seminal concept by Tenório (1998) is one of the most cited in the literature on this subject and it assumes Habermas' (1984, 1987) communicative action and the deliberative democracy concept as its analytical premises.

Tenorio and Araujo (2021) stated that despite the concept of social management being already on the agenda of the South American academy for quite some time, its understanding is not unanimous, and the concept is still not fully known. Notwithstanding, the authors insist that social management, since the early 1990s, has been an opposition and alternative to strategic management. Thus, it is a schism, a heterodox perspective against the mainstream, a concept of resistance not taken as an end in itself or as a goal of politics, but as a beginning and as a possibility, as the relationship between oppression and resistance, with no appeal to the sense of maximum agency of the modern subject.

The concept of social management is not fully formed and continues to evolve, with the existing academic debates shaping its progression and refinement. However, there is a common and convergent point in every work, social management is based on participation. In addition, it has flexible delimitation, and it is based on the ideal Weberian type (Weber,

2017). This means that it has a path to be followed as a guide, but the end possibly will not be fully achieved. This path, however, is conducted by some characteristics in collective decision-making with the characteristics being: no coercion, maximum transparency, intelligibility, dialogicity, aiming at emancipation.

2.2 Rapid Participatory Emancipatory Research (RPER)

To accurately appraise the reality of an organization, a rural community, small groups, or a collectivity from the perspective of Social Management, in relation to organizational change and sustainable development, it is necessary to use participatory methods based on dialogical processes of transformation of reality. It was with this aim in mind that the Rapid Rural Appraisal (RRA) emerged, and by 1979 it had its own thematic workshop and conference (Barnett, 1979; Workshop on Rapid Rural Appraisal, 1979; Conference on Rapid Rural Appraisal, 1979). After some time, Chambers (1981) provided one of the foundational expositions on RRA, elucidating the method's rationale and repertoire, emphasizing its significance in obtaining reliable data swiftly and efficiently. However, as the decade unfolded, there was an increasing awareness of the necessity for a more collaborative approach. This thought led to the evolution of RRA into the Participatory Rural Appraisal (PRA) in the late 1980s. This approach prioritized the active involvement of local communities in the research process, ensuring their voices and insights were central to the findings. In a seminal work, Chambers (1994) traced the origins and practices of PRA, highlighting the transformative shift from the more observational RRA to the inclusive and collaborative nature of PRA. This evolution underscored the realization that sustainable and impactful development necessitates the active engagement of the communities it seeks to benefit.

The RPER was established on the foundational principles of both RRA and PRA methods. It integrates the tenets of critical theory, predominantly from the Habermasian communicative action theory (Habermas, 1984, 1987), and is also deeply influenced by Paulo Freire's approach to dialogical education (Freire, 2018). Thus, RPER became a path for the application of Social Management theory (Teixeira et al., 2019).According to the method's creator, Pereira (2017), RPER is not entirely characterized as an action-research, it has the

presence of an interdisciplinary team, external to the collectivity and uses participatory techniques, although, it uses such methods in the research process and in the construction of inter-subjectivities. According to the author, in the RPER, the main role of the interdisciplinary team is to guide participants to identify their own problems, their causes, and possible solutions, recognizing their demands within a principle of dialogical otherness. Thus, the participatory approach of this method is based on the knowledge, aspirations, and creative capacity of the participants, in addition to the involvement of other social actors. Therefore, in the methodological process of the RPER, a dialogical communicative action occurs and causes the commitment between the social actors involved. This gives the research a characteristic of a participatory development process. In addition to that, the interdisciplinary characteristics of the external team enable dialogic interaction with participants in correspondence to various aspects of their socio-economic, political, cultural, and environmental reality. That makes it possible for the participants to capture, understand, register, and communicate properly about different problems.

In general terms, the objectives of the RPER are focused on the basis of a process where the awareness of the participants allows them to move from a situation of dependency (also known as tutorial) to a sustained and emancipated situation as mentioned in the dialogical education perspective by Freire (2018). The main objectives of the method are: 1) to identify and analyze the participants' generated themes to motivate them methodologically to problematize their own reality, establishing their priorities and evaluating the actions that they themselves can carry out with those that would be the responsibility of local, state, or federal institutions; 2) to collect information of qualitative and quantitative natures in order to develop action strategies for the participants; and 3) to identify structural or potential organizational limitations of the participants (Pereira, 2017).

RPER is used to instrumentalize the concept of Social Management. It has as its methodological assumption the participation of the community that will experience the research process in conjunction with the interdisciplinary team. It is an approach and intervention methodology that is not in a tutorial format but one that has the capacity to promote participation and commitment from those involved. More details and information on the stages of the RPER will be explained in the Results and Discussion section of this work since they are part of the software requisites analysis and implementation.

3. METHODOLOGY

In order to carry out the implementation of the software, a development lifecycle model was used, which is a structure that contains processes, activities, and tasks related to the development, operation, and maintenance of a software product, covering the life of the system, from the definition of its requirements to the end of its use (ISO/IEC/IEEE 12207, 2017). However, there is no absolute consensus on software development lifecycle models, but traditional models are sequential and include models such as waterfall, spiral, or V-shaped (Ehrler, Lovis & Blondon, 2019). For this study, the waterfall model was chosen due to its great success, simplicity, and systematic nature (Bassil, 2012; Kumar & Bhatia, 2014). Precisely because of these characteristics, the waterfall model was and still is used by many software development companies and industrial manufacturers as the main technique to plan, build and maintain their products (Munassar & Govardhan, 2010; Susilo, 2018; Firzatullah, 2021).

The waterfall model was first introduced by Benington (1956) and modified by Royce (1970). Bennington's original waterfall model recommended that software be developed in the following stages: operational analysis, operational specification, design and coding specification, development, and testing. Anticipating that there could be difficulties and unforeseen events, Royce (1970) improved this model, where at the end of each stage, feedback would be added so that each previous stage could be revisited, he also suggested a preliminary requirements phase (Figure 1).
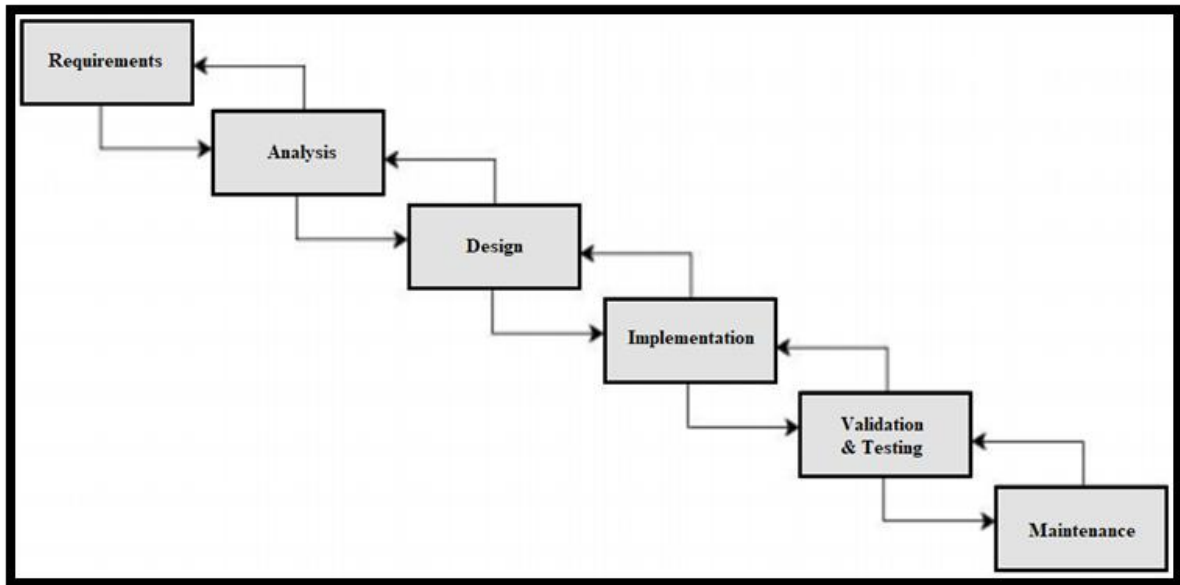
Figure 1 – Waterfall Model Diagram for Software Development.
Source: Adapted from Ruparelia (2010).

The model phases can be summarized as follows (Royce, 1970; Bassil, 2012):

Requirements Phase - Also known as planning, or system requirements. As with research, this initial step consists of conducting a preliminary analysis to raise the problem, the objectives, and the needs or requirements of the software to be built. The business prerequisites are recognized at this stage, and, if possible, an initial measurement of the software should already be carried out at this stage.

Analysis Phase - This phase represents a complete and comprehensive description of the behavior of the software to be developed. Here functional and non-functional requirements are defined in more detail, including classes, their relationships, functions, software attributes, interface requirements, and database requirements.

Design Phase - It is the process of planning and solving problems for a software solution, including the initial visuals. In this phase, the developers define the plan for a solution that includes algorithm design, software architecture design, graphical user interface design, among others.

Development Phase - Refers to the realization of business requirements and design specifications in an executable program, database, website, desktop application, and/or mobile

application, that is, a concrete software component will be done in this phase using programming and implementation.

Validation and Testing Phase - It is the process of verifying whether a software solution meets the original requirements and specifications and if it fulfills the intended objective. In addition, the testing phase is the time to perform code debugging, in which errors and system failures are sought and corrected.

Maintenance Phase - It is the process of modifying a software solution after delivery and deployment to refine the output, correct errors, and improve performance or quality.

The general procedure starts with the identification of the requirements and needs of the project through the authors' experience in software development and knowledge of the RPER method. The target audience for using the software was determined as the entire interdisciplinary team responsible for applying the method. All the requirements and requisites of the process that would be affected somehow by technology to be developed are detailed in the results topic.

The discipline of Business Process Management (BPM) was used to carry out the requirements mapping. BPM includes concepts, methods, and techniques to support the representation and execution of Business Processes (Weske, 2007). The BPM approach has been increasingly applied in the business scenario in recent years (Baklizky & Fantinato, 2012) and has proven to be a powerful way of solving or contributing significantly to the solution of a series of organizational problems, allowing for the improvement of business processes and, consequently, improved results obtained (Baklizky & Fantinato, 2012). The union of business management and information technology allows for the alignment between the processes and the strategic objectives to be achieved. In business process modeling, the main objective is to produce a description of reality, for example, the way in which a business transaction is carried out to understand it and, eventually, modify it to incorporate improvements in it. Consequently, it is important to have a notation that allows the essence of the business to be modeled as clearly as possible (Rodríguez, Fernández-Medina & Piattini, 2007). This notation has the acronym BPMN and for this study two elements of the notation will be used. Basically, the activity, represented by a rectangle with rounded edges, and the

sequence flow, represented by an arrow indicating the process flow. Each activity will have mapped the requirements that can be accomplished or supported by the software.

After the initial requirements mapping, the Function Point Analysis (FPA) technique was used to measure the software. This is a complete technique to measure software from the system requirements point of view, even in the early requirements planning and analysis stages. FPA is part of one of the Functional Size Measurement (FSM) methods, which was introduced by Albrecht (1979) as a method for measuring the amount of complexity and functionality in a software project. In the FPA procedure, there are a variety of transactions to be accounted for, including data received, sent, or to be processed by the system and its access to internal and external databases (Rohayani, Gaol, Soewito & Hendric, 2017). Despite accounting for these details, the analysis should only be used with the business requirements that are clear to users and is independent of technical details such as the choice of programming languages and technologies to be used.

4. RESULTS AND DISCUSSION

4.1 Functionality Planning for the RPER's Steps

The RPER's methodological intervention process follows a script, which can be defined as shown in Figure 2 (Pereira, 2017). Almost all steps can benefit from the software implementation in different ways, the details of each step will be presented next.

Figure 2 – Methodological process of the Rapid Participatory Emancipatory Research (RPER) intervention steps

Source: Pereira (2017).

Formation of the interdisciplinary team - At this stage, it is already possible to predict the need for the system to support the registration of users. Thus, a CRUD for users is needed – CRUD are the four basic operations for data manipulation, which is create, read, update, and delete data from a table in the database. In addition, there must also be a registration of roles and the association between roles to users. These roles include being a member of a RPER and coordinator, which can add or remove other users as members of the interdisciplinary RPER team.

Preparation and training of the interdisciplinary team - To help with this step, the system can have the following functionalities: a) A page with step-by-step about the RPER method described using text and graphical visualizations. b) A help button on each of the system screens with useful information about each system functionality and step.

Elaboration of the generating themes framework table to be used as a guide to the techniques that will make up the RPER - Despite not being specified in the Figure 2 scheme, this is an important part of the team preparation and we believed to be important to make sure it will be added in the system. Similar to what will happen in most steps, here the system will allow members of a particular RPER to add content to a blank editor page, where they can work together in the same document. Also, at this page, the help link could provide examples of tables already made on past applications of the method.

Collection and systematization of secondary information about the collectivity in focus and the historical context of the region - Here, the system allows the upload of images, text, and table inputs from members of that particular RPER application. The content will be saved in the database and all users will have access to the same content so they can collaborate with each other to form a single document for each RPER, similar to the step right before about the generating themes.

Direct contact and mobilization with the participating actors or community - For this step the system has no interference, everything must be done in person or sometimes over the phone/video conferences.

Fieldwork with the community following the methodological process using previously defined participatory techniques, including interviews - Especially due to the possibility of no internet connection in most places where the RPER method is applied, it will not be possible to count on having the system work in loco for most places, since it is a web-based software with integrated options between several different users at the same time. Nonetheless, the functionalities of fieldwork will be created to enable the insertion, storage, and organization of all data collected during the application, even afterward. CRUD functions for all field work activities, enable the insertion of images, tables, charts, and text obtained during each used technique. The complete list and purpose of each technique can be found in table 1. In summary the software will be able to be a place where the interdisciplinary team members could save: the information on all collective participants acquired during their presentation;

data obtained during the historical mapping; inputs acquired during the transect walk; details of public and private organizations that have links with the community for the stage named Venn diagram; facts on the seasonal calendar; findings about the community daily routine habits; records about the input and output technique; whole transcripts and insights from interviews and focus groups, with guiding pre-set questions; the reality and objective matrix data; and finally, the results of the priority election step.

The RPER fieldwork phase should be carried out over a period of three to five consecutive days by an interdisciplinary team with approximately five researchers from different backgrounds. Before the fieldwork, the group of researchers must have already contacted the community where the method will be applied. It is important that everybody knows some basic information about the community, such as type, structure, who are the members and leaders, among other aspects. After that, the application team and the community should schedule a date for the fieldwork application. As mentioned, there are several techniques that can be applied during this phase. Table 1 presents a summary of field activities that can be carried out during the application and its purpose. It is important to emphasize that the method is flexible, enabling changes in the choice and organization of the participatory techniques to capture the reality experienced by the participants of any given collectivity. The system is prepared for that, where each activity can be marked as not applicable, if necessary and with optional other fieldwork where additional fieldwork not initially predicted can be added to appear in the final report.

Technique name	Technique Purpose
Presentation of the interdisciplinary team and members of the community	Identify who the participants are (name, age, marital status, occupation, and other information).
Historical mapping	Draw a map of the location that represents the organization or social phenomenon in the perception of the participants.
Transect walk	The team must walk across the map drawn in the previous step to verify on the spot the description made by them, photographing and/or filming the landscape.
Venn diagram	Identify and evaluate public and private organizations that have importance and performance in the organization in the perception of the participants.
Seasonal calendar	Arrange all the organization's activities during the previous year in a graph.
Input and output	Analyze the situation of the production system in relation to the market context that involves the economic activities developed by the organization.

Semi-structured interviews	Allow for the objective comparison of opinions while also providing an opportunity to spontaneously explore topics relevant to that collectivity member. In addition, it requires the interviewer to have prior knowledge about the interviewee and the topic to be addressed.
Focus group	It aims to obtain qualitative information on the themes that generate collectivity and have as a principle a focused, previously determined discussion.
Daily routine	Identify day-to-day activities and the division of labor in the organization while planning future activities.
Reality and objective matrix	Identify problems, their causes, and possible solutions in the perception of the participants themselves.
Priorities election	Identify the social, economic, political, and technical-productive priorities of the participants through a democratic election.
Other fieldwork	While many fieldwork techniques are already encompassed in the method, its theory clearly allows for adaptability. Depending on the collective needs, certain techniques can be included or omitted.

Table 1 - Rapid Participatory Emancipatory Research (RPER) fieldwork stages and techniques
Source: adapted from Pereira (2017).

Systematization, analysis, and interpretation of all information collected - This can be used after the analysis to insert content about the data gathered and studied. On this page the team members can also insert text and figures related to the interpretation of the data.

Elaboration of the final report - It is important that all the information collected is inserted into the system beforehand so it can be used to enable the final report generation. At first, the system will contain a button to generate a Microsoft Word report with a pre-defined style and introduction.

Apart from the already mentioned not applicable status available for each step and fieldwork activity, the system offers three additional status options for each page: unstarted, completed, and in progress. These indicate the current stage of each step within the RPER application. These statuses serve two primary purposes in the system. First, the software features a progress bar that automatically calculates the completion percentage of the RPER application, counting steps marked as completed or not applicable. Second, the statuses guide the automated report generation. Only pages with the status completed or in progress are selected for printing to form the final document.

For the data analysis and interpretation, everything should be carried out by the interdisciplinary team members following the RPER principles, that is, using content analysis (Bardin, 1977). This analysis is considered a fundamental phase of the research process for

the RPER method. It is another step where the software can facilitate and speed up the process as much of the information should be collected by now and the team members can work cooperatively and simultaneously before selecting the final report elaboration. The concept of content analysis is given by Bardin (1977) as a set of communication analysis techniques that use systematic and objective procedures to describe the message content. According to the author, content analysis follows three phases: 1) pre-analysis, 2) exploration of the material, and 3) treatment, inference, and interpretation of results. The purpose of this analysis is to reveal the meaning of the ideas and values expressed during the research process by the participants.

During the RPER, the interpretation of the participating actors' ideas and values is enriched by the discussion about the materials collected and by the triangulation of information, which confers quality, validity, and fidelity of the information to the researched reality. Possible discrepancies between the actual situation of the community and the thematic universe in which they fit must also be analyzed, contrasting the information presented by the participants and the technical-scientific knowledge of the interdisciplinary team. Thus, the RPER seeks to explore, qualitatively and quantitatively, the generating themes, considering the whole set and attributing a "holistic" character to the information collection process during the analyses. Finally, during the data interpretation stage, it is necessary to distance the team from the place where the research was carried out to put into practice the process of critical reflection on the information collected.

Figure 3 offers a comprehensive view of the RPER application process using a BPM diagram, illustrating the software features associated with each activity. Each functionality is numbered for easy reference and to track their frequency of appearance.
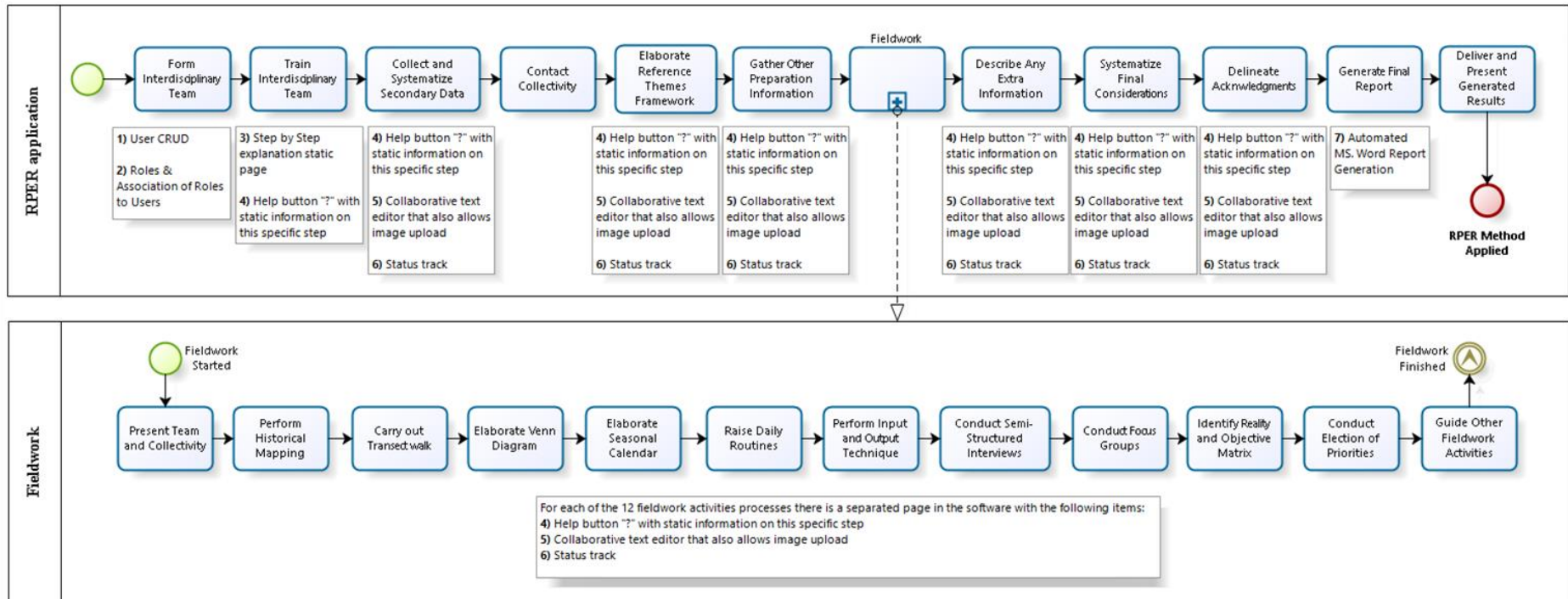
Figure 3 - Business Process Management (BPM) diagram of the Rapid Participatory Emancipatory Research (RPER) intervention method process and the respective planned functionalities for the system.

4.2 RPER Software Function Point Analysis (FPA)

Albrecht (1979) initially proposed Function Point Analysis (FPA) as a strategic approach to quantitatively assess both the complexity and functionality inherent in a software endeavor. Within the framework of FPA, it's imperative to consider an array of transactions. These encompass data that the system receives, sends, or processes, as well as its interactions with both internal and external database structures (Rohayani et al., 2017).

Within the realm of software development, the foundational operations associated with data management are encapsulated by the acronym CRUD, denoting Create, Read, Update, and Delete, as already mentioned in this manuscript. When delving into function point analysis, these operations are equivalently recognized as the foundational activities for interaction with the system's Internal Logic Files (ILFs), that is, persistent data structures within a software application that store and manage the system's internal data (IFPUG, 2004).

Table 2 elucidates the desired system functionalities according to the BPM established in the previous topics and their corresponding calculated total function points. It offers a comprehensive view of each individual functionality point. Every row of the table delineates a specific functionality with its name, brief description and numerical designation which corresponds to the ones mapped using BPM shown in the previous section.

Functionality	Overview	FP
1) Users CRUD	CRUD operations for the users, this defines the possibility of user creation in the system, update information such as name and password and update profile picture, for example.	19
2) Roles & Users/Roles Association	A user is given the status of a viewer for all registered RPERs when he/she fist join the system, but it is known that they can became members or even coordinate a RPER, this functionality controls this kind of association.	22
3) Step by Step Explanation Page	Just a static page that will contain information to guide current and future interdisciplinary team members on how to proceed with a RPER application.	3
4) Help Button "?" Pages	This is also a static page with information, but instead of a macro view of the applications, using this help button users can see information on each individual step of the method, including examples of past uses.	54
5) Text Editor with Image Handling	Collaborative text editor for each step of the method, so users can insert, update, delete and/or just inspect text, images, and tables for each page of the system. This is the main functionality in the whole software where users will input most of the data and information gathered.	360

6) Status Tracking Info	With four possible status options, not applicable, unstarted, completed, and in progress, each step of the application will be controlled by the team members to keep track of their progress and select what will be printed in the report.	57
7) Automated Report	With this functionality, users can generate a report document with all the information placed into the system. Initially the software will only be able to create a Microsoft Word file, but the choices could extend in the future.	4
8) Summary Page with Progress Bar	This page is a dynamic page with summarized information about the RPER, such as its avatar image, team members, and progress, monitored by evaluating the status of each step.	10
9) RPER CRUD	CRUD operations for the RPER itself, where it is possible to create the method for an application in a collectivity, choose its avatar picture and by default the coordinator will be person that initiate the RPER.	13

Total Function Points: 542

Table 2– Function points for the functionalities mapped for the software.

Starting with the users CRUD functionality, this was evaluated based on several components. External Inputs (EI) for creation, updating, and deletion of users accounted for 9 points. The display of user details, categorized under External Inquiry (EQ), contributed another 3 points. Additionally, the Internal Logical Files (ILF) for user data storage added 7 points, culminating in a total of 19 function points for this segment.

To ensure there is no confusion, an EQ, worth 3 functions points, typically involves both retrieving and presenting data without significant transformation to it. External Output (EO) involves processing logic that changes the behavior or form of the data, like doing calculations before presenting it, that is why it is accounted for 4 function points each. That is the reason user details being displayed are more of an inquiry operation rather than an output operation.

Roles and users/roles association is an important functionality within the software, responsible for the management of roles to users. The processes of role assignment and removal, both categorized under EIs, together they contributed 8 points since they fall under the average complexity classification for interacting with two ILF at once. The ILFs, which holds user data and the intricate associations between specific RPER applications and their members, summed up to 14 points, 7 each. Thus, the aggregate function points for this segment amounted to 22.

EIs refer to processes in which data enters the software system from an external application or user. These inputs do not necessarily have to update the ILF, but often they do. The primary intent behind an EI is to maintain some form of ILF or to influence the behavior of the system. An EI is characterized by its complexity, which is determined by the number of data elements it manages and the number of ILFs it references. In the context of the RPER software's roles and users/roles association functionality, an EI is the process where a coordinator assigns or removes a member role to/from a user. This role will influence the system by updating the user's permissions or access rights based on it. These processes of assigning and removing roles are typical examples of EIs in the function point analysis.

The software also offers a step-by-step full explanation of the method and help pages that provide guidance for each of the 18 steps of the RPER application. In total there are 3 preparation pages, 12 fieldwork pages, and 3 more after fieldwork steps that can withhold separate information each. The viewing of unique content for these pages, classified under External Inquiries (EQ). The sum of 3 function points for each of these 18 pages, 54, plus the 3 for the step-by-step document generated a total of 57 points.

Next, we have the text editor with image handling, this tool facilitates content management across all 18 steps. This functionality involves 162 points from EIs for adding, updating, and deleting content (3 operations times 3 function point times 18 different content pages). Also, the display of this content, categorized under EQ, added another 54 points, 3 for each page. The ILF, for storing this content in the database, contributed 126 points, since it uses 18 unique tables to save the content of each page. This led to an aggregate of 360 function points for this functionality.

Status tracking information enables the software to monitor and present the status of each of the 18 RPER steps. This functionality amassed 54 points from EIs dedicated to status dynamic updates and an additional 3 points from EQ used to display the current status of each step of a given method, totaling 57 points. On another functionality, a user has the option to generate the report merging the information from all the steps in a single Microsoft Word file, despite being technically challenging, this task falls under a single EO contributing in mere 4 points to the overall function point count.

The summary page with progress bar displays information on the RPER avatar's image, team members, and roles which account for 3 points as EQ. It also enables members to update the

RPER avatar photo, adding 3 points as EIs. And it calculates and presents the progress percentage for the RPER application, 4 points as an EO. All of this results in 10 function points for this segment. Lastly, the RPER Creation operation to allow the management of the RPER itself, was assessed. In this version of the software it is only possible for users to create the RPER, and all the updates possible on it were already dealt with in previous functionalities, so we only have to add the EIs for the creation operation, 3 points, the displaying of RPER details in the RPERs list, which falls under External Inquiries (EQ) adding 3 points, and the ILF for storing RPER data, that contributed 7 points, bringing the total for this section to 13 function points.

The RPER software, with its set of functionalities and interactions, encompasses a total of 542 function points, providing a robust measure of its complexity and underscoring the intricacies involved in its development and maintenance. The Function Point Analysis technique considers the effort required to produce the software, however, to transform this points effort into number of hours of work is very subjective. This can vary depending on the programming language chosen and the knowledge of the technicians who will produce the system, for example.

Nonetheless, expert knowledge provides a metric suggesting that in modern programming languages, one function point equates to approximately 10 hours of effort from a well-trained professional, which fits with what is indicated by other researchers. While in the past this value reached fourteen hours per point (Morris, 2001), more recent studies indicate that this value ranges from about eight to eleven hours depending on the project type, software system, application area and technology involved (Chrobot, 2011; Czarnacka, 2012). The International Software Benchmarking Standards Group (ISBSG, 2023) supports this estimate, particularly for "medium 2" size projects (spanning from 300 to 1000 function points). Consequently, completing such a system would require roughly 5420 hours of dedicated full-time work, equating to about two years and eight months. Subsequent sections compare this estimation with the actual development time spent.

4.3 Software Interface Prototyping and Wireframe

There are several free tools that help in the system prototyping stage. In this work we use Figma (2021), a vector graphics editor and prototyping tool which is primarily web browser based. The software is focused on graphical user interface development and user experience design, also known as UI/UX (Franco, 2021). Figma is mainly a browser-based application, but there are desktop versions available for macOS and Windows. In addition, it has vector tools for proficient illustrations and code generation. Furthermore, the software can be applied to image manipulation (Kadam, Ahirrao, & Kotecha, 2021). Figma allows the resize, crop, adjustment of colors, and filters application in images like contrast, shadows, mirror, blur, exposure, highlight, and many others.

The designed graphical interface can be visualized in Figures 4 and 5. Figure 4 shows the logo created for the software, the login screen, and the account creation screen. In Figure 5, two screens of the system are presented. The screen on the left lists all RPERs in progress or finished in the format of a product cards design, where the title of the application and a photo representing it will be highlighted. Also, on the same interface, it is possible to check the position of the search bar and the sorting functionalities. The button to add a new RPER is also present. The other screen, located on the right of figure 5, unveils an example of RPER already in progress and the menu with the mapped features accounted for in the previous sections of this work. It is also possible to see the featured image, also known as RPER avatar, other images inserted in the particular example project and the application progress based on steps already finished or underway. Each step status is listed as a graphical small circle before the step's name. The empty circle for example indicates an unstarted step, while the full circle suggests a completed task. This design was done before any coding, however the end result of the software precisely followed this plan.

4.4 Software Back-End and Front-End Implementation

The back-end of the RPER software serves as the backbone, ensuring data integrity, security, and communication with one or multiple front-end options (e.g. Web Application, Mobile App). It functions as the foundational infrastructure where data storage, processing, and business logic reside. In our case it also delineates a set of conventions for creating, retrieving, updating, and deleting data, thereby ensuring the seamless interplay of data and

operations between the front-end and back-end systems. The most important technologies employed for this step of the software development included: Node.js, an open-source server environment, Express as the free and open-source back-end web application framework, Postgres database as the free and open-source relational database management system (RDBMS), and TypeScript as the open-source high-level programming language that builds on JavaScript.

Node.js is a multi-platform, open-source runtime environment that executes JavaScript or TypeScript both on the client-side and the server-side. This facilitates the creation of a dynamic web system even before it is relayed to the user's browser. Node.js harmonizes web application development around a singular programming language, simplifying its coding process. In recent years, Node.js has garnered significant accolades. For instance, LinkedIn's mobile application transitioned from "Ruby on Rails" to Node.js, leading to a reduction from 30 data servers to a mere three, all the while retaining the same user traffic (Paul, 2012). Other industry leaders like Netflix, PayPal, and Uber also leverage this technology (Lin & El Gebaly, 2016). In performance evaluations juxtaposing Node.js against traditional server environments, systematic tests have consistently shown it outpacing its competitors (Chitra & Satapathy, 2017). Carter (2014) further praised Node.js as a platform designed for rapid and easy system development with significant scalability for network applications.

The choice of using Express, a minimal and flexible Node.js web framework, ensured a strong foundation for building the application's programming interface (API). Express, when combined with Node.js, enabled the creation of a powerful representational state transfer API (RESTful API), which serves as the bridge between the software's front-end and its PostgreSQL database. Express is used at large companies, such as Twitter, now "X" (StackShare, 2023)

Data management and storage is the essence of the RPER software. Given the intricate nature of participatory appraisals and the depth of data they produce, a reliable and efficient database system was paramount. PostgreSQL, a powerful open-source relational database, was the chosen database system. Given its reputation for extensibility, performance, and Structured Query Language (SQL) compliance (Makris, Tserpes, Spiliopoulos, Zissis, & Anagnostopoulos, 2021), PostgreSQL provided the necessary tools to handle the vast amounts of data that could be generated during several to come Rapid Participatory and Emancipatory Research (RPER) applications. Its atomicity, consistency, isolation, and durability compliant

(ACID-compliant) nature ensures that all transactions are processed reliably, a critical factor for a research-oriented application like this. As example, due to its robustness, companies like Instagram and Spotify are using PostgreSQL in their applications (Thomson Data, 2023)

Lastly, TypeScript, a typed superset of JavaScript (Microsoft, 2023), was used as the primary programming language for the back-end and for the front-end development. It offers strong programming concepts, including classes and interfaces, facilitating the building of large-scale JavaScript projects (Wu, Sun, Gong, Chen, Liao, & Jin, 2020). Based on various studies, both JavaScript and TypeScript had emerged as leading languages for quite some time and still are (Frederickson, 2018; Stackoverflow, 2017, Stackoverflow, 2022). TypeScript's static typing feature, combined with its powerful object-oriented programming capabilities, ensured that our codebase will remain maintainable, a critical aspect for any software expected to last long and evolve over time.

For our front-end, we faced a decision between developing a mobile app or a web application. While we initially leaned towards a mobile app, we strategically pivoted to a Web Application. Web apps provide instant cross-platform access, facilitating quicker deployment and wider user engagement. Despite not being developed specifically as a mobile app, our web system was designed with responsive principles and adjusts seamlessly to various screen sizes and resolutions, ensuring optimal viewing on phones, tablets, and computers alike. The framework we chose for development of the front-end was React (Meta, 2023), a free and open-source front-end library for building user interfaces based on components, primarily developed maintained by Meta (formerly known as Facebook). This not only expedited development but also simplifies potential future transitions. As React Native, a popular tool for developing mobile apps leverages React's core principles, it offers a smoother pathway to expand into a mobile app later, facilitating continuity and a unified user experience across platforms.

The front-end of the RPER software focuses on user experience, ensuring that data visualization, user input, and overall interaction are smooth and intuitive. The choice of React for building user interfaces laid the groundwork for a componentized and efficient front-end architecture. This modular approach allows for reusable components, enhancing the software's maintainability and scalability. Besides Typescript and React.js, other important tools were used in the front-end development, such as StyledComponents, SunEditor and Axios. We will briefly explain how these tools were used in our application.

Styled-components played a crucial role in the software's aesthetics and user experience. This library for React and React Native allowed us to utilize tagged template literals to style components, ensuring a clean and organized code structure. This approach also eliminated the need for mapping between styles and components, reducing potential errors and simplifying the styling process while ensuring the software's web pages were both responsive and interactive. For rich text editing capabilities, SunEditor, a lightweight yet powerful what you see is what you get (WYSIWYG) editor, was incorporated. This allowed users to generate detailed reports, documentation, and other essential research documents with ease. And finally, communication with the back-end was facilitated by Axios, a promise-based HTTP client for the browser and Node.js. Axios made it simpler to send asynchronous HTTP requests to REST endpoints, ensuring that data retrieval, posting, and other CRUD operations were handled smoothly.

All the technologies used for implementing the software are open-source and freely available, including the software itself which is in a public repository of a cloud-based service for version control. In summary, the combination of these technologies provided a robust, scalable, and user-friendly software solution, tailored specifically for the needs of RPER. Given that community participation lies at the heart of the topic, it was imperative to choose free and open-source tools. This not only echoes the principles of participatory research but also ensures that the platform remains adaptable to future needs, inviting contributions and fostering a sense of community ownership over its evolution.

The coding for the back-end and front-end started in June 2021 and was done regularly until August 2023, little over 2 years. It had the involvement of two experienced developers and one occasional third junior developer that helped with the front-end. The effort and time invested closely matched the initial projections from the function point analysis, especially considering none of the developers were dedicated full time to the project. By the time this manuscript was being drafted, both, the back-end and the front-end, had approximately eight thousand lines of code, each, in the back-end these lines were spread among basically three hundred files while in the front-end one hundred and thirty files were created, including pages and components. This amount accounts only for developed files, excluding the code from imported libraries and reused functions from external contributors.

5. CONCLUSIONS AND FUTURE WORK

This work used a professional approach to software development to create an initial version of an application in the Social Management field to enhance the capabilities of this theory, augment the RPER methodology with innovative information technology, and extend its reach. Based on the number of function points calculated, and the hours required for development it is evident that the system is of significant size. Despite the complexity of development, it is more important to note how the software can support the RPER method application in nearly every step of the way. This will consequently benefit society and the rural communities where the research was intended to be applied.

The thorough text description, coupled with illustrative software screens, make it easier for readers to grasp the developed work, facilitating their journey from conceptual understanding to tangible insights. Due to the development methodology adopted, the waterfall model, it is possible during the maintenance of the system to revisit previous steps to make changes in the design itself or in any of the functionalities already mapped, according to the necessity.

Beyond the immediate theoretical merits of applying social management, other accomplishments are expected with the use of a web system in the RPER applications. These benefits include the distribution and dissemination of results, even more transparency, the unification or centralization of the research made using the method, the organization of data, report generation automation, and better communication and collaboration between team members. But perhaps its most profound impact lies in its potential socio-economic ramifications, particularly in the realm of rural community engagement and qualitative research enhancement in agriculture.

As future work, we recommend the continuation of this system development, maintenance, and possible adaptations like integrating artificial intelligence capabilities and adaptation to other appraisal practices. As highlighted in the results, every single technology used to build the system is openly accessible and we made sure the RPER software be the same, guaranteeing the platform's flexibility for future demands and encouraging community contributions. Some other suggestions include a frequently asked questions page where users can pose questions and specialists give their responses, integrated video lessons with tips about the techniques and application steps, and interactive questionnaire for users to gauge

their proficiency and readiness to apply the method. Furthermore, it is also possible to suggest the construction of other systems using the concepts, techniques, and technologies presented in this work, especially those that bolster qualitative research in the agriculture domain, a methodology niche with a shortfall in information technology engagement.

Figure 4 - Rapid Participatory and Emancipatory Research (RPER) Software Graphical User Interface (GUI): Logo, Login, and Signup Screens.

Figure 5 - Rapid Participatory and Emancipatory Research (RPER) Software Graphical User Interface (GUI): Listing and Example Screens.

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ARTICLE 4 - SOCIAL MANAGEMENT METHOD APPLIED IN THE SOLUTION OF COLLECTIVE PROBLEMS: CASE STUDY WITH THE MEAT SHEEP ALLIANCE OF FLORIDA.

SOCIAL MANAGEMENT METHOD APPLIED IN THE SOLUTION OF COLLECTIVE PROBLEMS: Case Study with the Meat Sheep Alliance of Florida.

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SOCIAL MANAGEMENT METHOD APPLIED IN THE SOLUTION OF COLLECTIVE PROBLEMS: Case Study with the Meat Sheep Alliance of Florida.

Abstract

Purpose
This research delineates the application of social management principles, grounded in the principles of communicative action theory and dialogical education, to address collective problems faced by the Meat Sheep Alliance of Florida (MSA), aiming to promote dialogical interactions and identify community-centric issues.

Methodology
Utilizing the Rapid Participatory and Emancipatory Research (RPER) method, an adaptation of Participatory and Rapid Rural Appraisal, this study collects qualitative and quantitative data to later be analyzed using thematic content.

Findings
The MSA community faces multifaceted challenges including predation, disease management, regulation, labor shortages, and processing deficiencies. The research identified such issues through members' discussions and highlighted pathways to help achieve sustainable solutions to these problems.

Practical Implications
The findings offer a roadmap for agricultural alliances around the world to foster community-driven and extension practices to identify problems and goals, highlighting the value of participatory approaches in rural settings.

Theoretical Implications
By engaging with the social management paradigm and employing the RPER method, this study enriches the discourse on cooperative actions while enhancing how dialogical management actions, grounded in a rich theoretical foundation, could be applied.

Originality/Value
This research stands as a pioneering exploration into the application of social management principles in the meat sheep industry of Florida, a rapidly growing yet under-explored sector. It introduces fresh empirical insights, enhancing the discourse on agricultural education and extension.

Keywords
Social Management; Participatory Approach; Rapid Participatory and Emancipatory Research (RPER); Meat Sheep Alliance of Florida (MSA); Dialogical Management Actions; Rural and Agricultural Extension.

1 Introduction

Social management is a paradigm that has been growing steadily in recognition, grounded fundamentally in the deliberative processes aimed at fostering the common good. At its core, it advocates for dialogical management actions focused on the public interest, a concept brought to the forefront by Cançado, Pereira, and Tenório (2015). This concept finds synergy with the deliberative governance delineated by Dryzek (2012) and incorporates elements from the theories of well-understood public interest by Tocqueville (2003), the public sphere by Habermas (1991), and the social emancipation theory of Freire (1985).

The lineage of social management can be traced to a rich tapestry of works that have sought to explore and define it, including notable contributions from Tenório in a series of publications (2008a, 2008b, 2010, 2012), França Filho (2003, 2008), and Fischer (2002) among others, with recent additions to the discourse from Davel, Xavier, and Cançado (2020) and Tenório and Araújo (2021). This dense academic background has spurred debates, with scholars like Araújo (2012) contending it to be a field still under construction, characterized by its multi-paradigmatic and polysemic nature. In contrast, others assert the field has achieved significant progress, nearing its first paradigm with a solid theoretical foundation (Cançado, Pereira, and Tenório 2015; Cançado 2011).

Despite the academic disputes over its concepts, there is a consensus that social management pivots on participatory governance, promoting a democratic articulation of society's interests beyond market forces (Tenório and Araújo 2021). This perspective advocates replacing a technobureaucratic, monological management style with one that is participatory and dialogical, a notion initially proposed by Tenório (1998) and grounded in the communicative action theory of Habermas (1985a; 1985b). The approach leans heavily on principles of transparency, dialogicity, and the pursuit of emancipation, suggesting a managerial process that is inherently cooperative.

In an effort to apply the principles of social management practically and holistically, the Rapid Participatory and Emancipatory Research (RPER) method, formulated by Pereira (2017) and further developed by others (Teixeira et al. 2019; Teixeira et al. 2020), offers a promising avenue. Tailored to address the nuanced realities of social groups, including rural

and agricultural cooperatives, the RPER method leverages both qualitative and quantitative data to pinpoint problems and ideate potential solutions, fostering social change and sustainable development. Despite new, the method has been applied in many empirical research projects, tackling agricultural issues and community concerns in diverse regions and settings (Teixeira et al. 2020; Teixeira et al. 2019; Pereira 2017; Alcântara, Pereira, and Vieira 2018; Teixeira Cruz 2017; Pereira 2001; Teixeira, Marques, and Pereira 2017; Pereira and Little 1998; Pensa, Arévalo, and Marques 2007). Here, it was used in to collect data and work with the Meat Sheep Alliance of Florida (MSA), an organization founded in 1999 dedicated to the advancement of the sheep industry in Florida that promotes educational initiatives, share insights, and foster the sheep farmer community. RPER embodies a harmonious blend of critical theory and participatory strategies, bearing the potential to enhance traditional extension methodologies and pave the way for innovative approaches in agricultural education and extension. It represents a progressive evolution from classic extension methodologies (Chambers 1981; 1994), Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA), merging and expanding from foundational principles used in both.

In the broad scope of agriculture in the United States, sheep production has had a varied history. In the early history of the United States, several states initiated sheep farming primarily for wool production (Connor 1921). In 1609, the industry began in Jamestown, Virginia, and soon spread to other areas including Massachusetts in the 1620s with the introduction of wool-rich breeds and around the same time, New York embraced sheep farming, albeit facing initial hurdles (Connor 1921). The mid-1630s saw the advent of the industry in New Jersey and Delaware, spurred by Swedish settlers, while in 1683, Pennsylvania joined the endeavor through Quaker initiatives. Rhode Island too fostered sheep farming, additionally exporting sheep for breeding. Despite challenges, these states laid the groundwork for a self-sufficient wool production industry (Connor 1921). However, in recent decades there has been a considerable paradigm shift towards meat sheep farming owing to fluctuating market demands and economic factors (Jones 2004). Lupton (2008) reinforces that explaining that while in 1910, 57% of the income from sheep farming came from wool, this ratio changed drastically over the years, with wool accounting for less than 10% of the income by 2007. Meanwhile, lamb crops in the new millennium have been recorded to be higher than those in the 1920s, and the weight of dressed lambs increased from 18 kg to 32 kg from 1940 to the present (Lupton 2008). Florida's role in this transition is steadily evolving. While not historically a hub for sheep farming, recent scholarly attention has underscored the

growth of the industry in this region (Karki et al. 2018). Facilitated by the state's unique climatic conditions that support year-round grazing, an increasing ethnic population, and ongoing urbanization of rural regions (Xie et al. 2023), Florida is gradually transforming into a noteworthy player in the sheep and goat industry. Moreover, the shifting consumer preferences towards healthier, sustainable, and locally sourced products have further propelled this growth, as noted in various studies (Collins and Reau 2013; Ivanovic et al. 2016; Brouk et al. 2022; Brouk 2023).

Yet, this growing industry faces a myriad of challenges, paramount among which is predation, a significant concern highlighted for example in Mitchell et al. (2004). Farmers continually grapple with the threat posed by predators, such as coyotes, which necessitate vigilant monitoring and protective measures. Additionally, disease management remains critical, with conditions like scrapie and parasites representing a constant threat to flock health (Baylis and Goldmann 2004; Arsenopoulos et al. 2021; Acín et al. 2021; Fast and Groschup 2023). Market dynamics further compound the challenges faced by meat sheep producers in the USA. As elucidated in studies by Maza, Gracia, and Saied (2018), the market for sheep meat is relatively small compared to other meats, leading to fierce competition and narrow profit margins. The industry also contends with a significant influx of imports, a scenario that requires strategic market navigation to maintain profitability, despite the increase of demand driven by the stream of ethnic population (Ufer, Countryman, and Muhammad 2020). Moreover, regulatory hurdles present another layer of complexity. Stringent regulations surrounding animal welfare, environmental standards, and health protocols sometimes impose substantial compliance costs, particularly on small-scale farmers (Boldt et al., 2023). Further, the industry is experiencing a labor shortage (Charlton and Kostandini 2021), a trend echoed in wider agricultural narratives and pinpointed as a critical area of concern in sustaining the sector.

In navigating these intricate challenges, there lies a promising avenue in cooperative actions grounded in social management principles. Through collective problem-solving and participatory governance, it is envisioned that a pathway to a more resilient and sustainable future for the meat sheep industry can be forged, a premise that forms the focal point of this research. In the evolving landscape of agricultural education and extension, there exists a noticeable gap in the detailed, real-world application of participatory and democratic methodologies, particularly in industries such as the meat sheep sector in emerging regions

like the state of Florida. By grounding in social management principles and employing the RPER method, our research tries to fill this void, offering fresh, empirically-backed insights into the practical dynamics of participatory governance in agriculture. Moreover, it delves deep into the unique challenges faced by the MSA, a rapidly growing player in the meat sheep industry. By doing this, the research situates itself within an industry and a region that is gradually asserting its presence but yet has not been extensively explored in academic discourse. Through an investigation of the individual and collective challenges encountered in this locale, the study aims to unveil innovative community-centric strategies for problem-solving, thereby contributing to the global dialogue on sustainable extension agricultural practices and education.

Building upon the identified gaps, this study leverages the RPER method to scrutinize the organizational dynamics and operational challenges inherent to the MSA in Florida, USA. It is anchored in the belief that social management principles can foster community-driven problem identification and solution pathways. The objective then, is to utilize the applied participatory methodology to assist the members of the organization in identifying their individual and collective challenges and in devising pathways and goals to address these issues themselves. Through this lens, we seek to offer both a theoretical and practical blueprint that can guide similar agricultural communities globally towards a future that balances people, profit, and planet interests, remaining true to the real participatory principles of social management and cooperative action.

2 Methodology

This paper primarily employs qualitative methods, supplemented by minor quantitative analysis. To lay the groundwork for implementing social management principles, this research adopted the RPER method as its backbone. Conceived to decipher the complex realities of social groups, mainly agricultural cooperatives, RPER amalgamates qualitative and quantitative data collection techniques to swiftly delineate problems, their roots, and viable solutions with the end goal of fostering sustainable development and social change (Pereira 2017; Teixeira et al. 2019).

The RPER method, while not strictly an action-research approach, operates with the assistance of an external interdisciplinary team. This team aids participants in pinpointing

their dilemmas and devising potential resolutions through a dialogic process grounded in Habermas's communicative action theory (Habermas 1985a; 1985b) and inspired by Freire's dialogical education principles (Freire 1996). Pereira (2017) emphasized that this method encourages the participatory development process, fostering a rich dialogical interaction that encompasses various dimensions of participants' realities. The method's inception can be traced back to the well-known education and extension practices of RRA (Chambers 1981), which over time evolved into the PRA (Chambers 1994), gradually adopting a more collaborative focus. The transition was marked by an increasing emphasis on the direct involvement of local communities in the research process, a shift advocated by Chambers in his seminal works (Chambers 1981; 1994). The RPER method integrates the participatory essence of the PRA and the hastiness of the RRA, while infusing a critical theory perspective, thus emerging as a potent tool for applying social management principles.

The objectives of employing RPER in this study were manifold, centered on nurturing a setting where participants could transition from a state of dependency to one of sustained emancipation, a cornerstone of Freire's dialogic education theory (Freire 1996). The methodology sought to stimulate participants to engage actively with their realities, fostering a deeper understanding and enabling them to articulate their priorities and potential action strategies. Moreover, it aimed to spotlight any structural or organizational constraints the participants might face (Pereira 2017). The RPER method has served as the foundational approach in numerous empirical studies addressing agricultural challenges and community-related matters across various geographical locales and contexts (Teixeira et al. 2020; Teixeira et al. 2019; Pereira 2017; Alcântara, Pereira, and Vieira 2018; Teixeira Cruz 2017; Pereira 2001; Teixeira, Marques, and Pereira 2017; Pereira and Little 1998).

The methodology harbors a symbiotic relationship with social management concepts, promoting active participation and commitment from the community involved. It is structured to be non-tutorial yet capacitates participants to take charge of the change they wish to see, working hand in hand with the interdisciplinary team. The methodological process of RPER, akin to the circular process of qualitative research, is constituted by a combination of collective techniques and sequential individual techniques interconnected with each other, aiming to cumulatively gather information in a short span of time. Typically, the field implementation duration of the RPER ranges from three to five days. The intervention methodology of RPER follows a guide, which is outlined as follows:

a) Formation and preparation of the interdisciplinary team.

b) Collection and systemization of secondary information about the focused community and the historical context of the region where it operates.

c) Direct contact with participating actors or the community to communicate the initiation of the work.

d) Development of a semi-structured interview guide.

e) Creation of a reference frame for generating themes with a guide for utilizing the techniques that will make up the RPER.

f) Mobilization of social actors and the community.

g) Allocation of tasks to each member of the interdisciplinary team.

h) Fieldwork with the community, following the methodological process through the use of predetermined participatory techniques, including semi-structured interviews with key informants.

i) Pre-systemization, discussion, and interpretation of collected information by the interdisciplinary team at the end of each fieldwork day.

j) Systemization, analysis, and interpretation of all collected information.

k) Compilation of the final report.

l) Delivery and presentation of the final report by the team, discussing the results with the community as a continuity of the educational process and as a starting point for executing participatory planning.

m) Evaluation of the final work.

This sequence of RPER stages is schematically presented as a circular process of participatory intervention, as shown in Figure 1.

Figure 1 – Methodological Process of the Rapid Participatory Emancipatory Research (RPER) intervention steps.

Source: Pereira (2017, p. 89).

During the fieldwork period, various individual and group dynamics are utilized, serving to relax participants, encourage openness, and foster reflection on the "limit situations" and the "unprecedented feasible" aspects pertaining to each individual and the community as a whole. These dynamics facilitate empathy between the team and the community. Selecting the appropriate techniques for each situation and context of the community, and determining the sequence of their use are crucial decisions in achieving successful outcomes throughout the process. This is the *sine qua non* condition that characterizes and distinguishes the RPER method from other similar methodologies. It is not sufficient to claim the implementation of

RPER by using only one, two, or even three of the techniques that compose it. To assert that an interdisciplinary team executed the RPER, it is mandatory to follow a planned and conscious sequence of participatory techniques, aiming to initiate a dialogic educational process grounded in the community's specific generated theme framework, guided by participatory democratic principles and communicative action, with no more than 24 hour interval from one technique to another. Some of the most common techniques applied are shown in Table 1:

Technique name	Technique Purpose
Presentation of the interdisciplinary team and members of the community	Identify who the participants are (name, age, marital status, occupation, and other information).
Historical mapping	Draw a map of the location that represents the organization or social phenomenon in the perception of the participants.
Transect walk	The team must walk across the map drawn in the previous step to verify on the spot the description made by them, photographing and/or filming the landscape.
Venn diagram	Identify and evaluate public and private organizations that have importance and performance in the organization in the perception of the participants.
Seasonal calendar	Arrange all the organization's activities during the previous year in a graph.
Input and output	Analyze the situation of the production system in relation to the market context that involves the economic activities developed by the organization.
Semi-structured interviews	Allow for the objective comparison of opinions while also providing an opportunity to spontaneously explore topics relevant to that collectivity member. In addition, it requires the interviewer to have prior knowledge about the interviewee and the topic to be addressed.
Focus group	It aims to obtain qualitative information on the themes that generate collectivity and have as a principle a focused, previously determined discussion.
Daily routine	Identify day-to-day activities and the division of labor in the organization while planning future activities.
Reality and objective matrix	Identify problems, their causes, and possible solutions in the perception of the participants themselves.
Priorities election	Identify the social, economic, political, and technical-productive priorities of the participants through a democratic election.
Other fieldwork	While many fieldwork techniques are already encompassed in the method, its theory clearly allows for adaptability. Depending on the collective needs, certain techniques can be included or omitted.

Table 1 - Rapid Participatory Emancipatory Research (RPER) Fieldwork Stages and Techniques.
Source: adapted from Pereira (2017).

In the course of this study, we engaged with eight diverse members of the MSA using several techniques: Presentation, Semi-structured Interviews, Transect Walk, Daily Routine, Venn Diagram, Seasonal Calendar, Input and Output, Focus Group, Reality and Objective Matrix, and the Priorities Election. These participants were carefully selected to represent a spectrum of experiences and engagement levels with the industry, factoring in their production size and

roles within the alliance, ranging from board members to newcomers. Proximity to the meeting location and availability were also critical in the selection process to facilitate participation, although this constraint limited the inclusion of members residing farther away. Despite the modest participant count, the diversified representation and the qualitative focus of this study ensured a rich and insightful data pool. The intense engagement, spanning over five days of interviews and group meeting, culminated in a substantial database: a transcription of 15 hours of recordings yielding over 120,000 words, equivalent to roughly 440 pages of in-depth narratives and discussions. We reference each of the participants using the following encryption and aliases: Barbara Martin [BM1], Bethany Miller [BM2], for MSA Board Member 1 and 2; Ethan Mason [ExpM1], Edward Moore [ExpM2], Eric Mitchell [ExpM3] for Experienced Members 1 to 3; and Nathan Morris [NewM1], Nicole Montgomery [NewM2], Noah Murphy [NewM3] for Newcomer Member 1, 2, and 3 respectively. For the interdisciplinary team applying the methodology, we will have ITeam1 to ITeam4.

If on the one hand we have the RPER as the methodology for data gathering and interaction with the community, on the other hand this paper also utilizes a communication data analysis technique named Content Analysis. In determining the most suitable approach to conducting content analysis for this research, we have opted to employ the methodology delineated by one of the preeminent figures in this field, Laurence Bardin (2016), more specifically the thematic approach, also known as categorical. Bardin's rich history of contributions to content analysis lends a well-established and respected theoretical foundation to our research, aligning with the rigorous standards set forth in academic research. Furthermore, the large utilization of her methodology in scientific production (Nascimento et al. 2021) was also a deciding factor.

In the thematic content analysis approach delineated by Bardin (2016), the initial phase, known as the pre-analysis, entails the meticulous selection of materials and the formalization of objectives. Following this is the exploration phase where the core activity is coding; here, units of analysis are defined and categories for coding are developed, either emerging from the data or based on pre-established theories. In our case we used pre-determined categories according to a series of factors explained in more detail during the results. The process of thematization occurs concurrently, where potential recurring themes are identified and continually refined to capture the nuances more distinctly. As we transition to the treatment

phase, a systematic organization of data takes place, which includes the creation of a data matrix for a comprehensive visualization of themes, and a data reduction process to retain only the most pertinent information. Lastly, in the interpretation phase, we conducted an inference on the themes grounded in the research objectives.

3 Results and Discussion

3.1 RPER Fieldwork Findings

In this section, we initially present a summary of the findings at each phase of the RPER, delineating the techniques applied in collaboration with members of the MSA. The interdisciplinary team assembled for this study comprised individuals with expertise in areas pertinent to the study's focus. The first member was a PhD student specializing in social sciences, with a deep understanding of social management and previous experience in applying the RPER method. The second team member was a professor with a specialty in forage extension, focusing specifically on the production and economic viability of forage-livestock systems. The third contributor was an Animal Science PhD candidate with prior knowledge of ruminants and their role in greenhouse gas emissions. Rounding out the team was a veterinarian pursuing a PhD, with a specialization in livestock agro-ecosystems and ruminants. This diverse team was instrumental in ensuring a comprehensive approach to the research, bringing a rich array of perspectives and expertise to the project. Before implementing the RPER, in addition to engaging in theoretical readings, the team convened for two consecutive full days. This period was dedicated to acquiring training on the methodology, simulating its application, and establishing the theme framework that guided the selection of the appropriate techniques to be utilized, as outlined in the methodology section.

Prior to the meeting day with the association, two members from the interdisciplinary team visited the association members' farms to implement three techniques: Interview, Daily Routine, and Transect Walk. Due to the significant distance between the farms, the extensive duration of each interview, and the limited availability of the producers, a maximum of two interviews were feasible per day. To adhere to the RPER's requirements, these interviews

were scheduled for the days immediately preceding the general gathering. This stage yielded the following results.

In the first interview, Mr. Ethan Mason [ExpM1] shared his extensive history of raising various animals on his land since 1993, often describing it more as a hobby than a business. Mr. Ethan Mason [ExpM1] employs a hands-on approach in managing his livestock, which includes sheep and pigs, paying close attention to their health and dietary needs, particularly during the winter when the food supply becomes limited. Despite facing challenges such as predators and parasites, he maintains a cooperative relationship with other members of the MSA, leveraging their assistance when necessary. As part of the Transect Walk and similar to the other interviews, Mr. Ethan Mason [ExpM1] guided us through his farm, talking about topics such as the weight and price of hay bales and the potential for tourism on his farm, a prospect he doesn't intend to pursue. The tour also shed light on his role as a custom butcher, with clients and other MSA members bringing their sheep to him for slaughtering and butchering.

During the second interview, in the land of Mr. Eric Mitchell [ExpM3] and Mrs. Barbara Martin [BM1], Mrs. Barbara Martin [BM1], an important board member of the MSA, delves into her background in livestock farming, tracing her expertise to South Africa. Mrs. Barbara Martin [BM1] emphasizes the meticulous process she follows to ensure the high quality of her sheep, underscored by a range of tests performed on the animals before sale. She shares her daily routine, revealing the level of dedication required to manage a farm and maintain the well-being of the livestock. Despite the substantial challenges she faces, including difficulties in finding competent labor and the high costs associated with veterinary care, Mrs. Barbara Martin [BM1] remains committed to enhancing the quality of her sheep through improved genetics and effective management practices.

In their interview, Mr. Nathan Morris [NewM1] and Mrs. Nicole Montgomery [NewM2] narrate the journey of establishing their family-run farm, which started in 2012. They express their strong adherence to Christian values, which guide their choice to raise goats and sheep. The couple talks about their reliance on community networks and the limited interaction they have had with the MSA thus far. They mentioned that they recently became members of the alliance and bought their Dorper sheep, following a failed attempt to raise sheep in the past. Sharing their daily experiences, they discuss having seven children who help with the daily

farm routine. Making use of the transect walk during the interview, they highlighted the self-built infrastructure for milking and their next steps to increase the flock size by acquiring a breeding ram.

Noah Murphy [NewM3], a Brazilian immigrant with a background in real estate, shares his experiences transitioning to a farmer in Gainesville, Florida. He outlines his aspirations to notably expand his herd in the upcoming years and rely solely on grazing systems with a considerable land. Mr. Noah Murphy [NewM3] touches upon the distinct challenges he encounters in Florida compared to the advice he received from friends in South Dakota, like more worms due to the warmer weather and lack of slaughterhouse facilities. Despite facing these and other hurdles such as a scarcity of growing pasture this initial year, he remains determined to grow his small ruminant livestock business. He also emphasizes the direct involvement required in the American farming context, contrasting it with his home country where hiring labor is more straightforward.

Mrs. Bethany Miller [BM2] shares her rich history of sheep farming, tracing back to her initial exposure to hair sheep. Through years of experience, Mrs. Bethany Miller [BM2] has navigated various challenges, including bureaucratic hurdles and skyrocketing expenses in farming. She emphasizes the vital role of veterinarians in managing health issues in sheep and how difficult it can be to find them, highlighting the increasing difficulty in treating respiratory problems. Mrs. Bethany Miller [BM2] also delves into her efforts to generate interest in an annual sheep festival, contemplating the potential of university involvement to revitalize the event. She also mention the educational benefits of the MSA encounters where the members share their experience with one another and have professionals speaking about sheep farming while promoting the industry. Lastly, she also gave a testimony on how she almost sold the property due to the difficulty in finding a hired hand, until she eventually found one.

In the final interview, Mr. Edward Moore [ExpM2] recounts his journey from aspiring to establish a vineyard to becoming a livestock farmer in Florida. Mr. Edward Moore [ExpM2] exhibits a deep commitment to organic farming, reflecting on his learning experiences from a California institute. Despite daily unforeseen challenges, including recent climatic adversities, he manages to adapt and maintain a resilient operation. Mr. Edward Moore [ExpM2] shares his affection for his animals, portraying them as intelligent beings with individual

personalities. His story paints a vivid picture of the dedication and care that goes into sustainable farming practices. He considers his farm a business and tries to make money by selling meat and other farm products while facing challenges, such as high costs of feed and other expenses.

In the subsequent phase of the RPER, we organized another fieldwork session, this time all the interviewees were gathered together for an entire day. The session began with the introduction of the members; some were meeting each other for the first time. This introduction aimed to foster a comfortable environment encouraging open dialogue and participation. Additionally, every member of the interdisciplinary team was introduced, as not everyone was acquainted with all the MSA members present.

After the presentations and initial talk, ITeam1 introduced the intricate process of mapping out the seasonal calendar. Members of the alliance were handed a graph-like paper to categorize each month based on labor intensity. Despite the task's inherent difficulty, owing in part to varied lambing seasons among the members, a consensus emerged pointing to the early and middle parts of the year as the most labor-intensive periods. With lambing activities being the most demanding and a shared concern was the strenuous period of parasite treatment in the summer, a crucial task to ensure animal health by performing FAMACHA® test. The discussion highlighted the unpredictability of farming, with obstacles ranging from unexpected infrastructure damage to severe weather events such as hurricanes in the region. Figure 2 presents a sheet filled in by one of the members, highlighting the months and activities most demanding, March with lambing, parasite testing and treatment during the summer months, and October with plating season.
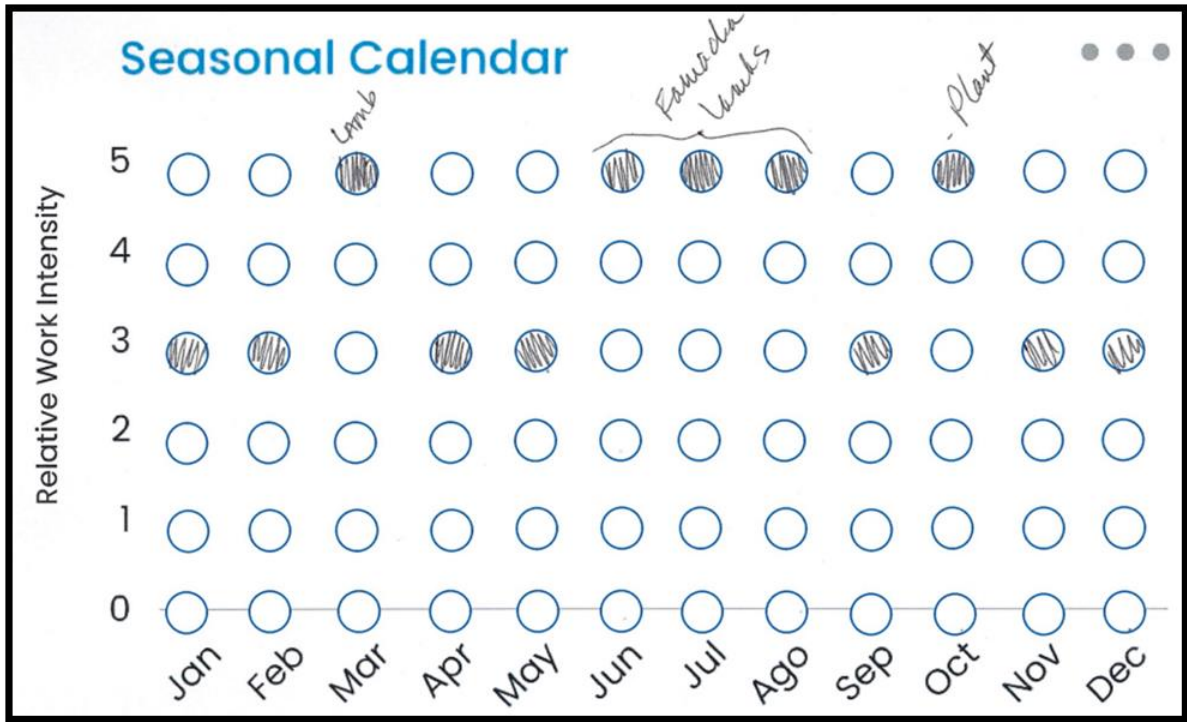
Figure 2 – Seasonal Calendar for a Meat Sheep Alliance of Florida Member.

Following the seasonal calendar activity, ITeam2 guided the Input and Output session, instructing members to detail the dynamics of their farm systems through a structured table that captured the journey from input to output, including intermediary processes and destination points for outputs. This exercise proved enlightening, fostering a rich discussion on market strategies, business models, and the potential role of social media in advancing their business objectives. The comprehensive view of their operations enabled them to identify key inputs such as geographical and political factors, enhancing their understanding of the multifaceted influences on their farms. Table 2 summarizes the results from the technique.

Input	Where from	Process	Output	Where to
Feed	Feed store	Feed intake	Weight gain	Buyers, stores
Medicine	Vet and pharmacies	Select high parasite resistance	Animal welfare	Buyers, stores
Labor	Scarce in Florida	Help with deworm feed lambing	Knowledge	Sales, farmers
Animal	MSA and own farm	Fed-Med-Repro	Increase Survival rate	Market
Advice	Experience, Internet	UF members	Relationships, Good Practices	Users, buyers

Table 2 – Input and Output Table Created with the Meat Sheep Alliance Members.

Post lunch break, the energy persisted as the MSA members embarked on the Venn Diagram activity under the stewardship of ITeam3. This initiative was designed to illustrate the relationships between the MSA, its members, and a range of related organizations through a visual representation. Members were prompted to note down organizations they perceived as having a connection with the alliance. Subsequently, they drew circles representing each organization; the size of the circle denoting the importance of the organization and its proximity to other circles illustrating the closeness of their relationship. Although members were divided into two groups, based on their farming experience to create the diagrams, the end results demonstrated a remarkable similarity, highlighting a shared vision of the network and the organizational landscape they operated in. Figure 3 shows a representation of the Venn diagram that has been drawn by the members.
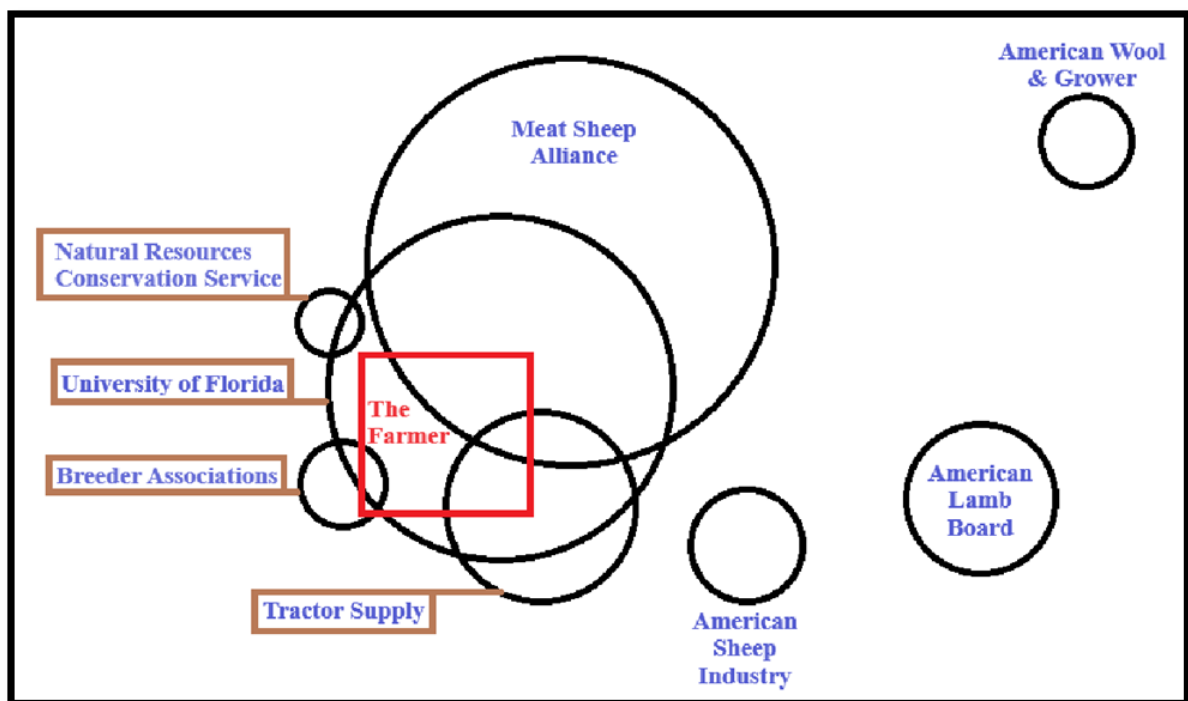
Figure 3 – Venn Diagram Illustrating Organization Importance and Relationship with Farmers.

Transitioning into the Reality and Objective Matrix discussion, also facilitated by ITeam3, the spotlight turned to identifying core challenges confronting the alliance and its members, along with potential solutions by defining a goal to be reach and a path to get closer to that goal.

Incorporating insights from earlier sessions, the interviews, along with a more focused conversation about the issues, members arrived at five main problems (Table 3).

Issue	Path	Goal
Labor Shortage	Alternative labor such as youth help and international or veteran hiring	Sustainable Employment
Mismanagement	Improve communication and education, look more for extension agents, get more involvement in the workshops.	Have Members Educated on Sheep Farming to Achieve Proper Management
Processing Deficiency	Access to a private complaints box, along with mediation provided by politicians, university officials, and state agents.	Get Reliable and Trustworthy Processing Facilities
Lack of Involvement	Get more involvement from the youth and propose home schooling with farm activities.	Get More People, Especially Kids, Into Sheep Farming
Communication Issue	Improve engagement on the Facebook group, try to drive more people to the website, and increase important dates email messages.	Have the News and Information to Find Every MSA Members

Table 2 – Input and Output Table Created with the Meat Sheep Alliance Members.

After they decided on the problems, goals, and paths, a democratic process started where they could vote on the pressing issues, this is called the Priorities Election phase. For this, MSA members were equipped with symbolic coins to invest in identified problems, signaling their perceived importance. A secret ballot voting system unveiled the most pressing concerns, effectively delineating the roadmap for future focus areas. Figure 4 presents the ballot boxes labeled on site, and the voting coins used, while Figure 5 reveals the results from the priority election. Labor shortage led with 44% of the fictional investments, followed by mismanagement with 19%, processing deficiency with 17%, lack of involvement 12% and communication issues 8%, showing what present members would prioritize on solving.
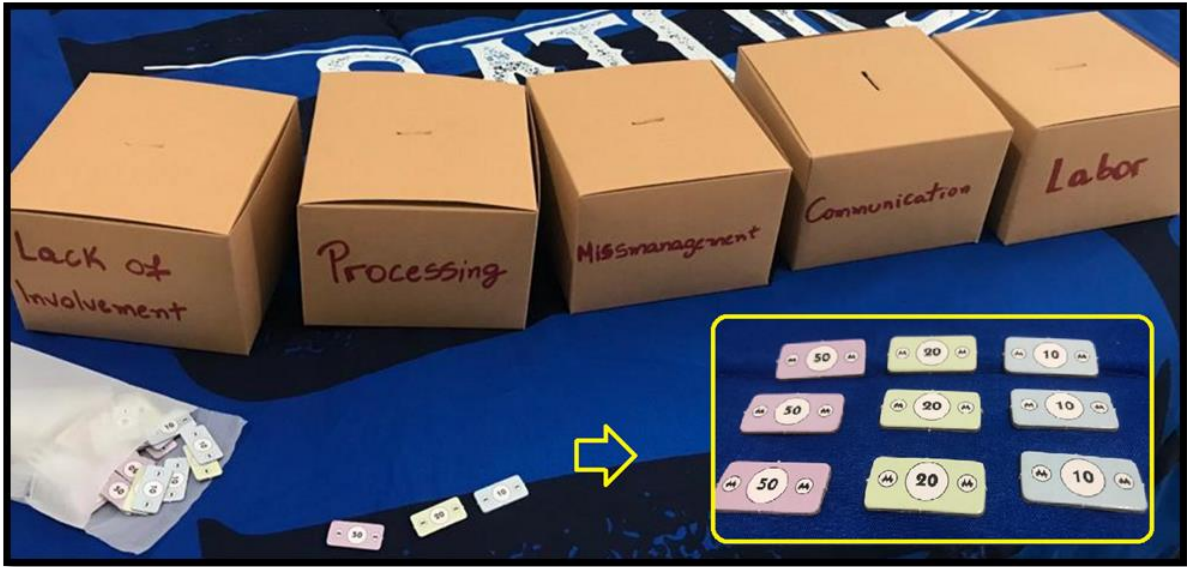
Figure 4 – Ballot Boxes and Voting Coins Utilized in the Priority Election Technique.
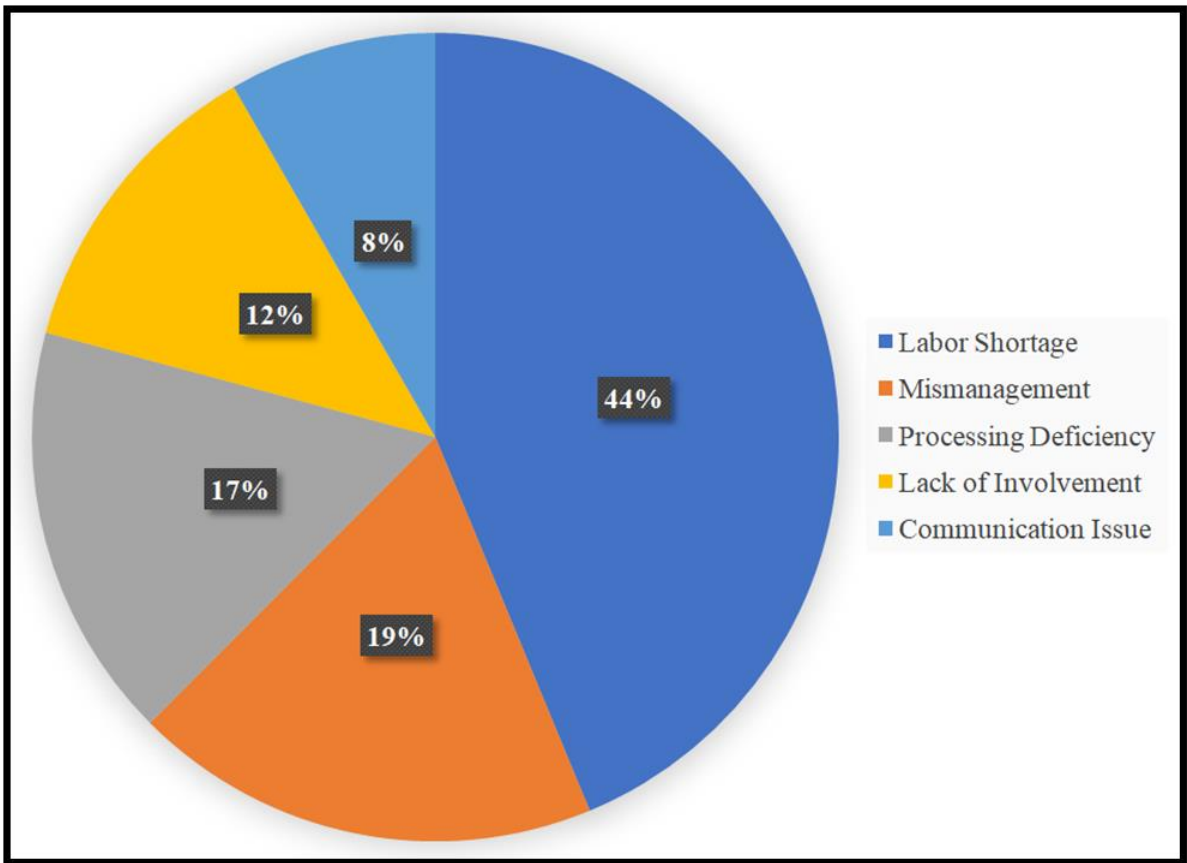
Figure 5 – Meat Sheep Alliance of Florida Priority Election Results.

The final segment of the session was a focus group discussion facilitated by ITeam4, spotlighting the future prospects and action plans for the MSA. A prominent topic of

conversation was the strategy for sustaining and expanding the alliance's membership through a rich educational portfolio featuring extension workshops and educational activities on pertinent subjects such as parasite control and proper sheep farm management. The collaborative relationship with the University of Florida was emphasized as a valuable resource in this endeavor. However, the conversation also gravitated towards the impending leadership transition, driven by the upcoming retirement of the current board members, and the struggle to identify committed successors. Members voiced their apprehensions about the viability of small-scale sheep farming in Florida, pointing to the detrimental impacts of urbanization, regulatory constraints, and economic challenges, including the high costs associated with running a small farm. The discussions also drew attention to Florida's underutilized potential as a substantial market for sheep products that need daily imports from other regions. Despite the challenges, the collective sentiment was optimistic and fueled by a shared passion for sheep farming.

Each step in this collaborative journey, punctuated by active engagements and vibrant discussions, not only brought clarity to the existing state of affairs but also forged stronger bonds among members. Shared concerns, intertwined operations, and a collective vision for the future emerged through a mosaic of individual narratives, creating a rich tapestry of the MSA's current landscape and carving pathways for united strides forward. The different phases of this session bears testimony to the vibrant and dynamic engagements that unfolded, etching a visual narrative of a community coming together, grounded in reality yet reaching towards a future crafted through collective will and aspiration.

One other activity outside the RPER day was the online survey that we made available for the members that couldn't participate in the discussion to vote based on the same principles we did on the in person voting. That is, choose one of the five issues to tackle for each symbolic coin, 10, 20 and 50. We had a total of 27 respondents and figure 6 shows the results of this online election compared to the in person voting. The only major difference was in the labor issue, the in person voted massively on that, while in the online it had almost no significance, we believe that this is due to a huge discussion we had with the in-person group on that matter. It could also be due to the specific area where the majority of the in-person group is from and perhaps because the in person group had or wanted to have a large flock and that leads to the need to hire a helping hand. Excluding labor, the order of importance was the

same for both the in-person priority election and the online one: mismanagement, followed by processing, involvement, and lastly, communication.
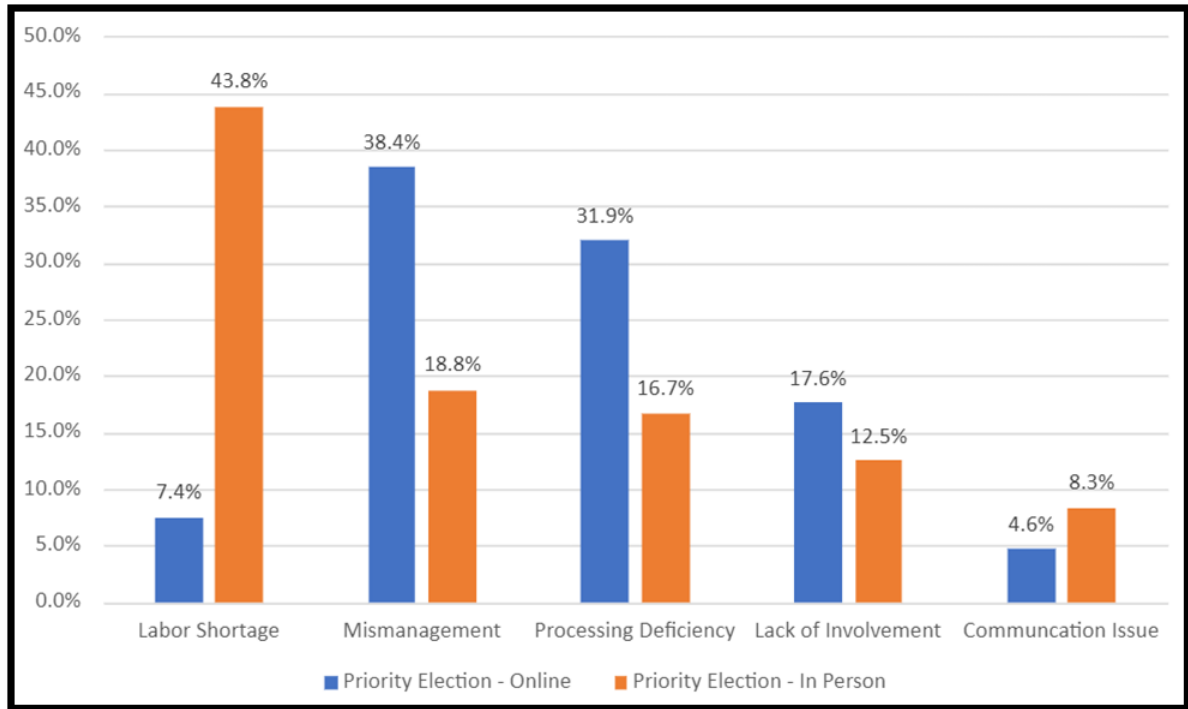
Figure 6 – In Person vs Online Priority Election Comparison.

Before we proceed with the content analysis, it is pertinent to present the word cloud derived from the Results from the RPER. This visual representation, delineated in Figure 7, was constructed based on the frequency with which relevant words appeared in the transcripts, thereby offering a preliminary insight into the predominant topics of the discussion.

Figure 7 – Word Cloud Based on Term Frequency in Rapid Participatory and Emancipatory Research Transcripts.

3.2 Thematic Content Analysis

In this section, we explore the findings from our Thematic Content Analysis based on Bardin's (2016) methodology. The first phase was the pre-analysis stage where we carefully carried out necessary transcriptions and set the research objectives. Here, we also identified key themes based on repeatedly reviewing the data available, the thematic framework developed before applying the RPER technique, and the recurrent opportunities and issues highlighted in a vast existing literature on related topics (Acín et al. 2021; Arsenopoulos et al. 2021; Baylis and Goldmann 2004; Boldt et al. 2023; Brouk 2023; Brouk et al. 2022; Charlton

and Kostandini 2021; Clark 2017; Collins and Reau 2013; Fast and Groschup 2023; Flynn, Anderson, and Rosson 2015; Gabler, Tozer, and Heinrichs 2000; Ivanovic et al. 2016; Karki et al. 2018; Maza, Gracia, and Saied 2018; Mitchell et al. 2004; Rezvanfar 2007; Ufer, Countryman, and Muhammad 2020; Xie et al. 2023).

Figures 8 and 9 provide a preliminary quantitative analysis of the RPER day discussions. Figure 8 illustrates the frequency with which each theme appeared, offering insight into the prevalent topics of discussion. Figure 9, on the other hand, delineates the participation rate of each MSA member, highlighting the extent of individual contributions to the overall discussions. In spite of having equal opportunities to contribute, newer members exhibited restrained participation. Nevertheless, their engagement was substantial, demonstrating a significant presence.
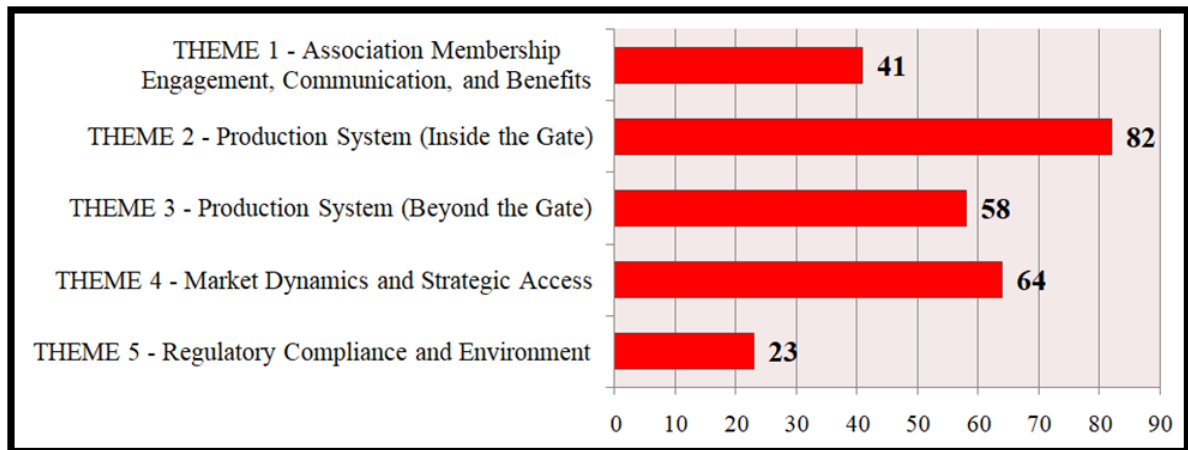
Figure 8 – Frequency Graph of Discussed Themes from the Rapid Participatory and Emancipatory Research (RPER).
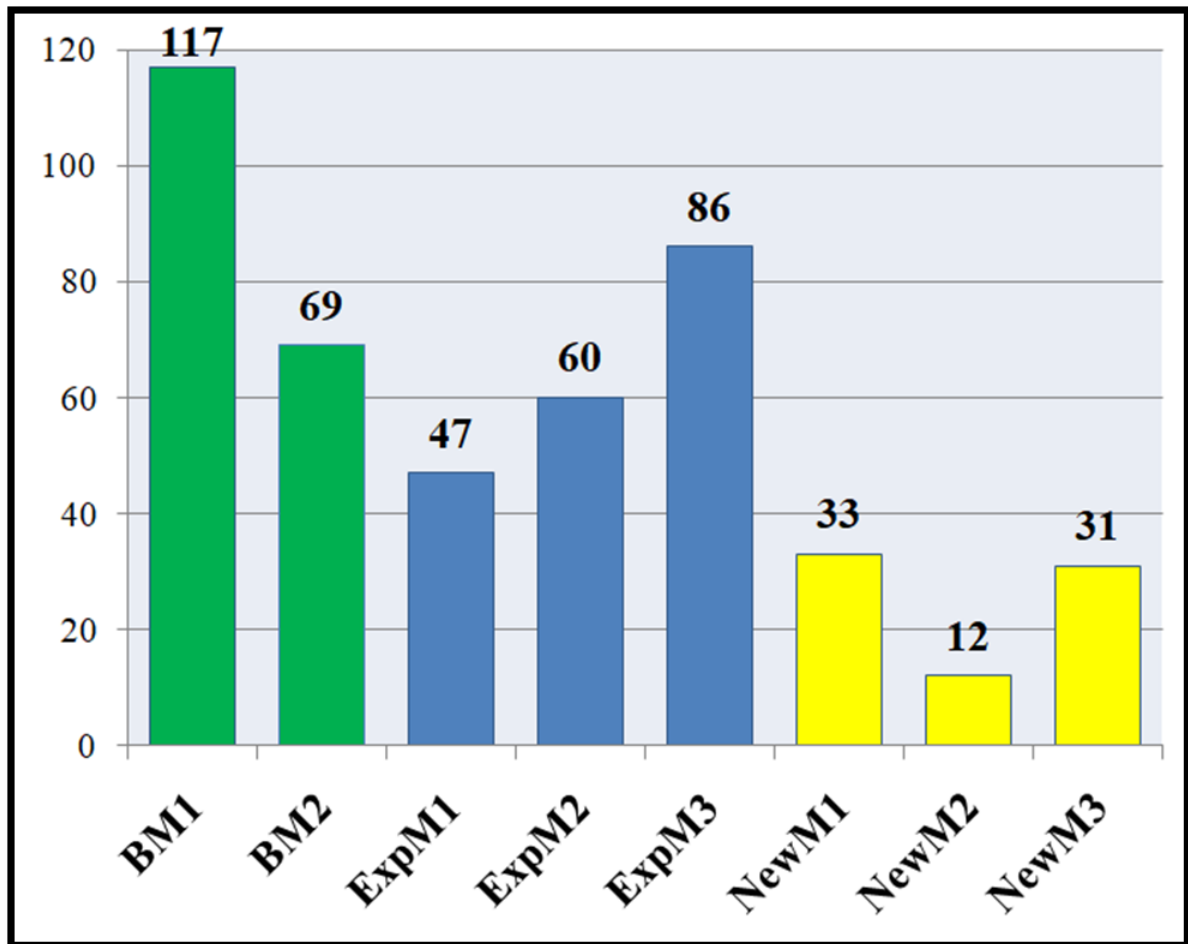
Figure 9 – Meat Sheep Alliance of Florida Members Participation Rate During Dialogues.

The first and one of the central themes we identified was "Association Membership Engagement, Communication, and Benefits" (Theme 1). This theme emphasized the importance of active engagement and clear communication in the success of the alliance. The theme highlighted that engaged members could offer vital insights and foster participation. This theme brought forward the idea that the benefits from being part of the community encourage ongoing participation and commitment to the group's goals, with a special focus on increasing youth engagement.

The RPER discussion showed several issues central to the MSA related to communication, networking, and engagement. One major concern was the gaps in communication within the alliance's present setup. Barbara Martin [BM1] highlighted the misconception that "everybody is on Facebook," which has resulted in considerable gaps in sharing important information. Bethany Miller [BM2] suggested that revamping the website could be a viable solution to enhance communication and to "keep it relevant." Moreover, there was a call to foster better

connections among members by avoiding the habit of keeping information as mentioned by Edward Moore [ExpM2] in "But we don't even know one another… I mean, it's like this is all secret stuff. It's not, if we want to do business, we have to be in touch on that." The conversation clearly signals the need to improve communication and networking to build a supportive community where members can stay "in touch" and nurture growth in the industry.

We found that the essence of the alliance's mission hinges on education and continuous learning. Barbara Martin [BM1] strongly pushed for a culture of never-ending learning, noting that "education doesn't stop. It's a thing that goes on, and on, and on." The workshops hosted by the alliance are a reflection of this dedication, aiming to develop informed and successful sheep producers through a continuous learning process. Furthermore, Barbara Martin [BM1] highlighted that these workshops serve a dual purpose, offering not just learning opportunities but also fostering networking and creating bonds by "having the connections and helping each other." This approach to learning, grounded in shared experiences and cooperation, is central to the alliance's strategy. The active mentorship roles of Barbara Martin [BM1] and Bethany Miller [BM2], showcases the alliance's supportive nature especially to new members. On the other hand, looking ahead, the group discussion echoed a unified worry for the future stability and survival of the alliance. Both Barbara Martin [BM1] and Bethany Miller [BM2] expressed concerns over finding dedicated individuals to take over their roles, indicating that it would be "really hard" to find. The discussion also spotlighted the lack of youth engagement and highlighted the urgent need to actively involve younger individuals to guarantee the alliance's continued influence in the coming years.

Next, we have the "Production System (Inside the Gate)" (Theme 2) experienced internally in agricultural settings. This theme brought light on a range of topics and issues such as disease management, pest control, expanding to cover aspects such as the need for infrastructure, feed management, predators, and the difficulties in finding labor, giving a detailed view of the challenges faced "inside the gate."

During the discussions, a prominent theme was the intensive care and deep knowledge required to manage different breeds. They talked about physical labor and the expertise needed in handling various animals, emphasizing that sheep entail "a little bit more care." The fluctuating demands of different seasons were also highlighted, describing March as a "short

breath" for some, before the summer, which brings the onslaught of parasite issues. Moreover, participants expressed the urgent need for quality education, urging for recent research to facilitate informed decision-making. They underscored the importance of understanding genetic makeup to enhance natural resistance to parasites and the necessity of reliable sources of information to support farmers.

The group painted a vivid picture of the labor challenges, with a consensus on the acute shortage of reliable and skilled labor. Despite this agreement, small scale producers worry less with this issue due to handling few sheep themselves. Barbara Martin [BM1] emphasized the difficulty in finding individuals with the "right compassion for the animals" and stressed the recurrent problem of finding trustworthy help. The discussion acknowledged the potential of tapping into different communities, including veterans and undergrad students, albeit with limitations. The conversation steered into the meticulous aspects of animal care, from the necessity of regular health checks to detailed attention to hoof care. Participants noted the quicker growth of hooves in certain breeds, attributing it to Florida's soil characteristics, and highlighted the hands-on involvement required in lambing to improve carcass size, stressing the continuous nature of managing various health challenges.

Towards the latter part of the discussion, participants delved into the business aspects of sheep farming. The discussion also touched upon the complexities involved in pricing sheep, with divergent views on whether to have a fixed price, considering the varying breed qualities and market preferences. The conversation reflected a collaborative spirit, ready to learn from each other's experiences, signaling the need for a structured knowledge-sharing platform to aid newcomers in the industry. The narrative underscored the intricate balance required in nutrition management, stressing adaptive strategies to changing circumstances and a focus on cost control to navigate the hurdles "inside the gate," painting a picture of a community eager to grow through collaboration and shared learning.

Shifting focus beyond the confines of the farm, the theme of "Production System (Beyond the Gate)" (Theme 3) surfaced, underscoring the necessity of adept handling of both tangible and intangible resources. The discourse traversed the dynamics of financial requisites, market fluctuations, and the external procurements encompassing seeds and assistance from veterinaries, technicians and extension agents, painting a detailed picture of the challenges and necessities "beyond the gate."

The MSA members discussed the pivotal role of extension agents in providing external resources and support for sheep farming. These agents were seen as crucial conduits facilitating the transfer of practical knowledge from universities and government bodies to producers, effectively "bridging the gap between community and essential resources," as stressed by Mr. Ethan Mason [ExpM1]. While appreciating the efforts of the University of Florida (UF) in fostering relationships that aid in connecting with veterinary services, they expressed a desire for a more homogeneous distribution of these agents across counties to ensure that they are "involved in what we do" and present "at every meeting that we have." Furthermore, they emphasized enhancing the training of extension agents to make them more adept at guiding producers, particularly in seed selection and applying research findings practically in the field.

Another essential part of the discussion revolved around seed selection, where the members shared a thought regarding their disappointing experiences with the Hancock seed company, describing it as having "terrible results" and offering the "worst germination." A member even voiced a wish for the company to "burn down." However, they appreciated local companies for providing better guidance and quality seeds and encourage a collaborative approach among members sharing this knowledge. As the conversation progressed to veterinary services, a shared sentiment of self-reliance emerged, stemming from the high costs associated with these services. Members advocated for a policy of "we do basically everything ourselves, for me to phone a vet, well she knows it's because it's something beyond my capabilities" as stated by Barbara Martin [BM1]. At the same time, they reinforced the need to have a close relation with a vet in case of real need.

The conversation also touched upon artificial insemination (AI) as a potential avenue for sourcing animals, but they felt that the costs and efforts outweighed the benefits only for sheep, expressing that for cattle this is a very common path. Towards the end of the discussion, members explored the broader challenges facing the sheep farming industry, harboring concerns over its future owing to the escalating costs and a lot of issues with processors. The dialogue painted a grim picture of the industry's future, likening it to the declining state of other agricultural sectors in Florida.

  "Market Dynamics and Strategic Access" (Theme 4) emerged as a category that examines the volatile market scenarios that producers grapple with. The discussion here is centered on the nuanced landscape of the sheep meat industry in Florida, emphasizing the fluctuating demand dynamics, stringent quality standards, and the quest for strategic market access amidst a diverse consumer populace with specific preferences. It also includes topics on where and how to sell the meat and the necessity of meat processing and how deficient this area is.

The participants extensively discussed market dynamics and strategic access, delving into topics such as consumer preferences, market reach, and marketing strategies to optimize the sheep meat industry in Florida. They explored the nuances of the ethnic markets, with some suggesting leveraging "Arabic" and "Spanish" languages in advertising to appeal to a broader consumer base. The discussions resonated with a shared vision of building a sustainable operation through education and a structured market approach, potentially encompassing consumers from Islamic background focusing on dates like Ramadan and Eid al-Fitr. The group identified the role of the MSA as a "marketing tool," guiding members to carve out individual strategies in a diverse and complex market landscape. They highlighted the importance of fostering trust through a "know your farm, know your farmer" initiative, as Nathan Morris [NewM1] proposed, aiming to build a loyal customer base.

The dialogue also ventured into the issues in the meat processing sector, which presented itself as a considerable bottleneck in the growth trajectory of the industry. Participants shared their outrage about the existing processing facilities, expressing frustrations over the long waiting periods that sometimes stretched to a year, and the apprehensions over receiving incorrect quantity and quality of the meat post-processing. The dialogue echoed with a collective desire for "honest reliable processing facilities" with a "certain minimum standard". They also expressed frustration over the lack of formal channels to address grievances against processors, proposing the creation of a "complaints box" coordinated by state or university entities. While they explored potential solutions like mobile slaughter facilities, concerns regarding traceability and maintaining quality post-slaughter persisted. Despite the hurdles, there was a consensus on the potential market in Florida, with demands reportedly reaching "600 sheep a day" from Texas alone and the underutilized potential of the local market, heavily reliant on imports constituting around "80%" of the sheep, predominantly sourced from Australia and New Zealand as stated by Eric Mitchell [ExpM3] and Noah Murphy [NewM3] respectively.

Lastly, there is the theme of "Regulatory Compliance and Environment" (Theme 5). Agricultural producers are often required to comply with a range of regulatory requirements, which can be both at the local and national level. Compliance ensures the safety and quality of the products, but can also present challenges, particularly for small producers. The agricultural sector, including sheep farming, is intrinsically linked to the environment. Producers are increasingly faced with the challenge of adopting sustainable practices to mitigate the adverse impacts of farming on the environment. Moreover, there is a growing awareness and demand from consumers for environmentally friendly products and this theme encompasses a range of sub-issues about these topics.

A notable point of contention raised was the USDA's role in meat traceability. Mr. Ethan Mason [ExpM1] noted that the current system, although structured to monitor meat-related issues, has loopholes that can be "circumvented without causing any problems." The effectiveness of this system was further put into question by Barbara Martin [BM1], who expressed skepticism about the USDA's "traceability" mechanism working "according to plan." Nathan Morris [NewM1] highlighted the pressing need for an "organization alliance system" to aid small farmers, emphasizing the necessity for a support network to facilitate lobbying at various governmental levels. The sentiment was shared by others, including Eric Mitchell [ExpM3], who humorously depicted the futility of "trying to lobby with the senators" with "our little sheep." There was a consensus on the increasing concern over changing regulations, such as the impending alterations in the availability of over-the-counter remedies, a change foreseen to bring about obligatory annual vet check-ups, as stated by Barbara Martin [BM1].

Shifting the focus towards environmental concerns, the discourse highlighted apprehensions regarding the unsustainable urban development's encroaching upon essential farming resources, notably water and land. Despite current easy access to water, acknowledged as "pretty ease" by Bethany Miller [BM2] and Mr. Ethan Mason [ExpM1], there was a unanimous concern about the prospective threat to the water supply from the "aquifer" due to unrestrained development activities in the state. Edward Moore [ExpM2] accentuated the necessity to revise land sale policies to prioritize farmers, a practice seen in "other countries" according to him. The dialogue traversed through intricate issues surrounding labor and employment, touching upon the challenges of undocumented laborers and the bureaucratic red

tape involved in establishing a custom butchery, as delineated by Barbara Martin [BM1]. As the session drew towards a close, the collective voice underscored the urgent requirement for a mediating body, potentially the "department of agricultural function," as proposed by Eric Mitchell [ExpM3], to mitigate the existing conflicts among various stakeholders encompassing farmers, processors, and end-users. Attention was also drawn towards the forthcoming challenges in the insurance and liability sectors of farming, with Edward Moore [ExpM2] cautioning against the potential repercussions of employing part-time help, hinting at significant setbacks.

4 Conclusions

In the exploration of the MSA through the lens of social management principles and the RPER method, we pulled out a depth of challenges and opportunities. One of the findings, which stands testament to the cooperative spirit of the community, is the urgent necessity for enhancing communication and engagement within the alliance members. This, in turn, fosters a nurturing environment where knowledge is symbiotically exchanged, paving the way for shared growth and learning. Another high spot was the pressing need for a paradigm shift in the community's approach to youth engagement, thereby sowing seeds for a future that is rooted in shared learning, active mentorship, and a collective vision that transcends generational gaps. Parallelly, the study revealed a detailed representation of the "inside the gate" and "beyond the gate" dynamics, spotlighting the nuances of animal care and the pressing need for self-reliant strategies to find paths in order to solve issues such as: labor deficiency, feed waste management, pest control, parasite identification, high veterinary costs, scarce technical and extension assistant, among others. Furthermore, with the techniques we ventured into the realms of market dynamics, uncovering the multifaceted nature of consumer preferences and the critical situation regarding finding ethical and efficient meat processing facilities. Simultaneously, we proceed to the regulatory compliance and sustainable practices, mentioning the pressing issues of environmental conservation and the important role of governing bodies in helping and promoting a sustainable future for the industry in the region.

Yet, as we navigate through the rich insights gathered, this study acknowledges the limitations stemming from a relatively confined participant pool, predominantly encapsulating the perspectives of a limited number of alliance members. While this approach facilitated a deep, nuanced exploration of the individual and collective experiences of a diversified

representation of participants, it potentially overlooks the broader spectrum of perspectives from a more quantitative angle within the community. Thus, subsequent research endeavors could benefit significantly from expanding the participant base to include a wider array of stakeholders, encompassing more members in order to foster another approach, more holistic and perhaps quantifiable understanding of the industry's dynamics.

Looking forward, this research serves as a foundation, encouraging further investigative forays into the meat sheep industry in Florida, a sector with unexplored potential. It invites future scholars to delve deeper into the themes explored here individually. As we stand on the threshold of forging pathways for a sustainable future, it is incumbent upon us to reflect on the theoretical and practical implications of the social management principles delineated through this research. While the RPER method has offered a framework for navigating the complex terrain of community-centric issues through participatory research, it also nudges us towards a broader discourse on the integration of cooperative actions and dialogical management strategies in agricultural education and extension practices globally. In conclusion, this research, rooted in the vibrant backdrop of the rapidly growing yet under-explored meat sheep industry of Florida, beckons agricultural alliances worldwide to embrace the rich insights and the roadmap delineated here to foster community-driven and dialogically grounded solutions, thereby steering towards a future where agricultural communities flourish through harmonious cooperation, sustainable practices, and a shared vision for the common good.

Acknowledgment

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APPENDIX A - RPER SOFTWARE - BACKEND FILE STRUCTURE

- 📄 .DS_Store
- 📄 .editorconfig
- 📄 .env.example
- 📄 .gitignore
- 📁 .idea
  - 📄 .gitignore
  - 📁 inspectionProfiles
    - 📄 Project_Default.xml
  - 📄 modules.xml
  - 📄 prettier.xml
  - 📄 rper-backend.iml
  - 📄 vcs.xml
- 📄 .nvmrc
- 📄 .prettierrc
- 📄 API Documentation.txt
- 📁 coverage
  - 📁 lcov-report
    - 📄 base.css
    - 📄 block-navigation.js
    - 🖼 favicon.png
    - 📄 index.html
    - 📄 prettify.css
    - 📄 prettify.js
    - 📁 rpers
      - 📁 services
        - 📄 CreateRperService.ts.html
        - 📄 ListRpersService.ts.html
        - 📄 index.html
    - 🖼 sort-arrow-sprite.png
    - 📄 sorter.js
    - 📁 users
      - 📁 services
        - 📄 AuthenticateUserService.ts.html
        - 📄 CreateUserService.ts.html
        - 📄 ListUsersService.ts.html
        - 📄 ResetPasswordService.ts.html
        - 📄 SendForgotPasswordEmailService.ts.html
        - 📄 ShowProfileService.ts.html
        - 📄 UpdateProfileService.ts.html
        - 📄 UpdateUserAvatarService.ts.html
        - 📄 index.html
  - 📄 lcov.info
- 📄 docker-compose.yml
- 📄 jest.config.js
- 📄 ormconfig.js
- 📄 package-lock.json
- 📄 package.json
- 📁 src
  - 📁 @types
    - 📄 express.d.ts
  - 📁 config
    - 📄 auth.ts
    - 📄 mail.ts
    - 📄 upload.ts
  - 📁 enums
    - 📄 index.ts
  - 📁 modules
    - 📄 .DS_Store
    - 📁 rpers
      - 📁 dtos
        - 📄 ICreateRperAcknowledgmentDTO.ts
        - 📄 ICreateRperConstructionDTO.ts
        - 📄 ICreateRperDTO.ts
        - 📄 ICreateRperDailyRoutineDTO.ts
        - 📄 ICreateRperEditResourceDTO.ts
        - 📄 ICreateRperExtraInformationDTO.ts
        - 📄 ICreateRperFinalConsiderationDTO.ts
        - 📄 ICreateRperFocusGroupDTO.ts
        - 📄 ICreateRperHistoricalMappingDTO.ts
        - 📄 ICreateRperInputAndOutputDTO.ts
        - 📄 ICreateRperInterviewsDTO.ts
        - 📄 ICreateRperMembersDTO.ts
        - 📄 ICreateRperOtherFieldworkDTO.ts
        - 📄 ICreateRperOtherPreparationDTO.ts
        - 📄 ICreateRperPresentationDTO.ts
        - 📄 ICreateRperPrioritiesElectionDTO.ts
        - 📄 ICreateRperRealityAndObjMatrixDTO.ts
        - 📄 ICreateRperSeasonalCalendarDTO.ts
        - 📄 ICreateRperThemesFrameworkDTO.ts
        - 📄 ICreateRperVennDiagramDTO.ts
        - 📄 IFindRperEditResourceDTO.ts
        - 📄 IGenerateRperReportDTO.ts
        - 📄 IRemoveRperMemberDTO.ts
        - 📄 IUpdateRperSecondaryDataDTO.ts
        - 📄 IUpdateRperTransectWalkDTO.ts
      - 📁 enums
        - 📄 Rpers.ts
      - 📁 infra
        - 📁 http
          - 📁 controllers
            - 📄 CreateRperBackgroundController.ts
            - 📄 CreateRperEditResourceController.ts
            - 📄 CreateRpersMembersController.ts
            - 📄 DeleteRperEditResourceController.ts
            - 📄 FindRperEditResourceController.ts
            - 📄 GenerateDocxReportController.ts
            - 📄 GetRperByIdController.ts
            - 📄 GetRperSectionStatusController.ts
            - 📄 RemoveRperMemberController.ts
            - 📄 RpersController.ts
            - 📄 UpdateRperAcknowledgmentController.ts
            - 📄 UpdateRperConstructionController.ts
            - 📄 UpdateRperDailyRoutineController.ts
            - 📄 UpdateRperExtraInformationController.ts
            - 📄 UpdateRperFinalConsiderationController.ts
            - 📄 UpdateRperFocusGroupController.ts
            - 📄 UpdateRperHistoricalMappingController.ts
            - 📄 UpdateRperInputAndOutputController.ts
            - 📄 UpdateRperInterviewsController.ts
            - 📄 UpdateRperOtherFieldworkController.ts
            - 📄 UpdateRperOtherPreparationController.ts
            - 📄 UpdateRperPresentationController.ts
            - 📄 UpdateRperPrioritiesElectionController.ts
            - 📄 UpdateRperRealityAndObjMatrixController.ts
            - 📄 UpdateRperSeasonalCalendarController.ts
            - 📄 UpdateRperSecondaryController.ts
            - 📄 UpdateRperSectionStatusController.ts
            - 📄 UpdateRperThemesFrameworkController.ts
            - 📄 UpdateRperTransectWalkController.ts
            - 📄 UpdateRperVennDiagramController.ts
            - 📄 UploadImageController.ts
          - 📁 middlewares
            - 📄 ensureRperMember.ts
          - 📁 routes

```
            rpers.routes.ts                              IRperVennDiagramRepository.ts
     typeorm                                             IRpersRepository.ts
        entities                                         IRpersSecondaryDataRepository.ts
           Rper.ts                                    fakes
           RperAcknowledgment.ts                         FakeRpersRepository.ts
           RperConstruction.ts                     services
           RperDailyRoutine.ts                         CreateRperBackgroundService.ts
           RperEditResource.ts                         CreateRperEditResourceService.ts
           RperExtraInformation.ts                     CreateRperMembersService.ts
           RperFinalConsideration.ts                   CreateRperService.spec.ts
           RperFocusGroup.ts                           CreateRperService.ts
           RperHistoricalMapping.ts                    DeleteRperEditResourceService.ts
           RperInputAndOutput.ts                       FindRperEditResourceService.ts
           RperInterviews.ts                           GenerateDocxReportService.ts
           RperOtherFieldwork.ts                       GetRperByIdService.ts
           RperOtherPreparation.ts                     GetRperSectionStatusService.ts
           RperPresentation.ts                         ListRpersService.spec.ts
           RperPrioritiesElection.ts                   ListRpersService.ts
           RperRealityAndObjMatrix.ts                  RemoveRperMemberService.ts
           RperSeasonalCalendar.ts                     UpdateRperAcknowledgmentService.ts
           RperSecondaryData.ts                        UpdateRperConstructionService.ts
           RperThemesFramework.ts                      UpdateRperDailyRoutineService.ts
           RperTransectWalk.ts                         UpdateRperExtraInformationService.ts
           RperVennDiagram.ts                          UpdateRperFinalConsiderationService.ts
        repositories                                    UpdateRperFocusGroupService.ts
           RperAcknowledgmentRepository.ts             UpdateRperHistoricalMappingService.ts
           RperConstructionRepository.ts               UpdateRperInputAndOutputService.ts
           RperDailyRoutineRepository.ts               UpdateRperInterviewsService.ts
           RperEditResourceRepository.ts               UpdateRperOtherFieldworkService.ts
           RperExtraInformationRepository.ts           UpdateRperOtherPreparationService.ts
           RperFinalConsiderationRepository.ts         UpdateRperPresentationService.ts
           RperFocusGroupRepository.ts                 UpdateRperPrioritiesElectionService.ts
           RperHistoricalMappingRepository.ts          UpdateRperRealityAndObjMatrixService.ts
           RperInputAndOutputRepository.ts             UpdateRperSeasonalCalendarService.ts
           RperInterviewsRepository.ts                 UpdateRperSecondaryDataService.ts
           RperOtherFieldworkRepository.ts             UpdateRperSectionStatusService.ts
           RperOtherPreparationRepository.ts           UpdateRperThemesFrameworkService.ts
           RperPresentationRepository.ts               UpdateRperTransectWalkService.ts.ts
           RperPrioritiesElectionRepository.ts         UpdateRperVennDiagramService.ts
           RperRealityAndObjMatrixRepository.ts        UploadImageService.ts
           RperSeasonalCalendarRepository.ts        utils
           RperThemesFrameworkRepository.ts            formatDate.ts
           RperTransectWalkRepository.ts           users
           RperVennDiagramRepository.ts             dtos
           RpersRepository.ts                          ICreateUserDTO.ts
           RpersSecondaryDataRepository.ts          infra
     repositories                                       http
        IRperAcknowledgmentRepository.ts                   controllers
        IRperConstructionRepository.ts                        ForgotPasswordController.ts
        IRperDailyRoutineRepository.ts                        ProfileController.ts
        IRperEditResourceRepository.ts                        ResetPasswordController.ts
        IRperExtraInformationRepository.ts                    SessionsController.ts
        IRperFinalConsiderationRepository.ts                  UserAvatarController.ts
        IRperFocusGroupRepository.ts                          UsersController.ts
        IRperHistoricalMappingRepository.ts                middlewares
        IRperInputAndOutputRepository.ts                      ensureAuthenticated.ts
        IRperInterviewsRepository.ts                       routes
        IRperOtherFieldworkRepository.ts                      password.routes.ts
        IRperOtherPreparationRepository.ts                    profile.routes.ts
        IRperPresentationRepository.ts                        sessions.routes.ts
        IRperPrioritiesElectionRepository.ts                  users.routes.ts
        IRperRealityAndObjMatrixRepository.ts           typeorm
        IRperSeasonalCalendarRepository.ts                 entities
        IRperThemesFrameworkRepository.ts                     User.ts
        IRperTransectWalkRepository.ts                        UserToken.ts
```

```
📁 repositories
    📄 UserTokensRepository.ts
    📄 UsersRepository.ts
📁 providers
    📁 HashProvider
        📁 fakes
            📄 FakeHashProvider.ts
        📁 implementations
            📄 BCryptHashProvider.ts
        📁 models
            📄 IHashProvider.ts
    📄 index.ts
📁 repositories
    📄 IUserTokensRepository.ts
    📄 IUsersRepository.ts
    📁 fakes
        📄 FakeUserTokensRepository.ts
        📄 FakeUsersRepository.ts
📁 services
    📄 AuthenticateUserService.spec.ts
    📄 AuthenticateUserService.ts
    📄 CreateUserService.spec.ts
    📄 CreateUserService.ts
    📄 ListUsersService.spec.ts
    📄 ListUsersService.ts
    📄 ResetPasswordService.spec.ts
    📄 ResetPasswordService.ts
    📄 SendForgotPasswordEmailService.spec.ts
    📄 SendForgotPasswordEmailService.ts
    📄 ShowProfileService.spec.ts
    📄 ShowProfileService.ts
    📄 UpdateProfileService.spec.ts
    📄 UpdateProfileService.ts
    📄 UpdateUserAvatarService.spec.ts
    📄 UpdateUserAvatarService.ts
📁 views
    📄 forgot_password.hbs
📁 shared
    📁 container
        📄 index.ts
        📁 providers
            📁 MailProvider
                📁 dtos
                    📄 ISendMailDTO.ts
                📁 fakes
                    📄 FakeMailProvider.ts
                📁 implementations
                    📄 EtherealMailProvider.ts
                    📄 SESMailProvider.ts
                📄 index.ts
                📁 models
                    📄 IMailProvider.ts
            📁 MailTemplateProvider
                📁 dtos
                    📄 IParseMailTemplateDTO.ts
                📁 fakes
                    📄 FakeMailTemplateProvider.ts
```

```
📁 implementations
    📄 HandlebarsMailTemplateProvider.ts
📄 index.ts
📁 models
    📄 IMailTemplateProvider.ts
📁 StorageProvider
    📁 fakes
        📄 FakeStorageProvider.ts
    📁 implementations
        📄 DiskStorageProvider.ts
    📄 index.ts
    📁 models
        📄 IStorageProvider.ts
📄 index.ts
📁 errors
    📄 AppError.ts
📁 infra
    📁 http
        📁 routes
            📄 index.ts
        📄 server.ts
    📁 typeorm
        📄 index.ts
        📁 migrations
            📄 1654047273107-CreateUsers.ts
            📄 1654104894701-CreateRPER.ts
            📄 1655396563157-AddAvatarFieldToUsers.ts
            📄 1660763604314-CreateUserTokens.ts
            📄 1666151038310-CreateRperMembers.ts
            📄 1666151651104-CreateRperSecondaryData.ts
            📄 1684689369146-CreateBlockEditing.ts
            📄 1686697220746-AddBackgroundUrlToRper.ts
            📄 1688237209038-CreateRperAcknowledgment.ts
            📄 1688842733471-CreateHistoricalMapping.ts
            📄 1688844330235-CreateTransectWalk.ts
            📄 1689106966464-CreateRperFinalConsideration.ts
            📄 1689272769340-CreateRperExtraInformation.ts
            📄 1689272796446-CreateRperOtherFieldwork.ts
            📄 1689272833184-CreateRperPrioritiesElection.ts
            📄 1689273033273-CreateRperRealityAndObjMatrix.ts
            📄 1689273054359-CreateRperFocusGroup.ts
            📄 1689273065337-CreateRperConstruction.ts
            📄 1689273079632-CreateRperInputAndOutput.ts
            📄 1689273088176-CreateRperDailyRoutine.ts
            📄 1689273101369-CreateRperSeasonalCalendar.ts
            📄 1689273109865-CreateRperVennDiagram.ts
            📄 1689273118397-CreateRperPresentation.ts
            📄 1689273125856-CreateRperInterviews.ts
            📄 1689273143663-CreateRperOtherPreparation.ts
            📄 1689273153730-CreateRperThemesFramework.ts
📁 views
    📄 report.hbs
📁 tmp
    📄 .gitkeep
📄 to-do
📄 tsconfig.json
📄 yarn-error.log
```

APPENDIX B - RPER SOFTWARE - FRONTEND FILE STRUCTURE

- .editorconfig
- .eslintignore
- .eslintrc.json
- .gitignore
- .idea
  - .gitignore
  - inspectionProfiles
    - Project_Default.xml
  - modules.xml
  - prettier.xml
  - rper-frontend-web.iml
  - vcs.xml
- .nvmrc
- .prettierrc.json
- README.md
- package-lock.json
- package.json
- public
  - favicon.ico
  - index.html
  - robots.txt
- src
  - App.tsx
  - assets
    - content-imgs
      - construction-group.jpg
      - construction-materials.jpg
      - historical-mapping-community-and-map.jpg
      - historical-mapping-community-drawning.jpg
      - historical-mapping-community-official-map.jpg
      - theme-framework-table.png
      - theme-framework-team.jpg
      - transect-walk-community.jpg
      - transect-walk-map.jpg
    - log-in-bg.png
    - logo-rper.png
    - sign-up-bg.png
    - small-logo.svg
  - components
    - HelpContent
      - index.tsx
      - styles.ts
    - HelpPage
      - index.tsx
      - styles.ts
    - button
      - index.tsx
      - styles.ts
    - header
      - index.tsx
    - styles.ts
    - input
      - index.tsx
      - styles.ts
    - logo
      - index.tsx
      - styles.ts
    - menu
      - index.tsx
      - styles.ts
    - profile-info
      - index.tsx
      - styles.ts
    - status-button
      - index.tsx
      - styles.ts
    - text-editor
      - index.tsx
      - styles.ts
    - toast-container
      - index.tsx
      - styles.ts
    - toast
      - index.tsx
      - styles.ts
    - tooltip
      - index.tsx
      - styles.ts
  - contexts
    - auth-context.tsx
    - index.tsx
    - rper-context.tsx
    - toast-context.tsx
  - enums
    - AuthEnum.ts
  - index.tsx
  - pages
    - dashboard
      - acknowledgment
        - index.tsx
        - styles.ts
      - construction
        - index.tsx
        - styles.ts
      - dailyroutine
        - index.tsx
        - styles.ts
      - editor-component
        - index.tsx
        - styles.ts
      - extrainformation
        - index.tsx
        - styles.ts
      - finalconsideration
        - index.tsx
        - styles.ts
      - focusgroup
        - index.tsx
        - styles.ts
      - generate-final-report
        - index.tsx
        - styles.ts
      - historical-mapping
        - index.tsx
        - styles.ts
      - inputandoutput
        - index.tsx
        - styles.ts
      - interviews
        - index.tsx
        - styles.ts
      - otherfieldwork
        - index.tsx
        - styles.ts
      - otherpreparation
        - index.tsx

- styles.ts
- 📁 presentation
  - index.tsx
  - styles.ts
- 📁 prioritieselection
  - index.tsx
  - styles.ts
- 📁 realityandobjmatrix
  - index.tsx
  - styles.ts
- 📁 seasonalcalendar
  - index.tsx
  - styles.ts
- 📁 secondary-data
  - index.tsx
  - styles.ts
- styles.ts
- 📁 summary
  - 📁 carousel
    - index.tsx
    - styles.ts
  - index.tsx
  - 📁 info
    - index.tsx
    - styles.ts
  - styles.ts
- 📁 team
  - index.tsx
  - 📁 modals
    - 📁 modal-add-team
      - index.tsx
      - styles.ts
    - 📁 modal-confirmation-action
      - index.tsx
      - styles.ts
    - styles.ts
    - types.ts
    - users.ts
- 📁 themesframework
  - index.tsx
  - styles.ts
- 📁 transect-walk
  - index.tsx
  - styles.ts

- types.ts
- 📁 venndiagram
  - index.tsx
  - styles.ts
- 📁 forgot-password
  - index.tsx
  - styles.ts
- 📁 log-in
  - index.tsx
  - styles.ts
- 📁 not-found-page
  - index.tsx
  - styles.ts
- 📁 profile
  - index.tsx
  - styles.ts
- 📁 reset-password
  - index.tsx
  - styles.ts
- 📁 rper-list
  - index.tsx
  - 📁 modal-new-rper
    - index.tsx
    - styles.ts
  - styles.ts
- 📁 sign-up
  - index.tsx
  - styles.ts
- react-app-env.d.ts
- 📁 routes
  - index.tsx
  - 📁 protected
    - index.tsx
- 📁 services
  - api.ts
- setupTests.ts
- 📁 styles
  - global.ts
- 📁 utils
  - constants.ts
  - get-validation-errors.ts
  - is-rper-member.ts
- tsconfig.json
- 🔒 yarn.lock

APPENDIX C - SEMI-STRUCTURED INTERVIEW QUESTIONS

SEMI-STRUCTURED INTERVIEW GUIDE:

ASK FOR THEM TO READ AND SIGN THE FORM OF CONSENT.
PREPARE THE RECORDING WITH THE FARMER'S NAME, DATE AND TIME.

First, we would like some general overview of your land and its history.
1) How long have you been here and how was this process? (history, ownership)
  - (suggested additional) Do you need help with labor, the family helps or you hire outside labor?

2) What do you produce or raise here
  - Could you explain to me a bit more on why you choose to produce and raise what you do today?
  - Would you consider it more like a hobby or more like a business where you make a living out of it?

3) Could you describe for us one day of your life, one that happens more often, preferably? (For example: You wake up around 6am, prepare and eat the breakfast, then while you go check the sheep another member of the family starts preparing their food. You got the idea?)

4) Ok, being a bit more specific on the production system you have here, what would you say are the main drivers of your cost of production?
  - Could you explain to me a bit more why you consider these the main drivers of costs of productions?

5) What do you consider as your main challenges here on the farm?

Ok, now talking a bit more about the meat sheep alliance of Florida:
6) How is your interaction with the alliance and how do you think it helps you?
  - what do you think it could be improved on, and how?

Lastly (if there is enough time)
7) Specifically on the Small Ruminants, could you tell me a bit about your annual production system? (Like Pasture, Feeding, supplementation, Health Assistance these kind of activities)

Thank you for the answers, that is all for the specific questions we had. Would you be willing to show us around a little bit, we would love to see and talk a bit about your facilities, see your flock and this amazing land you have here. It can be either on foot or with the car, what do you prefer and think would be best?

After the Transect Walk
8) Also ask about other Sheep producers and members of the alliance that they may know and would be nice to visit, if they could recommend any other and give me their contact information.

APPENDIX D - INFORMED CONSENT FORM

Informed Consent Form for Participants

Events: Semi-Structured Interview and Social Management Method event day with the Meat Sheep Alliance of Florida.

You have been asked to participate in an interview and an event day to apply a Social Management Method. The purpose of these techniques are to allow the sharing of information about the Meat Sheep Alliance of Florida and its members in a quick manner so that this information can later be used to identify the alliance's problems, their causes, and possible solutions, with the final goal of promoting social and economic development.

The interview and the event day techniques such as focus group will be conducted in a private location and will be recorded. The responses will be transcribed and then analyzed using content analysis and or critical discourse analysis. The interview is expected to last one hour, the event day with the collectivity is expected to be concluded in one day.

There are no major or life-threatening health risks associated with participating in these events.

The final product of this study is a report that the researchers will generate for the association's members at a later date. This report will contain some of the analysis with possible solutions to problems identified by the members participating in the event. This report can also be used as supporting documentation for a plan of action for accessing subsidies and support funds (e.g., government grants). This document will also serve as a guide for research and extension activities.

You will receive no compensation for participating in the study. Your participation is completely voluntary, and you may refuse to participate or discontinue participation at any time without penalty.

If you have any questions or concerns, please feel free to contact Assistant Professor and Forage Extension Specialist, Marcelo Wallau by email (mwallau@ufl.edu) or phone (352) 273 - 2216.

Consent:
 I have read the information provided and understand it. I agree to participate in these activities and understand that I may discontinue participation at any time without penalty.

[Signature]

Date:

APPENDIX E - ONLINE PRIORITY ELECTION SURVEY

Hello and thanks for taking the time answering this survey.
This is what we call Priority Election for the Meat Sheep Alliance of Florida.
Imagine you have a total of 80 coins to invest in solving the most common problems involving sheep farming and the Meat Sheep Alliance.
You can choose the same problem multiple times or spread the coins, choose wisely.
Observe you have 3 different value coins: 10, 20 and 50.

Which of these problems would you invest **10 coins** to solve?
- o Lack of Labor - Have more labor availability in the short and long term.
- o Mismanagement - educate yourself and other producers to not make mistakes in sheep farming management, reduce waste and be more productive.
- o Processing Deficiency - increase the amount and quality of processing facilities for sheep.
- o Communication - enhance the communication between the Meat Sheep Alliance members.
- o Lack of Involvement - increase people's involvement in sheep farming, especially kids and youngsters.

Which of these problems would you invest **20 coins** to solve?
- o Lack of Labor - Have more labor availability in the short and long term.
- o Mismanagement - educate yourself and other producers to not make mistakes in sheep farming management, reduce waste and be more productive.
- o Processing Deficiency - increase the amount and quality of processing facilities for sheep.
- o Communication - enhance the communication between the Meat Sheep Alliance members.
- o Lack of Involvement - increase people's involvement in sheep farming, especially kids and youngsters.

Which of these problems would you invest **50 coins** to solve?
- o Lack of Labor - Have more labor availability in the short and long term.
- o Mismanagement - educate yourself and other producers to not make mistakes in sheep farming management, reduce waste and be more productive.
- o Processing Deficiency - increase the amount and quality of processing facilities for sheep.
- o Communication - enhance the communication between the Meat Sheep Alliance members.
- o Lack of Involvement - increase people's involvement in sheep farming, especially kids and youngsters.

- Are there any other major issues or problems that you think we didn't include above, please let us know? _____
- Do you consider your activity related to sheep as your main business, a secondary business, or basically a hobby? _____
- What is your current flock size? (number of sheep) _____
- How long have you been raising sheep? (years) _____

APPENDIX F - CONTENT ANALYSIS CONTEXT UNITS THEMATIZATION

RPER Technique Colors where the speech happened

Presentation	*Seasonal Calendar*
Input and Output	*Venn Diagram*
Reality and Obj Matrix & Priorities	*Focus Group*

Each Themes' Context Units

Theme 1
Association Membership Engagement, Communication, and Benefits
Nathan Morris [NewM1] 21:56 "Not saying anything about anyone in particular, because it's really, I think, more of a larger scale issue, but what we have learned over the last 13 years with the Florida Dairy Goats in particular, is that there is not a lot of support there and people will tend to get in, they're driven towards the fares and showing, and then that's about it. And so there's no real support for an industry or for anything that is long term or sustainable. And what we find is that a lot of people, they kind of get in, they're excited about it, there's not much support and then after a few years, they sell their animals and move on."
Nathan Morris [NewM1] 22:56 "And so we're excited about kind of applying what we've learned with the dairy goats in a broader sense and expanding into meat sheep. And Barbara Martin [BM1] isn't here, but I do appreciate her inviting me here and meeting you folks and hopefully getting to know you guys better. My wife and I have been doing this for a long time and we're in it for the long haul and so we'll learn and hopefully..."
Nathan Morris [NewM1] 26:11 And then I think that's important to communicate.
Edward Moore [ExpM2] 33:08 "Now, the deal was finding a place to do that with (processing). So here's where the meat cheap organization comes in."
Edward Moore [ExpM2] 35:43 "They won't go from county to county. They just don't do that. The Cattlemen's Association, I have found not to helpful I don't know what your experiences, but the Meat Sheep Alliance has been really open. But we don't even know one another, you know, and we don't have a phone list. I mean, it's like this is all secret stuff. It's not, if we want to do business, we have to be in touch on that."
Edward Moore [ExpM2] 36:31 "Okay, well, that's interesting. I don't think I'm on the list, and I think I've called up about it. I mean, these are just little things because I know the people that I know in the Meat Sheep Alliance, that's Bethany Miller [BM2] and another board member. I just pick up the phone, if my phone is working, and find out what's going on. But I think we have to do other things."

Edward Moore [ExpM2] 41:01

"And I think that's where the alliance could come in again. If we let people know we need help and we're willing to pay for it, I think we'd find the help. But for us to look for help, I can't get anybody to help. And I'm just exactly like you. I mean, I start early in the morning and late at night, and guess what? I don't have a life. There's nothing going on. I mean, baby sheep are fine, right? Cattle are fine. "

Noah Murphy [NewM3] 54:52

"I am the new one here, I start a year ago. I got my first ewe from Bethany Miller [BM2]. She's my mentor. Everything I learned is from her, and from Barbara Martin [BM1]. So I rely a lot on those two ladies here. And I'm learning a lot, so I start with seven, now I have 52, one year later."

Edward Moore [ExpM2] 58:22

"I just came up with another little idea we might want to explore. Through the alliance, we should set this up. If you have X number of sheep you want to sell, you let the alliance know. We all let the alliance know what we have, because I have run out during the religious festivals."

Edward Moore [ExpM2] 59:01

"We might have a number of lambs, but we don't have that many rams necessarily. Nor do I want a lot right now, because we're trying to get the herd up, but we run out of animals to sell, and people will say, 'well, where can we get them?' Well, if we have none, and you have sheep, we could let people know about that."

Barbara Martin [BM1] 59:22
I don't have a problem adding it on Facebook and on the classified section.

Barbara Martin [BM1] 01:01:08
"So currently, I'm just going to interrupt, as far as the Meat Sheep Alliance go, and unfortunately, yes, we can actually see a different way for those people that are not on Facebook, because all our members that are registered members, it's exactly what we're already doing at the Meat Sheep Alliance on Facebook."

Barbara Martin [BM1] 01:00:02
"But as it stands currently on our Facebook, we've got quite a few people on Facebook already advertising their sheep that's for sale."

Bethany Miller [BM2] 01:04:33 Bethany Miller [BM2] 01:05:31

"It's hard to get people involved."

"I've been involved with the Meat Sheep Alliance since the beginning and we really want to make it good. It's hard. A few of us do everything there mostly now Barbara Martin [BM1] has come in, she's quite a tech person and she can do all that stuff and she does it very well."

Bethany Miller [BM2] 01:05:45

"And we try. I think basically the function of the Meat Sheep Alliance traditionally has been education. Getting people information on how to keep sheep alive in Florida, which mostly parasite and predators, protecting them from that."

Bethany Miller [BM2] 01:06:08

"So we can do better in other ways as well, like helping people sell their sheep, which we have on Facebook. But we've never really driven people to our website. We've always just used Facebook. But we certainly can start doing that, advertising on our page and get more people involved on the board in working on this."

Barbara Martin [BM1] 01:06:45

"Yeah. I think one of our most of the challenges also for us as the organization is going to be is, well, one day when Bethany Miller [BM2] moves on, one day when I move on, it's like, who takes over from us? Because we do not have a lot of youth involved in the Meat Sheep Alliance as such and trying to get the youth board involved in it, it's also difficult."

Edward Moore [ExpM2] 01:38:14

"The other thing, too, is for the association is to let people know, and this is an opinion, this is from our experience, our experience at Hancock, I'm surprised it's the same. Let the new people who want to be involved know where to go, to get help, to buy seed if they need it or whatever else they need."

Nicole Montgomery [NewM2] 01:40:21

"But it might even be something like, Milton's, if you belong to the Meat Sheep Alliance, you get a 5% discount, and then you're more encouraged because she's going to get all of us to go there."

Edward Moore [ExpM2] 01:46:20

"Excuse me, Eric Mitchell [ExpM3]. We all go out when this happens every year that we have to feed the animals. And we probably all worked out ways of dealing with it, finding places to buy what they call "cow hay" out here and stuff like that. Is there some way we could put it together where it's almost impossible to have a property here that you could put 300 sheep on. We don't have the land. But for instance, if we have a local association work and have, let's say, X number of sheep on little farms that add up to that number that we're looking for, and then have a way to purchase the supplemental feed that we need at a discounted price. or place."

Barbara Martin [BM1] 01:54:32

"So the Meat Sheep Alliance, so we try and do our workshops throughout the year, except for the summer months because it's very hectic on the sheep and it's very warm on people and people don't like sitting outside in the heat and stuff."

Barbara Martin [BM1] 01:55:19

"Every single one of those workshops though, do have FAMACHA© training. Both Bethany Miller [BM2] and I am certified instructors. We both did our certification. So we try and teach people. Now the February workshop that we're hosting is always rehosting in combination with Dr. Brittany Diehl, University of Florida to try and get people to come and learn. So Laura, the extension officer, well yes, so, but that's a good time where most people that don't know each other will get to network and speak and learn."

Barbara Martin [BM1] 01:57:05

"This year, we've got a new people. I mean, the problem just becomes, after a while, it's like, how much more do you want to talk about parasites? But, yes, you still have to talk about parasites because there are new people in a workshop kind of thing."

Bethany Miller [BM2] 01:58:36

"Yeah. So Barbara Martin [BM1] was a real blessing, and we have a pretty good board. The problem is, they're just so busy trying to keep their head above water and doing your own labor and spreading yourself too thin. You're just really tired. You can't even imagine taking on another job."

Barbara Martin [BM1] 02:09:36

"It's all about networking and having the connections and helping each other at the end of today, because, I mean, face it, we all have our challenges. Any sheep producer in Florida that tells you that got no challenges, I would stay very well away from me because that ain't the truth."

Barbara Martin [BM1] 02:40:58

"Yeah. One of the issues we have in the Meat Sheep Alliance. It's only a few of us that do work in this. If I tell you how many times we have reached out to producers to come on board or do help this, people just don't... I think... you're the only one [pointing at Nathan Morris [NewM1]] that replied to me to say to me what you would like to see the new workshop. And that was Nathan Morris [NewM1]. It's the only one. As for the rest, did not hear anything. Nope. You guys must do what you have always done. That's the problem. People keep on telling us to do the same thing we've always done. So, you know, and a last weekend we hear from people like I mean, today we got a lot of new feet that we now can spend time on the board to listen and to move it. But all of us also have our own farms, so farm it is a big problem."

Noah Murphy [NewM3] 1:06:55

"The way I see it, as a beginner, I see like this. I can count first with MSA, Bethany Miller [BM2], Barbara Martin [BM1]... (other members of the association)."

(Talking about communication issues)
Barbara Martin [BM1] 1:54:58

"I think we do, Especially after I spoke to Edward Moore [ExpM2] today that he doesn't know about like our Facebook, that some of that information hasn't reached you? Because obviously I think we need to rethink the fact that we just assume everybody is on Facebook and it's maybe not the case that everybody is there. And as an association, I think we could probably do a little bit better with communication. I really try, like, with my customers to tell them about the Meat Sheep Alliance and those things, and, so you know, and get our workshop dates out there. We try and posted it everywhere we possibly can. But then as today, I didn't realize that Noah Murphy [NewM3] (for example also) didn't have the date, so I thought you were on Facebook. But you are on Facebook. I don't know why."

Barbara Martin [BM1] 1:59:23
 The goal is education.
(Educate Members.)

 Bethany Miller [BM2] 1:59:25

"Yeah. That is what we try to do, through our workshops."

Barbara Martin [BM1] 2:04:22
 We do try and teach that at the workshops, but sometimes just feel… (talking about feed management and sheep weight gains)

Barbara Martin [BM1] 2:04:30

"Yeah, well, we have been this year, especially from my side, I have been pushing a lot of my customers to say that you need to come and start doing the workshops. I can't be only a free walking encyclopedia. You need to put the work in to understand what you are doing with the sheep. Otherwise you're never going to be successful. You can ask Eric Mitchell [ExpM3]. Even now, I still try and read up on sheep. Education doesn't stop. It's a thing that goes on, and on, and on."

Barbara Martin [BM1] 2:12:44

"Well, we do. I mean, we just don't have a lot of young kids. But the problem is because the workshops are not about show or anything, so therefore
 None of us show sheep. So the problem is putting a workshop together of showing sheep. Well, we're not going to give you the right information or not to show you a sheep." (youth involvement issue)

Bethany Miller [BM2] 2:13:28

"Tried to contact them, they will have nothing to do with us. And I think they just are too busy. They don't want to come. We even had a special, this is before you (looking at Barbara Martin [BM1]), we tried to get a specific workshop for 4-H leaders to pass on parasite Information to these kids and how to feed the ruminants and that they need good quality forage, and, just teach them about sheep, so they could pass this information on to the kids. We didn't get one person, and we sent out, this was back before constant contact (online marketing). We sent out letters to them and we called them, and they just were not interested."

Noah Murphy [NewM3] 2:14:21

"They don't have… because, I know that, because my daughter's on the 4-H, at the school, and she was showing her lamb, the daughter of your lamb (they bought it from Bethany Miller [BM2] or Barbara Martin [BM1]), and she just got so mad because, first she missed the date, she forgot to sign up, so she's not going to show anything. And then it's going to be the only sheep on the whole 4-H. They don't have sheep over there, they have goats, everything else, chicken, goats, pigs, no sheep."

Bethany Miller [BM2] 2:14:56

"I think that is a big problem for us, too, is getting the kids involved, because, we're getting old and tired, because if we had kids in the association, we might have a little bit of a labor pool, just for them wanting to learn about sheep."

Barbara Martin [BM1] 2:15:31

"But it's always been an issue, is how to get the kids to come."

Bethany Miller [BM2] 2:15:33

"Yeah, how to get them involved. We need to have a youth person who wants to take that on because I can't. I just don't have the time. Barbara Martin [BM1] can't. We had somebody on the board from 4-H. She didn't, she never came to one meeting."

Nicole Montgomery [NewM2] 2:17:26

" I would say that, just the 4-H clubs they just don't, the kids…, their goal is showing, like, even in the day, like the goal is showing. All the workshops are showing, and most of those kids are just leasing kind of animals. What we have found more effective, is also home schooled. And those moms will bring kids that work hard, that want to learn about animals that, you know, those have been so good."

Nicole Montgomery [NewM2] 2:18:11

"So I would focus more on, like more on that aspect, maybe reaching out to home school groups. I could give you the names of the ones that are here or whatever, and those come in, and then you tie that in to get those high schoolers who really work, that are going to say, okay. Like, my daughter won the America La Mancha Scholarship because she put in a certain amount of hours. She went to farm, she helped out. So that makes you eligible for that scholarship. Like, what do you do? What are you doing? And these are kids that are interested, that want to be vets, that want to do, they're not interested in the showing. Well, maybe they are, but that's not the focus, because it's so much different raising an animal than one show a year that you've put all this time and effort into than that day to day. There's a few farms in these groups, and they pay $30 to have their kids come out. I took my kids to the camp and they go, you just paid $40 a piece for us to do somebody else's chores. They're like, we wanted to ride the horse. We wanted to do the sheep. We wanted to learn, not muck the barn, which mucking the barn is, I mean, that's how we got our best worker. Like, he wants to learn about animals. Okay, well, we'll pay you $10 an hour to muck, and we'll teach you how to trim hooves. And you and I both know that if you don't know how to trim hooves, you just saved me 2 hours of my life."

Bethany Miller [BM2] 2:21:19

"Yeah. We need them to go to the website, and we need to no, we need to, I say we. [laughter], (she knows is basically her). I need to learn how to update the website, keep it relevant, put the information on there, so that people automatically go there for what they need. And this is a new website that Barbara Martin [BM1] organized." (Talking about Communicating better within the MSA members)

Barbara Martin [BM1] 2:32:15

"Well, I guess we still hope that we are going to grow as associations, with retaining our membership, but also getting new membership as new people are getting into sheep. And then definitely our main goal would be to continue education. Educating producers on basic things like parasite, management, hoof management, lambing issues. But in combination with the association, I think we would like to continue our work with the university as far as possible in the future."

Bethany Miller [BM2] 2:32:49

"I see… I sound like I'm bragging, but I think to replace me and Barbara Martin [BM1] is going to be really hard, because she and I are very dedicated, where I don't see that from very many of our other board members. And I could be totally wrong. But that's the worry for me in the longevity of the Meat Sheep Alliance. And I think we're the only game in Florida for showing people about, except for the university, with their small ruminant programs. They (other members) can call us anytime, day or night, and ask a question, and we'll answer them. We're the only game in town for that. We'll get in our car and we'll drive to their farm and help them pull a Lamb or whatever. I don't see that in, not that they're not hardworking, but in terms of putting out the effort that Barbara Martin [BM1] and I put out, I just that's what concerns me."

Barbara Martin [BM1] 2:34:13

"So this is now, I've been two years vice president. I've been two years president. I will be president for another two years. And I've also been with the Meat Sheep Alliance for six years. So we try and make space for new people, but sometimes it's difficult getting people to do that. But for a while, I am still involved with the MSA. Definitely the push is education, working with the university. Those two things is important things to us."

Bethany Miller [BM2] 2:35:21

"And I had to quit because I wanted someone to take over for me, and nobody would, so I said, you know what? I just have to quit and force someone to do it. Although they said they would take some of my duties. But, and I thought, you know."

Barbara Martin [BM1] 2:35:39

"We're going get in a situation what Bethany Miller [BM2] did with me, I just got a phone call to let you know you are on the board. No questions asked."

Bethany Miller [BM2] 2:35:46

"Yeah, we've got to do that. Just pull them in, make them do it."

Eric Mitchell [ExpM3] 2:39:25

"It's the best organization that I know of, because I've been involved with the cattle and the sheep side of it. The Meat Sheep Alliance is the best that there is out there. I can promise you that, by a long way. There is no politics, there is no nonsenses, there is no bullshit involved in the Meat Sheep Alliance that you will get in the other associations. So, if the Meat Sheep Alliance doesn't survived, well..."

Bethany Miller [BM2] 2:39:52

"It is not going to be because we didn't work at it."

Theme 2

Production System (Inside the Gate)

Mr. Ethan Mason [ExpM1] 13:03

"There's only so many people that want to get into this business. A lot of people say, yeah, I want to get into the business, and they get into it and they find out the trials and tribulations of the sheep. If they're used to raising cattle, it's a little bit more than just putting some cows up in the pasture and letting them eat. So sheep is a little bit more care and a lot of people don't understand that."

Mr. Ethan Mason [ExpM1] 13:41

"Well, I raised some cows, get on in the future and got into raising ostriches also and went through that and... you thinks sheep were a lot of trouble, the ostriches are a lot of trouble also, mostly here with the... it's not like Arizona or South Africa where the humidity is real low and you can let them hatch their own eggs. You got to take the eggs, incubate the eggs, watch the chicks, watch the predators. And predators are more than just coyotes., they're hawks, eagles come down and get the ostrich chicks."

Mr. Ethan Mason [ExpM1] 14:48

"And the pigs, of course, provides you another type of meat. So as far as the help, I pretty much do it by myself. If I need some help with the sheep, I have a daughter or I have a friend also lives in the property, he can help me. So I don't have any paid employees that come in."

Mr. Ethan Mason [ExpM1] 15:11

"But pretty much my animals live off the grass. I feed them not for really, the feed, just to keep them coming back and keep them friendly with me, feed 'em some mineral. But I don't feed them a lot of feed. They live off the land themselves."

Nathan Morris [NewM1] 19:48

"Yeah. Nathan Morris [NewM1]. We live in Brooksville as well, so Hernando County. We're relatively new to sheep, we have been raising dairy goats for 13 years now, La Mancha's, and so that's more where our background and expertise has been and everything from breeding and showing to nothing large scale right now, we have close to 30 head of La Mancha."

Nathan Morris [NewM1] 20:17

"We had sheep a few years ago as part of a forage project for one of our older kids. She moved on, her animals moved on along with her. Those breeds were tough. It was a Southdown and a Suffolk, a lot of wool, and we just felt like we were playing from behind the whole time. And so, did some research, like the Dorpers that led us to Barbara Martin [BM1]. And we were here last year for the Meat Sheep Alliance, and we got some two ewes from Barbara Martin [BM1] here in October and one of them has lambed."

Nathan Morris [NewM1] 23:47

"So I would say that on the education side, there's a lot out there on the internet, and a lot of it isn't very good information. And so on the education side, I mean, research that has been done, when we look historically, we see that there were several, from universities throughout the United States, releases back about 15, 20 years ago, good information, but there hasn't been anything very recently, and especially here in Florida, we have unique conditions with the parasites and the heat, et cetera, for raising the animals."

Edward Moore [ExpM2] 28:54

"But I also discovered that we don't really know a lot about our sheep in terms of when we talk about a cracker, what is the real genetic make up of that that makes it parasite resistant, for instance? And what are we doing to it by mixing all kinds of stuff with it?"

Barbara Martin [BM1] 40:21

"For us, our biggest issue is probably labor. It's all good and well, we can have all the markets, we can have all the resources in the world, but if you, just like us, trying to do 128 of sheep, and sheep take a lot of time, and if you don't have somebody that can help you, well, you're not going to need any of the other resources because you're not going to be able to make it."

Edward Moore [ExpM2] 41:01

"I have other things I got to do, too. And you cannot find help. And yet there's a lot of help and unemployed people in Hernando County." "Now you have to train them, that's a problem, and you don't necessarily know if they're gonna adjust."

Barbara Martin [BM1] 41:42

"That's the other problem, you have to be able to trust. (the employees)"

Edward Moore [ExpM2] 41:50

"Now, there's another thing, too, in Hernando County. A lot of veterans out here, and that's a market that I'd like to look at. And if we had a way to advertise the Meat Sheep Alliance right now, we probably should do it for workers."

Barbara Martin [BM1] 42:16

"Even as a farm. If I advertise as Windlestone Ranch that I'm looking for somebody, and somebody can see we've been in business a long time. You can ask Eric Mitchell [ExpM3], the people that sometimes apply for this. There's a lot of people that don't have work, but there's also a reason some people don't have work, like, literally, you have to charge these people to operate tractors and all kinds of things which open to all kinds of liability issues and nonsense."

Barbara Martin [BM1] 42:47

"But before I got Emma, we used to have Davidson for a long time, and then when he moved on, you can ask them. I was really getting stressed, because literally, I can train, I can help somebody to understand what they have to do, but to find a quality of person that has got the right compassion for the animals and that pitches up."

Barbara Martin [BM1] 43:09

"Many times people would say, Barbara Martin [BM1], I'll be there Monday. Monday comes. No one arrives. You know. And so we go."

Barbara Martin [BM1] 44:52

"Our biggest challenge that we face is basically it's also, you know, it's labor. I mean, we're tied to the farm. You can't move. This is what you do and stuff. If Emma, for example, it's always in the back of my head, when she moves on, I'm going to be in a crisis. It's like, who am I going to get to full her space to come and assist us and help us."

Noah Murphy [NewM3] 58:22

"(he's got) Katahdin. And he's got some Dorpers. So these are challenging. They are challenging."

Edward Moore [ExpM2] 01:01:19
The pricing, excuse me, the pricing has to be fixed. What do you get a pound right now?

Barbara Martin [BM1] 01:01:29
I'm not going to disclose all of that.

Edward Moore [ExpM2] 01:01:31
Well, I don't mind disclosing it to you because we're never going to move forward, but we get on the hook $4 a pound, and that has to do with a little bit of advertising, and I think it has to be more.

Eric Mitchell [ExpM3] 01:01:44
Is that on the hook, or is it alive?

Edward Moore [ExpM2] 01:01:44
Alive.

Barbara Martin [BM1] 01:01:46
We get $3,50.

Edward Moore [ExpM2] 01:01:47
And I started off with $2 a pound a couple of years ago, and now it's $4. Nobody worries about it. Live. So that's something we have to discuss. Because I think...

Barbara Martin [BM1] 01:02:00
I just don't agree that it should be a fixed price because not all sheep genetics are the same.

Edward Moore [ExpM2] 01:02:07
No, but if you want to buy Dorpers, X amount, so on, you put it down. That can be done. The point is... you don't think it works?

Eric Mitchell [ExpM3] 01:02:15
You can't fix prices. I couldn't see it.

Nicole Montgomery [NewM2] 01:09:39 Nicole Montgomery [NewM2] 01:09:57
Actually, we learned that the two girls that were very intensive ambassadors for sake everything went to college. And we learned that...

Nathan Morris [NewM1] 01:10:04
we learned that we depended on them a lot more than we realized.

"Sure. I'm Nicole Montgomery [NewM2] and Nathan Morris [NewM1]'s wife. We traditionally raised goats for the last 15 or so years and got in sheep the last few years. We run a family farm, we have seven children."

Bethany Miller [BM2] 01:16:44

"The hard thing is that we have this sheep that are not seasonal lambers..." (trying to fill the busiest months)

Edward Moore [ExpM2] 01:18:09

"The other problem with this, again, the lambing isn't seasonal, but the seasons aren't seasonal here either. I mean, if we go through another December, January like we had here, I mean, that was just insanity. and that's not talking about the droughts or anything else. And I think some people think when we have a drought, we have nothing to do."

Bethany Miller [BM2] 01:22:19

"But in January, February and March, we're just doing rotational grazing, so we just move the sheep, which it's pretty easy, actually."

Barbara Martin [BM1] 01:22:40 Ethan Mason [ExpM1] 01:22:40

"It's basically a mix of lambing and I buy additional feed, hay, during that time, so I have to feed them a little bit more than during the growing season of the pastures."

"Lambing." (which makes January, February really busy for her)

Barbara Martin [BM1] 01:23:14

"It's much more time. Everything is not necessarily got to do with more work. It's just more time consuming on your day. Because for us with the cattle, we feed a little bit differently, so we've got a TMR trailer, so you have to put the bale and you have to wait for the bale to mix and stuff. If I didn't have that, that would have saved me like an hour of my day and I could have done something else."

Barbara Martin [BM1] 01:23:44

"Because normally in March, we have already finished with our lambing and also, hopefully most of the maintenance should be done in the winter time. So March is really one of the months that we breathe. But then from April, things change again. It's a short breathe."

Barbara Martin [BM1] 01:24:10

"We're on parasite months." (on summer, middle of the year)

Bethany Miller [BM2] 01:24:12

"Yeah. We get the sheep in every two weeks and check them for parasites, especially the replacements, that's when you really watch them to see which ones... well, the ewe lambs and your ram lambs, you get them in every two weeks to check them, to see what replacements you're going to keep and what sale animals you can sell." (summer months, middle of year)

Bethany Miller [BM2] 01:24:38

"Yes. During the summer time, you have a greater increase in parasite activity, too, because it's warm and wet and your lambs are young and you can figure out which ones you're going to keep at that time pretty easily. So that's really a busy time for us."

Bethany Miller [BM2] 01:25:04

"Well, we have, you know, every year you have five or six or seven old ewes that you need to call. So you want to replace those with young replacement animals. So you want to replace them with whatever is your best animals that did well over those summer months, because that's the hardest time for our animals, is during the summer."

Bethany Miller [BM2] 01:25:39

"The older animals get sold as they quit producing or they had their lambs, we're not going to breed them for another year, so we wean the lambs, they go in the cull pen and we have no trouble marketing our cull ewes. The requirement is that they kill those cull ewes on the farm so that they, those good girls that work so hard for me, have a nice death. And I know they're gone. I don't have to worry about them being taken."

Bethany Miller [BM2] 01:26:15

"To a market to be sold as breeding ewes. So then those, over the year that we had, maybe somebody got mastitis real bad and we ended up having to feed her lambs. Well, she's nice and fat. She's going to go in the cull pen and get sold right away. So then we have those lambs, so then she needs to be replaced with one of those good replacements that we had chosen during the summer."

Barbara Martin [BM1] 01:26:55

"By FAMACHA scoring, fecal, body scoring, swelling, bottle job." (Check Health and Parasite) Barbara Martin [BM1] 01:27:06

"But the most effective way for us is that my animals come onto scales like every two weeks then. So we check weights, we check their eyes, we will see what the fecal counts look like, deworm when necessary, the ones that don't go. But those months specifically, just because it's Florida, those are the big months where you normally start having issues. I mean, right now we don't really have issues, there is isolate cases, obviously."

Noah Murphy [NewM3] 01:27:44

"Right now I start to have a lot of ewes with parasite, just last couple two days I deworm, like, nine ewes with the swelling. This amaze because just so that the FAMACHA is still good, three, but they have the big swelling."

Noah Murphy [NewM3] 01:28:22

"But it was my mistake. Yeah, my mistake. Because two things I plant for the winter and I leave my animals on the pasture. They eat everything. So I don't have pasture now. My pasture is this big (shows short pasture size). So that's why they come out with so many parasites now. I'm screwed."

M2 01:29:04

"Nothing you did, probably it would have happened anyway. And I know your nutrition is good. I know you take good care of your sheep. Nutrition has a huge impact on parasite resistance."

Nathan Morris [NewM1] 01:29:20

"Again, from the dairy goat side, we have found that nutrition in the sense of minerals, so goats you give copper to, copper deficiency leads to more susceptibility to parasites. Now, that's not something, obviously, you do with sheep, but making sure that their nutrition is sound, whatever their minerals are, that all of that is balanced and well. But we have learned, so we're just very diligent on making sure that our animals are eating."

Nathan Morris [NewM1] 01:29:49

"We've found that they'll start to pull off feed, as soon as that starts to happen, obviously, it's the sign of something, and typically it has to do with parasites. And then we also look for the patterns of their feed. We call it clumpy poop. Right. So if their poop starts to stick together, that's something else. So those are preliminary signs that would lead us to, all right, let's check their eyelids and FAMACHA score them and be very close monitoring their feed consumption and those kinds of things on the front end. And so those are some of the things that we look at before that lead us to, okay, FAMACHA testing and then just being very diligent on how are they recovering. And then red blood cell also is something that to start supplementing in the event of just to help with the..."

Barbara Martin [BM1] 01:30:48

"Hoof trimming. The thing is, if you pay somebody to do it, you don't know what's happening in your flock. That's how I feel. I like to tip my sheep and I like to see exactly what's going on in their hoof. That way it's also a good time for me to investigate what's happening with which sheep and stuff, so you're up and close. But that's the most time consuming thing for me."

Ethan Mason [ExpM1] 01:31:19

"I think that's a characteristic of the Dorper too. I think their hooves grow faster than the other breeds."

Eric Mitchell [ExpM3] 01:31:25

"That's a characteristic of Florida, because we don't have any rocky soil."

M2 01:32:15

"Well, for me, I plant grass in the winter and I have pretty good Bahia and Coastal in the summer. Some years I hardly feed any grain or hay at all, except for my babies, I do feed the young stock, but the mature ewes, they are on grass and I don't have to trim feet."

Bethany Miller [BM2] 01:33:10

"It's been bad for everybody. Even at Hawthorne, the grass just isn't growing this year, so I've had to feed corn and hay to my ewes." (Talking about this year lack of pasture)

Bethany Miller [BM2] 01:33:26

"Big Boss, Rye grass, Clovers. ITeam4 brought me some really nice seed, and I'm sorry to say, just not none of it really... The Big Boss withstands the drought, the frost, and it will live and it will look pretty, but you can't graze it because it's not growing back. So if you graze it once, it might be a month or six weeks before it grows back because there's no moisture."

Bethany Miller [BM2] 01:34:17

"It needs steady rains. And this summer has just been terrible. I mean, this winter has been terrible."

Eric Mitchell [ExpM3] 01:45:05

"Feeding is by far your biggest expense. In cattle or sheep, probably pigs as well. And if you can manage and monitor your feed costs, that's the difference. Because according to my math, you need to have 300 sheep before you're viable. Anything below 300 sheep, you're not viable. So less than 300 sheep, we are hobby farmers. Okay? And if we want to make any sort of living or we want to be sustainable, you have to control your feed costs. Your parasites and all those other things are way easier to control, because you can do it chemically and you can call, but your feed costs is what kills every operation."

Eric Mitchell [ExpM3] 01:45:56

"I come from the feedlot background, feeding cattle and sheep. So understand, it's not as sensitive as chickens, but it's critically important that if you want to be sustainable, you need to control your feed costs, or have some sort of control over it."

Noah Murphy [NewM3] 01:48:12

"But, you guys correct me, last year was my first year and I did everything by the book with ITeam4's help. I have grass all year around. All year around. I don't have to buy... Have to buy just like, corn for treat. And I think this year, now I feel it, because I mess up and I put a lot of money on it." (talking about this year lack of forage/pasture)

Eric Mitchell [ExpM3] 01:52:19

"In practical sense. Like parasite control. This is just stupid, but when we have our sheep out in the pastures and they stop at this gate at 05:00 in the afternoon and as soon as Barbara Martin [BM1] puts a bit of grain in here and she opens that gate, I stand and I watch the sheep and they order for the grain. They run like hell from the gate to here, the stragglers. There's only three or four stragglers, they are sick sheep. Get them, put them in the shoot and look at the eyes. Those are your sick ones, you know."

Barbara Martin [BM1] 01:52:57

"And that's an easy way of just like, a management thing. We put the grain because we normally, in summertime, we bring the sheep in. But as true as word, your back sheep, there's a reason why there's a back sheep. You better go look. Maybe she's very evidently pregnant or there is something. But yeah, your strongest sheep are always in the front."

Eric Mitchell [ExpM3] 01:59:01

"That's our biggest problem to say. What is our biggest problem?"

Edward Moore [ExpM2] 01:59:10

"Labor."

Eric Mitchell [ExpM3] 01:59:10

"Lack of it."

Barbara Martin [BM1] 01:59:11

"If I didn't have to worry about things like what happens if my little Emma moves to a greener pasture, and then it's like, okay, so right now, it's things that you worry about because I've got a lot of animals." (Labor)

Ethan Mason [ExpM1] 01:59:38

"You can't find seasonal workers."

Barbara Martin [BM1] 01:59:40

"A problem for us is we don't have accommodation. That's all different things. So now, if you want to do the seasonal, you have to be able to put them somewhere to stay."

Eric Mitchell [ExpM3] 02:01:44

"If you're not pulling lambs, you got a problem with your genetics because you're not growing your carcass size. And it's not like cattle, where we have a database where we can go in there and we can go for low birth weight, high weaning weight, high yearlings, with sheep you don't have that information. You're going to try and guess it. You're trying to bring up your carcass weight, and so you're going to have to start it because you got to pull those lambs sometimes."

Barbara Martin [BM1] 02:10:05

"So we, me typically I'm on February vaccinations, just because every year February I vaccinate all the animals and we only do CDT, which is the clostridium diseases and tetanus."

Bethany Miller [BM2] 02:10:42

"30 days. We vaccinate ours at 30 days because we wean at 60 and we want them to be vaccinated before we wean and have that CDT well settled in there, so we vaccinate at 30 days and then two weeks later and then two to three weeks after that, they get weaned and then they're on full feed. Then you don't have to worry about hetero toxemia."

Mr. Ethan Mason [ExpM1] 02:31:01

"Animals with a High FAMACHA score. Well we don't, I mean, I don't automatically deworm every animal." (Regard Applying Deworm)

Eric Mitchell [ExpM3] 02:32:22

"Healthy animal. Or it means you have an animal that you now cannot send to Ethan Mason [ExpM1] as an emergency slaughter. So if you got an animal that's sick and you start injecting it, you got to stay with that program. If you've got some experience, you see the sick animals. Like we had that prolapse we found, Ethan Mason [ExpM1], was the day before Christmas. That's advantage of having a network that we had with Ethan Mason [ExpM1]. Hey, Ethan Mason [ExpM1], we got trouble. It's the day before Christmas. I know, but we got a sheep that's got a prolapse. Can you help us? He was here in two minutes. We slaughtered it, and we sold the meat in ten days."

Eric Mitchell [ExpM3] 02:33:05

"The negative one that I put there is it pushes up your cost of sales. Medication. If you don't control that, your cost of sales go through the roof."

Nathan Morris [NewM1] 02:33:31

"Yeah, well, I mean, we joke around because we have a lot of kids, but the truth is, we do need help. We do need it." (labor)

Eric Mitchell [ExpM3] 02:33:37

"It needs to be from outside though, not just from the Meat Sheep Alliance. These guys need to lobby it to the government for us, and somebody needs to do it because. The problem with labor, they are not going to listen to us."

Edward Moore [ExpM2] 02:38:04

"I actually do that (outsource labor) with someone out of Texas. One of the problems is the communication and making them understand what our goal is. A lot of people in this who advertise to set up websites and do all of this linking up aren't on the same page with you as a farmer."

Edward Moore [ExpM2] 02:38:28

"Now, when I was talking earlier about my lack of or interest in all of this computer stuff isn't because I'm some dumbass, I know about it, but it takes a lot of time. And if you're trying to manage and repair a piece of property and manage those animals, that is a full time job. You need somebody, and frankly, I broken it down to you have to have time to manage your business. It doesn't matter what we raise or how good it is. There are buyers out there. But getting to them isn't easy. Anything you do like that is worth the money. And it is not cheap. And you have to make the money somewhere."

Nathan Morris [NewM1] 02:39:18

"And the only concern that I would just add to that is as a person that runs a farm or any kind of a business, the most important thing is the vision that's established by whoever is responsible for that. And when you outsource the advertising or the marketing, you tend to lose that. And then that misrepresents. Potentially your company or farm. And you're not projecting what you're trying to project to others."

Edward Moore [ExpM2] 02:39:59

"It's to the laborers. People who work for you have to have the same vision you do, because that passes on to your buyer."

Nicole Montgomery [NewM2] 02:41:56

"One of the things that was really great when Nathan Morris [NewM1] and I started out, we went to a big workshop and they gave us a business plan and how to get that vision and things. The binder is this thick and it's never going to get done. Here's the marketing, here's the advertising. What's your vision? What's your employee think of your vision? How many hours are you spending on this and that, we added up the hours and we're like, well, how are we going to have the time to get that? But it's just now there's online and you just Google business plan and you get seven lines, but that doesn't really give you the profit or how to get the customers or like he was talking about those private treaties."

Nathan Morris [NewM1] 02:44:56

"There's also predator protection, correct?"

Eric Mitchell [ExpM3] 02:45:34

"Electric fence is the best."

Eric Mitchell [ExpM3] 02:45:45

"Mortality. Mortality. It depends from farm to farm. Ours is pretty low. Right? but we don't know about other people."

Eric Mitchell [ExpM3] 03:01:30

"South Africa exports is the second biggest exporter in the world, fresh citrus. Spain being the first. We don't do any orange juice, but that is it now. So I come out of the citrus world and I come here to Florida, and I see the whole citrus industry collapsed because of greening disease."

Eric Mitchell [ExpM3] 03:02:12

"In fact, most, such as producing countries in the world, have had greening disease for years and years and years, and they will solve the problem. So why can't we solve the problem in Florida? It's a people problem. It's not a greening disease problem, it's a people problem."

Eric Mitchell [ExpM3] 03:02:37

"The other thing has shut down the Citrus industry in this state. Lack of labor. So they bring the migrant workers in from Mexico during the picking season, which is now winter months, and then they send them all back again. Now it's becoming more and more difficult to bring these guys in on a permit."

Eric Mitchell [ExpM3] 03:03:07

"But that's what's killed. Industry. Yes. So I agree with what you saying, that we're not ahead anymore in this country. Not in wine production nor in citrus. Sheep. Not in sheep. We are way behind in sheep."

Eric Mitchell [ExpM3] 03:06:55

"I've spent time in Vietnam. Spent time in Thailand. India. I've spent a lot of time. And really, if you want to meet hardworking people, go to those countries. You cannot believe what an Indian guy or a Chinese guy does in one day for, like, $3."

Eric Mitchell [ExpM3] 03:07:24

"It's incredible, you know, we never going to compete against them, never ever."

Eric Mitchell [ExpM3] 03:07:36

"And we are inclined to say Chinese goods are junk. They're not junk. They're fantastic manufacturers."

Eric Mitchell [ExpM3] 03:07:44

"They produce that shirt for the price we are willing to pay for it. If we pay them a little bit more, they'll give us a better shirt." (Talking about labor in the US)

Noah Murphy [NewM3] 1:08:20

"Like Adrian (another MSA members that work in Bethany Miller [BM2]'s farm), I was dealing with diarrhea in my flock, I call the vet and he is like try this, try that, and nothing is happening. I call Adrian, and ask, what is happening? Adrian is like, Noah Murphy [NewM3], give Pepto-Bismol. So, diarrhea gone next day.

Eric Mitchell [ExpM3] 1:25:28

"You got more times of cutting your feed costs by cutting out wastage than you have for dealing, trying to get a better price from a supplier. But if you look at your nutrition, you look at your daily gains, you look at your daily intake, if you control that carefully, you'll save more money than getting a little discount. And if you don't have wasted in your bins and that type of thing."

Barbara Martin [BM1] 1:25:52

"Mean, I'm guilty of it, I'll be honest, Eric Mitchell [ExpM3] was saying to me, just two weeks ago, he's like, you're overfeeding, and I can see it by the amount of things that you have to gather around, the bins. Because I'm very specific, the sheep areas need to be clean, so we go and then we put it back in the pasture to work it back in. And he said to me, so you can see you've got a lot of waste, you're feeding them too much."

Barbara Martin [BM1] 1:26:19

"I mean, that is money that I put in the bin, and the sheep simply waste it, and I don't get anything back for it. It ended up back in the pasture which hopefully will help the soil but..."

Eric Mitchell [ExpM3] 1:26:34

"Yeah, it's about 20% weight, but we are losing, so you could never get a 20% discount from the supplier."

Barbara Martin [BM1] 1:27:08

"My problem is still labor. To me, I'll be honest, my biggest problem is the shortage of labor, but it's the continuity of my farm, of what I'm trying to do. So, right now, I cannot employee 3 or 4 people, I can employee 1 person at a time. So, you sort of like, work with this person, but what if she all of a sudden comes tomorrow and say, ok, well, I got another job and I'm going. You know, then you are stuck. Surely I can do all the things but it's not something that is sustainable."

Barbara Martin [BM1] 1:27:54

"Yes. So, the funny history is, so I used to have Davidson working for me, and then I advertised because he was graciously enough to tell me that he was moving on, so he gave me like two months notice that he's going to go. So I started advertising, and then Emma actually interviewed but I wasn't sure, to be honest, that this little girl, because she was young, was going to do everything she said she can do. Like, I looked at Emma, I'm not sure about the same story, but so I employed a guy. But it was just not working out, you can ask Eric Mitchell [ExpM3], the guy I employed, then it was this stress."

Barbara Martin [BM1] 1:28:34

"Stealing. All of a sudden I could see the diesel was going less, and I'm like, there is no way, and then it is. So it would be in this situation where I could leave this house and trust that guy. And if you can steal from me, well, I'm not sure I want trust you with the animals. Or you would know its Vaccination Day and he will just not pitch up. To me, that is a big warning sign, because it is my animal's health we are dealing with. So then I phoned Emma. I said, so are you still looking for a job? And she's been with me, next month, for almost a year. And let me tell you, she's worked out better than Davidson and any other guy I've ever employed. So I'm going to be probably prejudiced to say the next person must be a girl again."

Bethany Miller [BM2] 1:30:04

"Yeah, I told you, that was my testimony, my husband passed away I did it for three years all by myself, and by the end of the third year I was so exhausted, all the time. My life revolved around my sheep, all day, every day, getting hay, getting feed, you know all the stuff you have to do. And so one day I was on the Tractor and I said, Lord, if you want me to sell this farm, I will, you got to send me somebody. I don't know how long, maybe a week or so, and Adrian walks down my driveway and looking for a job. And I said, well can you dig a ditch? Because I had my electrician would at 30 bucks an hour, was digging a ditch. Adrian dug that ditch in like 30 minutes and came back and said I'm done and I said well, can you rip out that fence line right there? And he did that and came back and said I'm done. [laughter] And I said oh, and I had him tear out the floor of my trailer. I said, can you? Because I had stuff piled up that I hadn't done. He did all that, and I said, how much money do you need? This has been 15 years ago. And he said, whatever you want to pay me. So I said, how about 10 bucks an hour? And we shook on it and been with me ever since. And he's a really good friend, and he's just a great guy."

Barbara Martin [BM1] 1:31:56

"Miss management is a problem…"

Barbara Martin [BM1] 1:32:40

"But you know the sad part is, Emma's is young, so I know she is going to college, so this is a step in stone for her, so eventually I am definitely going to run in this problem. And it is a problem that at the moment I don't have an answer for it. And it stress me, it is a big problem for me." (Lack of Labor)

Eric Mitchell [ExpM3] 1:33:37
 Nah, money is not the motivating factor.

 Barbara Martin [BM1] 1:33:10

 "You will still not get the correct person to do this kind of job."

 Barbara Martin [BM1] 1:33:21

 "You can even pay… Ask Eric Mitchell [ExpM3], literally, I've had young guys trying to come and do the job. We will be driving into the driveway and ask Eric Mitchell [ExpM3]. They would be standing like this over there for fast asleep, not even knowing that I'm driving into the driveway."

 Barbara Martin [BM1] 1:33:40

 "It's the lack of, the lack of ambition, the lack of working, nobody wants to work outside in the sun when it's hot, nobody wants to deal with sheep that don't always want to do what they are supposed to do."

Barbara Martin [BM1] 1:36:02

 "But I can tell you that the average American kid or person that is supposed to come and help that's younger than me, hopefully, they just don't have the inclination to do this kind of work anymore."

(Talking About Labor) Eric Mitchell [ExpM3] 1:36:39

 "Well, there are programs, youth programs, but there's a lot of liability. You're not going to get very much out of them."

 Barbara Martin [BM1] 1:36:52

 "I would like to see our undergrad student come here, I think after the second day they will talk, I'm out."

Barbara Martin [BM1] 1:37:04

 "I mean, I've always said that I would never… I don't mind teaching people like Emma. She had a background in horses and a little bit of cattle and stuff. Everything she know about shepherd I taught that. I can teach you anything if you are having the attitude that you want to work and you want to, but if you don't, you not going to learn."

 Barbara Martin [BM1] 1:37:25

 "Can't teach how to work."

 Barbara Martin [BM1] 1:37:26

 "Yeah, I can't teach you how to work. And I cannot pay you for watching me work either. Because, you know, we're trying to make the workload less. I'll be honest, I just don't know where to go after Emma."

Noah Murphy [NewM3] 1:39:13

 "It still have those programs people want to learn English and they live at your house, they pay you to live here and you can have they work for you, you just have to give food and shelter. They come legal, very legal, it is a program to learn English."

Eric Mitchell [ExpM3] 1:40:32

"That's a problem, that is just going to get your numbers up. Gotta do three or four hundred sheep (to be worth)."

Barbara Martin [BM1] 1:40:42

"But them, in order to do that many sheep you need to find someone to do that many sheep."
(talking about having an employee, not every farmer can afford it).

Noah Murphy [NewM3] 1:59:56

"Maybe, remember, us the beginners, the dates when to plant. When to put the ram together. Little stuff like that, for you guys is very easy, you guys already know when I'm going to have to put my ram."

Noah Murphy [NewM3] 2:00:37

"You guys know like, when I have to put my hand with my ram with my ewes, you guys go like this, tadadada (expressing they do it fast and easy, which is not so fast nor easy for beginners in the sheep farming). And them for me it's going to be like, "ahn!?"."

Eric Mitchell [ExpM3] 2:03:21

"Yeah, like, If you are feeding your animals, weigh the feed that's not getting eaten, it's getting spoiled because they're walking on it. Weigh that on a daily basis for a while and just see how much feed you actually are wasting."

Barbara Martin [BM1] 2:03:38

"I mean, we still running for a lot of people that doesn't weigh animals. Because, I mean, if you don't weight you animals, first of all, you don't know how to medicate the animals you've need it, but you also don't know if you're feeding enough or you're overfeeding or where you are or what your average daily gains is."

Eric Mitchell [ExpM3] 2:04:00

"Or of they suddenly start losing weight."

Barbara Martin [BM1] 2:04:02

"Or if they start suddenly losing weight, which can already show you that there's an issue. Because if they have got good nutrition, there's no reason why they should be losing weight. I guess that all falls again under education."

Nicole Montgomery [NewM2] 2:23:01

"Just bringing up the home school thing, DeSantis (the Florida Governor at the time, Ron DeSantis) like just passed, if you work, you can get bright future hours, like so, if you're a farmer and you have a teenager come out, they can earn the hours, just to, I mean... We haven't had a really good success but."

Edward Moore [ExpM2] 2:23:29

"Employing veterans? Yeah. You could advertise right in the local VA office, the county office, there's a lot of them looking for jobs and, about these home schoolers. It's funny you mentioned that because I had a mother and her two kids a year or two ago out at the farm to buy some sheep, and they kept coming back. I never thought about having anybody work, but they wanted to, and they just got in touch with me yesterday about sheep and olives, and I'll invite them back. But this gives me an idea, because that's a network of people."

Eric Mitchell [ExpM3] 2:47:10

"Yeah, I'm planning now with, Barbara Martin [BM1] and I we've got the Awassis and we've worked a bit of them with the dorpers and whatever. I've got a little project going on myself now, which everybody mocks me about, because I've got a couple of katahdin. And the reason I'm working on these katahdins is I want to take the best traits of the katahdins, which is their parasite resistance, and the ease of working, which in a sense saves you labor, because the katahdins doesn't take as much work as a dorper."

Bethany Miller [BM2] 2:50:06

"You need to figure out which are your best ones. You need to know who those good ones are."

Eric Mitchell [ExpM3] 2:50:22

"Because, a good sheep, and a bad sheep, a good sheep and a bad sheep, they eat the same. They take the same amount of medication. If you split the hairs on that, your good sheep eats less, because it's got better feed efficiency, it takes less medication because it's more healthy. So your bad sheep is costing you more to feed than your good sheep, it's costing more to medicate than your good sheep,"

Theme 3
Production System (Beyond the Gate)

Mr. Ethan Mason [ExpM1] 08:08: "It's amazing to go up in Bethany Miller [BM2]'s part of the country, Marion County up in that area, and see the number of extension agents up there. You come down here, you've got one for or three or four counties."

Mr. Ethan Mason [ExpM1] 09:48: "yeah, I feel they should be at every meeting that we have."
Mr. Ethan Mason [ExpM1] 09:52: "They should be involved in what we do." (Talking about the extension agents)

Mr. Ethan Mason [ExpM1] 09:09 "Like in Marion County, it's 100% of horses up there. So I guess most of the agents up there are supporting the horse people."

Barbara Martin [BM1] 10:01 "So the workshop on the 25th, Laura will definitely be here, she is going to present the extension office for Hernando and stuff. Because I also know that the extension officers don't want to work outside their counties because Laura said to me they strictly remain within the county that they are set. So you can't go, if you're in Hernando, and ask the Marion County person to come and help you, they're not going to come and help you. Laura stay is busy, though, because she's Pasco and Hernando, and I think Hillsborough too."

Mr. Ethan Mason [ExpM1] 11:08 "Well, I can see them sticking to the county, because if you say the county pays their salary, that's the reason."

Nathan Morris [NewM1] 21:18

"So we want to be sustainable, but at the same time looking towards other families, there's a lot of interest in what we're doing amongst the community. ... and then those that have some knowledge and experience that are willing to just share some of that, because there's a real big gap in knowledge, what we can do legally, what we can't do, what opportunities are there and what kind of support there is."

Edward Moore [ExpM2] 35:06

"Now, going to local support. Laura is a great resource. She's very open. The USDA here ought to be sent home. NCRs is excellent, and MCRs, which is part of the USDA, as soon as the USDA finds out that they know what they're doing, they'll probably close it down, that's my feeling. They have all kinds of pasture programs that could help us. They have great technicians that will come out to see you whenever you need them. But again, they only work in their own counties."

3

Barbara Martin [BM1] 40:21

"There's definitely a big demand. I'm in a position that supply is a problem for me."

Nathan Morris [NewM1] 01:36:14

"We purchased seed. It's been a while, but over at Hancock we were just learning we probably did something wrong. We tried to overseed in our pastures and the grass came back and the seed, I think, got choked out."

Eric Mitchell [ExpM3] 01:36:32

"When we bought our in Hancock, terrible results. They're the worst germination company."

Eric Mitchell [ExpM3] 01:36:45

"No, we've tried many times, and just, I bought sunflower, which I wanted to plant around my pond. And I know sunflower grows because we pick it up from the cattle. So I planted a strip all around the pond for the birds. Not one of them came up."

Edward Moore [ExpM2] 01:37:14

"We discussed this yesterday. Hancock is a nightmare, and they're expensive. Producers can't deal with this, and we talked about this yesterday. There's a seed barn here, Melton's, and they're very good, and they will spend time with you, and they will get you the right seed, and they'll tell you how to plant it. And that's right here..."

Edward Moore [ExpM2] 01:39:20

"I know we have to be diplomatic. I know you do, but I believe the extension offices need an enema, a serious one. But I'm talking about between us, as the producers, we could talk to someone and say, hey, look, this is our team, go here."

Edward Moore [ExpM2] 01:40:06

"Effort. But the other thing is, it takes a lot of time. We lose a year every time that happens. We lose a growing season. We do not have time. We cannot afford that." (talking about buying bad seeds)

Barbara Martin [BM1] 01:41:27

"Basically, when we saw it here, everybody was saying to us that "this is where we buy" and so we did the soil testing and all the things, as we should, we just couldn't figure out why things were not germinating and stuff. And then, funny enough, I got my big boss through imported I got it shipped to us because I wasn't going to go to Hancock Rock. Any seeds that we have bought that didn't carry the Hancock name on it, was germinating. You put a Hancock seed bag in the ground, and you wait for it, and nothing happens. And it's nothing's got to do with soil or rain. It's just the seed. But that's what big signs up here on the interstate, Hancock, Hancock. And they do run a lot of specials. I don't know. So maybe that's why people go there. But I'm not going there anymore,

Edward Moore [ExpM2] 01:42:28

" (Talking about Hancock seed) They have a very aggressive website. And they sell beyond this area. They sell nationally, and I think even internationally, when you go out there it's amazing how much it's grown over the last few years. Again, the official world can't say what we're talking about. But once you get into sit down with Jack Melton or any of those people and start of talking seed, because they could talk seed, and not only do they produce it, they buy it in. Because they buy some clovers we can't get and stuff like that and they'll bring it in for you. They will tell you about the seed market. One of the things with Hancock is they have coated all of their seed but theoretically some kind of protective coating."

Edward Moore [ExpM2] 01:43:28

"So when you buy a 50-pound bag of seeds, you're buying 25 pounds of clay and that protective coating doesn't do anything, it's crazy stuff, it is just insane, but it makes them a lot of money. Again, I think we have to operate more almost as a family, where we can talk to one another, and get this... our objectives done."

Nicole Montgomery [NewM2] 01:44:11

"As far as, like, the club, that might be more of like a mentor, because you bought from breeders who will tell you what to do and don't worry about hurting your feelings, and this is how your favorite site management should be, so maybe have, if they're a newbie, here's your mentor, discuss the whatever, that's your person. That's not overwhelming calling you all the time, but we'll tell you the truth on."

Barbara Martin [BM1] 01:44:34

"See but that is actually, when it comes to the seeds and stuff, that is actually where the extension officer comes in. She's the one that is supposed to be guiding you, to say to you, for this season, this is what we recommend, what should be the planting and stuff. Because you guys are much more in touch with that world than us as producers can be. I mean, every year, like now, Eric Mitchell [ExpM3] and I'm like, trying to figure out what are we going to do for spring planting there."

Eric Mitchell [ExpM3] 01:50:51

"I think in my experience over the years, even back in South Africa, your extension needs to be trained by the government or the university. They have to be the in between, between the university and the producer. And if you don't put the training into extension officers, when they go to the producer, they're not really that useful. So they feel uncomfortable and the producer thinks, well, why bother?"

Eric Mitchell [ExpM3] 01:51:37

"Yeah, it's practical stuff. I always say, if you want to learn about sheep, the sheep will teach you. If you want to learn about cattle, the cattle will teach you. Don't need a university for that. But the research side and what you people are doing, you see, the producers are not really interested in that. They want that information to be put together, funneled into the extension officer, who then applies it in the field on a practical way."

Eric Mitchell [ExpM3] 01:53:40

"But also, put it this way, I wouldn't want my extension officer doing more research and development (R&D). So I don't want more R&D people trying to do my extension work. They're two different animals completely. But the R&D people, university, the brains behind it, they should be coaching your extension officers a little bit better."

Barbara Martin [BM1] 01:55:19

"Every single one of those workshops though, do have FAMACHA© training. Both Bethany Miller [BM2] and I am certified instructors. We both did our certification. So we try and teach people. Now the February workshop that we're hosting is always rehosting in combination with Dr. Brittany Diehl, University of Florida to try and get people to come and learn. So Laura, the extension officer, well yes, so, but that's a good time where most people that don't know each other will get to network and speak and learn."

Ethan Mason [ExpM1] 02:00:04

"Eric Mitchell [ExpM3] made a good point a while back about practical information, practical knowledge, and I think that's what Barbara Martin [BM1] said, that at these workshops, a lot of new people show up. So it's good that the university speaks at these workshops and gets the information. But I think the members enjoy hearing information about practical. They can kind of decipher what you all have to say, but a lot of times it goes over their heads."

Eric Mitchell [ExpM3] 02:03:01

"From a university point of view, from a research person's point of view, there's another factor which I feel we're lacking badly here in Florida, and that is artificial insemination. We have got a terrible record of people that can do."

Barbara Martin [BM1] 02:03:42

"He can't leave his country because he got a permit to come and work here, but he... so, no artificial insemination. And know (Some UF Dr.) said she can do artificial insemination but they doesn't have the experience that what he has, and we have tried, I mean, you can ask Eric Mitchell [ExpM3], I love artificial insemination because it makes your world open. But to put the ewes through all that thinking and stuff, and then for the end of the time, for only four out of ten ewes or maybe three out of ten ewes, to fall pregnant with it. Well, after all the money spent for that and all the time and all the effort and all that, I might as well just go buy a $3,000 ram in there. He goes in and you get 50 of them pregnant at once. Voila. No problem."

Barbara Martin [BM1] 02:04:39

"The Dorper semen is very difficult to find. That you're very restricted to the Australian genetics, which is Carlisle genetics. But there are some producers now that you can basically get semen from."

Eric Mitchell [ExpM3] 02:05:46

"Don't go in vitro, you're going to lose money."

ITeam3 02:05:58
And when you talk about the artificial insemination is it just for the sheep or do you think it's the general problem in Florida?

Barbara Martin [BM1] 02:06:05
Oh no, cattle is easy. You can find anyone to come and artificially inseminate.

Ethan Mason [ExpM1] 02:07:18

"We avoid the vets. You know how much money it costs to get a vet out?"

Barbara Martin [BM1] 02:07:22

"Yeah. So, basically we do work closely with our vet in our operation and stuff, but we do basically everything ourselves. So for me to phone a vet, well she knows it's because it's something beyond my capabilities, because our motto on the farm is do no harm, so there are certain things that I would simply do not do. Like, I don't necessarily want to stitch up my own ewes and stuff, so for those things, we do use our local vet. But you do have to have a local vet if you want to have any medicine to your exposure."

Barbara Martin [BM1] 02:09:11

"I mean, if I had to get the vet out with that uterine prolapse, that would have cost me more than the sheep. And then I can't breed her after that anyway. So it's going to end the same way at the end of the day."

Noah Murphy [NewM3] 02:08:51

"But at the same time you end up, the cost of the veterinary... Is going to be the cost of the sheep. It's better let the sheep go and buy a new one. I feel sorry about that, but that's true."

Mr. Ethan Mason [ExpM1] mentions several inputs such as medicine, grass, hay - Mr. Ethan Mason [ExpM1] 02:17:38

"Medicine, Grass, Hay..."

(Talking about where the animals come from)
Bethany Miller [BM2] 02:43:29

"well, they could come from an auction house. I know some people buy their sheep there. I don't recommend that, but they do. They come from various farms."

Bethany Miller [BM2] 02:43:42

"They come from your own farm. Mostly, I think we saved most of our own sheep, but to get started out, I think they come from, like neighborhood."

Nathan Morris [NewM1] 02:44:18
It's Artificial Insemination (AI) is also would that fall under where animals come from?

Nicole Montgomery [NewM2] 02:47:11

"And if you want bad advice, I mean, you can find anything on the Internet."

Bethany Miller [BM2] 02:48:40

"Yeah. YouTube is really good on the Internet."

Eric Mitchell [ExpM3] 02:48:42

"The Facebook as well."

Barbara Martin [BM1] 02:48:45

"Or the Internet, Sheep 101 [Website], I like Sheep 101, or Sheep 201."

Bethany Miller [BM2] 02:48:51

"And wormx [Website] is really good too."

Nathan Morris [NewM1] 02:49:03

"They're also university publications online."

Bethany Miller [BM2] 02:49:16

"UF is good, Maryland is really a good one."

Noah Murphy [NewM3] 02:47:39

"I had some issue with a hurt ewe, she cut her leg and I don't have a clue how to do it."

Noah Murphy [NewM3] 02:47:57

"And a big cut like that was hanging the skin was hanging up. I call my neighbor. My neighbor come. He'd show up with some yellow powder and put the powder over there and strap around. And the ewe is good as new."

Noah Murphy [NewM3] 02:49:18

"I show up. I find out first before I start Maryland with Susan. I had a call with Susan."

Noah Murphy [NewM3] 02:49:27

"First thing she told me, buy sheep on your neighborhood, in your area. So then I end up finding UF [University of Florida]. And then I met everybody on UF, from UF I met Bethany Miller [BM2] and Barbara Martin [BM1] and I don't have any complains at all."

Edward Moore [ExpM2] 02:58:23

"So, yeah, this is the thing. We talked about it with seed. If we plant a seed that doesn't germinate because somebody wants to make an extra dime, I want their flesh to burn down, literally [Laughter]."

Edward Moore [ExpM2] 03:00:06

"Yeah, I want to add something else. We have to think far out of the box with what we do. We can't only go to traditional sources of information. On my little farm, we do a couple of other things. And the USDA, for instance, has Internet programs I've never seen anything so horrible where they theoretically are teaching aspects of what we've been talking about."

Edward Moore [ExpM2] 03:00:37

"And I found if I went to Australian's programs to look at, for instance, vineyard maintenance, they're much better. Or to go to the Latin American's programs, They're much better than we are producing here in this country."

Eric Mitchell [ExpM3] 03:03:23

"Registered remedies for sheep. It's a joke, isn't it? If you compare what's available in Australia and South Africa"

Barbara Martin [BM1] 47:51

"They are basically, you have to register your Dorpers, so obviously you are normally in contact with the registrant. I don't know how it is for other people, but she knows me very well, but it's just because they basically use, um, they get a lot of my photos (Dorper Sheep Photos). We've got one-on-one communication on me. But I don't know if it is a different producer, she will be just a registrant." (Dorper Association)

Bethany Miller [BM2] 48:50

"The Meat Sheep Alliance applies for Grants through them, they give us our insurance for all of our workshops. Uhm, so they've been a very good source of funds and also they have a kind of a nice little website to go to." (Talking about the American sheep industry)

Bethany Miller [BM2] 51:51

"We are just kind in a corner somewhere, because we don't hardly have any sheep and they're always a little nipped that Florida has the most new members joining ASI, because we tried to promote them."

Edward Moore [ExpM2] 53:02

"Yes I have, and ASI, I found very useful. If you read their magazines and their updates, they are kind of interesting, they are well ahead of the public release on information, so if you get their update and you read something and then call up like your FSA (Farm Service Agency) office, USDA (United States Department of Agriculture), they don't a clue about it. So I think the ASI is good, yeah."

Edward Moore [ExpM2] 58:09

"Natural Resources Conservation Service"

Edward Moore [ExpM2] 58:19

"For me, yeah, I do a lot of work with them, they have a cost share program, which really means you're going to spend more money than they're going to give you but, I have found any amount of money I get from another source I'll take. What they will do, soil remediation, soil testing, fencing, they helped me put in a new water well, which wound up cost lot more money than I thought, but it works. They are part of the USDA and USDA has an office in Brooksville and they have what they call the FSA, the Farm Service Agency, useless, and NRCS. I would add them, they are very good, they have great publications."

Edward Moore [ExpM2] 59:36

"In terms of equipment, I have bought equipment from Canada, for my cattle, because I couldn't find good equipment. And one other thing, that everybody knows about, we all go to places like Tractor Supply for feed or because it's a little bit cheaper, a lot cheaper most of the time, although they have some practices, where they push up their prices as much as everyone else. But they also sell two classes of equipment and some it's just not good. So another place that I have bought things from I'm talking about gates and stuff like that it's actually from Lowe's, you know the big retail store. And those gates, if I can't find old ones, that people throw away. The old gates are much better, they are better steel and stuff. So I will get from them, or Tractor Supply. But some of the equipment Tractor Supply don't have, If you look for something specific for sheep for instance, you know 1 foot high, one by two by six, a hundred gallon tank, nobody carries it."

Noah Murphy [NewM3] 1:03:18

"For me, it is going to be almost like that [draws a big circle]. Cause they (UF) are the ones that helped me a lot, like after you (Pointing to ITeam4) and Barbara Martin [BM1] they are the ones I rely regarding my vets, I created a relationship with the vets over there, I just call, I have the personal phone for the vets over there, she always answer me, helps me a lot so I'm very thanks for that, cause I know how hard it is to get a vet and how costly it is."

Bethany Miller [BM2] 1:04:28

"I have been in sheep since the 90s in Florida. And I have never had a group that cared enough to stick with us, and so, I think that is very representative of the relationship that we have with UF and I'm really thankful for it, and the ram tests, and all that is really very good for us."

Bethany Miller [BM2] 1:05:36

"Yeah, historically, It probably be off the board there. But you (UF) have helped and you bring in more people, and I love that."

(after drawn a circle representing a small importance of the ASI) Barbara Martin [BM1] 1:14:14
Yeah. They need to give us more money.

Nicole Montgomery [NewM2] 1:14:16
I was going to say, more money [laughter].

Barbara Martin [BM1] 1:14:17
Give us more money and I make their circle bigger [laughter].

Noah Murphy [NewM3] 1:16:22

 "No, they don't know who I am, I agree with her, but that's my day by day supply. Whatever I need I get there, I know some stuff is cheaper but some other are very expensive. Day by day I need the supply, day by day I need something, today I have to go over there and I don't have a choice." (Talking about Tractor Supply)

Barbara Martin [BM1] 1:17:12

 "They don't have good price for that, so I did not get my feed from Tractor Supply. You know, you go to malls, we've got a recipe so I get a big bulk of food in so I don't have to pay Tractor Supply."

Noah Murphy [NewM3] 1:17:55

 "So the point is, if they can get the money up front is going to be amazing right? So, but now you have to put our money first, has to do everything the best of the best (quality), you have to buy, you can't buy like a small stuff, has to be the best one, so you can get approval and then we'll wait around don't know how many months so to pay you back 70 percent or whatever you expend for. So, that's a problem." (Talking about the Natural Resources Conservation Service)

Bethany Miller [BM2] 1:20:40

 "Like, right now, my biggest, the thing that worries me most is the cost of feed, but hopefully that's going to be temporary."

 Bethany Miller [BM2] 1:21:38

 "Yeah. Well it is not as big an issue, well it would be because they are paying a lot more for their, uh… Like, I could buy a bag of corn to keep it simple and on a small like, for me math, [laughter], I'm so bad. I could buy a 50 pound sack of whole corn, uh it was maybe last year for 7.50, seven bucks, 6.50 sometimes. Now I'm paying 10. 400 dollars a Ton for corn, for whole corn. And I grind my own. So for me, that is a big deal."

Barbara Martin [BM1] 1:22:25

 "It's still a big deal for us, because feed cost is big for us. Every time feeds goes up it's relevant to the market, it is still like even if you get it in big bulk those people, not all of their commodities is grown in Florida, so they are outsourcing it from somewhere else and it has to come with the fuel prices so you can see whatever the fuel prices is doing It's directly related, so I try and gather you know when is the best time to order the feed or what the commodities are, and stuff. So, but you know, I think in any place where you need to feed, feed is always going to be an issue for every single one of us. Whether you are forage based or not."

Bethany Miller [BM2] 1:23:09

 "My seed was 36 bucks this year, last year it was 28. Dollars a bag, this year was 36."

 Barbara Martin [BM1] 1:23:16

 "Yeah, you can't even afford fertilizer."

Eric Mitchell [ExpM3] 1:23:27

 "Yeah, I agree that is an issue, but for this particular list, I would put my feed problem onto this list. And the reason for that is that whatever the feed cost are, whatever the feed problems are, as an industry we all have the same problem. That is one thing. The second thing is we can't control that problem."

Eric Mitchell [ExpM3] 2:02:44

"I think the extension could play a very valuable part in that education part, because. When you know something, it's easy, but this is really common sense, if you know about it. But if you if you don't know about it, it's a lot more than common sense. It's very complicated."

Eric Mitchell [ExpM3] 2:03:13

"Training extension (agents), obviously, yeah. Pointing out the problems."

Eric Mitchell [ExpM3] 2:06:02

"I think another thing for the processing, which would solve a lot of issues is the university or especially the state, could put together a complaints box. So, in other words, when you have a problem with your processor, you can privately contact, without being discriminated against, and give them the facts of what you what you said. So if I complain and it goes in the complaints box, later on, you complain, then you complain about the same person. Eventually they're going to say, but this guy actually is doing people in, you know. That's what we're lacking with these processors, because there is no… nothing is ever done against them."

Barbara Martin [BM1] 2:06:46

"I mean, where do you report a processor that you think is doing you in? Where do you go as a small, little producer? Who do you complain to? Because it's not helping to complain to them?"

Eric Mitchell [ExpM3] 2:37:14

"I think it's going to go like the cattle industry, is doomed. I think the cattle industry, Florida used to be the biggest producer of calves in the US. Florida used to be the biggest grower of tomatoes in the US. Florida used to be the biggest Citrus producer, in the US. All of those industries are failed. So why should sheep be any different?"

Bethany Miller [BM2] 2:37:54

"Everything is more expensive here. It's just that we want to do it, and we have the money to do it, but most people don't."

Barbara Martin [BM1] 2:38:06

"Most people go two cycles of sheep and them they walk away."

Bethany Miller [BM2] 2:38:09

"Yeah, because they just can't afford it."

Eric Mitchell [ExpM3] 2:38:10

"Especially when they go to the processor and they have to get their sheep processed. That's enough to scare anybody."

Barbara Martin [BM1] 2:51:26

"I mean, you can ask Eric Mitchell [ExpM3]. I'm not going to say where I bought my Katahdins from, but this was the last person, that I ever thought in my life would have hoof rot, on his farm. And guess what? I got my four Katahdins and here we are. So it's fine now. It's going to heal completely fine and stuff. But imagine I didn't know and I just took those Katahdins and I threw them in with my Dorpers and stuff. It would have been a disaster, but get them confined and stuff and I said to Eric Mitchell [ExpM3]. For the life of me, I was dumbstruck. I could not. And I still had the niceness to say, to text the breeder and say to him, well, you know, I just want to let you know one of the sheep I've got hoof rot, you might want to investigate your other sheep, and I don't hear anything back. And I'm not complaining, I'm just saying, those sort of things, they do happen."

Theme 4
Market Dynamics and Strategic Access

Mr. Ethan Mason [ExpM1] 12:05

"Yeah, that's an important aspect, I believe, of raising the animals these days, or the sheep these days, is we raised the sheep and the lambs. And what you sell them to? Who do you sell them to? If you don't have a slaughter facility of butcher facility, you're limited to where you can sell the animals."

Mr. Ethan Mason [ExpM1] 12:32

"You have to sell them to somebody else that wants to start their own business, basically, if you don't have somebody that could process the animal for you. So having somebody that can process them or you process them yourself for that person is very important, because you'll probably find more people that want to purchase a processed animal than a live animal at a certain time in the year or eventually."

Mr. Ethan Mason [ExpM1] 14:14

"So that's basically... I've had several types of animals that I raised. and got into the sheep probably five years ago, and I finally got into it just before I retired. I wanted to get into something other than cows because I can't process a cow. Cow's too large of animal for me to process in a land. Gives you the same type of meat, better quality of meat than the cows do, I think."

Mr. Ethan Mason [ExpM1] 16:29

"I can't process your animal for sale. I can process it for you to consume. But if you want to sell your sheep lamb, to be able to sell it for meat to somebody else, you need to sell that animal to somebody and then have it processed."

Barbara Martin [BM1] 17:01

"So basically how it would work, say I've got a customer, right? So I sell my live lamb to them, okay? But they were like, okay. Then I put them in touch with Ethan Mason [ExpM1]. So they cannot collect that meat at all from me. They have to go collect that meat from Ethan Mason [ExpM1] because I sold them a live animal, which means that animal became their animal. They were allowed to consume their animal, which they get processed by Ethan Mason [ExpM1]."

Mr. Ethan Mason [ExpM1] 17:33

"And you can break it down even more than that. You can say, that person you sold that lamb to, they can divide that lamb in half. So half the lamb goes to Joe, and half the lamb goes to Bill. So neither one of them has to have that whole land process as long as they say, hey, I bought half this lamb. I've had half that land processed."

Barbara Martin [BM1] 18:00

"My invoicing, for example, would say, basically it's a live animal. I didn't sell meat I sold the live animal."

Mr. Ethan Mason [ExpM1] 18:24

"So if you sold or I sold cuts of meat out of my house, it'd be a nightmare for them to try to track that meat. But if I could tell you where that half or at least could tell you where half that lamb went, or that whole lamb went, if there's a problem, then they could track it. So it is ways around it, and it doesn't cause any problems. I do the pigs the same way."

Nathan Morris [NewM1] 20:59

"And so we've got four sheep and we're just learning, but for the most part we're more of just a family farmstead, but at the same time just always looking to see what's going on in terms of the trends and what people are doing."

Nathan Morris [NewM1] 24:24

"But what I really mean about that is just support for the industry. What opportunities are there for people to have a sustainable operation? How do we get products out there?"

Nathan Morris [NewM1] 26:11

When folks want to buy a sheep or they want to get started, this is the kind of information I think people should have before they make that decision, for the sake of the animals, for the sake of the industry, for the sake of public perception, to make sure that people are educated on what those opportunities might be for them and make sure that they go into it for the right reasons.

Edward Moore [ExpM2] 30:15

"In other words, with good body confirmation. Now comes the issue of where we sell them. And I've been dealing mostly with an ethnic market and people got to know me. I put a little ad out and they came over and suddenly they... suddenly I realized that there's not one Arabic market. There are many. And they have country websites which they put us on in Arabic. For instance, the folks from Morocco or from Tunisia, they're all different. And suddenly we have a market to sell to. But the market is more than religious feast based it's based on weddings and funerals and births and all manner of stuff."

Edward Moore [ExpM2] 31:53

"The other thing is, I wanted to expand the market. So when I took my first two steers up to... I went around to USDA facilities, and I didn't like them. I finally found nettles up there who was willing to talk to me, and they're very open, and they process these two animals for me. And then I thought, well, maybe we can process sheep up there, and they're willing to do that. Now, the process of sheep requires some religious restrictions, which I spent a long time dealing with, again, our Arab community, to find out how we would actually do that, and we can do it."

Edward Moore [ExpM2] 32:41

"So they will put on the freeze package, USDA inspected, and the halal is there, which opens up for us a huge market because it's now frozen and processed. And as Ms. Postley says, and she's correct, a lot of people don't want to do all of that processing themselves, nor do they know how to do it, nor do they have a place to do it."

Edward Moore [ExpM2] 33:08

"So if they could go to a market and buy Arabic cuts that are already processed and frozen, they'll do it. Now, the deal was finding a place to do that with. So here's where the meat cheap organization comes in."

Edward Moore [ExpM2] 33:54

"But for a bigger market, we need one production, from us, we know what we could produce. And then we could get processors, or rather, not distributors, but markets to buy our products. I'm dealing with somebody from Libya right now talking about Ash, who's very knowledgeable about all of this. And we have been actually sending meat up to Alabama, halal meat. So the market isn't just down here, but we need to be able to supply the market, and that's a big deal.

Edward Moore [ExpM2] 33:27

"It's like with Ethan Mason [ExpM1] (because he is a custom processor), that opens up a big window for me, you know, for people who come and buy a live animal. Because I've had people come out to buy a live animal and I said, "what are you going to do with it? " And they haven't got a clue what to do, but that they want the meat, but that I'm not going to go and slaughter a cow for them. You know, I know we can't do that. So, but this opens a whole window with a custom place."

Edward Moore [ExpM2] 37:08

"Yeah, no kidding. The thing is, I realize that, but you just get to a point where you either do what you do plus run the farm. Or play for hours on the computer. I can't do it. I need an answer now. You know, so but we could set that up. We could set that up. And also, I think if we start thinking in terms of market, I think we have to make ourselves known for what we produce, and I don't think we do it."

Edward Moore [ExpM2] 38:07

"Oh, no, it is exactly right. Exactly right. And they're not into anything, and they don't have a good idea in their heads. But that can't stay in our way. We have to figure out how to develop a market."

Nathan Morris [NewM1] 38:21
Do people have a hard time selling sheep or meat?

Barbara Martin [BM1] 38:26
No.

Nathan Morris [NewM1] 38:27
Okay.

Edward Moore [ExpM2] 38:27

"No. If you can advertise it, if you let people know you have sheep or goats, for instance, you'll have customers. But how do you do that? I mean, I put some little ad on Craigslist because someone said, oh, you ought to try that. And that's how this thing started with all the Arabs. Why? Because they're always on Craigslist and they have their own Facebook pages, those I know about because we're on them. And then they put it all in Arabic, and then people call me up and they think I speak Arabic."

Edward Moore [ExpM2] 39:21

"And the people who are coming are generally aware of that. They come from small places in Tunisia and Libya and Morocco. And it's amazing once you start getting to know the people, I mean, they know animals. I mean, they might want it for a religious thing. You might wind up making donations of stuff, which I've done, if the people didn't have much money, especially for some Arab holidays. That's what you do. But to answer your question, yeah, it happens. And you will not have... depending on how critical you are about things, I mean, I won't sell an animal to somebody who looks like a crazy person or acts like it or brings a trailer in and they want to tie a cow down on it. That doesn't work. But you will have customers. You'll have customers and you might have more than you expect."

Barbara Martin [BM1] 44:30

"And then we started with three sheep and now we've got a lot of them. So, but for us, we are lucky. We love Dorper meat. We promote Dorper meat.

Barbara Martin [BM1] 45:24

"If you keep on telling customers that you cannot supply, well guess, eventually you won't have any customers, because you can never supply. So to me, that is a big issue. I'm lucky that Ethan Mason [ExpM1] and I have got a good relationship, you know, with custom processing. But unfortunately, Ethan Mason [ExpM1] doesn't do cattle. That is a big problem for us on the cattle side, and to such extent that, now I sell them as deer, I'm not even involved to get it. I don't even want to get involved with my customers anymore, saying that I will take it to a butcher for you or something."

Barbara Martin [BM1] 46:01

"And the biggest problem with the processes is traceability on these sites, because I'm not always convinced you get all your meat back, and all that. Those are, for us the biggest challenges."

Eric Mitchell [ExpM3] 46:18

"I think cattle processing is a huge problem in Florida. And the biggest problem we have is, we produce good quality Angus, we sell them to a customer, he gives it to the processor, or we deliver it to the customer processor, and then he doesn't get his meat back, he gets somebody else's meat. And we know that, because we've asked for samples of meat from people that we've sold to. There ain't no way it's one of our Angus."

Eric Mitchell [ExpM3] 46:54
What I do is actual genetics. And we know without a doubt it's not our meat.

Ethan Mason [ExpM1] 47:42
That's the situation now, these slaughter facilities are so backed up, it's very few and they're all... because of this COVID deal, since then, they've all been pushed. I got a neighbor that has some cows and they contacted the local slaughter facility first part of January, they gave him a date, the 1 April they can get him in. So that's the cow. So a lot of them are saying, hey, I don't want any pigs, I don't want any sheep, I got enough to do with the cows.

Ethan Mason [ExpM1] 48:31
It is, it's been years. Been that way for years. I mean, they'll take, mostly if you drop that cow off at that slaughter facility alive, they might be taking that cow somewhere else in the country and dealing with it, and then giving back your customer some range cow. It's been like that for years with these slaughter facilities.

Edward Moore [ExpM2] 49:54
I thought I was the only angry one in town. I had an idea that you were talking, in Europe, and in France, where the laws are really strict on animals, they have... what do they call? Mobile slaughter facilities, that are controlled by the government. That's something we might want.

Edward Moore [ExpM2] 50:39
I think it's worth looking into. And especially if we had a market that would support one now for cattle. I agree fully with you, because I turn people back because of the slaughter issue. But, yeah, I think we could probably support one between cattle and sheep. And then that would make it worthwhile for someone to... because they're expensive to put together. That's a big deal.

Eric Mitchell [ExpM3] 51:11
 Yeah, I've thought of that. But the problem is that if you get a mobile butcher in here and you've got a couple of heifers you want to, or steers, you want to slaughter out, how do you trace that animal?

 Eric Mitchell [ExpM3] 51:28
 Because practically, the guy arrives here with his trailer, he slaughter the animal on site and you hang the animal in the cold trailer, and now you've lost control. That animal needs to be taken back somewhere to a cold room. It needs to hang for ten days.

 Ethan Mason [ExpM1] 51:50
 Right. It could go anywhere from there.

 Eric Mitchell [ExpM3] 51:55
 It's gone. If a guy is going to come a slaughter on your property, shrink wrap the meat and put it in the freezer. Well, that is not going to be very good, because that meat needs to hang out for ten days. Cattle. I like to hang out for 30 days. When I used to do venison, I used to hang for 60 to 90 days and it makes a huge difference.

 Ethan Mason [ExpM1] 52:29
 Yeah. It'd be hard to do a mobile yeah. I mean, mobile slaughter. We used to have a mobile slaughter "Circle H Meat". They used to come out in an old milk truck and pick your cow up, dig a hole and put a glass in the hole, but still, they take that carcass back to their facility.
 Eric Mitchell [ExpM3] 52:48
 That's where the problem starts, not getting it sorted.

 Ethan Mason [ExpM1] 52:51
 It could go anywhere from there.

 Eric Mitchell [ExpM3] 52:54
 When it arrives at the facility that is a problem....

 Ethan Mason [ExpM1] 52:56
 That wouldn't work because you can't slaughter and butcher on the same property that particular day.

Noah Murphy [NewM3] 56:32

 "My goal now is... that's going to be my first time selling the sheep and ram. And I don't have a clue who to sell that. And I have some friends in South Dakota, they...there I get the idea to have sheep here, and over there they sell straight to the slaughter house. They don't have the religious people, so for him, like: put on the truck, sell to the slaughter house, get the check, and then you start again. And I thought, it's going to be the same thing here, and it's not."

Ethan Mason [ExpM1] 57:14

 "Well, you can you can do basically the same thing here, but you don't get any money for, you can bring them to the auction, the livestock auction, and sell them then they..." Noah Murphy [NewM3] 57:26

 "They're $150 now." Ethan Mason [ExpM1] 57:29

 "That's what I'm saying. You don't get nothing for them. The cows the same way, bring them to the auction, they sell them to the slaughter facility. So there's no money in that. If you're a big producer and you want to get rid of a lot of animals, yeah, but you won't get much return on your investment that way."

Eric Mitchell [ExpM3] 01:02:37
 No. I think the Meat Sheep Alliance is a marketing tool. It's not a sales tool. There's a huge difference between sales and marketing. So you can market your sheep that you want to sell through the Meat Sheep Alliance, but the actual sale gets done in private. Between you and the customer buyer.

 Barbara Martin [BM1] 01:02:56
 The Meat Sheep Alliance can't get involved in sales with animals and stuff because it is between the person that buys. Like if Nathan Morris [NewM1] had a problem he needs to come to me and say to me well, Barbara Martin [BM1], this is what's happening.

Bethany Miller [BM2] 01:03:40

"Currently I have 80 head of St. Augustine and some Katahdin and our market is selling to ethnics, mostly Hispanics, Muslims, Greeks, Brazilians, on the hoof, we sell them live, they carry them away or they kill them on the farm. We allow farm slaughter. I have Adrian there and he knows how to do that. So he is with them when they do it to make sure that they do a good, humane, clean job. I used to have a cut and wrap business but that was too much work for me."

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Bethany Miller [BM2] 02:23:30

"Buyers. Consumers? Consumers, yeah, ethnic market, stores, stores, I mean. Auction yards. Some people sell in auction, auction. Sometime in December at the Ocala livestock market, you can get pretty good prices for your stuff."

Bethany Miller [BM2] 02:24:07

"They have two sheep, goat and pig sales every month. The first Friday and the third Friday. Yeah, it's not ewe market, but ram lambs yah. Except during the summer months, you can count on fair to good prices."

Bethany Miller [BM2] 02:24:34

"Yeah, I know quite a few people who take their stuff to the market simply because it's so convenient."

Noah Murphy [NewM3] 02:24:48

"As I said before, on my view, you guys know this business for a long time. On my view is going to be easy like cows if you can sell. I'm from Brazil, so over there, almost everybody sells straight to the slaughterhouse. And the people I met now in South Dakota, in the north, they sell straight to the slaughterhouse. So I understand the slaughterhouse is a big place, a lot of money involved for having sheep like twice a year. It's not everyday stuff. I understand why Florida we don't have this kind of stuff here, but the same way it's going to be amazing. So time to sell. Get the truck drop over there and done deal. You don't have to put a sign outside of farm. We sell lambs. So I still very to put a sign on my farm. I live on the 301 very busy road. So I can put a sign up there. I can see people going to see it. You want to be like, get it quick. Especially, as he said, writing Arabic. Right, and putting a sign in Arabic. I would."

Bethany Miller [BM2] 02:25:55

"I think you have a lot of Hispanics over there too. Yeah. If you go to a Spanish market, which I'm sure you've got there somewhere. Go to a Spanish market, put a little sign in Spanish that says Barego or whatever sheep are in Spanish. And it just takes one or two people, and then that spreads like wildfire. You're not going to be able to have enough lambs."

Noah Murphy [NewM3] 02:26:26

"Right now. I'm going to have like, how many lambs for sale? 10, 11, something like that. Yes, but the same way as my goal is based on my business plan, on my goal, I would like to have around more than 500 heads on my property. So with that kind of animals, many animals, who am I going to sell to?"

Bethany Miller [BM2] 02:27:03

"You got start, you got to take a step. You're getting way too far out there. Deal with what you've got today with the idea that you might get up to 500. You might decide that 150 is about all you can handle. Just deal with what you've got now. Build your market. As your operation grows, you'll get more people."

Nathan Morris [NewM1] 02:27:28

"Do you need to get to 500 to be profitable?"

Noah Murphy [NewM3] 02:27:30

"No. By my business plan, with a hundred depend how much profit you talk about and how much money you talk about. So with a hundred head, you can have, like, a different life, you know, if you don't have bills to pay. But with 300, as he said, you have a life, you don't have to have a second job, as I have right now. I can live just with the farm, you know, so that's the numbers. When I talk like reality, that's my number."

Eric Mitchell [ExpM3] 02:28:12

"The more important part is not the 300 head. The more important part is what you were talking about just now is how you sell your offspring. Because that is going to determine whether you are successful or whether you fail. If you're going to put anything that really needs effort into your operation besides animal health, is your private treaty. The way you sell your animal. If you take into the auction those 300 animals, you might need seven or 800 animals to earn the same money. If you go in private treaty or selling through somebody like Ethan Mason [ExpM1], yeah, you can do well. But it is the most neglected part of farming. It's the most neglected part of business. Anybody can produce anything. Very few people can sell. It's easy to buy. It's different to sell. And if you want to be successful, animal count, I'm not saying you don't look at that, but how you sell and dispose of your product is critically important."

Nathan Morris [NewM1] 02:35:04

"Let's say one of the factors with labor that has been spoken of a lot here is labor on the marketing and sales side. Yeah. I mean, there's the labor, obviously, that we do on a day to day basis on the farms, but that gets us to a certain point before we're really making any money on the marketing and sales side of things."

Nicole Montgomery [NewM2] 02:35:44

"You got to update your website. You got to take the time to learn how to keep your website updated. Like you need a Facebook page. People want that updated like two times a day. And you're like, I'm feeding animals, I can't update my website. How to market, you got to make a label. You got to make a date. You have to have a contract. You have to have people that show up, right? Like they'll say, oh yeah, I'm going to come buy this. Where are you?"

Nathan Morris [NewM1] 02:36:06

"And along those lines too, is that the idea? It behind know your farm. Know your farmer. People have to be comfortable with your farm and your operation before they buy your product. And that takes time to update websites or communications, stay in contact with people. And so that part of the labor pool should also be I mean, it's not just, again, what we do."

Nathan Morris [NewM1] 02:36:52

"And those are the things that will help us price our products more appropriately because people will want to then buy from you. People will want to interact with you. And that is something that should have a cost associated with it."

Bethany Miller [BM2] 03:04:46

"Well, Americans don't eat lamb. They're not lamb eaters."

Barbara Martin [BM1] 51:06

"They are actively trying to get people to eat more lamb, so they will give you all the different cuts of lamb and recipes and things in that, so their drive right now is to educate people on the nutritional value of lamb, why you should eat lamb and not something else." (Talking about the American Lamb Board)

ITeam3 51:26
And, do you know how do they do this marketing?

Barbara Martin [BM1] 51:28
Through Facebook, through internet. Fairs. Organizations like us.

Eric Mitchell [ExpM3] 1:43:37

"To answer your question on why we don't just get more processors. There's obviously a huge demand for processors because right now the time to get a animal slaughtered is about a year. Anything from six months to a year. Especially when the students are bringing their cattle off the show. You wait a year to get your animal slaughtered. So there's a huge demand. But why is the supply not there? There's a problem. I can't match those two up. So why have we got this huge demand? But we have no supply."

Barbara Martin [BM1] 1:44:54

"Problem is going to find the person that does the butchering. Part of it. Labor again, we come back to the same thing. We can do a lot of things but to find the people. I mean I'm certainly not going to be able to go slaughter sheep and process sheep and stuff. Nor is Bethany Miller [BM2] going to be able to do it and stuff. But you go find somebody, like, make a trial run and so we are in search of a butcher and see how many people reply to that. It's like butchering is also a dying trait. And that's why right now the reason why we all pay such a huge amount for processing like in cattle, because those people know we are stuck. We got no other choice. If I have to have an emergency slaughter now on my cattle, do you think I can find anyone here that will come and get the cow and emergency (slaughter it)? No. We've got a waiting list. So what the heck am I supposed to do if I don't have the facility? I have to go bury this cow. That is the issues we're all faced with."

Barbara Martin [BM1] 1:46:25

"I mean, processors, they come and they go and they come and they go. And the ones that stick around, well, I'll be honest, so far I haven't made one that, and I deal a lot with my customers a year. Where have you taken it? Where have you taken after you've bought this year live for me? You raised it yourself. Now, where did you take it? So far, I haven't found anyone that feels honestly that they got all of their meat back. I'm not even saying that they got the correct meat back. I'm saying that they got all their meat back. Because if you do weigh your cattle, you do know what the percentages of and it's going to hang out. So you sort of got an idea, because a lot of people are not getting a lot of their meat back (after processing). Like, if you go work out to some stages, they end weight, and if you go back to the custom processors, there is nothing that happens. They just tell you, well, that is what it is. So we're going to be in a situation soon in the cattle industry. The people are going to be it's way too expensive to raise our own steer and in to get it processed, because by the time I've gone to do that, I might as well just go to Publix and buy what I need."

Bethany Miller [BM2] 1:47:58

"It's been a long time ago. I tried to form a co-op to meet the demand during Ramadan and Eid (ul-Fitr) and it did not work out. Back then, I was using South Marion (processing facility). Gary at South Marion Meats he does a good job. He was not USDA inspected, but he basically, what we were trying to do was gather up these sheep, and then the buyers would come and buy them. So it wasn't really trying to find a slaughterhouse. It was more trying to get a nice bunch of uniform lambs together to meet that demand."

Bethany Miller [BM2] 1:48:57

"The issue was the quality of the lambs. We need somebody, if we're going to do that, we need someone to take charge of each farm, go to that farm, they would call us up and say, I've got 20 rams. And we say, well, what do they weigh? Well, I think they weigh about 70 pounds. And then you go there and they weigh 35 or 40 pounds, and they look horrible. You know? What are you going to do?"

Bethany Miller [BM2] 1:50:27

"They want nice, healthy lambs. And that's what I try to provide to them. And so that was the problem. I only did it that one year, and at the end of it, I was just the exhausted."

Eric Mitchell [ExpM3] 1:50:43

"Barbara Martin [BM1] and I looked at custom butcher shop. We looked at it Ethan Mason [ExpM1] set up somewhere like that, and we also looked at the possibility of opening a butcher store in town, so we would sell our own meat in town, so we would have to send our carcass to have it slaughtered, prepared. And then what our thinking was, was instead of getting them to cut up the meat, they deliver your carcass back. So we can make a tattoo of carcass make sure we get our carcass back."

Eric Mitchell [ExpM3] 1:51:29

"Yeah. We hang it up in the see-through cold room in the shop, and we then mature it, and then we slaughter it. Sorry, we then cut it into halves and package it and everything, and we sell it as fresh, fresh beef. And I just couldn't get the numbers. I just couldn't get it to work. One of the problems was lack of sort of commitment from people. This is one of my big gray areas of my spreadsheet, exactly what you're saying. If you're going to invest in that. You need some commitments. And one of the things that I was not willing to do and it was another reason why I gave it up. I'm not prepared to just become another dirty deal of meat processor not out there because there's a lot of them. And if you want to if you want to go against the flow, you're going to get hurt. So the only way you're going to do it is to do what they're doing. So, I decided no, So, we pulled out our cattle, we pulled out."

Barbara Martin [BM1] 1:52:41

"I will be honest with you. You know, we are originally from South Africa. We're from a third world country. But I can tell you now, they can go learn a lot from how butcher shop is supposed to look like. Here, it just nobody takes pride in how the meat is packaged and presented. It's disgusting. Half of the places I can even believe that they passed inspection. Like, we used quite a few different processors and the first time we drove on, I said to Eric Mitchell [ExpM3]: I'm like, Is this where I need to bring them (the meat)? I don't think so. It is not going to happen. I mean, it's really bad. You must understand, if you have people that's from the city that comes to buy a steer from you, and you take the steer to the processor and then they have to go get it at the processor, but they used to buy in the Publix. Do you know what a shock it is to people arriving at some of these processing facilities? And I mean, it's bad for you as a breeder because some of that is like, well, they didn't quite, they were thinking the packaging is going to look like Publix, well, no."

Barbara Martin [BM1] 1:54:06

"I'll be honest. We get very gross when we get meat and the way, it's like this person not have any pride in this. It's hacked. It's not butcher, it's hacked. But yeah, that is like really labor, processing. It's a big issue for everyone, no matter what you do. Cattle, sheep, pigs."

Barbara Martin [BM1] 2:05:33

"(having) Honest reliable processing facilities. Which I don't know if we are able to." (Talking about the goal of processing deficiency issue)

Eric Mitchell [ExpM3] 2:05:39

"(with) Certain minimum standard."

Barbara Martin [BM1] 2:09:26

"I can tell you know, if you go speak to anybody that's raising cattle right now, everybody's, same question is: who did you use as your last processor? if you are raising high end cattle? Like, we are, we're not talking about the normal commercial cow that is skin and bones out there. We're talking about specific genetic animals for mobbing and Rabbi. You'll find we all say the same thing. Well, we just scared to send our animals. We don't know where we're going to go."

ITeam4 2:10:11

"You call them and they schedule a slaughter for you in six months, at least, at the earliest. But now imagine if you have a steer that's almost getting ready, you cannot wait because you have to feed and then it's age and more feed and more cost."

Eric Mitchell [ExpM3] 2:10:32

"The sad part is, I raise a steer until it is a yearling ok. You come and to buy my steer because I advertise it, you come and have a look. And I don't tell you hey, if you haven't got a booking, you going to have to wait a year before we get it done or nine months. So he loads up his steer and hope he goes very happy thinking, ah, next month we are going to have a freezer full of meat."

Bethany Miller [BM2] 2:40:44

"Down here (in Florida), we have a great market. It's huge. We have so many ethnics that live here. And yet…"

Eric Mitchell [ExpM3] 2:40:52

"500, no, 600 sheep a day coming from Texas. 600 sheep a day."

Bethany Miller [BM2] 2:41:00

"Well, they can buy it so cheap down there (in Texas)."

Edward Moore [ExpM2] 2:41:04

"And a lot of them, by the way, are sick, diseased, all kinds of problems that theoretically are being checked, and they're not."

Eric Mitchell [ExpM3] 2:41:16

"...I meant, 600 head of sheep are consumed from Texas, here. They come here already properly slaughtered, processed, and everything. But we're taking 600 sheep a day, out of Texas. So that shows how big the market is. That's just, that's just Texas. So if you go to Kansas and some of the other sheep producing areas, you know."

Bethany Miller [BM2] 2:41:52

"Well, there's a guy down south in… anyways, way down south, he, instead of purchasing, he can't get enough lambs here during Ramadan and Eid. He ships in, via semi (semi-truck), two loads of lambs at his property and sells them to the Muslims down there, during Ramadan and Eid. And he says, they're cheap and they're in pretty good shape, you can find reputable guys to haul and purchase from in Texas."

Bethany Miller [BM2] 2:42:31

"Yeah. It cost him probably well, maybe not less now, but it cost not that much more to ship them in from Texas than it did for him to buy them locally and have them ship down there or go get them."

Eric Mitchell [ExpM3] 2:43:11

"Yeah, exactly. If you walk into public or walk into Walmart. You'll see New Zealand lamb, all the shelves. You'll see Australian sheep products, all on the shelves. But you won't find any American lamb."

Noah Murphy [NewM3] 2:43:30

"I saw, when I did my business plan. I end up facing USA import around 80%. 80% of the Sheep Meat is imported from Australia, New Zealand. So we are so low."

Eric Mitchell [ExpM3] 2:43:48

"Exactly. Cause we can't produce. This has been very educational to me. You can see why we can't produce."

Eric Mitchell [ExpM3] 2:46:24

"See, most of, like in our business plan, most of our idea, when we started off with sheep, was to produce meat, and that's why I don't worry so much about the processing. So we have a lot of sheep that we supply as meat, but the bulk of our production goes into people that want to take our sheep and breed with them. There's a big demand for that."

Noah Murphy [NewM3] 2:49:39

"I need to find my market. The question I'm going to have, that's a question, if I pass that season right now, right? for sale. And whatever is if I don't sell everything, so if I still have some, so what I'm going to do? Keep them? or try to sell for some other farmers or to the markets or something?"

Theme 5
Regulatory Compliance and Environment

Mr. Ethan Mason [ExpM1] 18:13

"But the only reason that USDA does this is because if there was a problem with that animal, with that meat, they want to be able to track it."

Mr. Ethan Mason [ExpM1] 18:24

"So if you sold or I sold cuts of meat out of my house, it'd be a nightmare for them to try to track that meat. But if I could tell you where that half or at least could tell you where half that lamb went, or that whole lamb went, if there's a problem, then they could track it. So it is ways around it, and it doesn't cause any problems. I do the pigs the same way."

Nathan Morris [NewM1] 25:00

 "Well, you can sell it for pet consumption (dairy milk) only, unless you produce cheeses that are age 90 days. And so there are some things in there, but there isn't much of a support organization alliance system where people can kind of pull together their ideas and see what paths are there for opportunities, maybe from there on up, even at a higher level for lobbying. I don't know what kind of efforts there are from small farmers. I know we're playing from way behind the 8 ball, but is there any sort of lobbying effort being done on a countywide level or on a state level that can help define, you know, some of the rules and laws moving forward? So we haven't seen a lot of that on that side. Still learning about what's going on with the meat sheep, what kind of restrictions are there?"

Nathan Morris [NewM1] 25:58

 "And it's not like we're trying to get around the laws or anything like that, but just trying to see what again, from a sustainability perspective, from a small scale perspective, what opportunities are there for people."

Edward Moore [ExpM2] 31:23

 "And now comes, I start dealing with that and there are certain issues with that, legal issues, because they have to buy the animal from us, and I allow them to slaughter right there, which is an important thing, and they like doing that."

Barbara Martin [BM1] 49:36
 Don't think because the name says USDA that the traceability and everything there is working according to plan.

Eric Mitchell [ExpM3] 53:29
 "Laughter". This a governmental thing, we are talking about a lobby, this is a lobbying point. (Processing facilities issues)

 Eric Mitchell [ExpM3] 53:39
 This is a seriously big issue that should be taken. Like Angus Association go to Gainesville once a year and they lobby with the senators and they get in our way. Imagine ushering there with our little sheep, trying to lobby with the senators. We're not going to get anywhere.

Barbara Martin [BM1] 02:08:25

 "You're not going to be able to get, like, a simple over the counter thing anymore. They're saying in June you will not be able to get, like, LA200 and all the normal stuff that people have been using. Unless you have a vet that has made a formal visit to your farm, I think they require them only to visit once a year, right?"

(They Talking about how easy is to get water or if they face any issues on that)

 Bethany Miller [BM2] 02:53:53
 Yeah, pretty ease yeah.

 Mr. Ethan Mason [ExpM1] 02:53:56
 There is an aquifer, we are right on top of a bunch of water.

Edward Moore [ExpM2] 02:54:53

 "Well, when you talk about environmental issues and politics, those are very linked here. Both water and land. Environmental impacts are limited. I mean, land you can't build, you can't make more of it."

Edward Moore [ExpM2] 02:55:13

"Water, you can't make more of that either. If you have somebody decide in a small community like this, let's say in Hernando County, to put up 30, 40,000 houses in a small area that is drawing on the resources that farms need, that everybody needs, there's no planning at all."

Edward Moore [ExpM2] 02:55:37

"There none. So the limited resource source of land we talked about, this is up for whoever has the money for it. In other countries, if you want to sell farmland, you have to make it available to farmers first."

Edward Moore [ExpM2] 02:55:56

"We don't do that here. So there needs to be mental changes. I mean, if people want to eat more than what comes out of a tin can or McDonald's, they're going to need farms and they're going to need good products."

Edward Moore [ExpM2] 02:56:13

"No one's thinking in those things, and that's what we have to do."

Mr. Ethan Mason [ExpM1] 02:56:17
Everybody enjoys eating McDonald's and fast food restaurants and eating out of a box and a can. That's the problem

Edward Moore [ExpM2] 02:56:34

"I'll give you a little example. One night there's this horrendous noise. Now a local farmer decides to turn his land into a racetrack. No idea. I never saw any car truck there. And they started off with a dirt track on it. I never put it together. Then I have a heifer miscarriage. It sounded like we were having a war." (problem with regulation and urban development)

Edward Moore [ExpM2] 02:57:13

"And I thought, this is crazy, what's happening? This light foot. Yeah. I mean, I'd close the place down. Oh, yeah. And at the same time, they're building literally thousands of houses around this. Now, they expect to be drawing out of the aquifer the water for those houses. There's no electricity in the area. There's no infrastructure for this, but the environmental damage is incredible."

Eric Mitchell [ExpM3] 03:02:24

"People are selling their orchards to golf courses, to housing development and all the rest of it. They're not interested. Citrus is hard work."

Eric Mitchell [ExpM3] 03:05:13

"Lobbying is a big problem." (Talking mainly on remedies availability)

Barbara Martin [BM1] 50:29

"The only thing that we did with the Florida Department of Agriculture has been to apply for your flock ID Number. That is the only time that all of us really deal with them."

Noah Murphy [NewM3] 1:06:55

"you guys have (referring to UF employees and staff) liability. Because of that liability UF is not able to answer a lot of questions we have. I can talk to you (pointing at Bethany Miller [BM2]) straight we get there. Over there (UF) they are behind UF, and the liability. Like that issue we have in my land, someone helped me but the UF is going to be against, they couldn't because they cannot tell you what to do."

Barbara Martin [BM1] 1:07:46

"What he is saying is like for example, ... with you if you know they've got the rules and policies they are not going to be very straightforward to say you know what, that person doesn't know what the heck is. or don't buy from Hancock seeds."

Noah Murphy [NewM3] 1:33:55

"I have a question. All my neighbors have a couple dairies around me, every single one they have so many employees and every single one is not America. Every single employee is illegal, they pay the guys like 500 dollars a week, but plus they pay the rent for them because they have trailers on the property and they let the guys live over there. But some of them doesn't, just pay that amount and they don't have these kind of problems."

Noah Murphy [NewM3] 1:34:44
They just… the way I see it, now come back to Miami, in Miami we had that kind of problem, you just make that person create a LC (limited company), and you pay the LC and you wash your hands.

Barbara Martin [BM1] 1:42:31

"The thing is you still have to get your custom license. A custom butcher. You cannot say you are a custom butcher if you don't have a license. There still a license required for you by the state of Florida to be a custom. So it's not just a question of you I just say, ok, I learned it, I'm just going to do it for, no. They do get inspected, there is paperwork involved in that, there has to be a certain square footage and all of those requirements. So, it is hard…"

Eric Mitchell [ExpM3] 2:07:46

"You need mediation because there's a war going on between the farmer and the processor. And there's a war going on between the processor and the end user, the guy that is doing the final selling. So, somewhere we need mediation. We need guys to sit down the table and say, okay, yeah, what are we going to do?"

Eric Mitchell [ExpM3] 2:08:47

"It might not be a UF (University of Florida) function. It might have to be some department of agricultural function."

Edward Moore [ExpM2] 2:24:55

"Somewhere in your study, you have to come up with things we can't handle that have to get in front of the legislature. One of them is insurance, because the minute we bring anyone on to work, we're going to get hit with that. And that is a big issue, liability insurance. But just having a farm out here, is hard to get insurance on, let alone anything else."

Edward Moore [ExpM2] 2:25:18

"So (now) if we could find them as some kind of reliable part time help or whatever, we could be shooting ourselves in the foot, very badly."

Eric Mitchell [ExpM3] 2:35:58

"Yeah, I think… I'm not really involved in with the Meat Sheep Alliance, my concern for the Meat Sheep Alliance is sustainability. And the reason I say that is that, the small family farm, talking about, the little guys that have a 50, 60 sheep, they are under threat. And unless we can make a small household farmer, make himself a little bit more money, people are going to walk away from it, because you got urbanization coming in. We've got more rules. We've got more rules against antibiotics, drugs. There's a lot of things ganging up against us, and it's not as though we're that profitable, that we can absorb all of this. Most people, if they're honest with their sheep, they are not making any money."