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Cooperative Agriculture and Capacity Building for Young Adults – A Case Study on the Kole Wetland Model of Cooperative Agriculture in Kerala, India

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Abstract

VUCA (volatile, uncertain, complex, and ambiguous) in the agriculture sector calls for adaptation to rapid environmental changes through capacity building. There is little evidence in existing research on the role of agricultural cooperatives as knowledge transfer systems that effectively support capacity-building through agricultural education among young adults. There is also a need to identify specific practical strategies for tackling capacity building in a VUCA environment. This thesis aims to study challenges and opportunities in capacity-building in the agricultural sector in a developing country using the Kole Wetland Cooperative as a case study. By using the case study methodology to further understand the role of agricultural cooperatives in capacity building as knowledge transfer systems, the researcher could identify practical solutions to improve capacity building in Kerala, India. Data for the study were collected through interviews and focus groups. The sample of 31 individuals, selected through snowballing, consisted of students, agriculture officials, farmers from the Kole Wetland Cooperative, and members of the managing committee of the cooperative. Thematic analysis of the data revealed challenges like societal stigma linked to jobs in agriculture and a gap between education and practice in agriculture. However, initiatives by the government, agricultural universities, and other allied research centres continue to contribute to capacity building. The study revealed that agricultural cooperatives had the trust of their members and the community. Capacity-building activities that utilise this trust to further improve the existing system would go a great way in enhancing the productivity and efficiency of the agriculture sector by preparing young adults to tackle a VUCA environment. This study provides practical solutions to improving capacity building in a VUCA environment, which, if implemented with better cohesion between all stakeholders, would lead to sustainable growth in the country.

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor used artificial intelligence tools or generative artificial intelligence tools (unless it is clearly stated, and referenced, along with the purpose of use), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

Lakshmy Radhakrishnan

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Ethics Approval

Application numbered 24/275 was approved by the Auckland University of Technology Ethics Committee on 11/10/24.

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Chapter 1: Introduction

The prevalence of rapid and extreme changes has emerged as the new norm. Over the past years, fluctuations in climate, the economy, and technological advancements have resulted in substantial environmental disruptions. Adaptation to change has become imperative for sustainability and survival for organizations and individuals alike. This study aims to explore the role of agricultural cooperatives in capacity building for young adults, who are the largest group of vulnerable populations in the VUCA world. This chapter begins with an overview of the global context of capacity building, followed by an examination of the local context for this thesis. Specifically, the researcher focuses on capacity building in the agricultural sector, using the Kole Wetland Cooperative, an agricultural cooperative based in Kerala, India, as the primary case study due to its ease of access for the researcher. The ease of access improves the chance of obtaining participants intended to be part of the sample through snowballing. Additionally, the researcher's familiarity with the region gives her a deeper understanding of the language spoken and the cultural and historical contexts of the region, making it easier to connect with the participants during the research.

1.1 Capacity Building and Career Development in a VUCA world

The terms volatility, uncertainty, complexity, and ambiguity (VUCA) were explained by Bennett and Lemoine (2014) and refer to the constant state of rapid changes and their consequences that the world faces now as a new normal. Organizations must cultivate a readiness for change to effectively anticipate and navigate the challenges posed by a rapidly changing world. This readiness hinges significantly on the skills and capabilities of the workforce. Capacity building is a coalition of learning resources, mentorship, and face-to-face interactions that lead to personal and professional growth (Okewole et al., 2020). To this end, fostering a culture that promotes continual learning and upskilling is essential (Achoki, 2023). Organizations not only need to enhance their sensing and response capabilities but also must support career development opportunities that extend beyond the traditional confines of the organization. Career Development refers to the interventions or practices that are used to enhance a person’s career development or to enable that person to make more effective career decisions (Spokane, 1991). Such initiatives help in building an empowered workforce that is well-equipped to adapt to and drive change (Achoki, 2023).

1.2 Impact of Climate Change and the Role of SDGs

The discourse on climate change highlights a critical global challenge that was long sidelined but has now become an unavoidable issue with widespread implications for sustainability and economic stability. The formulation of the UN SDGs in 2015, particularly SDG 8, reflects a concerted global effort to promote sustained, inclusive, and sustainable economic growth and decent work for all (United Nations, n.d.). SDG 8 is not only a commitment to economic growth, but also encapsulates the need for creating employment opportunities that are both rewarding and environmentally sustainable through capacity building (United Nations, n.d.).

1.3 The Agricultural Sector, VUCA, Career Development, and Capacity-Building

Specifically, in the agriculture sector, which is fundamentally impacted by climate change and is highly climate-dependent, there is a pressing need to redefine roles and develop new competencies in the VUCA context (Achoki, 2023). Career Development, as noted by Lundry et al. (2015), plays a pivotal role in this context. Career development focuses on learning experiences and equipping individuals with the necessary job and life skills tailored to the evolving demands of the agriculture sector. Capacity building through career development prepares individuals for both entry and advanced roles within their chosen careers, thereby enhancing their prospects for personal and professional growth (Lundry et al., 2015).

1.4 Broader Implications for Sustainable Employment

Volatility caused by erratic monsoon is a major deterrent for farmers moving away from agriculture as a livelihood. This uncertainty fuels further alienation amongst young farmers who want to start a career in agriculture (Achoki, 2023). On the surface, it may seem simple; however, the complexity of the situation lies in the fact that knowledge to combat the volatility of climate change and the uncertainty it brings is still out of reach for some in developing countries (Achoki, 2023). In a sector highly dependent on the climate, climate change exacerbates the ambiguity of the situation by highlighting the lack of skills needed to survive. The logical way out is through capacity building. The integration of capacity-building strategies with efforts to combat climate change can help mitigate the potential economic disruptions caused by climate change through upskilling and reskilling (Achoki, 2023).

By aligning capacity building with sustainable practices, organizations can contribute to the broader goals of environmental conservation and economic resilience (Hopner et al., 2024). A strategy that integrates sustainable careers, capacity building, and the broader interests of people will create an environment and society that not only addresses the immediate impacts of climate change but also ensures long-term sustainability and quality-of-life improvements, embodying the essence of SDG 8 (Hopner et al., 2024).

Overall, this narrative provides a comprehensive overview of how organizations can strategically navigate the challenges of a VUCA world while contributing to global sustainability goals through focused career development and proactive engagement with environmental issues (Bennett & Lemoine, 2014). The emphasis on creating equitable work opportunities through education and training is particularly pertinent in developing countries, potentially offering a blueprint for how different sectors, especially agriculture, can adapt to and thrive in a changing world (Sadhna Dash, 2023).

1.5 Scope of Review

The study aims to comprehensively explore the impact of cooperative agriculture on fostering capacity-building opportunities for youth, using the Kole Wetland Cooperative (Kole Karshaka Samithi) as a case study. This focus will enable an in-depth examination of the dynamics within cooperative agriculture that contribute to or hinder the creation of sustainable employment opportunities through capacity building for young people in the agricultural sector. Given the complexities of the VUCA world, the study will also investigate how capacity building is crucial for equipping youth to navigate these challenges effectively.

The research questions to be addressed are as follows:

RQ1: What are the challenges and opportunities of capacity building for young adults in agriculture in a VUCA world?
RQ2: How has the cooperative agriculture movement in the Kole Wetlands influenced (positively and negatively) capacity building for young adults?
RQ3: What can be learned from the Kole Wetland Cooperative model, and what improvements can be made to cooperatives to advance capacity building in young adults?

1.5.1 Scope and Focus of the Study

The research is geographically confined to the Kole wetlands of Thrissur, reflecting a deliberate choice to explore the intricate relationship between the local ecology, the cooperative model, and the socio-economic dynamics it engenders. By narrowing the study to this specific locale and cooperative model, the researcher aims to gain detailed insights that may be obscured in broader geographic or thematic studies. This research aims to explore the cooperative agricultural practices employed by the Kole Wetland Cooperative and assess their impact on capacity-building opportunities for young adults.

1.5.2 Objectives of the Literature Review

The literature review in this study is structured to ground the research in a set of well-defined concepts:

1. Capacity Building through Career Development: The study will examine how the cooperative model supports or hinders capacity building for young individuals involved in agriculture. This includes investigating how the cooperative facilitates capacity building through educational and practical opportunities.

2. Capacity Building in Agriculture Cooperatives: An examination of the various facets of cooperative agriculture will be conducted, focusing on how these cooperatives operate, their governance structures, and their economic, social, and environmental impacts.

1.5.3 Relevance and Significance

This study holds significant relevance as it aligns with global discussions on sustainable agriculture, youth employment, and ecological conservation. The current literature offers insights into capacity building through agricultural cooperatives and its direct implications for combating a VUCA world; however, there is a lack of practical solutions, and a call for unique, localized solutions tailored to specific regions based on their culture and history. The gaps in policy integration across sectors such as agriculture, education, and rural development highlight the need for research on how policies can be better coordinated to support sustainable employment opportunities through capacity building (Chen et al., 2023). Current research also emphasizes the importance of a deeper understanding of how member engagement affects the performance of agricultural cooperatives and how knowledge transfer within them is crucial for comprehending the dynamics of capacity sharing and attracting young adults (van Gerwen et al., 2018). This study will further attempt to address the research gap, highlighting the lack of focus on fostering endogenous growth for local markets, which could better

support poverty alleviation efforts (Martin, 2019). The unique setting of the Kole Wetlands and the cooperative model present an opportunity to contribute to academic and practical understanding of how localized agricultural practices can align with broader economic and environmental goals.

1.5.4 Implications for Future Research

This study is exploratory, small-scale, and its strength lies in the fact that the researcher is an insider in the research setting. The findings from this study could provide a foundation for future larger-scale research into similar ecological and cooperative settings elsewhere, offering comparative insights or reinforcing the findings from the Kole Wetland study. Moreover, it may offer practical implications for policymakers and educators in the agricultural sector of developing countries, suggesting ways to integrate cooperative models into agricultural education and management to enhance capacity building through career development for young people in these countries.

The body of the study comprises different chapters; the literature review analyses the current literature on key terms, including capacity building, VUCA, and career development, all within the context of agricultural cooperatives. The methodology chapter provides insight into the selection of methods, sampling, data analysis, and ethical considerations. The findings chapter explains all the themes and codes, presenting the major findings from the thematic analysis. The discussion chapter presents the findings, considering the research questions, linking them to relevant literature, and drawing conclusions.

In summary, the research at the Kole Wetland Cooperative is poised to make valuable contributions through practical solutions to the understanding of the role of cooperative agriculture in promoting capacity building among young adults in the agricultural sector.

Chapter 2: Literature Review

The intersection of capacity building and agricultural cooperatives offers a profound avenue for exploring how structured collective efforts can enhance both economic and social outcomes for farmers, especially in regions where agriculture forms the backbone of livelihoods.

2.1 Sustainability Capacity in a VUCA world

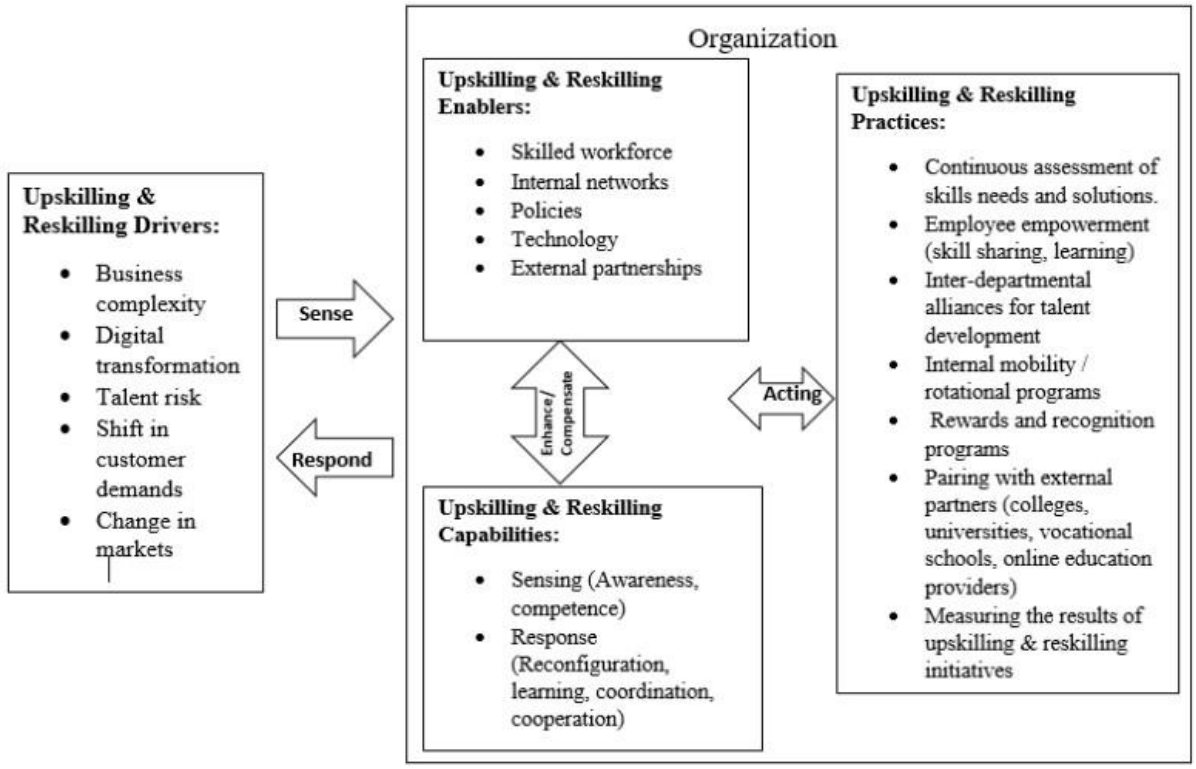
Individuals and organizations are increasingly acknowledging the significance of adapting to volatility, uncertainty, complexity, and ambiguity (Achoki, 2023). The terms within the acronym VUCA can be expanded and explained as defined by (Bennett & Lemoine, 2014):

- **Volatility:** A situation characterized by instability and unpredictability, often arising from a critical lack of knowledge or significant doubts regarding potential outcomes.
- **Uncertainty:** A condition defined by an insufficient amount of knowledge necessary to make informed decisions regarding future actions.
- **Complexity:** A situation that, while neither unpredictable nor unstable, presents itself with a substantial amount of information, which, if adequately processed, can resolve the issue at hand. However, the effort required to do this is considerable, thereby rendering the situation complex.
- **Ambiguity:** Situations characterized by a lack of clarity concerning the nature of cause-and-effect relationships, typically associated with novel circumstances where historical data is insufficient or unavailable to guide decision-making.

The sense-response framework developed by Achoki (2023) illustrates the relationship between the VUCA world and the upskilling and reskilling drivers, enablers, practices, and capabilities.

Figure 1

Organisational Sense-Response Framework for Upskilling and Reskilling in a VUCA World



Note. This model was proposed by Achoki in 2023, as a new organisational sense-response framework for upskilling and reskilling in a VUCA world. From "Upskilling and Reskilling for a VUCA World: Organizational Sense-Response Framework." by Achoki, 2023, *GILE Journal of Skills Development,* 3(2), p. 46. CC BY-NC.

This analysis effectively weaves together themes of organizational adaptability, the imperatives of career development, and the global urgency of addressing climate change within the framework of the United Nations Sustainable Development Goals (SDGs). The discourse underscores the crucial need for organizations to be nimble and proactive in a volatile, uncertain, complex, and ambiguous (VUCA) environment, where internal and external resources are strategically leveraged to meet evolving challenges and opportunities.

2.2 Capacity Building through Career Development

According to the United Nations, capacity building is the process of developing and strengthening the skills, resources, and systems that organizations and communities need to sustain themselves, adapt to change, and thrive in a rapidly evolving world (United Nations, n.d). It includes opportunities for

work that is not only productive and fair in compensation but also provides job security, social protection, and prospects for personal development. For agricultural cooperatives, these elements are crucial in fostering an environment that enables farmers to thrive, particularly for young farmers who may face challenges due to smaller landholdings (Ahado et al., 2022).

Career Development is defined as "the set of interventions or practices that are used to enhance a person's career development or to enable that person to make more effective career decisions." (Spokane, 1991). Career development essentially improves capacity building, synergizes quality improvement, and performance (Ali, 2021). A conducive environment that brings together "co-location," learning resources, mentorship, and face-to-face interactions tends to add to personal growth in addition to professional growth, leading to capacity building in its true sense (Okewole et al., 2020). Personal growth and human capital development through capacity building are closely linked to overall organizational growth. Strategic actions that bolster performance, through development initiatives, increase productivity (Ahmad et al., 2015)

Capacity building through career development programs, richly infused with peer mentoring and experiential learning, is found to be beneficial for members undergoing the capacity building program (Yuen-hang Ng et al., 2025). Capacity building in developing countries requires the support of an extensive spread of ICT that drives innovation using available resources, thereby promoting development. Developed countries have already mastered this art, and developing countries can go a long way in long-term development by adopting the resources they need to achieve their long-term goals in capacity building and economic advancement (Phale et al., 2021).

Building on Sen's Capabilities Approach, Mormina (2019) reiterates the importance of developing specialized capacities, such as research capabilities, in developing countries. Rather than viewing it as 'a task to be completed' or a 'good to be given away to an individual', capacity building at different levels must be blended with the long-term sustainability goals of the society and should not be just to bridge a developmental gap. Capacity building through career development is also a change driver, uplifting the vulnerable sections of society, such as marginalized women, and giving them an opportunity to build a life through such programs and become change drivers themselves (Subramaniam, 2003).

National programs, such as India's NEP 2020, are seen as a crucial driver of the country's ambition to become a developed nation by 2047. Several employment enablers, such as vast human capital,

including many children, who are the future potential of the country, and workers India (n.d), are advantages to the system. However, blending policy with partnerships among the government, organizations, educational institutions, and individuals is required to harness the full potential of this capacity-building initiative (Sadhna Dash, 2023). There are many ways in which this can be achieved; including financing mechanisms from more advanced countries that deeply penetrate funding for capacity-building programs in the Global South. Even though banks like NDB and AIIB finance projects in these economies, countries like India need to upscale their offerings from agriculture, services, and manufacturing to go up the productivity ladder Roy (2016), which is only possible through capacity building.

2.3 Capacity Building in Developing Countries

Smallholder and marginal farmers, who represent a substantial 86.2% of India's farming population, manage only 47.3% of the arable land, according to the (FAO, 2024). Characterized by their small-scale operations, these farmers prioritize the stability of the farm household system, utilize family labour for production, and often consume a portion of their produce themselves. A lot of smallholder farmers are part of cooperative agriculture. This model, while supportive of family-focused motives, presents several economic challenges, like a deficit in mechanization due to land fragmentation, giving rise to an additional labour cost Deininger et al. (2017), and accentuates the necessity for targeted sustainability interventions and capacity building to mitigate factors detrimental to the development of smallholder farmers.

A study by Bisht et al. (2020) critically examines these challenges and proposes four key interventions to promote sustainability among smallholder farms by strengthening local food systems by fostering direct connections between farmers and consumers, enhancing the local economy, and ensuring food security. Enhancing access to local and regional markets, as well as developing robust value chains, can provide better economic returns for smallholder farmers. Creating off-farm employment opportunities through capacity-building within the community, particularly for young adults, can help diversify income sources and reduce the economic pressure on farming.

The overall context of capacity building through career development is that there is significant migration from rural to urban areas, particularly among young adults, which affects agricultural labour availability and alters the social structure of rural communities. Migration to urban and non-farming activities is common due to a rise in labour costs, which sometimes even alters the cropping patterns of farmers (Prasad, 2017). In a few states in India, such as Kerala, labour shortages are rampant, partly

because labourers choose not to report for work, resulting in further strain on the system (Nair, 1999). Additionally, the increasing role of women in agriculture, driven by male out-migration and referred to as "feminization," underscores the need for targeted support and recognition of women's contributions to farming and building capacity (Datta et al., 2015).

Herein lies the importance of capacity building in rural areas. Kroesen and Darson (2013) articulate the significance of capacity-building training programs as a critical success factor in rural entrepreneurial programs launched with the sole aim of uplifting the rural community. In their study, they discuss how, rather than undertaking a large, multi-scale project, the focus lay on capacity building for farmers through smaller projects, such as creating energy from windmills or biogas, starting a bakery, and so on. The initiative, by focusing on capacity building integrated into the existing workflows in a farmer's life, created an environment of self-reliance and entrepreneurship, ultimately making rural life more attractive by balancing the rural-urban migration tendencies (Kroesen & Darson, 2013). Amalgamating capacity building into the existing fabric of a farmer's life to improve income-generating opportunities is an important aspect to be considered, as outlined in the study by (Amaruzaman et al., 2023).

An interesting example of capacity building is that of the coffee farmers in Indonesia's Pagar Alum. They were introduced to rice cultivation as an alternative source of income, supplementing the perennial income from coffee cultivation. This study highlights that capacity building through comprehensive stakeholder engagement significantly enhances the effectiveness of agricultural policies and interventions. Introducing a range of alternative income projects requires a well-integrated capacity-building program, one that is designed with the local culture and issues in mind. Such programs add on to the sustainability potential of an industry, here agriculture (Amaruzaman et al., 2023).

Technology adoption is an integral part of capacity building (Kroesen & Darson, 2013). In rural settings, the introduction of small-scale, affordable technologies through capacity-building initiatives leads to an overall improvement in the quality of life and productivity. However, to be successful, these initiatives must consider the human and societal factors of the locality where they are implemented (Kroesen & Darson, 2013). Very often, traditional transfer of technology methods overlooks the uniqueness of the local farming system. Capacity-building techniques that integrate local knowledge have greater spillover effects, not only improving awareness of an initiative among farmers in the program but also impacting neighbouring farmers through the spread of information (Akter et al.,

2023). The Government of India's nationwide agricultural advisory services, known as Krishi Vigyan Kendra (KVK), are an example of such a capacity-building program that equips farmers with the technical knowledge and skills required to adopt these technologies. The programs from KVK have not only influenced the primary recipients, but their effects have also extended to secondary and network beneficiaries (Varshney et al., 2022).

While addressing the issues within capacity-building programs in agriculture in developing countries, Oya et al. (2018) also highlight the effectiveness of such programs in enhancing the institutional capacity of producer organizations and the variation in their effectiveness depending on local conditions, among other factors. This is of utmost importance in developing countries, where every bit of initiative acts as one more link to the overall development of the society (Oya et al., 2018). Capacity-building programs in agriculture often succeed when they are marketed properly with clear outcomes to the right audience, such as female participants, those in leadership roles, or those directly employed in the field. Addressing structural barriers like these can have a positive impact on the success of agricultural capacity-building programs in developing countries (Azumah et al., 2022). Capacity-building programs, designed to inspire trust and solid communication systems among all stakeholders (government, designers, technicians, farmers), are particularly of important where digital technology is propagated (McCampbell et al., 2022). Capacity building in the true sense becomes successful when institutional arrangements that align with business strategies and excellent governance practices are coupled with adequate funding for resource procurement to lead to the transformation and success of an agricultural organisation in a developing country. This also helps attract new members to the organisation (Esnard et al., 2023).

Chaudhuri and Kendall (2021) highlight that a critical role of capacity building is in equipping the farmers with the tools and trades required to combat climate change. This study was conducted in West Bengal, India, and elaborates on the collaboration between small-holding farmers, village volunteers, and the DRCSC (Development Research Communication Services Centre), which developed a system to interpret weather data and communicate it to farmers using technology. This system not only helped farmers make decisions about irrigation or livestock grazing based on the chances of rain, but it also began to be used to safeguard their resources and families from the extreme climatic conditions caused by climate change (Chaudhuri & Kendall, 2021). The relevance of this study lies in its capacity-building efforts through the development of a resilience framework for vulnerable sections of society. Three capacities are developed, namely, the ability to withstand external shocks, recover from such events, and adapt to long-term climate changes. Capacity-building

in these areas enhances preparedness for one of the groups most affected by climate change: farmers (Chaudhuri & Kendall, 2021).

Additionally, exploring capacity-building in developing countries through initiatives in formal education in agriculture, Tamboli and Nene (2013), India does not have a dearth of formal avenues for agricultural capacity building. There are state agricultural universities that provide higher agricultural education, but they face serious impediments due to a lack of autonomy, modernization, and operational funding (Tamboli & Nene, 2013). A pluralist approach is what suits a developing country to combat its many risks. While universities play a crucial role in capacity building through knowledge transfer, adopting a tailored knowledge transfer method that focuses on the traditional and non-technological aspects of the economy will lead to endogenous growth. Again, a comprehensive effort linking changes to the existing models of capacity-building, improvements to mitigate structural barriers like infrastructural issues, and a bridging of local and international markets is required (Martin, 2019). In a developing country like India, where sustainable careers are key to steady growth, capacity-building programs like NEP 2020 offer relief to the young adult section of the population through a "unified interdisciplinary learning environment" (Sadhna Dash, 2023). However, this should be supplemented with multifaceted support from the government through grants, subsidies, loans, insurance, tax benefits, price and commodity support that encompasses adequate structural reforms to support sustainable growth (Polukhin et al., 2019).

India achieved food security and sustainability through the Green Revolution, and Joshi (2015) recommends a second green revolution through capacity building in agricultural sectors with potential and supplemented infrastructural and trade support. Though there is a need for immense reforms in the existing system, the scope for capacity building and employment in agriculture and its impact on the economy of a developing country calls for this abutment (Joshi, 2015). A study by Dey and Singh (2023) on capacity-building programs in the eastern states of India reiterates the importance of clubbing the introduction of such programs with infrastructural development and reducing barriers to market entry for smallholder farmers.

To summarise, small holding farms in developing countries may have their fair share of challenges; however, with the right blend of capacity-building initiatives, designed to suit the local flavour and culture, responsible agricultural practices can be adapted to the advantage of farmers (Moyo, 2016).

2.4 Capacity building in Agriculture Cooperatives

In the context of agriculture, capacity building translates into practices that enhance the sustainability and viability of farming activities, especially for smallholder and marginal farmers who face numerous challenges. These include limited access to markets, financial services, and technology. Capacity building takes a backseat when there is a lack of security, instability, and scant resources, and agricultural cooperatives provide some sense of security by addressing these challenges through various interventions:

1. Training and Capacity Building: As seen in studies such as Lofton et al. (2022), providing training and knowledge transfer is essential. Agricultural cooperatives can facilitate this by organizing sessions on advanced farming techniques, sustainable practices, and even business management.

2. Access to Credit and Financial Services: Cooperatives often provide their members with better access to credit facilities, enabling them to invest in productivity-enhancing technologies and capacity-building practices (Ofori et al., 2019).

3. Market Access: By pooling resources and organizing collectively, cooperatives help members gain access to larger markets and secure better pricing for their products, enhancing their economic returns, leading to more resources that can be invested in capacity building.

4. Technological Integration: The use of technology in capacity building and improving access to information, as demonstrated by the Agropedia initiative by the Indian Institute of Technology-Kanpur Balaji et al. (2015), shows how cooperatives can leverage digital platforms to benefit their members.

However, integrating capacity building into agricultural cooperatives is not without challenges. The focus on economic gains may sometimes overshadow investments in training, technology, or other aspects of environmental sustainability, as highlighted by Mojo et al. (2015), who noted that intensified production practices negatively impacted the environmental performance of cooperatives. Thus, it is essential to prioritize sustainability capacity building.

For cooperatives to truly embody the principles of capacity building, a concerted effort is needed to balance economic, social, and environmental objectives. This involves:

Policy Support: Governments and institutions should provide supportive policies that encourage the formation and growth of cooperatives, along with incentives for adopting sustainable practices. Perverse government initiatives lead to the formation of shell cooperatives, or the creation of inflated data to garner financial support, adversely affecting the true intention of cooperative formation (Chen et al., 2023). A multi-stakeholder engagement, collective action, or co-creating solutions towards a

common cause is central to the success of any establishment. This process leads to a constant cycle of reflection, action, and change (Kartikasari et al., 2022).

Education and Training: Continuous education and training for cooperative members on sustainable agriculture practices and business management are essential for adapting to changing market and environmental conditions. Training enhances job knowledge and the tendency of members to collaborate among themselves for the exchange of know-how, creating a mutual-investment environment within the cooperative or any organization (van Gerwen et al., 2018).

Community Engagement and Market Engagement: Engaging with the broader community and other stakeholders can help cooperatives align their objectives with societal values and expectations, thereby enhancing their social license to operate. Parallelly, engagement with the local market and alignment with changes in the market and consumer demands will help keep cooperatives relevant (Grashuis & Cook, 2018).

Cooperatives with continuous capacity-building programs for their members, enhancing technical and managerial skills that align with local culture, may be able to thrive sustainably in a smallholder economy (Beishenaly & Dufays, 2023). There are gaps in the capacity-building structure among cooperatives in small economies like Kyrgyzstan. Addressing issues , and leveraging opportunities, such as creating a solid network among other farmer communities and cooperatives, can strengthen the existing agricultural system (Beishenaly & Dufays, 2023).

Similarly, Sebhatu et al. (2021) found cooperatives with a diverse portfolio of services extend capacity building in multiple directions, like training and technical advice to its members, sharing information on production and markets, through partnership with research institutions and universities through shared knowledge, involving young adults in daily activities and exposure visits of the cooperative to train them in the operational aspects. However, it was found that cooperatives with government or NGO (Non-Government Organisation) support perform better than just member-led cooperatives due to the fact that the cooperatives with government or NGO support have better access to resources, both financial and non-financial (Sebhatu et al., 2021).

Furthermore, a study on cooperatives in Izmir, Turkey, by Yildiztekin and Erol (2022) emphasized the significance of networks in capacity building. Networks among farmers, in the absence of a proper support system from the government, helped in knowledge and resource sharing. Niche networks,

networks that act as main information sources amongst members of a cooperative, like the Urla Wine Route, offer better coordinated and structured information for capacity building (Yildiztekin & Erol, 2022).

The economic sustainability of agricultural cooperatives is highlighted through their ability to boost members' working income and total production through capacity building, particularly in developing regions. By consolidating resources, cooperatives enable farmers to access larger markets and improve their bargaining power. This collective strength, coupled with capacity building, can lead to better pricing, reduced marketing costs, and increased economic resilience against market volatility (Semou et al., 2022). On the environmental front, cooperatives play a pivotal role by promoting the adoption of sustainable agricultural practices among their members. They serve as conduits for information, new technologies, and practices that mitigate the environmental impact of farming by enhancing the capacity of their members. This includes encouraging methods reduce the environmental footprint but also enhance the long-term viability of agricultural land (Deng et al., 2021). Social sustainability is another crucial aspect facilitated by cooperatives. They foster stronger community ties, enhance social services, and build social capital among members, especially vulnerable populations, such as women, often creating a safe environment for capacity building. Through these networks, cooperatives provide a platform for support and resilience through capacity building, enabling communities to better withstand market and environmental adversities (Barut, 2017).

In parallel, the study by Constantine Iliopoulos and Valentinov (2018) applies Niklas Luhmann's system-environment distinction to explore how cooperatives, viewed as systems, often struggle with managing their boundaries effectively due to member heterogeneity. This mismanagement can blur boundaries, leading to inefficiencies and conflicts. Differences in member goals, resources, and levels of commitment represent significant governance challenges that can impede cooperative sustainability and effectiveness, oftentimes leading to capacity building taking a backseat (Constantine Iliopoulos & Valentinov, 2018).

All the above-mentioned studies emphasize the need for improved management strategies and policies that can better accommodate the diverse needs and contributions of cooperative members, thereby enabling them to build their capacity more effectively and enhance the overall sustainability and impact of these organizations in the agricultural sector. As with any organisation, in cooperatives, the quality of leadership also influences the cooperative's ability to handle internal dynamics and

maintain effective external business relations. However, such leadership may take a different form in the context of a cooperative. A study by Omar et al. (2022) examined the catalysts and constraints that impact the performance of agricultural cooperatives, focusing on interviews conducted with the top management of six palm oil smallholder cooperatives in Malaysia. This research elucidated several key factors that significantly influence cooperative performance but did not find leadership to have an impact on performance.

It did, however, find that leadership played a crucial role in establishing a robust relationship with regulatory authorities through compliance with all relevant regulations. The integrity and goal-oriented approach of the management team were also identified as critical in steering the cooperative toward achieving its strategic objectives. These elements underscore the foundational role of good governance and strategic leadership in the success of cooperatives (Omar et al., 2022).

Moreover, the study highlighted a prevalent high-risk avoidance attitude among the board members, which tends to limit the cooperative's capacity to engage in potentially lucrative ventures. This conservative approach can stifle innovation and reduce opportunities for significant growth. Additionally, discord among board members was noted as a hindrance to effective decision-making, further exacerbating the challenges faced by the cooperative in adapting to dynamic market conditions (Omar et al., 2022).

Omar et al. (2022) offer valuable insights into the internal and external factors that affect the operational efficiency and economic resilience of agricultural cooperatives. Addressing these issues requires a multifaceted approach that balances strategic risk management with innovative growth strategies, ensuring both compliance and competitive edge in a challenging economic landscape.

Multiple studies highlight the significant role of agricultural cooperatives in supporting rural economies by enhancing access to resources and improving operational efficiencies. The findings underscore the importance of strategic management and the integration of effective practices such as capacity building to ensure the sustainability and success of these cooperatives in serving their communities.

Simkhada and Bhattarai (2023) stress the importance of building team capacity to contribute towards cooperative success. Such programs are encouraged by the leadership within these cooperatives, thereby enhancing their sustainability and effectiveness. A successful cooperative that thrives under

strong leadership will organically focus on capacity building through career development, as it will want its members to benefit and grow along with the cooperative and, in turn, attract more young adults to join (Simkhada & Bhattarai, 2023).

Similarly, studies by Panda et al. (2023) and Manjula (2020) discuss the effectiveness of PACS or Primary Agricultural Cooperative Credit Societies. These societies are crucial for providing credit to marginalized farmers and the poorest sectors of rural India (Manjula, 2020).

The study suggests that improvements in management quality and loan recovery efficacy can significantly impact the sustainability of PACS, underscoring the need for enhanced financial literacy, which can be improved through capacity building within agricultural cooperatives. This is especially vital in rural areas where farmers or the general population are prone to financial abuse by local moneylenders. Enhanced capacity building in financial literacy enhances their business acumen and money management skills, ultimately improving their livelihoods (Thongrak et al., 2021).

In a related context, Shen et al. (2022) discuss the role of agricultural cooperatives in alleviating poverty among smallholder farmers in China. The study highlights how cooperatives facilitate access to credit, financial and market information, as well as improved farming resources, such as high-quality seeds and fertilizers. These cooperatives also provide essential technical know-how through capacity-building, enabling smallholder farmers to navigate challenges more effectively.

Having explored the various aspects of agricultural cooperatives, it is pertinent to examine the impact that the duration and nature of support from external aid agencies have on the self-reliance and sustainability of these cooperatives. An illustrative comparison can be drawn between the rice cooperative in Musambira, Rwanda, and a banana cooperative in the same region. According to Moon and Lee (2020), the rice cooperative received continuous support and managed to sustain and expand its operations, whereas the banana cooperative struggled and nearly failed following the cessation of aid.

The differential success between these cooperatives can be attributed to several factors. The rice cooperative benefited from strong local ownership and active member participation in its activities, which fostered a sense of responsibility and commitment towards the cooperative's objectives. In contrast, the banana cooperative was plagued by weak member involvement and suboptimal management decisions, contributing significantly to its decline. These issues highlight the critical role

of effective management and leadership in navigating cooperatives through various challenges (Moon & Lee, 2020).

Furthermore, the rice cooperative enjoyed access to a stable market and exhibited prudent financial management, factors that are crucial for the longevity and stability of any economic entity. Conversely, the banana cooperative faced considerable challenges in accessing markets and was financially unstable, heavily reliant on loans, and lacking in strategic financial planning. The presence of adequate infrastructure and consistent training was pivotal in strengthening the rice cooperative, enabling it to operate efficiently and adapt to changes. On the other hand, the absence of sufficient infrastructure and inadequate training exacerbated the operational difficulties faced by the banana cooperative post-aid (Moon & Lee, 2020).

These case studies underscore the complex interplay between external support, local management, member engagement, and market access in determining the success or failure of agricultural cooperatives, particularly in developing country contexts. This analysis offers valuable insights into the factors that contribute to the sustainability of cooperatives and the critical need for holistic support strategies that encompass not only financial aid but also capacity building and career development.

In conclusion, agricultural cooperatives play a significant role in promoting capacity building in the agricultural sector. They exert community control, enhance local control of capital, gather locals, pool resources, encourage local hiring, and improve local community leadership development. By focusing on the comprehensive development of their members and adhering to the principles of sustainability, cooperatives can contribute significantly to the overall well-being of farmers and the communities they serve, paving the way for more resilient and sustainable agricultural systems (Majee & Hoyt, 2011).

2.5 Kole Wetland Cooperative (Kole Karshaka Samithi)

Agricultural cooperatives have been instrumental in fostering economic growth and enhancing individual prosperity globally by consolidating produce, facilitating marketing efforts, adapting localized agricultural practices, and ameliorating the economic status of farmers. A paradigm of such sustainable cooperation can be observed in the agricultural initiatives of the Thrissur-Ponnani Kole wetlands. Located in the Thrissur District of Kerala State, India, these wetlands are recognized as one of the 75 Ramsar sites in the country.

Encompassing 13,632 hectares, they account for approximately 40% of the rice production in Kerala. Ownership of much of this area resides with approximately 150 farmers who have established the Kole Karshaka Samithi, a cooperative society (Srinivasan, 2011). This cooperative engages in sustainable agricultural practices, which not only support the local ecosystem but also serve as a magnet for young farmers, agricultural students, and enthusiasts. This influx of youth helps the dissemination and exchange of the extensive agricultural knowledge accumulated by these farmers, making the Thrissur-Ponnani Kole wetlands a quintessential example for examining pertinent research questions in the field of career development.

2.6 Principal outcomes and areas for future research

Organizations need to be agile and adaptable in a volatile, uncertain, complex, and ambiguous (VUCA) environment. This readiness is largely dependent on the capabilities of the workforce, emphasizing the importance of continual learning and upskilling (Bennett & Lemoine, 2014).

Career development within organizations is crucial for preparing the workforce to manage and adapt to rapid changes. Promoting a culture of learning and providing opportunities for skill enhancement are essential for empowering employees and fostering a proactive workforce. Climate change has a profound impact on global employment, necessitating significant adjustments across all sectors, including agriculture. The disruption caused by climate change requires strategies that not only mitigate its effects but also foster sustainable economic growth (Achoki, 2023).

The United Nations Sustainable Development Goal 8 focuses on promoting sustained, inclusive, and sustainable economic growth and decent work for all (United Nations, n.d.). This goal is crucial in addressing the economic challenges posed by climate change and ensuring equitable work opportunities.

As per Lundry et al. (2015) Career Development is critical for providing necessary job and life skills, especially in the agriculture sector. These events help prepare individuals for both entry and advanced roles, aligning career progression with sustainable practices.

The integration of sustainable practices into capacity building is essential for long-term environmental conservation and economic resilience. This approach aligns with global efforts to combat climate

change while enhancing the quality of life and improving work opportunities worldwide. These findings highlight the importance of strategic practices that adapt to external changes and challenges, particularly those posed by climate change, while fostering a culture of growth and learning to promote capacity building for young adults.

As mentioned in the literature review, agricultural cooperatives play a fundamental role in enhancing the economic viability of farming, promoting sustainable agricultural practices, and improving the livelihoods of farmers and rural communities. Their role is particularly pivotal in empowering smallholder farmers through capacity building for youth, who might otherwise struggle to access markets, credit, and other essential services.

Despite the extensive research conducted, several research gaps remain.
The identified research gaps underscore the need for a more nuanced understanding of the complex dynamics within cooperative agriculture, with a focus on improving educational frameworks, policy environments, and strategic development. Addressing these gaps could substantially enhance the effectiveness and sustainability of cooperatives in boosting livelihoods through decent work, engaging youth, and incorporating technological advancements in agriculture.

2.6.1 Gaps in Research

While the challenges of operating in a VUCA environment are frequently discussed, there is minimal guidance on actionable and specific strategies that leaders can adopt to address the distinct elements of VUCA effectively (Bennett & Lemoine, 2014).

There is a pressing need for further exploration into the roles that educational institutions and specialized training centres play in facilitating knowledge transfer within the field of agriculture (Alif et al., 2024). Additional studies are necessary to determine the types of policies that effectively support capacity building through agricultural education and cooperative organizations van Gerwen et al. (2018) and such studies need to be conducted by capturing the perspectives of multiple stakeholders.

More detailed research into how member engagement affects the performance of agricultural cooperatives and knowledge transfer within them is necessary to understand the dynamics of capacity sharing and the attraction of young adults (van Gerwen et al., 2018). Further research is required to

balance the lack of focus on fostering endogenous growth for local markets, which could better support poverty alleviation efforts (Martin, 2019).

Further investigation into the dynamics of member engagement and its impact on cooperative governance and success is essential, including the effects of capacity-building of its members, decision-making participation, and commitment to cooperative goals, and acting as building blocks of a sustainable society, since these factors affect attracting new members from amongst young adults (Novkovic, 2022).

The gaps in policy integration across sectors such as agriculture, education, and rural development highlight the need for research on how policies can be better coordinated to support comprehensive and integrated development strategies (Chen et al., 2023). Studies are necessary to understand the social implications of government interventions in agriculture, particularly their effects on women and young adults in rural communities, and how these interventions can be designed to be more inclusive and equitable in capacity-building through capacity development (Sheetal et al., 2022). Although some studies discuss knowledge transfer and career development, there is a scarcity of research demonstrating the actual impact of agricultural cooperatives on career development (Lofton et al., 2022) .

Enhanced understanding, strategic development, and future research in these areas could lead to more robust, adaptable, and inclusive cooperative models that effectively contribute to sustainable agriculture, capacity building through career development.

Chapter 3: Methodology

3.1 Introduction

This chapter outlines the research design, approach, and methods used to explore cooperative agriculture and capacity building for young adults. It provides the rationale behind choosing the methodology for research, and it also explains the method of data collection, analysis, and interpretation of data, leading to findings. Ethical considerations of the study are also discussed in this chapter.

The research employs a qualitative approach, utilizing the case study methodology to explore capacity building among young adults through cooperative agriculture. The criteria for participant selection, instruments for data collection, and analytical techniques are described in detail here. By establishing a methodological framework, this chapter aims to provide an all-inclusive overview of the research process undertaken.

3.2 Research Design and Justification

This study adopts a qualitative research approach (Merriam & Tisdell, 2015). Qualitative research is an ideal method for understanding how people perceive their worlds, their perspectives on experiences, and the meanings they attribute to these experiences. Both quantitative and qualitative research have their own pros and cons. However, qualitative research considers the experiences of a person rather than just looking at their responses in a purely logical manner (Merriam & Tisdell, 2015). This study aimed to understand the challenges and opportunities in capacity building for young adults from the context of cooperative agriculture. The ideal way to assimilate the challenges and opportunities, study the influence of the Kole Wetland Cooperative, and analyse improvements to better the system is through a qualitative study that embraces the subjectivity of a scenario by integrating perspectives rather than just applying rigid logic, and this helps the researcher look at the problem uniquely (Chang et al., 2025).

My research questions involve factors such as challenges and opportunities in capacity building, the influence of the cooperative movement on capacity building, and improvements that can be made to existing capacity-building interventions. Qualitative research helps identify causal mechanisms and influences within the system that can inform a researcher's improvement of interventions (Howarth et al., 2016). It would have been easy for me to conduct a survey and gauge the opinion

of people about capacity building or just look at the existing literature, but I feel that I had to try to understand the phenomena of capacity-building in the context of cooperative agriculture and from the perspective of young adults and qualitative research seemed the right fit for analysing the relationship between these research factors (Svensson, 2021). Quantitative studies are ideal for testing a hypothesis or confirming a theory. Qualitative study, on the other hand, is commonly used to understand concepts or experiences, and my research was to understand the role of agricultural cooperatives in capacity-building from the perspective of young adults (Merriam & Tisdell, 2015). In quantitative methods, I obtain extremely logical answers, but I will not be able to gather data on life experiences, opinions, or a unique perspective on the research factors. Hence, the method used was qualitative.

The ontological stance of this study is relativist, recognizing that reality is constructed from multiple, subjective experiences. Concurrently, the epistemological perspective is subjectivist, asserting that knowledge is inherently personal and context-dependent (Creswell & Poth, 2016). The general research paradigm employed is pragmatism, which integrates diverse methodologies to address real-world problems effectively (Allemang et al., 2022). This approach lets the researcher combine scientific methods with more interpretive, people-focused ones (Brierley, 2017). A pragmatic approach is suitable for my study because I am interested not only in advancing the theory of capacity building, but also in the practices in the agricultural setting of a developing culture.

The methodological framework for this investigation is a case study, deemed appropriate for examining complex and dynamic issues within real-life contexts (Vissak, 2010). This approach facilitates an in-depth exploration of the nuanced dynamics within agricultural cooperatives in the context of the Kole wetlands. The case study methodology is employed when a researcher aims to investigate a single entity, referred to as the "what", which is bounded by well-defined boundaries and is referred to as the case (Merriam & Tisdell, 2015). Researchers have employed the case study methodology to develop theoretical constructs from one or more cases, utilizing empirical evidence from the case or cases in question (Eisenhardt, 2007). The essence of a case study is to build theory by understanding patterns of relationships between the theoretical constructs within the case (Eisenhardt, 2007). This study focuses specifically on the Kole Wetland Cooperative. Within the context of that case study, I aim to understand capacity building in agricultural cooperatives on a more intimate scale by examining the challenges, opportunities, and practical solutions to enhance capacity building. One of the most frequently asked questions in a case study is the choice of the case. Since the purpose of a case study is to develop a theory and not to test out a hypothesis, here

the theoretical sampling involved choosing a case accessible to the researcher and also one that would offer insight into the concept of capacity-building for young adults in the agriculture sector, thus adding on to existing literature in the subject and highlight some unusual findings if there are any. As Eisenhardt (2007) points out, single-case study research is often employed to capitalize on the opportunity to learn about a phenomenon with unusual access or under unusual circumstances.

Qualitative research also recognises that I bring my own assumptions to the methodological choices and data interpretations (Patton, 2014). I understand this context through my own family roots. Although I do not have direct links to agriculture, both my parents and our ancestors, spanning many generations, were agriculturists. I grew up in a household that was constantly filled with stories about life experiences, all of which were interlinked with agriculture. My mother would reminisce about the truckloads of a wide variety of mangoes that were harvested and sold during the summer, and my father would regale stories about his father teaching him the basics of agriculture in their family-owned rice fields. The lifestyle of my grandparents and parents was, and still is, centred around agriculture. The area demarcated as Kole Wetlands lies near my home in Kerala, and throughout the years of my growing up, I used to watch the news and listen to people discuss the workings and various issues at the Kole Wetlands. My cousins and I have fond memories of hiking up a hill during the monsoon season just to admire the beauty of the lush green wetlands. Back then, the Kole Wetlands were in the news for a general decline in agricultural interest in the region and labour strikes against the use of harvester machines. I remember a very brief period when there was no farming in the Kole Wetlands. Therefore, it was natural for me to consider this region and the cooperative when I decided to focus on capacity building in the agricultural sector in India. Naturally, there would be a concern that skewness might creep into the research due to my connection to the region and the people being studied. As a researcher, I have tried to avoid skewness through my choice of research design and analysis. As suggested by Eisenhardt (2007), one can consciously select many well-informed participants for the interviews and focus group study to get a highly diverse perspective of the phenomenon under study. These participants are from diverse groups, backgrounds, hierarchies, and functional areas within the cooperative, as has been explained in the sampling method.

3.3 Sampling Method

Four different participant groups were identified for the study.

The different participant groups are:

- Students of agriculture courses in their final year of study (5)

- Young farmers/farmers at Kole Wetland Cooperative (7)
- Managing Committee members of the Kole Wetland Cooperative (5)
- Government officials in the agriculture sector (3)

While contemplating the research design, I had to consider who was in the best position to provide information concerning my research question, whom I could contact, and how I could contact them. To understand capacity building for young adults (20 to 35 years old), I collected data from individuals in this category who were studying and on the cusp of starting a career, as well as from some individuals who had already begun a career in agriculture. Thus, I decided to form a participant group consisting of students enrolled in agricultural courses who were in their final year of study, farmers, individuals in the field, and young adults of the same age group.

As a case study on the Kole Wetland Cooperative, I would naturally choose participants from the cooperative, including farmers (both young adults and older members), and members of the Managing Committee (elected members of the cooperative who handle operations). I wanted to gain the perspective of a few policymakers to understand the government's point of view on capacity building and the extent to which they felt responsible for it. Consequently, the fourth and final participant group was formed: Agri-officials. Thus, multiple sources of data converging in a triangulating fashion offer a less skewed perspective (Yin, 1994).

Each of the four groups contacted provided a distinct perspective on the research questions (Eisenhardt, 2007).

- Students of agriculture courses - career expectations, challenges they face in job hunting/job creation, and fresh perspectives on capacity building.
- Young farmers/farmers at Kole Wetland - ground realities as working farmers, practical issues they face, working/benefits, and challenges in working with the Kole Wetland Cooperative, practical suggestions for improving capacity-building in the cooperative.
- Managers of the Kole Wetland Cooperative - Details of the model, transformation over the years, benefits and challenges of the cooperative, expectations from government and officials, improvements that will benefit all stakeholders, the role of the cooperative in creating jobs, and capacity building.
- Government officials - Broader perspective of the cooperative movement in line with government policies and UNSDG plans, capacity building initiatives, knowledge transfer,

challenges from the past, and the way forward, the connection between cooperative agriculture and capacity building.

The sampling method chosen was the snowballing method, identifying future participants from the recommendations of previous ones. This technique of sampling is particularly useful when trying to contact “hard-to-reach” people and groups (Rosemarie Streeton, 2004). The cascading set of contacts enables the researcher to gain access to information and people through a key informant or helper. It seemed the ideal way to reach some of the participants, especially the farmers who were wary of researchers and interviewers and worked on a tight schedule during the day. Snowballing ensured that I had some credibility as a researcher because I was approaching them through a reference, a person they knew. Despite these advantages, there are limitations to this technique that may prove detrimental to the collection of data during research. Dropping out of committed participation in research, showing a lack of interest when contacted, and a lack of commitment may sometimes lead to changing the research design (Rosemarie Streeton, 2004). Even though it took a long time to contact everybody in my sample, I feel I have a broad range of voices, and this time-tested way of sampling is useful when the researcher wishes to collect data from a diverse group of people in remote locations (Rosemarie Streeton, 2004).

3.4 Data Collection

Data collection began in mid-October 2024 and was completed just before Christmas. A lot of different methods can be used in case study research to collect data, some of them being documentation, archival records, interviews, direct observations, participant observation, and physical artifacts (Yin & Campbell, 2018). Here, I used the following methods to collect data for research.

- Semi-structured interviews
- Focus Group Studies

I focused on semi-structured interviews and focus group studies to gain insight into the participants' lives. During the initial phase of the study, I had considered traveling to Kerala for data collection, but I had to think of alternatives because I realized that data collection would take longer than I initially thought, and I could not leave my family back in New Zealand for the duration. Once it became apparent that I could not travel, I utilized my contacts in Kerala to initiate the process after receiving AUTEC approval. Due to my heritage, I was certain the language of communication with

most of the participants had to be Malayalam, the regional language of Kerala, and my mother tongue. Semi-structured interviews would provide a basic outline of the interview's direction and enable the collection of data on phenomena (Adeoye-Olatunde & Olenik, 2021). This form of the interview is also organic when talking to the participants without appearing too formal, oftentimes resulting in unexpected insights (Adeoye-Olatunde & Olenik, 2021). Semi-structured interviews provided a framework to follow and set boundaries for my data collection, while also allowing me the freedom to explore participants' perspectives further if the opportunity arose.

First, I interviewed participants individually. I conducted nine semi-structured interviews, each of an average duration of 30 minutes. Then, the focus group study was conducted for each of the sample groups. Focus Group Studies are typically conducted when there is a time constraint, and the researcher needs to collect data from multiple individuals in a specific locality (Hormel, 2014). Semi-structured interviews offer more complex data; however, since the sample size was small, I found that Focus Group studies were the best way to incorporate more participant data from each location, in addition to semi-structured interviews. This approach worked well for all three focus groups, including students, Agri-officials, and especially the farmer/managing committee groups, which were previously difficult to contact or interview. Focus group studies also create an interesting interaction between members of the same participant group, and through it, a different set of angles emerge (Akyıldız & Ahmed, 2021). For example, the focus group study with Agri-officials had three participants, and all three had slightly different perspectives on capacity-building. The members of the Managing Committee and Farmers of the Kole Wetland Cooperative were combined for a single focus group study. A total of three focus group studies were conducted. The managing committee and farmer group sessions lasted 35 minutes, the student group sessions for 46 minutes, and the longest focus group study was with the Agri-officials, which lasted 1 hour and 10 minutes.

The semi-structured interviews were conducted first, followed by a focus group discussion. The indicative questions for both the interviews and focus group studies were pre-approved by AUTEC (AUTEC). The interviews consisted of both asynchronous email interviews and online interviews conducted via Zoom. Asynchronous email interviews do not occur in real-time and typically span a period of several days, weeks, or even months. In this study, I chose to conduct email interviews with a few participants due to their busy schedules and locations, as this approach did not affect the time zone difference (Golding, 2014). A total of ten participants were interviewed through the asynchronous email interview method. One of the most significant advantages was that the time zone

difference did not affect communication in any way, allowing participants to answer the questions thoughtfully.

However, participants had to receive multiple reminders to submit their responses. Even though I had received only ten responses, I had contacted more than fifty people with the questions. A few of the participants, namely the farmers of the Kole Wetland Cooperative, are older and not very tech-savvy. Therefore, the interviews with the farmers were conducted via WhatsApp calls after they had finished their day's work. The data collection from the student group and the Agri-official group began only after I received permission from the Kerala Agricultural University, as per the directive from AUTEC. All the focus group studies were conducted through Zoom calls. Some of the interviews and focus group studies were conducted in Malayalam, the language spoken in the region, and they were translated into English and transcribed by the researcher. The participants in the interviews and focus group studies differed because none of the interview participants were willing to participate in the focus group studies. This meant I had to snowball for new participants for focus group studies.

Pseudonyms

To understand the role of each of the voices, who they were, and what data they provided, and to understand their voices and perspectives better, confidentially, the participants have been given pseudonyms, and they are as follows:

SL No	Participant	Pseudonym	Role	Data Type	Age
1.	Agri Official 1	Umesh	Agri Official	Interview	34
2.	Agri Official 2	Ammu	Agri Official	Interview	32
3.	Agri Official 3	Marar	Agri Official	Interview	41
4.	Farmer 1	Nandini	Farmer	Interview	30
5.	Farmer 2	Appu	Farmer	Interview	31
6.	Farmer 3	Nanu	Farmer	Interview	66
7.	Farmer 4	Gagan	Farmer	Interview	57
8.	Farmer 5	Surya	Farmer	Interview	28
9.	Manager 1	Shivan	Manager	Interview	64
10.	Manager 2	Ashwini	Manager	Interview	49
11.	Manager 3	Sherif	Manager	Interview	71
12.	Student 1	Anju	Student	Interview	21

13.	Student 2	Anu	Student	Interview	22
14.	Student 3	Karthika	Student	Interview	22
15.	Student 4	Shruti	Student	Interview	21
16.	Student 5	Durga	Student	Interview	21
17.	Farmer 1	Bharathan	Farmer	Focus Group	53
18.	Farmer 2	Sasikumar	Farmer	Focus Group	45
19.	Farmer 3	Devaki	Farmer	Focus Group	64
20.	Farmer 4	Fathima	Farmer	Focus Group	47
21.	Farmer 5	Chandran	Farmer	Focus Group	58
22.	Manager 1	Raman	Manager	Focus Group	55
23.	Manager 2	Alikutty	Manager	Focus Group	65
24.	Agri Official 1	Suma	Agri Official	Focus Group	38
25.	Agri Official 2	Ajitha	Agri Official	Focus Group	41
26.	Agri Official 3	Devi	Agri Official	Focus Group	47
27.	Student 1	Minnu	Student	Focus Group	22
28.	Student 2	Sara	Student	Focus Group	22
29.	Student 3	Leela	Student	Focus Group	21
30.	Student 4	Mathew	Student	Focus Group	22
31	Student 5	Vishnu	Student	Focus Group	22

3.5 Thematic Analysis

The data analysis was conducted using a thematic analysis approach. The usual method of presenting the complete story of the single-case study has been utilised here (Eisenhardt, 2007). The story consists of quotations from data collected from participants, which were analysed using thematic analysis. This is then interspersed with evidence from theory to establish the connection between empirical data and theory (Eisenhardt, 2007). Thematic Analysis is a method of identifying and interpreting patterns across a qualitative dataset by developing codes and themes that form the final form of analysis (Braun & Clarke, 2024).

Data analysis was completed in a few steps:

- Data familiarisation: Some parts of the data were email interviews, and the others were recordings of WhatsApp calls and Zoom calls in Malayalam. Translating all the recordings and re-listening to them ensured proper translation, making familiarisation with the data easier.
- Data coding: Coding of data began after the translations were completed, and the data was transcribed and uploaded to NVivo. I did two sets of coding. Coding in thematic analysis is about pattern recognition, demarcating differences, and finding shared meaning or ideas (Braun & Clarke, 2024). During the first coding cycle, I used the Initial Coding method to create codes (Saldaña, 2013). After all the coding was completed, I went back and refined the code during the second coding cycle using the Axial coding method Saldaña (2013), merging a few and deleting those that did not contribute directly to the research. For example, I had codes named “Career challenges” and “Challenges in good working conditions”. I merged them into one code, “Career challenges”. There was a code named “The fair wage challenge”, which I deleted because it did not contribute to the research question.
- Initial theme generation: Once the second set of coding was completed, I started to arrange the codes around themes and worked with them until they fit under the three research questions. Identifying themes involves capturing a range of data that shares a common meaning (Braun & Clarke, 2024). For example, the codes “Capacity building for young adults” and “Government policy” combine to create the theme “Government support in capacity building.” Even though each theme has its own meaning, themes also have a unique central organising concept (Braun & Clarke, 2024). For example, there are two themes: “Government support in capacity building” and “Government support for agriculture cooperatives”. The former is centred around the idea of the government's role in supporting capacity building in the agricultural sector, and the latter is centred around the government's role and policy for agricultural cooperatives in capacity building. I have used the visual mapping technique to chart out the themes and categories, and this technique helped with the process of evolving themes (Braun & Clarke, 2024).
- Theme Development and Review: This exercise continued until I was satisfied with the themes and the clustering of codes (Saldaña, 2013). To elaborate, initially the theme “The role of cooperative agriculture in capacity building” comprised of codes “Cooperative life”, “Cooperative success”, Cooperative support” and “Cooperatives and capacity building”. After rearranging and restructuring all the codes, the theme comprised of codes from “Cooperative support” and “Cooperatives and capacity building”. The other codes were combined to form a theme “Kole Wetland Cooperative”. While finalizing the themes, I emphasized clarifying

what each theme was about, its boundary, the uniqueness of the theme, and its contribution to the analysis (Braun & Clarke, 2024).

Figure 2

The final set of themes and codes for the study

Themes	Codes
Choosing a career in farming	• Promising career path • Future career opportunities in agriculture
Stigma in agriculture	• Lack of appeal • Challenges in working conditions
Labour conditions in Kerala	• Labour shortage in agriculture • Unreliability of labour • Lack of skilled opportunities in agriculture
Context for capacity-building	• Geography of Kerala • Farming system in Kerala
Apathy and lethargy	• Practical issues in farming • Government lethargy and delay
All is not rosy	• Politics in cooperative agriculture • Systemic lags
Practical issues in farming in the region	• Systemic issues • Challenges in agriculture
Match between education and practice	• Difference between education and practice • Future career plans
Gap in support	• Government policy for capacity building • Issues in capacity building
No skill? or no vacancy?	• Careers in agriculture • Challenges in careers in agriculture
Trends and innovation	• Exciting and concerning trends in agriculture • Interesting agriculture paths
Government support in capacity building	• Capacity building for young adults • Government policy
The Kole Wetland Cooperative	• Formation of the Kole Wetland Cooperative

	• Kole Wetland Cooperative in agriculture
Support for farmers	• Farmer support • Capacity building for farmers
Government support for agriculture cooperatives	• Government policy in agriculture • Government programs in agriculture
Motivation to join the cooperative	• Starting the cooperative • Cooperative movement in agriculture • Benefits of joining agricultural cooperatives
The role of agricultural cooperatives in capacity building	• Cooperative support • Cooperatives and capacity building • Kole Wetland Cooperative
Kole Wetland Cooperative and capacity building	• Capacity building in Kole Wetland Cooperative • Capacity building programs
Scope for improvement	• Suggestions for improvement • Focus areas for development
Approachability and access to information	• Approachability of the government • Access to information
Infrastructure and support	• Support systems • Infrastructure required for agriculture • Climate change infrastructure
Adopting technology and thinking future	• Technology in agriculture • Opportunities in agriculture
Play your strengths	• Strengths in the system • Sustainable practices
Regular updates help	• Future-proofing agriculture • Technology and capacity-building

- Write up: The setting of themes led to the writing up of the findings chapter, where each theme has been linked to the research question, and the responses of the different participant groups were compared and contrasted.

3.6 Ethical Considerations

This research fully complies with all ethical guidelines set by AUTEC (AUTEC, 2019). In line with the values and principles of Te Tiriti o Waitangi, AUTEC (2019), this study aims to deepen our understanding of a future generation that will lead the way in the world and the challenges they will face due to climate change and the adoption of the United Nations Sustainable Development Goals. AUTEC granted permission for the research application *24/275 Cooperative agriculture and capacity building for young adults – A case study on the Kole wetland model of cooperative agriculture,* under the conditions that:

- The call for students' advertisement should state what the research is about
- If approval is gained for the farmers to take part during normal working hours, this should be stated

  Both conditions were met.

3.6.1 Informed and voluntary consent

The collection of data for the study began after approval from AUTEC was granted, and all ethical considerations were followed during and after the study . All participants were informed about the details and nature of the study at the time of initial contact as well as before the interview and the focus group study. They were provided with the Information Sheet approved by AUTEC and given ample time and opportunity to clear any doubts about the research. All participants thus voluntarily participated in this research.

3.6.2 Confidentiality

All the participants were also informed about the manner of data collection, how the data would be stored, and who would have access to their identity and data. According to AUTEC guidelines, the collected data has been stored at AUT premises, and participants have been assigned pseudonyms to maintain confidentiality. This ensures that only the researcher knows the participants' identities.

3.6.3 Minimisation of risk

Approval and guidance from AUTEC ensured the minimisation of risk by following a Researcher Safety Protocol. All participants were invited to participate in the interviews and focus group studies, which were to be conducted either at a public location or online. The participants also had the option of

bringing a support person if required, and interviews and focus group studies were conducted after their consent was obtained. All interviews and focus group studies were conducted online at a date and time convenient to the participants.

3.6.4 Avoidance of conflicts of interest

The participant groups were selected in a manner that ensured no conflict of interest. After obtaining permission from the Kerala Agricultural University, Mannuthy, the students in their final year of study were contacted by circulating an invitation approved by AUTEC, and they were spoken to individually. The focus group study was conducted separately. All the farmers were contacted during their available time in the evening, when they would be back from the fields after a day's work. One major concern was the focus group study involving farmers and managing committee members. There was a concern of a conflict of interest. However, the farmers of the Kole Wetland Cooperative elect their own Managing Committee members, who are also farmers in the region.These members are elected to manage the cooperative's operations and represent it at the government level.

3.6.5 Treaty of Waitangi

Te Tiriti o Waitangi is the founding document of Aotearoa New Zealand that was signed on February 6th, 1840, between Māori Chiefs and the British Crown (Orange, 2023). This document lays the foundation for the guiding principles of AUTEC in research. Māori are not the focus of this research as the sample group is Indian. Nevertheless, there may be some benefit.

3.6.5.1 Partnership

The treaty calls for equality of opportunity and outcomes for Māori, ensuring that they are protected and their collective rights are respected. This research aims to investigate the role of agricultural cooperatives in capacity building for young adults. The takeaway from this research will benefit the young adults in New Zealand, as it has an agrarian community, especially the Māori, and the country also has a lot of agricultural cooperatives.

Although this research is localized to Kerala, India, and focuses on one of the many agricultural cooperatives in the region, the implications of the research can be applied to young adults and their challenges in New Zealand, particularly among Māori.

3.6.5.4 Rigour and Trustworthiness

To ensure the rigor and quality of the research, several key elements are meticulously integrated into the case study design Viera (2023), including:

1. Precisely formulated research questions that direct the investigative focus.
2. A research design that is aligned with the objectives and context of the case study.
3. Strategically chosen sampling techniques and data collection methods that are congruent with
    a) the research questions and
    b) the case study methodology.

3.7 Summary

This research aims to elucidate the role of agricultural cooperatives in fostering capacity building in young adults, utilizing a relativist and subjectivist approach within a pragmatic framework. The study has framed its inquiry around several pivotal research questions designed to uncover the underlying challenges and opportunities presented by cooperatives in creating environments conducive to capacity building. The Indian agrarian community, particularly in Kerala, was built on the foundation of agricultural cooperatives. They supported millions of farmers, along with other allied services, during the initial decades of the country's struggle for independence, when the economy was reeling from the aftermath of the fight for independence. India remains one of the world's top exporters, a result of its capacity-building efforts. Agricultural cooperatives play a major role in this endeavor. Many of the participants I interviewed, especially those who openly spoke about the workings of the cooperative, did so in good faith, and I have ensured that their identities and information remain confidential. There were students from the Kerala Agricultural University who reached out to me seeking opportunities in New Zealand, and I had to apologise and inform them about my limitations as a student and guide them to the relevant websites that provided the legitimate information they needed. I chose to research this topic because of my concern for the younger generation and my interest in capacity building. Connecting with the people in my homeland, listening to their experiences, and learning from them was a privilege.

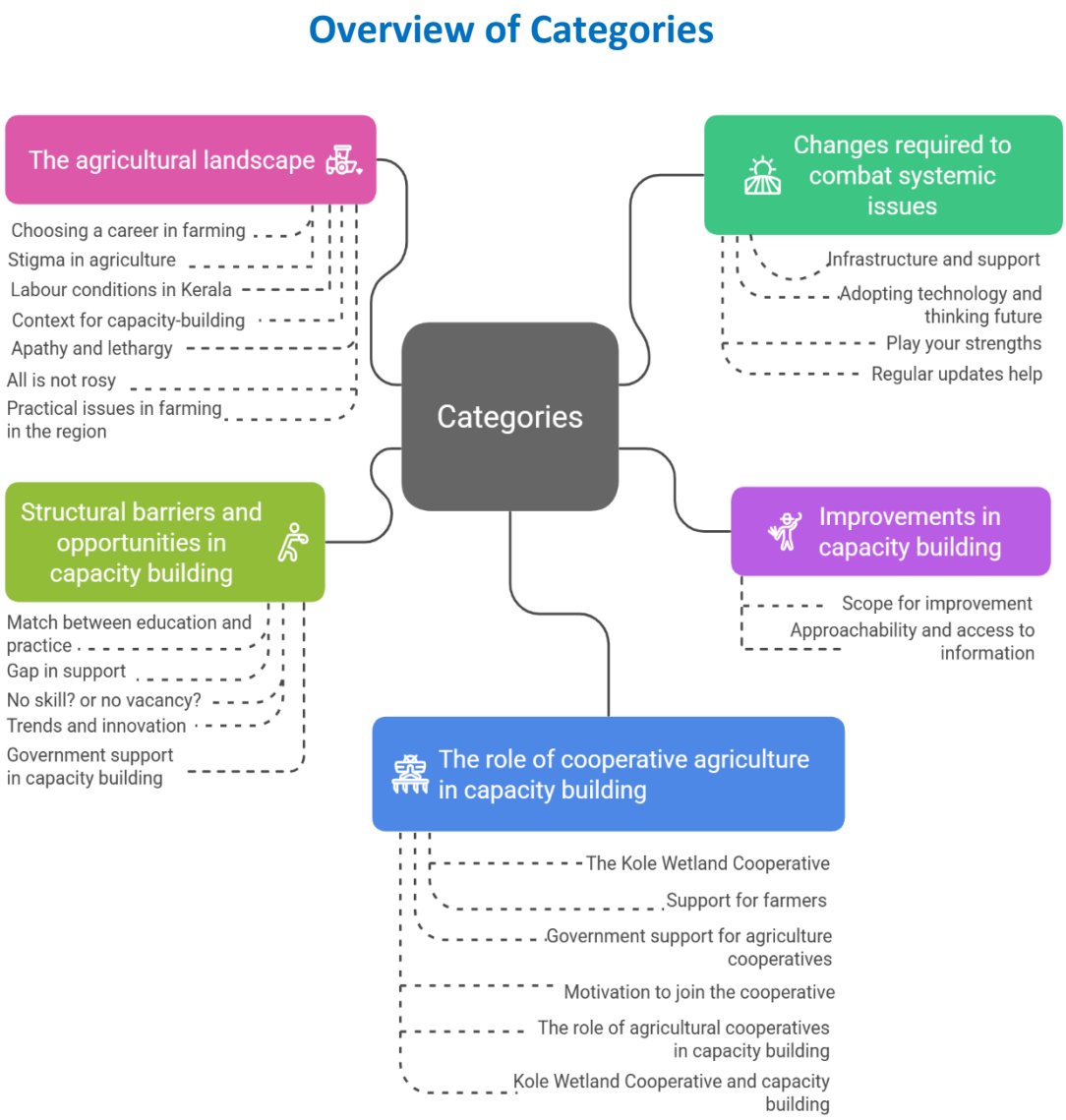
Chapter 4: Findings

4.1 Introduction

This chapter presents the findings from the research into cooperative agriculture and capacity building for young adults, a case study on the Kole Wetland Model of cooperative agriculture. I examine the various categories and themes identified within the data collected through interviews and focus group studies with students in agriculture courses, farmers in the Kole region, managing committee members of the Kole Wetland Cooperative, in the region.

Figure 3

Overview of Categories and Themes Identified in this Research



Note. Created using Napkin AI.

4.2 Categories and Themes

4.2.1 The agricultural landscape

4.2.1.1 Choosing a career in farming

Agriculture has been predominantly family-based in India, and most of the agricultural land is held by family members. Reflective of this family-based practice, some of the student participants chose to take up agriculture as a career because it was in the family.

> *"My grandparents are farmers and spending time with them in the fields during my childhood helped me choose this." – (Anu, 22 years old, student)*
> *"an agriculture-based family-my grandfather, my father-all doing um have agriculture field and doing their job in agriculture, so I have some like link to agriculture" – (Karthika, 22 years old, student)*

There were a few other participants who chose for agriculture because of their interest in the field and their love of food.

> *"The motivation to start farming was from my love for tapioca chips, which led me to lease land for it, but the planting, caring, and harvesting, this process attracted me a lot, and it became a habit," – (Appu, 31 years old, farmer)*
> *"because biology was my favourite subject, and since I don't want to go for medicine" – (Karthika, 22 years old, student)*

For the younger generation, helping the world and society at large were also some of the goals for choosing agriculture as a career.

> *"My motivation stems from a desire to contribute to food security and environmental health through innovative and responsible agricultural practices." – (Keerthana, 21 years old, student)*
> *"we can use AI to create plants we want, high-yielding plants with AI, by estimating their yield and then producing it." – (Durga, 21 years old, student)*

4.2.1.2 Stigma in agriculture

Agriculture has never been the first choice of career for many participants. Traditionally, there has been a stigma associated with farming, which is still very much alive, as indicated by some of the participants. Here, participants from both the farmers' group and the students' group discuss how this stigma affects their perception of agriculture, which is often viewed as a low-paying job associated with poverty.

> *"farming is often a stigmatized, which leads younger generation stay away from agriculture." – (Appu, 31 years old, farmer)*
>
> *"in India we have some stigma towards farming, like you are studying this much like you are having a master's or you are having a PhD then why are you going for farming they have some stigma like um farming is only for illiterates or if you don't have any other job then you can prefer farming yeah even our parents will say if you don't have good marks you can we will buy you some cow or you can go for farming like that oh my god okay yeah sometimes people will say like that yeah so yeah people have that thinking in mind that farming is for people who don't study well or so or someone who don't have a good job okay don't prefer to go for farming or it's their personal choice, okay." – (Karthika, 22 years old, student)*

4.2.1.3 Labour conditions in Kerala

The labour conditions in Kerala are linked to the influence of the Communist movement and the rise of trade unions. Although it ensures a relatively higher wage rate compared to other states in India, Kerala still faces a labour shortage. Here, a labour shortage may also manifest as labourers not showing up after being contracted to work, as suggested by some of the farmers interviewed.

> *"difficulty in retaining long-term labour for our farm. This is because farm labour salaries are lower compared to other types of jobs, and there is a stigma associated with it, because of which we have to rely heavily on people from other states who migrate here looking for jobs. We have to arrange the labourers on our own and there is a shortage in labour. There are workers often receive better benefits by migrating and working abroad." – (Nandini, 30 years old, farmer)*
>
> *"Labour shortages are rampant in Kerala. That has been the situation for years. These days we rely on Bengali workers……pay rate is good in Kerala. That is why we have people come in from other*

states, now Bengali workers and we manage to get the work done." – (Raman, 55 years old, manager)

"Basically farm work is time bound. So if we take a vegetable plant, it has a life span of 120 days. If we are supposed to work on it today and we don't have labour available today, it might contract a disease and it will spread to other plants. So that kind of issues exist. Then, they are inconsistent. They'll come for 4 days and then go on leave for 10 days. So issues like that. I think it is something everyone in Kerala faces, labour shortages." – (Surya, 28 years old, farmer)

Nandini, Raman, and Surya discuss the unskilled labourers in the agricultural sector and the issues they face as farmers employing these labourers, as mentioned above. When it comes to skilled workers in the agriculture sector, the scenario is slightly different. Skilled workers are those who have a formal education in agriculture, and there are many enthusiastic young individuals entering the field. However, many youngsters say the chance to secure a fair wage and recognition in the field is difficult. One could link this to the stigma in agriculture and the gap in government support for creating job opportunities in professional roles, often leading to fresh graduates from different levels competing for the same job role.

"Agricultural professionals are neither considered as professionals like Medicine/CA/Adv etc"- (Anju, 21 years old, student)

"I worked for I worked for one year after my bachelor's for the same job after my resignation; one, MSc student means she graduated; she completed her master's then she applied for that job and she is also getting the same fee like it's like Rs.15, 000 per month,"- (Karthika, 22 years old, student)

"There are many positions lying vacant. Just recently people were invited to an Agricultural Officer post by PSC (Public Services Commission) after years. Until then it was filled by temporary staff on a daily wage basis. The Government is not creating a permanent posting and are also not calling for people to fill the vacancy." – (Shruti, 21 years old, student)

"*In the past people would choose agriculture to become a gazetted officer. For the green ink pen. But now, PSC is not publishing vacancies, maybe they may publish one in two years. But by then, people who graduated 5 years before me would also be applying to the same job.*" *– (Shruti, 21 years old, student)*

4.2.1.4 Context for capacity building

The agriculture sector comes with its fair share of challenges, too. The topography of Kerala, a narrow strip of land flanked by the Western Ghats on one side and the Arabian Sea on the other, does pose some unique challenges in terms of arable land. The cultural history of the land has also influenced the way the agricultural sector works, according to a few of the interviewees.

"our farms are smaller. Kerala has a unique geography. It is almost like a narrow strip of land, on one side we have the Western Ghats and on the other the Arabian Sea. Earlier in the history of the state, there were larger agricultural land holdings that were all under one joint family. The family managed the agricultural affairs together, but over the years, you know right, because of partitions and nuclear families and people from Kerala migrating to other places a lot of the land ownership has been distributed or you could say scattered. So for things like drones, or machinery or any other technology to be used to make farming less expensive, we need larger areas of land and a lot of investment. It is really not profitable in the current situation" – (Nanu, 66 years old, farmer)

The weather has been playing truant in recent years, and the VUCA environment has caused serious issues for people in the sector, those hit directly being the farmers.

> *"the influence of weather. The weather has been consistently adverse for the past six years. We have a rain cycle or a rain calendar that all farmers have been following for centuries. Climate change has affected that badly and made rain unpredictable" – (Appu, 31 years old, farmer)*
> *"We just do once. We are not getting return on investment on the second season. So it was stopped. Because of climate change, there is a difference in water. It needs a lot of water. So we are only doing one flowering season. It means we can harvest in 4 to 4 and a half months. – (Gagan, 57 years old, farmer)*

4.2.1.5 Apathy and lethargy

The factors mentioned in the themes above, coupled with general apathy from the government, can add a burden to the already overburdened farmers. The rice produced by farmers in the Kole Wetlands is procured by the Kerala State Horticulture Mission, which pays farmers a pre-negotiated fixed price

for the rice procured. However, all this is not rosy, as there are payment delays, which Nanu, one of the farmers interviewed, explains below.

"but there have been instances where the payment for the rice comes after a year or even later. This delay affects everything. We cannot afford to delay wages for our workers. The household expenses have to be met. Expenses for farming operations, taxes, all have to be paid on time. So this is a big challenge when the payment for rice procured is delayed."
"This delay affects everything. We cannot afford to delay wages for our workers. The household expenses have to be met. Expenses for farming operations, taxes, all have to be paid on time. So this is a big challenge when the payment for rice procured is delayed." - – (Nanu, 66 years old, farmer)

4.2.1.6 All is not rosy

There are issues within the cooperative that a few of the participants are not in favour of. These issues necessitate a shift in the cooperative's outlook and operations to ensure it functions more effectively in today's times. A few participants from the farmers' group and the Agri-official group agreed that cooperatives were politically driven and lacked leadership.

> *"the Sangham is politically driven. So, more than often, their interests and ideas have been influenced and governed by the political parties governing the committees. This means at times agriculture takes a back seat. Learning to work around this issue is a major challenge, and I don't think anyone from the younger generation will want to do this." - (Nanu, 66 years old, farmer)*

Issues ranging from a lack of funds to a lack of general direction and operational efficiency affect the effectiveness of agriculture cooperatives. Once a great way to bring people together, cooperatives now need a change of direction.

> *"basically, firstly these cooperatives play politics, with increase in members decision making is delayed and becomes pathetic. They don't take efforts to market, they use this as a platform to voice their opinions and sit there and nothing gets done, this is what happens exactly. On the other hand if it was a private player they would have marketed the product long back and made money out of it. It benefits the farmers. The others, they have the infrastructure, but they cannot still develop a product or market it, because they will discuss things a hundred times and voice opinions and nothing happens, the colour of the packaging cannot be this and then they get fed up and*

leave it be. Then they needn't be that talented, like for an FPO you need a 100 farmers, someone will come forward and the others will have a problem with it, talented people don't come up. There are internal politics and a hundred issues." – (Surya, 28 years old, farmer)

Leadership is one important thing there and politics is one of the thing that happens in cooperatives of Kerala that we had to consider here, most of the cooperatives are started in a political background. Most of the cooperatives that start have a leadership orientation problem. It is not a good professional team that leads the cooperatives. That is a problem." – (Ajitha, 41 years old, agri-official)

4.2.1.7 Practical issues in farming in the region

At the end of the day, farmers need a Return on Investment. Agriculture is laborious, and the goods produced are perishable. The only two options for farmers would be to either harvest and sell fresh produce or create a value-added product. However, each comes with its own set of challenges.

"Then again we need to see if our production cost and marketing cost tally. We are again competing with tonnes of cheaper produce from Karnataka. That is a big issue. Unless we have a special market there is no use in us doing all of this."

"Our aim is to get all the products to the market at the earliest. If we are doing value-addition we will need to market more. Now we are able to get all our produce to the market, fresh, but with value-addition we will have to invest deeply in marketing and we will need a lot of labour for all this and it is not feasible if it not in a big scale because of labour shortage. So we focus on getting good returns from our produce now."

"Focus on marketing, rice cultivation is profitable in Kerala and that is because the Government is procuring it for Rs.28. So everyone does it, there is no headache for marketing. So everyone does it. If I am harvesting something for Rs.5/kg but the production cost is Rs.8/kg the operations go into loss. But if there is a good marketing platform people will definitely do it. In case of production, there are a lot of private players, be it varieties or fertilizers or pesticides or bio controls or chemicals, there are hundreds of them released daily, it reaches the farmers, but once they produce something are they able to market it and get money? That is the question. That needs importance; young entrepreneurs can do marketing and it will be helpful." – (Surya, 28 years old, farmer)

There is a heavy reliance on middlemen due to systemic issues and a lack of streamlining in the existing procurement process. Issues like the absence of a good marketing platform cause farmers to rely on middlemen who, in turn, make a profit, whereas the farmers lose out on money.

> *"Secondly, middlemen are like, suppose I grow plantains and I harvest them and sell them to the middlemen for Rs.30, they then resell this. There are first quality, second quality and third quality produce and they always buy this as second quality produce. They will keep it for 2 days, ripen it and resell it for Rs.60 or 70. They are getting the profit. The profit we make in 10 months, they earn in 2 days. If we are able to cut that, if we are able to remove this we will get more." – (Surya, 28 years old, farmer)*
>
> *"Fluctuations in market prices lead to crop loss, poor yields, and low return on investment, and it affects the next farming cycle if the farmer doesn't have financial stability. This is leading to the overuse of herbicides and more manual labour instead of automation and delegation, it sometimes repeats like a loop." – (Appu, 31 years old, farmer)*

This might be making the sector less attractive for the youngsters, becoming one of the many systemic issues that need to be addressed, along with advancements in capacity building. However, it also highlights a problem that can become a business idea for someone enterprising and with the right kind of skill set.

4.2.2 Structural barriers and opportunities in capacity building

4.2.2.1 Match between education and practice

The reasons for choosing agriculture varied, as did the views on the challenges they faced in the sector. Some students indicated that what they study in university may differ from what happens in the field. They indicated that there are gaps in the course content and field requirements, which can be detrimental to finding a decent job after graduation.

> *"Not all of us need to be able to go to a farmer and identify a symptom, if we are speaking in terms of theory. The lack of practical knowledge is a problem. So what happens if , when we go for farmers visits, they say that the younger generation knows nothing. The farmers have to teach the students." – (Durga, 21 years old, student)*

"abroad the professors are teaching based on the recent publications. They are referring to the recent publications in their presentations, they will show the graphs and figures of recent publications, and they are explaining from that, from that, from uh but in India, uh, the thing is, they will have a presentation that may be uh prepared. Even before five years, and they are still continuing to teach from that presentation itself. Yeah, yeah, it was textbooks not on presentations, so um, updation has to be um, means every year new researchers and new knowledge will be coming and it's not reaching to students in India, yeah, yeah, that's true, um, okay, um. So, like, we there are a lot of challenges you know in pursuing this career in agriculture." – (Karthika, 22 years old, student)

There is a different perspective from one of the Agri-officials in their focus group study, where she talks about a lack of planning and preparation among students and how it affects their career decisions.

"Normally in Kerala, it comes in a stage where they realize that they are not ready for a government job or they are not equipped for any other well-placed job, then what next? Then they think about other opportunities and this is how it comes, only if they have some sort of basic knowledge about agriculture or their family have got a running business in agriculture. Otherwise, normally I don't think that any, even graduates from agriculture college are going to think about having an entrepreneurial activity with the current scenario. This is what I believe. " – Devi, 47 years old, agri-official

4.2.2.2 Gap in support

It would be appropriate to say that although there are opportunities, the rewards are not very attractive, and a lack of support or attention from those in power amplifies the situation, resulting in another challenge for young adults. Even if there are opportunities in the job market and ample capacity-building programs, structural barriers like these negate the overall effect of opportunities in the sector. A few responses from the students point towards a general apathy from the government in creating ample employment opportunities, resulting in stiff competition for existing jobs in the agricultural sector, one of the structural barriers young adults face in starting a career, despite having the qualifications required, making it a potential area for future research.

"even if it we manage to move up, yeah, so it's just the entry-level jobs that are um, you know, underpaid or lacking, or you know, even if it we manage to move up" – (Karthika, 22 years old, student)

"even PhD students are ready to apply for the same job because after complete even after completing their PhD, sometimes they are not getting the proper opportunity, yeah, so they are ready to do any job." – (Karthika, 22 years old, student)

4.2.2.3 No skill? or no vacancy?

There are other systemic issues that permeate the sector, which directly impact the employment opportunities of young adults entering the industry. These challenges are issues within the government employment system that become directly detrimental to employment opportunities. A few participants from the interviews with the students mentioned that the Public Service Commission of Kerala, a government body responsible for recruitment and filling vacancies in government offices, has delayed the publication of advertisements.

"the Agricultural Officers' in the new generation can't take care of farmers, we don't even have enough workforce for this. There are many positions lying vacant. Just recently people were invited to an Agricultural Officer post by PSC (Public Services Commission) after years. Until then it was filled by temporary staff on a daily wage basis. The Government is not creating a permanent posting and are also not calling for people to fill the vacancy." – (Durga, 21 years old, student)

"But now, PSC is not publishing vacancies, maybe they may publish one in two years. But by then, people who graduated 5 years before me would also be applying to the same job. So, setting aside government jobs people are moving on the banking, business and management roles" – (Durga, 21 years old, student)

4.2.2.4 Trends and Innovation

The trends and innovations that inspire young adults and experienced professionals are equally exciting. Some participants from the managers and farmers group were looking forward to incorporating technology or some form of mechanisation into agriculture and related fields, primarily to reduce the labour costs. Organic farming is another sector that the future generation is interested in.

"Another trend is the increasing consumer demand for organic produce. We see this as an opportunity to position our cooperative as a leader in organic rice production. There's also growing interest in precision farming. Although it requires significant investment and considerable research in rice cultivation, we believe it will play a crucial role in improving productivity and sustainability in the long term." – (Ashwini, 49 years old, manager)

"I feel there is a consumer demand for healthier food especially organic food and that is a market we can tap into in future. It is a win-win for the producers, consumers and the environment. I believe the younger generation is also interested in these kind of ventures and that is a trend that I am really interested in for the Sangham." – (Alikutty, 65 years old, manager)

"P: We expect mechanisation in agriculture. Machine….completing sowing and everything else with machines, only then there is benefit. Because it is really difficult to get labourers. No one is interested in this kind of job."

"We expect mechanisation in agriculture. Machine….completing sowing and everything else with machines, only then there is benefit. Because it is really difficult to get labourers. No one is interested in this kind of job."– (Gagan, 57 years old, farmer)

"effective application of fertilizers and nutrients such as application through drones. Agriculture drones and novel and precise machinery and equipment for agriculture could minimize agricultural labor and make farming activity attractive for the young generation and make agriculture a profitable business." – (Ammu, 32 years old, agri-official)

I found that AI, intensive mechanization, drone technology, precision farming, and blockchain are among the hotspots that are keenly watched by both professionals and enthusiasts. A few participants from the Agri-officials group mentioned that there is a lot of research and development in the field, and many view these as solutions to improve efficiency and reduce labour shortages. A few farmers have mentioned that the role of organisations like the Kerala Agricultural University is bringing together farming solutions for the issues mentioned above.

> *"Kerala Agricultural University, has brought out a lot of machines for use and it will actually reduce the labour intensity in Kerala. There are a lot of government organisations and cooperative banks that fund the purchases of such machinery." – (Appu, 31 years old, farmer)*
>
> *"Technological advancements such as IoT, AI, blockchain, etc. will solve many issues faced in the agricultural sector. Data analysis tools will help gain precise and accurate live information about*

the farm and help in forecasting plant growth, soil moisture content, microclimate, etc. which leads to improved productivity and sustainability practices." – (Umesh, 34 years old, agri-official).

"Autonomous machinery, such as robotic harvesters and weeders, reduces labor dependency and operational costs, while AI-powered systems analyze data to optimize planting, irrigation, and pest control." – (Marar, 41 years old, agri-official)

4.2.2.5 Government support in capacity building

The Government of Kerala has a plethora of programs, disseminated through various organisations, that aim to build capacity at different levels. There are capacity-building programs for those interested in start-ups, researchers, farmers, and technology in agriculture, and I found there seems to be awareness of the availability of these programs amongst a few of the students and one of the farmers.

"In Kerala, many public domain research institutes like CPCRI, CTCRI , IISR etc extention centres and co operatives are actively promoting farming through their work shops, internships online MOOC courses." – (Shruti, 22 years old, student)

"There are training programs being conducted for them, specifically on subjects that are of interest to them. Now, after Corona, there was a new trend to cultivate ornamental plants. What happens here, training programs in specific subjects that interest people are given. If you take the Horticulture Department at KAU, every month there are different trainings for people. So, one month it will be ornamental plants and there are all open trainings, open registration, people can register and participate." – (Durga, 21 years old, student)

"There is also an Agribusiness Incubator here. That is an innovative department. So if you have an agribusiness idea, if you give it to them, they will help you make a project plan. They provide financial and infrastructural support during the first stage. That is a really good project by the University. They have been frequently giving trainings in fields like small scale manufacturing food products etc, processed foods etc, that sell well. They give trainings in all this. Now here, cocoa powder production, chocolate production, trainings are given, aimed at small scale farmers." (Durga, 21 years old, student)

"Firstly, there are Incubation Centres by the Government, like in KAU (Kerala Agricultural University), they have an incubation centre, the ICKAU. They have equipment. For example I have a product and I need a Freeze dry machine. They have these equipment and for a small fee I can use that incubation space for 3 years, develop my product, create a prototype and market it. If it

works out I can go get the necessary equipment and space to start my business. There are benefits like this." – (Surya, 28 years old, farmer)

"For fundings they conduct training and if we pitch during the training we will get funding. If we need technology, there is IIHR (Indian Institute for Horticultural Research) in Bangalore, so if we want the technology for a business we will get that and the license from them. We can modify it after discussion with the scientists there and we can use their space for up to 3 years. There is an amount for that, it is like yearly Rs.10, 000, so we can use everything there. Incubation, it is helpful, many companies are finding it helpful."– (Surya, 28 years old, farmer)

According to a few Agri-officials and a Managing Committee member, the training programs provided by these organizations are creating a conducive environment for agriculture business start-ups and farmers alike, helping individuals follow their passion while also enhancing capacity building, thus reducing vulnerability.

"Government-funded agricultural extension services are highly effective in capacity building among farmers, particularly in advancing UN Sustainable Development Goal 8 on Decent Work." – (Marar, 41 years old, agri-official)

"extension services educate farmers on modern techniques such as precision agriculture, climate-smart farming, and pest management, which directly contribute to increased efficiency and income stability" – (Umesh, 34 years old, agri-official)

"I have seen a young man quitting his job from abroad and starting agriculture production with the aid and support of local government institutions. The awareness given and programs tailored aiming at creating potential opportunities are effective capacity-building services for farmers." – (Ammu, 32 years old, agri-official)

"Agriculture programs are there, there are enough number of agriculture programs for the farming sector. Through the State Department there are 30 to 35 schemes running, annual schemes running for agriculture. They all are mostly focused on production oriented, so for increase of production and development, that is their main aim. There are enough programs, Kerala has enough programs. We set aside a large amount, budget for such programs. There is extensive agriculture systems, you maybe knowing about Krishi Bhavans. " – (Suma, 38 years old, agri-official)

"we regularly conduct training sessions on modern farming techniques, financial literacy, and leadership. These are conducted in partnership with the Kerala Agricultural University and Krishi

Bhavan. Our aim is to build a skilled and informed farming community." – (Shivan, 64 years old, manager)

However, there was an interesting response from a young farmer participant that seemed to throw light on another perspective of capacity-building programs from the government and the ingenuity of farmers.

> *"P: For product improvement…..no…I don't think anyone does farming for product improvement or development; most do it because they have already been doing this, and they might not even have a balance sheet. I am not sure training work, I really don't think they are worth it. Government institutes conduct training, but the thing is all these government institutes are outdated. They know of new technologies or varieties a long time after it has arrived. By which time the farmers would already have used them and moved on to the next. So more than technology who uses what best is what matters, better than class….." – (Surya, 28 years old, farmer)*

There are concerns about the effectiveness of such programs in capacity building. Some Agri-officials identified a need for increased government support and patronage to bring agricultural opportunities to the forefront. Support from the government is reassuring to young adults who wish to enter the sector but lack a background or formal training in the sector.

> *"the effectiveness of these services often depends on proper funding, outreach, and adaptation to local contexts, which, when well-executed, significantly bolster their impact." – (Marar, 41 years old, agri-official)*
>
> *"Increased funding through targeted grants will support innovations in sustainable agriculture, agritech startups, and climate-resilient farming practices, fostering job creation and economic growth."– (Marar, 41 years old, agri-official)*

4.2.3 The role of cooperative agriculture in capacity building

The Kole Wetlands are a Ramsar site in Kerala, India, that has been used for rice cultivation for many decades now. Spread over 13,000 hectares, all the land is held by individual farmers, who are part of an agricultural cooperative. One such cooperative is the Kole Wetland Cooperative or the Kole Karshaka Sangam.

4.2.3.1 The Kole Wetland Cooperative

The cooperative has a fixed role in supporting its member farmers, as described by a few of the members. They supply the seeds and manage the water supply required for rice cultivation. Most importantly, they bring all the farmers together under one name.

> *"Karshaka Sangham is providing us with support for rice cultivation in the paddy fields in the Kole Wetlands. They give us seeds and through connections within the Karshaka Sangham we are able to arrange for harvest machinery and the flooding and draining of the region and preparation for agriculture is completely done by the Karshaka Sangham." – (Nanu, 66 years old, farmer)*

The managing committee of the cooperative oversees its activities, and farmer members have the opportunity to connect with other farmers in the same region, in addition to the support the cooperative provides.

> *"coordinating with local suppliers for seeds and talks with government officials for the planning of the farming calendar. " – (Shivan, 64 years old, manager)*
> *"getting access to seeds and farming resources like tractors and harvest machines through the network we have in the cooperative. I get to meet a lot of other farmers/entrepreneurs and share knowledge and concerns with them". – (Nandini, 30 years old, farmer)*

Through this support, the cooperative has made claims of investing efforts in consistent agriculture that provides income and job opportunities for its members. The cooperative, through its arrangement with the State Horticulture Mission, has been providing its members with a fixed price for the procurement of grains after harvest, one of the reasons making membership attractive.

> *"one of our biggest successes is consecutively and successfully initiating farming in the Kole fields for three years. This was achieved through the introduction of better farming techniques and by ensuring the timely availability of high-quality seeds and proper Government intervention." – (Shivan, 64 years old, manager)*
> *"There was a time in the history of the Kole padasekharam when there was absolutely no agricultural activities and it had become fallow land. But then under our new leadership and with government support and also support from institutes like KAU, KVK, Krishi Bhavan and*

other researchers we managed to revive the land and start agriculture again. It has indeed been a journey and we would have been able to do it without the support of all the members of the sangham and the guidance." – (Sherif, 71 years old, manager)

"improving the yield quality and quantity through collaborative farming methods. Over the past three years, we've managed to increase average productivity by 25% while reducing overall costs by adopting shared resources, like tractors and harvesters." – (Ashwini, 49 years old, manager)

"It cuts out middlemen and guarantees a fair price for our members' produce with the Horticulture Mission of Kerala, a government body, buying all the rice directly from the farmers after harvest." - (Shivan, 64 years old, manager)

Although the cooperative claims consistency in farming and land revitalization, a few members disagree when it comes to actual, practical farming.

"We just do once. We are not getting return on investment on the second season. So it was stopped. Because of climate change, there is a difference in water. It needs a lot of water. So we are only doing one flowering season. It means we can harvest in 4 to 4 and a half months." – (Gagan, 57 years old, farmer)

"That is there and also pests, when it rains unexpectedly, it is not in our hands. So when the paddy is in the flowering stage, if it rains heavily, the paddy will fall and the flowers will wither. So the grains will not form. These are not in our hands." - (Gagan, 57 years old, farmer)

4.2.3.2 Support for farmers

Managing 13,000 hectares of individual small landholdings and consolidating them all under one label is no mean feat, and the Kole Wetland Cooperative has been doing the same for years. A few of the managers of the Kole Wetland Cooperative speak about the support lent to the farmers.

"We bulk-purchase fertilizers and seeds at discounted rates and pass those savings on to our members. On the market side, we've established direct partnerships with wholesalers and retailers, which eliminates middlemen and ensures better prices." – (Ashwini, 49 years old, manager)

" we are a part of a state-level consortium of cooperatives, which helps us advocate for better

policies and share best practices with other cooperatives." - (Ashwini, 49 years old, manager)

Water is pumped from the Kole wetland and the same water is used for irrigation. This is a laborious process and involves a lot of planning and work, and it is completely managed by the cooperative. Doing it individually would not be feasible because all of us have very small land holdings" – (Nandini, 30 years old, farmer)

Some farmers are equally vociferous about being a member of the cooperative. Being identified as a member of the Kole Wetland Cooperative has its own benefits. The support from the cooperative is multi-fold and has paved the way for many members to reinvest in farming or take up farming in the Kole region.

"Through Supplyco, the cooperative will arrange different mills. Then it is through Supplyco…the millers come and get the grain from the field…after harvest, they come and weigh the grain from the field and take it…"

"The, seeds we get from the cooperative, Kole Karshaka Sangam. So if we need it they will bring it and we can go get it from them."

"These….tractor and tiller….are arranged by the cooperative. We don't have to worry about that. Preparing the big area, they do it under their leadership. When they do it we have to go stand there, other than that we don't really need to be involved."

"Water….water…..water needs motor, right?....then…water….taking care of water management. Every time we sow or harvest….water…there are times when we need water and don't need water…so managing all that, arranging that is done using motors from the society, the cooperative motors." – (Gagan, 57 years old, farmer)

4.2.3.3 Government support for agriculture cooperatives

The cooperatives are independent organisations formed under the Cooperative Societies Act, 1912, for a common purpose. Kerala has over 28,000 cooperatives serving various purposes. However, the support from the government, both state and central, plays an important role in the functioning of a cooperative and capacity building. Various government organisations involved in the agriculture sector provide subsidies and other forms of support to agriculture cooperatives.

"Ok…so that is mostly the I will say the set price that we get from Horticulture Mission for our grains. They give us like Rs. 2820 per quintal of rice. This is their minimum support price, set by the state government. The MSP, minimum support price set by the central government is still

lesser. It is only about Rs. 2000 or Rs.2050 or so. So this price we get because of the cooperative and its agreement with Horticulture Mission and that is why so many people in the Kole region want to still cultivate rice here. Many young adults are joining us even by leasing out land because of this only. " – (Raman, 55 years old, manager)

"Supporting Agricultural cooperatives by providing funds, and technical support along with monitoring systems in place has hugely impacted their growth, thereby supporting farmers, creating work opportunities, and improving agriculture" – (Umesh, 34 years old, agri-official)

"efforts are being made to foster a conducive working environment by encouraging the establishment of new companies and cooperatives that focus on sustainable practices. Startups in agritech, renewable energy for farming, and organic agriculture provide opportunities for youth to engage in innovative and environmentally friendly practices."

4.2.3.4 Motivation to join the cooperative

For a few farmers and even members of the managing committee, being part of the cooperative was the only solution to a better price or more support. Chandran and Alikutty, some of the senior members of the cooperative, recall why they decided to join the cooperative and what the times were like when they made the decision.

"I can say that I joined the cooperative because it provided a chance for us to start farming in the Kole fields again. For a long time, and by that I mean when my parents were farming here, this was all done individually..but once the cooperative was formed and all of us farmers came under one umbrella, things changed a bit. There was more team spirit in the farming activities." – (Chandran, 58 years old, farmer)

" Farming on one's own is not easy, we don't get good prices. Now at least there are better options, back then…some 30 – 40 years back there was not many options like now. Once I realised that being part of the cooperative gave me a better price for the grains I stuck to it" – (Alikutty, 65 years old, manager)

4.2.3.5 The role of agricultural cooperatives in capacity building

Agricultural cooperatives, including the Kole Wetland Cooperative, have been supportive of farmers engaged in rice cultivation in the region, creating work opportunities for other stakeholders, such as labourers. For a newcomer in the sector, this assistance is invaluable. It is not just the farmers who

benefit from work opportunities; all ancillary agricultural activities generate employment opportunities, making agricultural cooperatives a necessity in the sector.

> *"The sangham has made it possible for all of us farmers to do paddy cultivation here. It is what keeps the show running. Because of this, a lot of people are getting jobs in terms of labourers, harvest, and tiller machine drivers, researchers, agricultural officers and also youngsters from the new generation who come to try out agriculture by contracting the land" – (Nanu, 66 years old, farmer)*
>
> *"By pooling resources and offering access to shared assets, cooperatives enable young individuals to engage in agricultural activities with reduced financial risks. Many cooperatives promote innovative practices, such as sustainable farming methods, value-added processing, and digital solutions for market access." – (Marar, 41 years old, agri-official)*

Some participants agree that agriculture cooperatives play a crucial role in capacity building by providing a common platform for like-minded individuals to come together. The success of a cooperative can have a positive effect on the influx of interested parties into the field. Interestingly, there is no data from the student group regarding agricultural cooperatives and capacity building. This could be because they are unaware of the capacity-building initiatives of an agricultural cooperative. In contrast, a farmer member or a managing committee member of a cooperative would know the details better.

> *"By focusing on sustainable farming methods, we create an environment where young people can see agriculture as a viable and profitable career, making them want to venture into this industry." – (Raman, 55 years old, manager)*
>
> *"By fostering collaboration, cooperatives provide a platform for youth to develop entrepreneurial skills, build networks, and contribute to the agricultural value chain." – (Marar, 41 years old, agri-official)*

Agriculture cooperatives are also a space for inclusivity and where diversity is embraced. Evolving according to the needs of the hour, cooperatives are also venturing into technology in agriculture, creating more opportunities for young adults.

> *"we promote inclusive work environments by encouraging women and youth to take on leadership roles within the cooperative." – (Ashwini, 49 years old, manager)*

"These initiatives not only enhance productivity but also create diverse employment opportunities in areas like agribusiness management, logistics, and technology. By fostering collaboration, cooperatives provide a platform for youth to develop entrepreneurial skills, build networks, and contribute to the agricultural value chain." – (Marar, 41 years old, agri-official)

However, a few participants have something different to say when they talk about the working of the cooperative and its role in capacity building. Two farmers from different generations talk about the lack of change in cooperatives and a lack of funds for anything other than farming operations.

"It is my understanding that we have a lot of cooperatives, virtually in every sector, be it finance, dairy, fisheries, agriculture, animal husbandry, food processing, wholesale and retail trade, anything you name it, we have cooperatives in all that. But the working model is still from the 70s or 80s." – (Appu, 31 years old, farmer)
"R: Ok…..can cooperatives do anything to increase job opportunities for young adults?
P: Nothing much. Venturing into agriculture is the only way.
R: Why is that? Is it a lack of funds?
P: Yes. There are no funds. No…no…..the cooperative does not have….like that…." – (Gagan, 57 years old, farmer)

4.2.3.6 Kole Wetland Cooperative and capacity building

The role of the cooperative is limited to rice cultivation in the region. Anything new or different is supported by other government organisations, even though one of the members of the managing committee of the cooperative, Ashwini, claims to encourage their members in entrepreneurship and capacity building. A few of the other responses from the member farmers of the cooperative pointed towards external interventions.

"The cooperative does not help them. New ventures in agriculture get support from Krishi Bhavan." – (Gagan, 57 years old, farmer)
"Cooperatives I am not sure about subsidies. We get 50% subsidy from the Central Government for the purchase of machineries for land clearing and everyone is getting their own machinery. All that is helpful. " – (Surya, 28 years old, farmer)

"We also encourage entrepreneurship among our members. For example, some of our younger members have started their own ventures in agri-processing and input supply, with support from the cooperative and its members." – (Ashwini, 49 years old, manager)

I did not have too many responses from students on this theme; however, one student spoke about cooperatives and capacity building, and hence, it is something to be explored in future research.

"I've seen in an article. If you take cooperatives, with less fees, they are training youngsters, developing their skills and contributing to the agriculture sector." – (Vishnu, 22 years old, student)

4.2.4 Improvements in capacity building

4.2.4.1 Scope for improvement

There is immense scope for capacity building in agriculture for a country like India that has been blessed with abundant natural and human resources. A few farmers from the younger generation have faith in the field, and there is a lot of passion and possibilities, for example, Appu and Nandini, both young farmer participants who have hope in the agriculture sector, the potential of the human resources of the country and the possibilities it lends to capacity building.

"Our country still has vast amounts of unused land that are ideal for agriculture. If the government were to focus more on this sector, we could position agriculture as a dominant source of profit by exporting crops and other agricultural products to neighbouring countries." – (Nandini, 30 years old, farmer)

"With this kind of wealth in human resources, we, as a country, should focus more on agriculture and youth representation because it is going to drive the economy forward." – (Appu, 31 years old, farmer)

It is not just the agriculture sector that needs a rehaul; people from the younger generation are looking for solutions to the issues of their era, and the lack of innovation in cooperatives is one of the factors keeping them away, as described by Suma, an Agri-official.

"The thing is that cooperatives are approachable for rural people. That means they, they want a livelihood from agriculture sector in that case. But making the agriculture in a much

profitable way in for Kerala situation, it's not OK what these cooperatives….they can support up to some limit, but maybe their activities are…their programs and their functions, everything are not in an innovative way or not attracting the youth towards their cooperatives. That will be one of the reasons for it." (Suma, 38 years old, agri-official).

4.2.4.2 Approachability and access to information

India, as a country, has a lot of government schemes at the state and central levels. However, it is difficult to access information when required, get the required permission to start a business, and get funds and investments. Coordination among government departments, cooperatives, Farmer Producer Companies, and universities will be helpful.

"I would like to see more mentorship programs for young adults and existing members who are interested. We need to show them that farming is not just about working on the land, but also about running a business and being innovative by adopting new methods and technology. The how and where to get the documentation done for an agri-business type of firm, just to apply a loan….there are so many things that such programs can teach. We should definitely invest in that". – (Fathima, 47 years old, farmer)

Having access to resources is one thing; the knowledge to use them is equally important for the success of a project or business idea, as one of the farmers said during an interview.

"We do have access to loans from KFC (Kerala Financial Corporation), but the thing is many of us don't know how to approach them or get things done. There should be a better coordination between the cooperative, agriculture officers and farmers. Things will be smoother then….." – (Chandran, 58 years old, farmer)

4.2.5 Combating systemic issues and structural barriers

4.2.5.1 Infrastructure and support

There are aspects that may seem unrelated to agriculture but have an indirect impact on the sector, and one factor is infrastructure, as per Shivan. Surya, one of the younger farmers, suggests that the government can also set up support options for farmers that are useful for them, for example, an MSP

(a minimum selling price) and better systems for the marketing of their produce that can be set up by young adults through start-ups.

> *" the drainage infrastructure needs improvement. There is no urban planning and widespread encroachment of agricultural land, especially wetlands. When it rains, it floods because there is no space for the water to go. And the monsoon rains these days are more than often cloud bursts. the ideal situation should be that the flooding is under control" – (Shivan, 64 years old, manager)*
>
> *"The government can create a minimum support price (MSP), everything else leave to the start-ups, the making is fast, otherwise they keep discussing 100 things and it is a time waste for us. So I think it is better to encourage start-ups or companies." – (Surya, 28 years old, farmer)*

4.2.5.2 Adopting technology and thinking future

Technology adaptations are good. However, systems and industries also need to think about the future. That might require changing the way we operate and, sometimes, the very way we work. To build the future, we need accessibility to knowledge and tools that the future needs, as informed by a few participants.

> *"it would be helpful if the cooperative could offer more access to advanced technology and be less politically driven. There are cooperatives, and FCPs that do this in Kerala. These improvements would strengthen our farms and make it possible for the next generation to succeed in agriculture." – (Nanu, 66 years old, farmer)*
>
> *"Cooperatives also need to update the way they operate and move to a more corporate-style operations than just a politically infused system. "- (Nandini, 30 years old, farmer)*
>
> *"the transition from a traditional to a digital and technologically advanced system of agriculture production should be a point to consider for the government". – (Ammu, 32 years old, agri-official)*
>
> *"I think improving access to affordable equipment and modern technologies for all farmers would be beneficial." – (Chandran, 58 years old, farmer)*

Similarly, students also need to consider the practical applications of what they learn and think critically, acquiring social and business skills to become competitive. Some students, however, express

their desires. Government policies that account for technological updates in agriculture, the involvement of young adults in the sector, and research and development to mitigate climate change are just a few of the measures that can be incorporated into agriculture cooperatives to ensure a more robust environment in the industry.

> *"There is no use in studying agriculture without practical knowledge. If the farmers need to see us as beneficial, we need to have practical knowledge, we need to work on developing that knowledge. Recently we went for a market visit and a farmer told us not to join the post of an Agricultural Officer if you are not able to help us." – (Durga, 21 years old, student)*
>
> *"As in any sector, updated knowledge of agricultural practices must be in priority along with integrating technology. Consider gaining business skills and connecting with experts the field. Being informed on the Agricultural policies will greatly help to be successful in this sector". – (Surya, 28 years old, farmer)*
>
> *"India this technological advancement is way too much lagging behind, like farmers are not willing to take up this so-called means, even if there are missionaries for transplanting, harvesting, um, irrigation certification, everything. But they are reluctant to adapt that okay. Um, mainly because of this initial investment will be high and they can't afford that. And also, they don't have the technical knowledge okay. Um, government has to support them for a um, for even if they want a tractor or a harvester. Government has to give them some financial support, but uh, it's the procedure for getting this financial support from the government is also very difficult."– (Karthika, 22 years old, student)*
>
> *" we need more Government interventions, we need new policies, for young adults, to attract people like us, to engage in farming, young people, like me who do research, are learning about agriculture will not be doing farming." – (Durga, 21 years old, student)*
>
> *" Policies may also prioritize infrastructure development, such as cold storage, irrigation systems, and market linkages, ensuring farmers can maximize profitability. Additionally, initiatives like public-private partnerships, cooperatives, and incentives for organic and regenerative farming will promote a dynamic agricultural workforce, enhancing productivity and sustainability. By aligning these strategies with global development goals, governments can drive inclusive growth while ensuring long-term employment stability in the agricultural sector."*

4.2.5.3 Play your strengths

Not all places and people are made for extensive agriculture. Knowing one's strengths, focusing on them, and capitalizing on them may yield better results. This again calls for different stakeholders to come together and strategize, as Surya puts it.

> *"No, we get 6 months of rain and most plants don't need 6 months of rain, secondly we have a lot of small fragmented land next to Western Ghats and we cannot operate heavy machinery, thirdly labour cost is heavy, because the rain is heavy we cannot assure vegetable produce quality, and, each area is of a different type, so better we produce one thing and market it.*
> *" I am not sure here, but in UP (Uttar Pradesh) I have heard, they made black rice, "Kaalaa"…., black rice, they cultivated that in one district and made it their product and marketed it as Buddha rice in US and it became a success. "*
> *"so better we produce one thing and market it like Wayanad Gandhakashala rice or Kerala Pepper, which the British came searching for, that kind of range, if we are able to brand and market it like that it will work. We can price this heavily and market it well and that is all we can do"*
> *"in our land we cannot use too many heavy machinery, secondly productivity is like, when we have ….rain is unpredictable here…when, where and how much it will rain we cannot say, risk is high, production we cannot compare with them, diseases and pests are high, when we take agri I would say cultivate premium products like pepper or spices or specialty rice and market them under premium quality, that is what we can do as a successful model." – (Surya, 28 years old, farmer)*

4.2.5.4 Regular updates help

A few participants are vocal that the primary change or update should come from the government, but there are many things that agriculture cooperatives can do that will yield results. Mechanization, where possible, is already helping the Kole Wetland Cooperative combat labour shortage. In a scenario where a shortage of labour and inconsistencies in the quality of labour received create unnecessary hassles for farmers, extensive mechanization is a very good way to ensure farming operations run smoothly. Better coordination with government organizations to adopt new research solutions will also improve operational efficiency.

"To address the issue of labour shortage we are gradually and steadily using more equipments and machinery right from the stage of tilling, sowing and all the way to harvesting."
"To combat this we have already partnered with KAU to create a revised farming calendar with the new weather patterns considered in it. "- (Sherif, 71 years old, manager)

4.3 Summary

Agriculture in India remains predominantly family-based, with many young adults choosing the field due to family traditions, personal interests, or a desire to contribute to society. However, several challenges hinder their capacity-building, including gaps between academic education and practical agricultural demands, social stigma that devalues farming as a career, and economic difficulties such as low wages and delayed payments. Fragmented land holdings and climate change further complicate agricultural viability, while labour shortages and inconsistent employment opportunities exacerbate the struggle. Despite government initiatives to support capacity building, slow bureaucratic processes limit job opportunities in the sector. Nonetheless, many young individuals remain passionate about agriculture, embracing trends such as organic farming, AI-driven agriculture, and precision farming to modernize the field and enhance sustainability.

The Kole Wetland Cooperative has significantly influenced the region's agricultural landscape by offering better pricing and enhancing support systems. However, challenges persist, including political interference, outdated operational models, funding shortages, and inefficient decision-making, hindering capacity building for young adults. While the farmer participants highlight the need for better marketing platforms, reduced reliance on middlemen, and strategic investments in infrastructure, mechanization, and modern agricultural practices, other participants from the Agri-officials group and students group stress the need for fostering mentorship, improving access to government schemes, and integrating business acumen with agricultural education to attract young adults to agriculture through capacity building.

Chapter 5: Discussion

5.1 Introduction

This study aims to explore the challenges and opportunities for capacity building among young adults in cooperative agriculture, using the Kole Wetland Cooperative as an example. My study examines the factors influencing the participation of young adults in farming and allied agricultural activities, including socio-economic barriers, education gaps, and modernization efforts in a VUCA world that hinders capacity-building in agriculture. Additionally, the study assesses the role of cooperatives in capacity building, improving agricultural sustainability, and enhancing profitability, while identifying areas for reform and innovation.

This study highlights several challenges that hinder capacity building in young adults, including social stigma, the risk of financial instability, small landholdings, and the impact of climate change. Despite government initiatives, bureaucratic delays, and limited access to financial and entrepreneurial support, further restrictions on capacity building in the sector persist. However, my study also identifies emerging opportunities in capacity building, many of which participants look forward to, including the adoption of modern agricultural practices such as organic farming, AI-driven agriculture, precision farming, and mechanized farming.

5.2 Theoretical Contributions

5.2.1 The agricultural landscape

In this study, I found that a reasonable number of young adults still choose to pursue farming, a choice often influenced by family traditions, personal interests, and a commitment to societal contribution. However, the sector is fraught with stigma. Despite a career in agriculture being a choice for several young adults, the stigmatization of the roles in agriculture for decades has led many in the younger generation to become reluctant to choose agriculture as a career option. Very often, it is their family and society at large that prevent them from taking up a career in agriculture. Siltaoja et al. (2020) discuss briefly the stigma attached to agricultural careers, but more so about the techniques to mitigate stigma and enjoy a fruitful career. Such deep-rooted stigma against jobs in a sector with immense possibilities is something that needs to be changed. Thus, my research lends empirical support to the idea regarding stigma manipulating the image and identity linked to a group, as

suggested by Siltaoja et al. (2020). Although I am a citizen of India and grew up in that region, I still did not realize the extent of the stigma until I spoke with the participants.

Furthermore, I found that labour shortages were rampant in the region. Many farmers who participated in the interviews and focus group studies spoke about the shortage of labour and the lack of dependability on migrant labourers from other states. On the other hand, skilled labourers, who are mostly young adults with a college or university degree, have identified that they are unable to find jobs that suit their interests and qualifications due to apathy from the government and a stigma towards agriculture, which creates significant stress for young adults. This finding empirically supports Prasad (2017) and (Nair, 1999), who discuss the unreliability of unskilled labour in India. However, it also contributes to this literature by examining whether there is sufficient work or the right work for skilled labourers in the agricultural sector in India. The findings point towards issues with students gaining employment. Most of the students I interviewed spoke about their experiences with the job market and the difficulties in securing a job that matches their qualifications. Some even highlighted how graduates, post-graduates, and PhD holders all apply for the same job, highlighting the pressures on young adults. The responses from the student participants shed light on two sides of the situation. One is that there are jobs, but not the right ones, according to a graduate's skill set and qualifications. The second is that the delayed publication of agricultural job vacancies by the government often results in graduates from several years together applying for the same job, creating stiff competition.

5.2.2 Structural barriers and opportunities in capacity building

This study aimed to assess the challenges and opportunities of capacity building for young adults in an agricultural context. Young adults today are hopeful of a better tomorrow and look forward to building a career in agriculture. The students I spoke to had plans to move on to research or start an agri-business. However, I found that a significant disconnect exists between academic education and the practical demands of the agricultural sector. Many young adults reported that their formal education does not adequately prepare them for the realities of farming and that they are inept at handling the rigorous regimen of farming. A few students even spoke of their field experiences, where they realized it was hard to identify the practical issues that a farmer must address and solve daily. The students provided examples of instances where, during field visits, farmers educated them on various issues they face. This confirms the existing knowledge of Martin (2019), which reaffirms the role of universities and other educational institutions in capacity building and regional development through collaboration among universities, industry, and government. My findings converge with the theory of

Tamboli & Nene (2013) in stating that the systemic issues in universities, like a lack of funding, adequately trained teachers, and negligible state-centred connections, all lead to education gaps in students. Additionally, these findings also align with the conceptual ideas of Sadhna Dash (2023) and India's national education policy, NEP 2020, which focuses on transforming the country's education system by integrating skill-based learning and the traditional education system for better capacity building by highlighting the need for an improved match between education and practice. My findings confirm numerous challenges in the system, but also highlight the importance of studying capacity building in a VUCA world, where we adopt a slightly different perspective on upskilling. We also find through past research that even in small agricultural communities affected by a VUCA world, it is important to recognise that organizational readiness is tied to this culture of continuous upskilling that can directly impact the performance of the individual, contribute to the stability of the organization, and add to the long-term survival and growth of the organization (Achoki, 2023).

The above-mentioned were structural challenges to capacity building in a VUCA world. Despite all these challenges, my research found that there are numerous opportunities in agriculture that can be tapped for capacity building, offering a significant scope for young adults to create work opportunities for themselves. My research found that technologies such as IoT, UAVs, ground sensors, and AI are being closely monitored by many respondents from the farmer, student, and manager groups to improve the productivity and efficiency of the system. Many participants from across all groups hope that technology and the mechanization of agriculture will solve many of their issues, especially the labour shortage. So, while previous literature has identified the importance of these techniques in a VUCA world, my study extends this literature by highlighting the significance of these techniques in reducing labor dependency and combating labor shortages. The farmers of Kole Wetland are hopeful that intensive mechanisation will reduce labour use, which may, in turn, help combat labour shortages in the region, despite the challenges posed by the fragmented and small-holding nature of the land. Our research draws a parallel with findings from (Deininger et al., 2017), that speaks about the linkage between fragmented land holdings, labour shortages, and the impact, mechanization can have on such agricultural land and its farmers, and further extends the literature by highlighting the need for capacity building in these areas to embrace mechanisation and thus avoid the additional burden in the form of labour shortage. Some farmers and Agri-officials said that extensive mechanisation in all stages of rice cultivation, from sowing to the application of pesticides and fertilizers, will reduce labour dependency, cut costs, and increase the attractiveness of careers in the sector to young adults. This finding in my research aligns with the findings from Kroesen and Darson (2013), which stress the importance of using affordable technologies or mechanizations through capacity-building to improve

productivity. My research further extends past literature by Kroesen and Darson (2013), accentuating the importance of mechanisation in agriculture to improve the attractiveness of careers in agriculture for young adults enthusiastic about agri-business prospects.

Some of the participants from the Agri-officials group of this study highlight the government's slew of capacity-building initiatives, disseminated through CPCRI (Central Plantation Crops Research Institute), CTCRI (Central Tuber Crops Research Institute), IISR (Indian Institute of Spices Research), KVK (Krishi Vigyan Kendra), and extension centres for farmers. Additionally, the start-up and entrepreneurship incubation centres at agricultural universities were found to be other centres for information dissemination and capacity building. This substantiates the study by Varshney et al. (2022), which stresses the importance of government-led initiatives, such as KVK, in imparting technical knowledge to farmers. The Agri-official participants also highlighted the capacity-building programs by the government, disseminated through the agricultural universities and extension services, that have helped many aspiring farmers in building careers in agriculture. My study supports the literature by Chaudhuri and Kendall (2021) in shedding light on the role of capacity-building programs designed to meet the needs of farmers, one of the vulnerable sections of society, in enhancing their careers. However, one interesting finding from an interview with a farmer about the capacity-building programs is that by the time these programs are rolled out, they become irrelevant and outdated due to the influx of new technology. Unfortunately, I did not find any new literature in this context. Similarly, certain Agri Officials also stated that the success of these capacity-building programs depends on funding and adaptation to the local context. These findings align with those of Kroesen and Darson (2013), which emphasize the importance of integrating capacity-building programs into a farmer's existing work by creating entrepreneurial opportunities through capacity-building and adding more value to their efforts.

Circling back to Kroesen and Darson (2013), one of the gaps identified in the study was the need for further research into the relationship between governance issues and the effectiveness of capacity-building programs. My study contributes to this research by highlighting the relationship between capacity-building programs and improving the efficiency of a system, thereby reducing the stigma associated with the sector. This finding is also in line with the results from McCampbell et al. (2022), which emphasize the need for improved coordination among all stakeholders involved in a capacity-building program.

5.2.3 The Role of Cooperative Agriculture in Capacity Building

One of the aims of this study was to understand the nuances of the cooperative agriculture movement in Kole Wetlands and its influence on capacity building for young adults. The Kole Wetland Cooperative is one of the many agricultural cooperatives in the region of study, Kerala. Through the findings of this study, I was able to draw a picture of the role of the Kole Wetland cooperative in the agricultural landscape. The cooperative provides extensive operational support to its members, who are primarily rice farmers in the region. From providing seeds to planning farming across 13,000 hectares of rice fields, the cooperative is an integral part of many proud farmers in the region. The cooperative's bargaining power has ensured that farmers receive a good market price for their produce, in addition to the operational support they receive as members of the cooperative. Some of the participants, including farmers and Agri-officials, are equivocal about the price support they receive, as one of the main reasons for being part of the cooperative. These findings are consistent with those of Semou et al. (2022), which emphasize the role of cooperatives in providing operational support and creating collective bargaining power for a group of vulnerable people.

This case study on Kole Wetland Cooperative was an attempt to understand capacity building in agricultural cooperatives. Our findings suggest that the cooperative provided a conducive environment for collaboration and created opportunities for its members and young adults interested in agriculture. Past literature supports the fact that pooling resources and providing access to a wealthy network of experienced farmers and entrepreneurs makes cooperatives the ideal space for capacity-building, as highlighted by Yildiztekin and Erol (2022) and Barut (2017). However, one aspect that stood out in my findings was that a few participants felt the cooperatives were outdated and lacked sufficient funds to invest in capacity-building programs, particularly for the young adult population. It was interesting to note that only one student I spoke to had something to say about capacity building through an agricultural cooperative. One reason could be that the other students I spoke to were not familiar with the inner workings of an agricultural cooperative, unlike a farmer member or a managing committee member, who are privy to such information. The studies by Lofton et al. (2022) and van Gerwen et al. (2018) reaffirm the role of agricultural cooperatives in creating access to capacity-building programs and training where knowledge transfer and adapting to changes are essential. This finding contrasts slightly with our observation that the Kole Wetland Cooperative was not the initiator of capacity-building programs. Most of the capacity-building programs were conducted by the Kerala Agricultural University or Krishi Vigyan Kendra. Being part of the Kole Wetland Cooperative gave its members a better chance to be approached for such programs and seminars. Majee and Hoyt (2011) in their study draw attention to the role of agriculture cooperatives in capacity

building and community building through sustainable practices, which supports my findings. Even though the members of the Kole Wetland Cooperative have access to capacity-building programs, it is through a third party.

Several challenges persist, making people gradually move away from cooperatives in agriculture. My findings suggest that the cooperative is governed by politics, and it often fails to address the needs of its members, leading to disruptions in cooperative operations and decision-making processes. Earlier research by Esnard et al. (2023) supports this finding in that capacity-building in the true sense can only succeed if it is coupled with the right organisational arrangements, business strategies, resources, and ultimately, attracting new members. However, the findings are in contrast to the concept of transformational leadership in cooperatives, the need for something beyond administrative skills, that encompasses technical knowledge specific to the sector and market, in addition to soft skills like communication, that are required to lead a cooperative to success (Hejkrlik et al., 2023). Many cooperatives operate under outdated frameworks that do not meet the current needs of farmers. My findings suggest that the Kole Wetland Cooperative is led by elected representatives from within the cooperative who form a managing committee to manage the day-to-day operations and affairs. My findings further suggest that they lack the leadership skills or professional refinement required to cut through the issues they face in today's world, and this corroborates the literature, as mentioned in Omar et al. (2022) and Moon and Lee (2020), in that a lack of enterprising skills from the management can be detrimental to the development of cooperatives. My study further extends the literature by pointing to the political affiliations within the managing committee that lead to a lack of professional refinement.

My findings confirm that limited financial resources hinder the ability of cooperatives to expand and innovate, restricting their activities to a certain extent and narrowing the purpose of cooperatives as platforms for capacity building. Slow and ineffective decision-making processes can stifle growth and responsiveness to market demands, as mentioned in Constantine Iliopoulos and Valentinov (2018), and again, the literature is further extended by the political affiliations and involvement in the cooperative leadership that can hinder the speed of the decision-making process.

5.2.4 Improvements in Capacity Building

This research has also explored the improvements necessary for the agricultural cooperative to enhance its capacity building. Despite the challenges, there is immense potential for growth and

innovation in Indian agriculture. Young farmers are increasingly embracing trends to stay abreast of the competition and challenges. The suggestions mentioned here are directly from the participants. Mentorship programs for young adults to gain hands-on experience in practical farming and entrepreneurial activities, which support findings from Yuen-hang Ng et al. (2025), and the findings from Lofton et al. (2022) reiterate the importance of knowledge transfer and the potential that agriculture cooperatives have as hubs of knowledge transfer and capacity building. Infrastructural support to combat climate change in a flood-prone area, and the outsourcing of activities like marketing and logistics of products to start-ups that have better operational infrastructure, is similar to findings in past research by Joshi (2015), reiterating the need for trade support and infrastructural support for the revamping of the agricultural sector. My research further extends the literature by underlining the new needs of a VUCA world. A group of farmers wanted more mechanization and technology to be incorporated into farming activities to make it less labour intensive, whereas participants from the student group suggested better policies and infrastructure for technology to be in place so that the younger generation can learn how to harness its use as they start off on a career path that supports Phale et al. (2021), Balaji et al. (2015) and Mormina (2019) in saying that developing countries need the intensive spread of ICT to drive innovation to succeed in long-term sustainability goals. There was a plea for more government interventions to ensure the integration of technology in farming.

In this light, the farmer participants suggested the need for access to improved marketing channels that reduce reliance on middlemen. FPCs (Farmer Producer Companies) and start-ups focused on market linkage can help with this; their professional and goal-driven operational methods will support the adaptation to rapid changes in the market and environment. My research supports the conceptual ideas of Sebhatu et al. (2021) and extends the literature by highlighting the need for funding and government support in capacity building. Emphasizing high-value crops and branding such as Wayanad Gandhakasala rice or Kerala Pepper, both suggested by a farmer participant, can increase profitability and sustainability. This suggestion aligns with Moyo (2016) and Beishenaly and Dufays (2023) in restating the importance of taking advantage of the local culture in agricultural practices that can immensely help smallholding farmers from developing countries. This suggestion by a farmer participant further extends the literature by highlighting the value of geographically specific branding of products. Improving access to government support and resources is crucial for empowering young farmers. Incorporating business education into agricultural training can equip young farmers with the skills needed to succeed in a competitive environment (Sadhna Dash, 2023). Cooperatives have the capacity to improve the standard of living, provided there is cooperation among members, and

continued policy interventions are made (Ige & Ojo, 2024). To conclude, my research supports the theory by Kartikasari et al. (2022) that co-creating solutions through multi-stakeholder engagement is the success of an establishment.

5.3 Practical Implications

This study aimed to understand the role of agricultural cooperatives in capacity-building for young adults through the workings of the Kole Wetland Cooperative. I found that despite numerous structural barriers to capacity-building, there were plenty of opportunities for the future. The government has been providing support in various forms; however, better coordination between different stakeholders, while considering local culture, is required to optimize the system's performance. One of the practical implications of this research is that there is a challenge in capacity building for young adults. A stigma is attached to careers related to agriculture. The stigma, coupled with a mismatch between practice and actual education in agricultural courses, adds an excessive burden to an already stressed section of the population. This highlights the obvious relationship between the need for improved linkage between the education structure, government interventions, and policies, and market demand. Based on my findings, I would suggest that better policies and plans, like the National Education Policy 2020, but with more links between education and practical requirements in the field, be designed for all people across the country. Additionally, it calls for the establishment of more research facilities, increased funding, and a revamp of the existing structure to enhance capacity-building. Proactively creating better career opportunities and ensuring a good pay structure will establish a good career reputation and solve the stigma issue.

One other practical implication is that a lot of the young adults who graduate are frustrated about problems within the job market, creating unnecessary competition among them, which in turn leads to a mad scramble for jobs, ultimately adding to the stigma in agriculture. Instead, we need to harness opportunities that make agriculture an attractive field for people to work in. Based on my findings, I suggest that this can be achieved by modifying traditional agricultural practices and adopting new methods with the support of ICT and research. This is a call for improved government-led knowledge transfer initiatives that empower local communities and inform the design of future adaptive policies, enabling the identification of rapid VUCA-level changes and supporting inclusive growth. By designing an education system that caters to the unique needs of the Indian scenario, the government can support long-term, sustainable growth. Such cohesive support leads to endogenous growth (growth

in local markets), resulting in the growth of the local community, which is essential for poor and developing countries and sustainable living.

Another factor we need to consider is the fact that, due to the geographic and socio-cultural uniqueness of Kerala, most of the agricultural land is fragmented. Coupled with the lack of mechanisation and shortage of unskilled labour, this causes an added burden on farmers by driving up the costs of production. The overall efficiency of the system is thus compromised, making the sector further unattractive, adding to the stigma. Now, capacity-building programs by the government, disseminated through universities and extension services like KVK, in addition to research and development by institutes like ICAR, can promote the adoption of technology. In light of my findings, I suggest that if this technology is properly adapted to meet the needs of farmers in Kerala, it could lead to an improvement in the overall efficiency of the farming system, attracting more young adults to the sector. Some of the student participants spoke about starting an agri-business and capacity-building with the adaptation of technology. However, if this issue remains unresolved, it will further exacerbate the problem and contribute to the stigma, highlighting that capacity-building is not a standalone program and needs to be integrated with other initiatives.

Additionally, another practical implication of the research is that there is a clash of cultures between the capacity building of students in an age of big data and technology, and data-driven, quick decisions on the one hand, and sticking to the age-old process of decision-making by debate and vote on the other. It does not bode well for attracting young adults. The cooperatives, especially the Kole Wetland Cooperative, used to be a big player in the field of agriculture. But their lack of updates has made them obsolete and in dire need of change. It is pertinent to note that, although the Kole Wetland Cooperative provides operational support and access to a thriving network of farmers and capacity-building programs through its banner, the system, especially the management system, is outdated and politically driven. As rightfully pointed out by a few young farmers, in a time where quick decisions must be made and adaptability to VUCA is the need of the hour, a politically driven management slows down the organisation, leading to a lack of viability in the eyes of many young adults. This also affects the performance of the Kole Wetland Cooperative as a whole, encumbering its productivity and creating further stress for its farmer members. On the grounds of the findings, I would suggest that a steady transition to a professional system, similar to a Farmer-Producer Company or a start-up, will help mitigate this problem. Furthermore, the cooperative could also try to liaise with Farmer-Producer Companies or start-ups to take care of certain aspects of their work, like the branding and marketing of products. All these suggestions call for extensive capacity building.

To continue, a wide variety of opportunities for capacity-building have been created for the agricultural sector in the country. One of the participants, a farmer and entrepreneur, informed that incubation centres, such as the one at Kerala Agricultural University, even lease out equipment required for making value-added products from produce. Such programs are beneficial for farmers or business aspirants who wish to venture into Agri-entrepreneurship. Technology and mechanisation are available. However, based on my findings, I would suggest that the incorporation of these techniques must be more vigorous to avoid burnout from labour shortage among farmers, which again contributes to the stigma attached to agriculture in the region.

Rural communities, particularly those with limited economic resources, will benefit significantly from pluriactivity. Considering the findings from this research, I suggest that this is applicable to all sectors, especially agriculture, where individuals can diversify their activities for production, thereby increasing their chances of limiting social vulnerability. Additionally, there is a need to connect subsidies, grants, support from government extension agencies, research organizations, infrastructure, and capacity-building for this system to succeed and operate at its full capacity.

While the sector offers immense potential, obstacles include limited youth participation, restricted access to financial support, and inadequate coordination among cooperatives, government bodies, and research institutions. Emphasizing niche, high-value crops, extensive branding, and adopting advanced technologies could enhance sustainability and profitability, which could in turn enhance capacity-building, thereby creating more opportunities for young adults.

5.4 Limitations and Implications for Future Study

My study is small and exploratory; however, this study offers valuable insights into the challenges and opportunities young adults have in capacity building in agriculture, particularly with the involvement of agriculture cooperatives like the Kole Wetland Cooperative or the Kole Karshaka Sangham. The findings can contribute to agricultural policy, education, and business strategies. The research conducted is a case study on the Kole Wetland Cooperative and its role in capacity-building for young adults. Although the topic may be extremely specific, the study lays a foundation for future research on the role of agricultural cooperatives in capacity-building for young adults.

There is a limitation in the size and scope of the study, as it was conducted in conjunction with the completion of a master's thesis. The study focused on the Kole Wetland model of cooperative

agriculture and its scope in capacity building for young adults; hence, the study is limited to one agricultural cooperative in a very specific geographical location in a country. Hence, the study would also have limitations in terms of the cultural, historical, and geopolitical influences of the location and the participants. This level of specificity has brought limitations to the review of literature as the researcher had to draw parallels with studies conducted in other locations across the world, where the cultural, historical, and geopolitical situations are entirely different.

Data from thirty-one individuals were collected through three focus group studies and sixteen interviews. However, since the participants were from Kerala, the interviews and focus group studies were conducted online, and a few were email interviews. The use of the snowballing technique can be seen as a limitation due to the loss of many potential participants who were either difficult to reach or did not commit to participation in the research, despite initially agreeing to do so. The researcher acknowledges that some information may have been lost during the translation of the interviews from Malayalam to English. Based on the research, there are a few areas for future study.

1. Further research is possible on the role of universities and other educational institutions in regional development and capacity-building.
2. The linkage of infrastructural support in agriculture and capacity-building requires further exploration.
3. More research is also required to truly understand the impact of pluriactivity in developing countries and how capacity-building can help sustainable development.
4. My research has no data about spillover effects of capacity-building programs, and that is another area for future research (Akter et al., 2023).
5. Similarly, capacity-building programs from Krishi Vigyan Kendra have been found to be useful to secondary and network beneficiaries, but there is no data to support that in my research. It is a possible area of future research (Varshney et al., 2022).
6. The Kerala context of the actual impact of technology use and mechanisation to combat labour shortage and increase the attractiveness of the sector is another area that can be further explored in the future.
7. Additional research on the redundancy of technology and the speed of adapting technology by farmers, and the role of capacity-building in adapting, is required.

Overall, this study has served as a roadmap for improving agricultural sustainability, empowering young adults through capacity-building, and strengthening cooperative models, ultimately contributing to the resilience of India's agricultural sector.

Chapter 6: Conclusion

Capacity building for young adults in cooperative agriculture is a fragment of a bigger picture, a concerted effort on a global scale to make sense of uncertainty and ambiguity and build resilience for the future. It is a tiny shard of comprehension required to create a more holistic, yet customised set of policies to ensure that we are future prepared. Agricultural cooperatives have been around for decades in India, and many such movements have uplifted the community in which they are based. Agricultural cooperatives have a strong presence and a sound base, and the system still has the community's trust. The government, educational institutions, and research centres across India are introducing new and better capacity-building methods for young adults, creating more opportunities, and leveraging technology to capture the market sustainably. Instead of chasing something new, rekindling the existing structure and linking it to newer solutions to form a better, well-integrated system will be a new chapter in capacity building for young adults in agriculture.

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Appendices

Appendix A – Ethics Approval

Auckland University of Technology Ethics Committee (AUTEC)

11 October 2024
Marjolein Lips-Wiersma
Faculty of Business Economics and Law

Dear Marjolein

Re Ethics Application: **24/275 Cooperative agriculture and decent work for young adults – A case study on the Kole wetland model of cooperative agriculture**

Thank you for your responses to AUTEC's conditions.

Your ethics application has been approved for three years until 11 October 2027.

Non-Standard Conditions of Approval

1. The call for students advertisement should state what the research is about
2. If approval is gained for the farmers to take part during normal working hours this should be stated

Non-standard conditions do not need to be submitted to or reviewed by AUTEC unless requested but must be completed before commencing your study.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC.
2. All public facing documents must have the AUTEC approval number and be of a high standard of spelling and grammar. Dates on the Information Sheet(s) and Consent Form(s) must be consistent.
3. Any amendments to the project must be approved by AUTEC prior to being implemented.
4. A progress report is due annually on the anniversary of the approval date.
5. A final report is due at the expiration of the approval period, or, upon completion of project.
6. Any serious or adverse events must be reported to AUTEC, this includes unforeseen issues that might affect continued ethical acceptability of the project.
7. AUTEC grants ethical approval only. You are responsible for obtaining management permission for access from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

The application number and title need to be referenced on all correspondence related to this project.

All forms are available online http://www.aut.ac.nz/research/researchethics

For any enquiries, please contact the Secretariat at ethics@aut.ac.nz
(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat
Auckland University of Technology Ethics Committee

Cc: hnk3725@autuni.ac.nz

Auckland University of Technology, Private Bag 92006, Auckland 1142, New Zealand
ethics@aut.ac.nz: www.aut.ac.nz/researchethics

Auckland University of Technology Ethics Committee (AUTEC)

27 March 2025
Marjolein Lips-Wiersma
Faculty of Business Economics and Law
Dear Marjolein

Re: Ethics Application: **24/275 Cooperative agriculture and decent work for young adults – A case study on the Kole wetland model of cooperative agriculture.**

Thank you for your email of 21 March 2025 advising the amendment to the research title.

The change of title has been noted.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC.
2. All public facing documents must have the AUTEC approval number and be of a high standard of spelling and grammar. Dates on the Information Sheet(s) and Consent Form(s) must be consistent.
3. Any amendments to the project must be approved by AUTEC prior to being implemented.
4. A progress report is due annually on the anniversary of the approval date.
5. A final report is due at the expiration of the approval period, or, upon completion of project.
6. Any serious or adverse events must be reported to AUTEC, this includes unforeseen issues that might affect continued ethical acceptability of the project.
7. AUTEC grants ethical approval only. You are responsible for obtaining management permission for access from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

The application number and title need to be referenced on all correspondence related to this project.

All forms are available online http://www.aut.ac.nz/research/researchethics

For any enquiries, please contact the Secretariat at ethics@aut.ac.nz

(This is a computer-generated letter for which no signature is required)

The AUTEC Secretariat
Auckland University of Technology Ethics Committee

Cc: , hnk3725@autuni.ac.nz

Information Sheet for Organisational Permission

Data Information Sheet Produced: 04th October, 2024

Cooperative agriculture and decent work for young adults – A case study on the Kole wetland model of cooperative agriculture.

Kia ora,

My name is Lakshmy Radhakrishnan. I am a Master's student at the Auckland University of Technology (AUT), New Zealand. I am working with Professor Marjolein Lips-Wiersma, and we are interested in exploring the Kole Wetland model of cooperative agriculture and the role of cooperative agriculture in creating decent work opportunities for young adults.

What is the purpose of this research?

Many more young adults are expected to join the workforce in the coming years. Economic and environmental challenges are posing a threat to a lot of jobs, and virtually every sector is on the verge of rapid changes to adapt to stay afloat in disruptions that might arise from these rapid changes. The field of agriculture is no different. Through this research, we intend to gain insights on the challenges in career development in the field of agriculture, understand the expectations of young adults (both students and young farmers), the role of cooperatives in creating decent work, practical insights from the Kole Wetland Model, understand the policies and capacity building initiatives by the government and the way forward.

The findings of this research may be used for academic publications and presentations.

How are participants invited to this research?

Participants can be invited to this research through the distribution of recruitment material that will be provided. Interested participants will be able to contact me through the details given in the recruitment material. Participants for this study are those students who are in their final year of study in agriculture courses.

How can a participant agree to participate in this research?

Participation in this research is voluntary and whether or not a participant chooses to participate will neither be an advantage nor disadvantage for them. If they choose to participate, they will need to complete a Consent Form (attached to the end page of this document).

Approved by the Auckland University of Technology Ethics Committee on 11/10/2024 AUTEC Reference number 24/275.

The consent form can be completed in-person, just before the interview/focus group study, or if the interview/focus group study is online via Zoom, or over the phone, the researcher will gain the participant's consent orally before the interview/focus group study starts. The participant can withdraw from the study at any time. If they choose to withdraw from the study, then they will be offered the choice between having any data that is identifiable as belonging to the participant removed or allowing it to continue to be used. However, once the findings have been produced, removal of the data may not be possible.

What will happen in this research?

On agreeing to participate, the participant will be invited to participate in a single interview and focus group discussion with Lakshmy (AUT student). The participant can choose to do the interview online via Zoom, email, or over the phone. The interview will take no more than 60 minutes. The interview will be a conversation about the participant's views on career opportunities in agriculture and cooperative agriculture. During the interview, we will ask them questions and give them plenty of time to share their stories and experiences. Please remember that we don't know anything about their agricultural experiences and aspirations, so anything they share is valuable in helping us understand this. There are no right or wrong answers to our questions. They are welcome to bring a support person/family member with them to the interview. If they do not wish to answer a particular question or continue with the interview, they will be free to stop at any time without giving a reason.

The focus group discussion will be conducted online over Zoom, and the date and time will be communicated to them. They may agree to participate in the focus group discussion only if they find the date and time convenient for them. The focus group discussion will be conducted as a group discussion, and you will be required to participate in the discussion on career prospects for young adults in agriculture, and the challenges they face, and the role of cooperatives in creating career opportunities for young adults. There are no right or wrong answers to our questions for the focus group discussion. They are welcome to bring a support person/family member with them to the focus group discussion. If they do not wish to answer a particular question or continue with the focus group discussion, they will be free to stop at any time without giving a reason.

Both the interviews and focus group studies will be recorded and transcribed for the research.

What are the discomforts and risks associated with this research?

Participation in this study is not expected to cause any discomfort or risk. However, the participants can stop the interview or focus group discussion if they feel uncomfortable.

Approved by the Auckland University of Technology Ethics Committee on 11/10/2024 AUTEC Reference number 24/275.

What are the benefits?

Participation in this study will allow them to share their story. The knowledge we gain from hearing their story will benefit other people looking to enter agriculture and make a career in the field.

How will their privacy be protected?

Lakshmy will be audio recording their interview and focus group discussion so she can transcribe it later (write it down word-for-word). To protect their confidentiality, no real names or other identifiable information will be used in the transcriptions. The participant's identity will never be revealed in any publications or presentations arising from this study. Apart from the study researchers, no one else can access their information. All data, including Consent Forms, will be kept secure on AUT premises, and destroyed six years after the completion of the study. If a participant withdraws from the study, all data relating to them will be destroyed whenever possible, except for the Consent Form.

What are the costs of participating in this research?

There are no costs to participate in this research. We need a maximum of 60 minutes of their time for the research.

What opportunity do the participants have to consider this invitation?

You will have two weeks to consider this invitation.

Will the participants receive feedback on the results of this research?

If the participants would like to receive a summary of the results from this research, please let us know by indicating so in the relevant section of the Consent Form.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Primary Researcher, Lakshmy Radhakrishnan, hnk3725@autuni.ac.nz, +64 291235235.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, ethics@aut.ac.nz , +64 (09) 921 9999 (ext) 6038.

If you would like to participate in this study or have any questions about the study, please contact Lakshmy Radhakrishnan using the contact details below: Email: hnk3725@autuni.ac.nz; Mobile: +64 291235235

Approved by the Auckland University of Technology Ethics Committee on 11/10/2024 AUTEC Reference number 24/275.

Participant Information Sheet

Data Information Sheet Produced: 04th October, 2024

Cooperative agriculture and decent work for young adults – A case study on the Kole wetland model of cooperative agriculture.

Kia ora,

My name is Lakshmy Radhakrishnan. I am a Master's student at the Auckland University of Technology (AUT), New Zealand. I am working with Professor Marjolein Lips-Wiersma, and we are interested in exploring the Kole Wetland model of cooperative agriculture and the role of cooperative agriculture in creating decent work opportunities for young adults.

What is the purpose of this research?

Many more young adults are expected to join the workforce in the coming years. Economic and environmental challenges are posing a threat to a lot of jobs, and virtually every sector is on the verge of rapid changes to adapt to stay afloat in disruptions that might arise from these rapid changes. The field of agriculture is no different. Through this research, we intend to gain insights on the challenges in career development in the field of agriculture, understand the expectations of young adults (both students and young farmers), the role of cooperatives in creating decent work, practical insights from the Kole Wetland Model, understand the policies and capacity building initiatives by the government and the way forward.

The findings of this research may be used for academic publications and presentations.

How was I identified and why am I being invited to participate in this research?

You have been invited to participate in this research because you were recommended to be contacted as an ideal participant for this research.

How do I agree to participate in this research?

Your participation in this research is voluntary (it is your choice) and whether or not you choose to participate will neither advantage nor disadvantage you. If you choose to participate, you will need to complete a Consent Form (attached to the end page of this document). The consent form can be completed in-person, just before your interview, or if you choose to do your interview online via Zoom, or over the phone, the researcher will gain your consent orally before the interview starts.

Approved by the Auckland University of Technology Ethics Committee on 11/10/2024 AUTEC Reference number 24/275.

You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

What will happen in this research?

If you agree to participate, you will be invited to take part in a single interview and focus group discussion with Lakshmy (AUT researcher). You can choose to do the interview in person at your own home or at a public location of your choice. Alternatively, if travel is difficult for you, we can do the interview online via Zoom, email, or over the phone. The interview will take no more than 60 minutes. The interview will be a conversation about your views on career opportunities in agriculture and cooperative agriculture. During the interview, we will ask you some questions and give you plenty of time for your story and experiences. Please remember that we don't know anything about your experiences and aspirations in the field of agriculture, so anything you share is really valuable in helping us to understand this. There are no right or wrong answers to our questions. You are welcome to bring a support person/member of your family with you to the interview. If you do not wish to answer a particular question or continue with the interview, you will be free to stop at any time without giving a reason.

The focus group discussion will be conducted at a public location, or online over Zoom, and the date and time will be communicated to you. You may agree to participate in the focus group discussion only if you find the date and time convenient for you. The focus group discussion will be conducted as a group discussion, and you will be required to participate in the discussion on career prospects for young adults in agriculture, and the challenges they face, and the role of cooperatives in creating career opportunities for young adults. There are no right or wrong answers to our questions for the focus group discussion. You are welcome to bring a support person/member of your family with you to the focus group discussion. If you do not wish to answer a particular question or continue with the focus group discussion, you will be free to stop at any time without giving a reason.

Both the interviews and focus groups studies will be recorded and transcribed for the research.

What are the discomforts and risks associated with this research?

It is not expected that participation in this study will cause any discomfort or risk. However, you are free to stop the interview or focus group discussion if you feel uncomfortable.

Approved by the Auckland University of Technology Ethics Committee on 11/10/2024 AUTEC Reference number 24/275.

What are the benefits?

Participation in this study will provide you with the opportunity to share your story. The knowledge we gain from hearing your story will be of benefit to other people looking to enter agriculture and make a career in the field.

How will my privacy be protected?

Lakshmy will be audio recording your interview and focus group discussion so that she can transcribe it later (write it down word-for-word). To protect your confidently, no real names or other identifiable information will be used in the transcriptions. Your identity will never be revealed in any publications or presentations arising from this study. Apart from the study researchers, no one else can access your information. All data, including Consent Forms, will be kept secure on AUT premises, and destroyed six years after the completion of the study. If a participant withdraws from the study all data relating to them will be destroyed whenever possible with the exception of the Consent Form.

What are the costs of participating in this research?

There are no costs to participate in this research. We need a maximum of 60 minutes of their time for the research.

What opportunity do I have to consider this invitation?

You will have two weeks to consider this invitation.

Will I receive feedback on the results of this research?

If you would like to receive a summary of the results from this research, please let us know by indicating so in the relevant section of the Consent Form.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Primary Researcher, Lakshmy Radhakrishnan, hnk3725@autuni.ac.nz, +64 291235235.

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTEC, ethics@aut.ac.nz , +64 (09) 921 9999 (ext) 6038.

If you would like to participate in this study or have any questions about the study, please contact Lakshmy Radhakrishnan using the contact details below: Email: hnk3725@autuni.ac.nz; Mobile: +64 291235235

Approved by the Auckland University of Technology Ethics Committee on 11/10/2024 AUTEC Reference number 24/275.

Permission for researchers to access organisation / school students.

Project title: Cooperative agriculture and decent work for young adults – A case study on the Kole wetland model of cooperative agriculture.

Project Supervisor: Professor Marjolein Lips-Weirsma

Researcher (Master's student): Lakshmy Radhakrishnan

- ○ I have read and understood the information provided about this research project in the Information Sheet dated 04th October 2024.
- ○ I give permission for the researcher to undertake research within……..
- ○ I give permission for the researcher to access the students ……..

Principal's signature:…….

Principal's name:…….

Principal's Contact Details (if appropriate):

……..

……..

……..

……..

Date:

Approved by the Auckland University of Technology Ethics Committee on 11/10/2024 AUTEC Reference number 24/275.

Note: The head of the organisation should retain a copy of this form.

Consent Form

Project Title: Cooperative agriculture and decent work for young adults – A case study on the Kole wetland model of cooperative agriculture.

Project Supervisor: Professor Marjolein Lips-Wiersma

Researcher (Master's student): Lakshmy Radhakrishnan

- I have read and understood the information provided about this research project in the Information Sheet dated 04th October 2024.
- I have had an opportunity to ask questions and to have them answered.
- I understand that notes will be taken during the interviews and focus group discussions and that they will also be audio-taped and transcribed.
- I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- I understand that if I withdraw from the study, all data that is identifiable as belonging to me will be destroyed except for this Consent Form, which will be stored separately from the audio recordings and transcriptions at AUT premises.
- I agree to take part in this research.
- I wish to receive a summary of the research findings (please tick one):☐ Yes ☐ No

Participant's signature:_____

Participant's name:_____

Participant's Contact Details (if appropriate):

_____

_____

_____

_____

Date:_____

Approved by the Auckland University of Technology Ethics Committee on 11/10/2024 AUTEC Reference number 24/275.

Note: The Participant should retain a copy of this form.

Consent Form (for Focus Groups)

Project title: Cooperative agriculture and decent work for young adults – A case study on the Kole wetland model of cooperative agriculture.

Project Supervisor: Professor Marjolein Lips-Weirsma

Researcher (Master's student): Lakshmy Radhakrishnan

- ○ I have read and understood the information provided about this research project in the Information Sheet dated 04th October 2024.
- ○ I have had an opportunity to ask questions and to have them answered.
- ○ I understand that identity of my fellow participants and our discussions in the focus group is confidential to the group and I agree to keep this information confidential.
- ○ I understand that notes will be taken during the focus group and that it will also be audio-taped and transcribed.
- ○ I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without being disadvantaged in any way.
- ○ I understand that if I withdraw from the study, all data that is identifiable as belonging to me will be destroyed except for this Consent Form, which will be stored separately from the audio recordings and transcriptions at AUT premises.
- ○ I agree to take part in this research.
- ○ I wish to receive a summary of the research findings (please tick one): Yes○ No○

Participant's signature:……

Participant's name:……

Participant's Contact Details (if appropriate):

……..

……..

Date:

Approved by the Auckland University of Technology Ethics Committee on 11/10/2024 AUTEC Reference number 24/275.

Note: The Participant should retain a copy of this form.

Call for Students Participants: Interview & Focus Group Study!

Are you a student looking to share your experiences and contribute to important research? We are conducting a study and need your input!

Study Title: Cooperative agriculture and decent work for young adults – A case study on the Kole wetland model of cooperative agriculture.

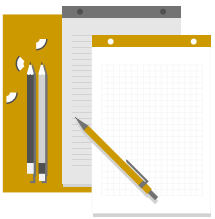
What's involved?

- **Interviews:** A one-on-one conversation where you can share your thoughts and experiences.
- **Focus Groups:** A group discussion with other students to explore key topics more

Why participate?

- Make your voice heard and contribute to valuable research.
- Meet fellow students and engage in meaningful discussions.
- Opportunity to share your unique perspective on important student-related issues.

Eligibility:



- Must be a currently enrolled student in their final year of study
- Open to students from agricultural courses

How to sign up:

Interested? Email us at hnk3725@autuni.ac.nz for more information.

We look forward to hearing from you!

Approved by the Auckland University of Technology Ethics Committee on 11/10/2024 AUTEC Reference number 24/275.

Indicative Questions for Interviews and Focus Group Discussion

Project Title: Cooperative agriculture and decent work for youth – A case study on the Kole wetland model of cooperative agriculture.

Students in agriculture courses:

1. What motivates you to pursue a career in agriculture, and what are your long-term career goals?
2. How do you understand "decent work" opportunities for youth? What are the most promising career paths in agriculture that offer decent work opportunities for youth?
3. Which agriculture industry sectors interest you most (e.g., agribusiness, farming, research, etc.)?
4. What challenges do you foresee in pursuing a career in agriculture, and how do you plan to overcome them?
5. What challenges do you anticipate in securing fair wages and good working conditions in agriculture?
6. How do you think technological advancements will influence your career in agriculture and in creating decent work opportunities for youth in agriculture?
7. Are there any trends or changes in the agriculture industry that you find particularly exciting or concerning?
8. Are there any programs or professional organizations (e.g., internships, workshops, cooperatives) that you think would be helpful and support capacity building and creating decent work opportunities for youth?
9. What advice would you give someone just starting in agriculture studies about their future career prospects?
10. What does UN Sustainable Development Goal 8 mean to you, and why is it important in today's global economy?

Farmers at Kole Wetland:

1. Are you familiar with the United Nations Sustainable Development Goals, particularly Goal 8, which focuses on decent work and economic growth? How do you perceive the importance of economic growth and decent work for youth in the context of your farming operations?
2. What are the main challenges you face in your farming operations (e.g., pests, weather, market prices)? What steps do you take to avoid exploitation and ensure ethical labour practices?

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3. How do you think technological advancements will influence your career in agriculture and create decent work opportunities for youth in agriculture?
4. What motivated you to join the cooperative? What are the main benefits and challenges you have experienced as a member of the Kole Wetland Cooperative?
5. How does the cooperative financially support its members (set prices, farming resources) and non-financially (training or educational resources)?
6. How has the cooperative supported your farming to become economically profitable, sustainable, and to create decent work?
7. How much input do members have in the decision-making processes of the cooperative?
8. How are conflicts or disagreements resolved within the cooperative?
9. What trends or changes in agriculture are you preparing for, and how does the cooperative help with this?
10. What improvements would you like to see in the cooperative to better support farmers like yourself and those seeking to join the cooperative or enter agriculture, like the youth, by creating decent work opportunities?

Managers of the Kole Wetland Cooperative

1. How do you manage the day-to-day operations of the cooperative? What are some of the cooperative's successes you are most proud of?
2. How do you engage with and support the cooperative members in achieving decent work and economic growth in line with UN Sustainable Development Goal 8 during extreme weather events?
3. How do you ensure the profitability and sustainability of the cooperative?
4. How do you incorporate new technologies or innovative practices into the cooperative's operations, and how has this impacted the capacity building of the members and in creating decent work opportunities for youth?
5. What trends in agriculture do you think will most impact the cooperative's future?
6. Does the cooperative offer training or professional development opportunities for its members or staff?
7. How do you work with the government, external organizations, or agencies to support the cooperative members in achieving UN Sustainable Development Goal 8 – Decent work and Economic Growth for all?
8. What decent work opportunities exist within the cooperative for individuals (especially youth) interested in agriculture? What skills or qualifications do you look for when hiring new staff or managers for the cooperative?
9. What are the biggest challenges the agriculture industry faces today? How is the cooperative addressing or preparing for these challenges?
10. What advice would you give someone considering a career in agriculture or in managing an agriculture cooperative?

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Government officials

1. What is the role of agriculture cooperatives in creating decent work opportunities for youth and sustaining jobs in a highly volatile environment?
2. What skills are currently in demand in the agriculture sector?
3. What initiatives are in place to create jobs in the agriculture sector to ensure decent work and economic growth for youth looking to enter agriculture and farmers in line with UN Sustainable Development Goal 8?
4. How effective are government-funded agricultural extension services in capacity building among farmers, especially in the context of UNSDG 8 on Decent Work?
5. What future direction will the government policy take for agriculture to create decent work opportunities (farmers and youth) and economic growth as per UN Sustainable Development Goal 8?
6. What role does the government play in supporting agricultural research and development, especially in promoting sustainable agriculture practices?
7. How does the government help farmers recover from disasters or extreme weather events?
8. What emerging trends or developments (adaption of new technologies) do you foresee impacting agriculture in the coming years, and how is the government lending support?
9. What past government initiatives have successfully created decent work opportunities, improved agriculture, or supported farmers?
10. What advice would you give to someone interested in a career in agriculture or in working in agricultural policy?

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