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Challenges of Farmers: Pursuing for a Sustainable Future

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ABSTRACT

In the fields of Barangay Dolores, Sto. Domingo, Nueva Ecija, farming is not just a subsistence activity—it is a legacy on resilience, hope, and survival. This qualitative research sought to describe the lived experiences of 20 smallholder farmers using purposive sampling and semi-structured interviews. The study concentrated on four main areas: the socio-demographic background of the farmers; the problems facing them, such as changing crop prices, climate change, and insecure land ownership; their adaptation measures; and their coping strategies for sustainable agriculture. Results indicated that even though the majority of farmers are aged and have over a decade of experience, the majority of them still lack formal training and modern farming equipment. Their centuries-long battles are characterized by unpredictable weather, unstable markets, and lack of secure land tenure. In spite of these challenges, the farmers exhibit remarkable resilience by modifying planting schedules, undertaking supplemental sources of income like poultry and vegetable farming, and relying intensively on family and community support structures. Their resilience does not come from institutional support, but from their ingenuity, solidarity, and profound attachment to the land they till. The study highlights the imperative for inclusive farming policies—especially in land reform, localized capacity development, low-cost mechanization, and youth participation in agriculture. In giving voice to those who feed the country, this research points to the silent but strong bravery that exists in rural communities. It urges policymakers and stakeholders to act now—because behind each grain of rice lies a tale of resilience, resourcefulness, and an indomitable will to survive.

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CHAPTER ONE
INTRODUCTION

➢ *The Problem and its Background*

Agriculture continues to be the backbone of most economies, yet this backbone of sustenance, the farmer, undergoes relentless struggles that jeopardize their livelihood and survival. Farmers remained crucial for ensuring food security and maintaining stable economies, yet they faced several challenges, such as low and unpredictable market prices, limited access to modern farming tools, and adverse effects caused by climate change. According to Olsson et al., (2014), poverty further exacerbates these challenges, and farming becomes less viable.

Despite its importance, the agricultural sector continued to struggle with low income, unpredictable market conditions, aging farmers, and inadequate support systems. The Asian Development Bank (2016) highlighted that agriculture employed 36% of the Philippine population, yet it remained undervalued. Climate change further disrupted farming cycles, affecting crop and livestock production (Koubi, 2019).

This research aimed to provide practical and sustainable solutions that would benefit farmers, agricultural sectors, and other stakeholders. The study intended to empower the farmers and improve their productivity by addressing the challenges they faced in terms of inadequate resources and adverse market conditions. A resilient agricultural sector contributes to the economy, food security, and environmental sustainability. The results of the study also aimed to assist policymakers and institutions in designing better programs and policies for the farmers' welfare and advancement of the agricultural community.

Growing up in a farming community, the researchers witnessed firsthand the struggles of farmers—unreliable weather, unstable prices, and limited access to technology. These challenges make it difficult for them to sustain their livelihoods. Recognizing these concerns, the researchers conducted this study to better understand their struggles and explore possible solutions. By addressing these issues, the researchers hoped to contribute to the development of more effective interventions that would support farmers and ensure the sustainability of the agricultural sector.

➢ *Statement of the Problem*

Agriculture is crucial for food security and economic well-being, yet the farmers remained threatened by several issues that affected their source of livelihood**.** This research aimed to investigate the challenges faced by farmers, their coping strategies, and the factors that shaped their resilience in the agricultural industry.

- *How may the Socio-Demographic Profile of the Participants be Described in Terms of:*

✓ Age;
✓ Years of farming experience; and
✓ Usage of farming machinery and equipment?

- *What are the Primary Challenges and Struggles Faced by Farmers in Terms of:*

✓ Fluctuating market prices;
✓ Climate change impacts; and
✓ Land tenure issue?

- *How do Farmers Adapt to Challenges or Circumstances Faced to Sustain their Livelihoods?*
- *What are the Coping Mechanisms and Strategies Adopted by Farmers to Navigate the Complexities of their Environments and Ensure the Sustainability of their Farming Practice?*

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➢ *Research Paradigm*

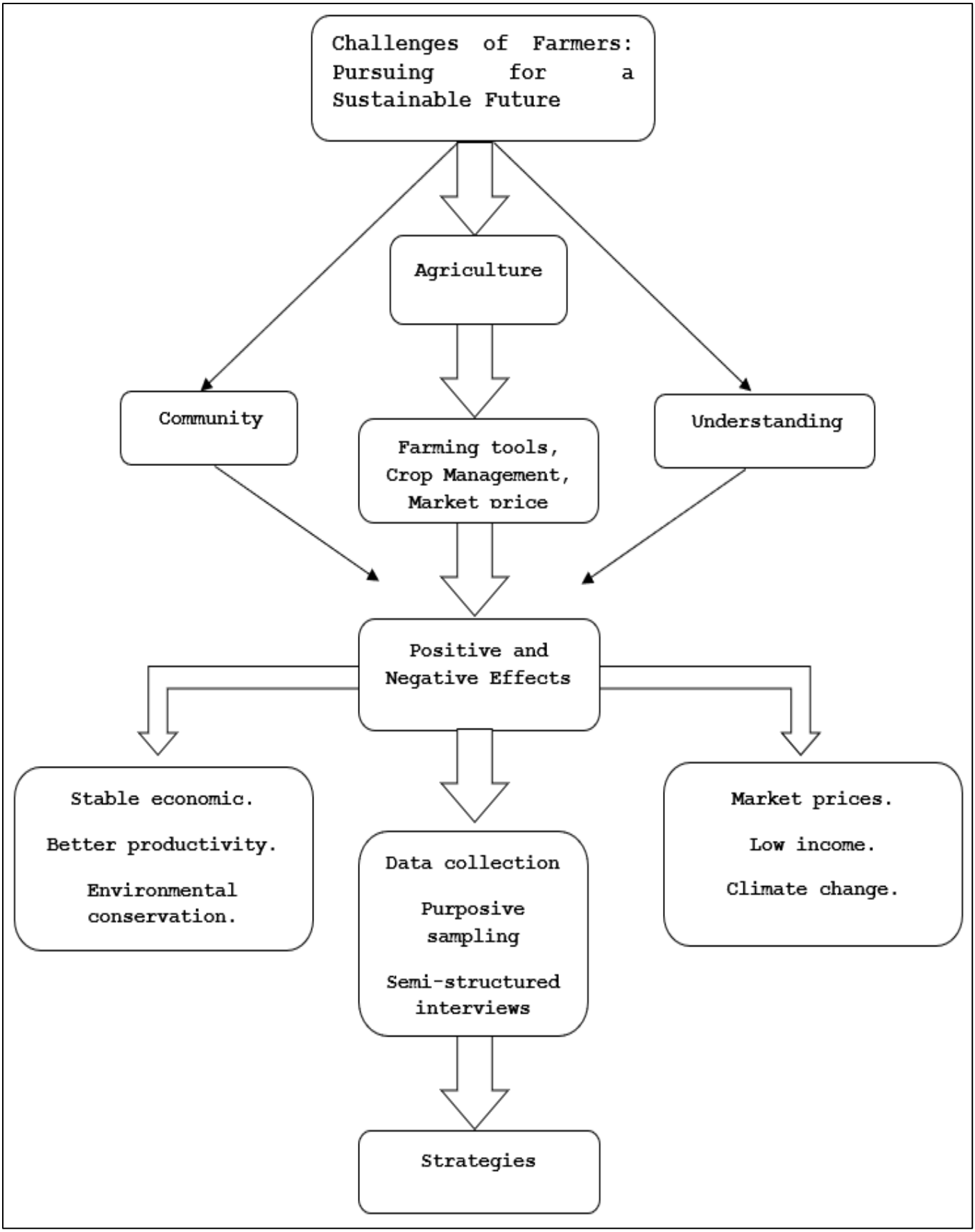

Fig 1 Research Paradigm

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➢ *Conceptual Framework*

The study aimed to understand the lived experiences of farmers. This conceptual framework addressed the struggles encountered by farmers and their methods of coping with stress within the context of sustainable agriculture. Challenges such as unstable market prices, lack of mechanized farming tools, and climatic changes, significantly impacted their livelihoods and resilience. These issues were rooted in socio-economic and environmental pressure identified through the research problem. The study used semi-structured interviews conducted under purposive sampling to elicit qualitative data from farmers. The researcher then applied thematic analysis to elicit recurring themes in their experiences and coping strategies for sustainable practices.

Furthermore, the framework emphasized that implementing sustainable agricultural practices that could benefit farmers through better productivity, stable economic benefits, and conservation of the environment in the long term. This aspect was part of recommendations aimed at enhancing the agriculture sector. At the end, this study intended to show the relationship between intertwined factors that impacted on the life of farmers as practical insights toward their problems' solutions, well-being improvement, and sustainable agriculture.

➢ *Theoretical Framework*

This study utilized the Sustainable Livelihood Framework (SLF) from the UK Department for International Development (DFID). The SLF explores the ways in which human, social, physical, natural, and financial capitals – such as skills, relationships, infrastructure, environmental resources, and economic opportunities-impact people's and communities' ability to maintain their livelihoods. In particular, it takes into account external determinants such as policy, institutions, cultural norms and vulnerabilities such as climate change, economic instability and so on. The framework addresses the issue of resilience and longer-term strategies with regard to tackling issues of poverty and inequality and problems of livelihood.

In this framework, the systemic constraint of farmers-which includes variations in market price, lack of modern tools and environmental changes-has been well related. The SLF emphasizes the interconnectedness of socio-economic and environmental factors to shed light on farmers' coping mechanisms and strategies for sustainable agriculture. It also advocates for participatory approaches that empower farmers to identify practical solutions and align local efforts with global goals like the Sustainable Development Goals (SDGs), focusing on poverty eradication, resource management, and climate change mitigation.

Lastly, the SLF provides a thorough basis for working with farmers in addressing their concerns and finding sustainability. Its underlying principles guide this study in dissecting key variables and providing concrete recommendations for improvement in farmer livelihoods and sustainable agricultural practices.

➢ *Significance of the Study*

This research offered meaningful insights for various sectors by uncovering the realities of farmers and proposition solutions to improve the agricultural landscape.

- Farmers. This study aimed to give practical insight and strategies that can be taken by farmers for overcoming the various challenges they are facing, like unstable market prices, lack of mechanized tools, and climate change. Knowing their struggles and coping mechanisms, research can help enhance their resilience, productivity, and quality of life, empowering them to sustain their livelihoods and contribute effectively towards agricultural development.
- Community. This study's findings helped the community as they develop an understanding of the crucial role that farmers play in ensuring food security. The strengthened agricultural sector can lead to a more stable food supply, reduced hunger, and improved social cohesion, thus impacting the local populace's welfare.
- Family. It would benefit the farmers and their families since better farming practices and income stability can be associated with a better living condition, education access, and even the general well-being of the family. This research acknowledges the relationship between a farmer's success and that of his or her household.
- Agricultural Sectors. This paper developed solutions to problems while supporting the agricultural industries in bringing out productivity and efficiency. It maintains a high level of interdependence with stakeholders included the farmers, suppliers, and distributors for sustainable and inclusive growth in the agricultural industry.
- Policymakers. The study offered evidence-based recommendations that can assist policymakers in forming or reformulating agricultural policies and programs. For example, policies may be structured in a manner that addresses adaptation to climate, market stability, and access to resources, leading policymakers to form initiatives that are more inclusive and effective in support of farmers.
- Future Researchers. This study served as a valuable resource material for future researchers interested in studying similar topics. It gives a solid basis of data and information that can be further built upon, thus continuously ensuring innovation and knowledge-building in the field of sustainable agriculture and rural development.

➢ *Scope and Delimitation*

This study dealt with the issues facing farmers in Barangay Dolores, Sto. Domingo, Nueva Ecija, as a means of suggesting solutions and how these affected the resilience and sustainability of farm activities. The research was centered on small-scale farmers

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in relation to the number of years of experience, crop types, and availability of agritourism resources. It examined the socio-economic and environmental factors affecting their productivity and strategies for coping with such factors. The study was limited to Barangay Dolores and does not generalize findings to other barangays or large-scale farming operations. Advanced agricultural technologies and policy-making considerations are excluded as they fall beyond the study's scope. Data collection was involved in semi-structured interviews through purposive sampling, relying on qualitative information. Limitations included potential participant biases, time constraints, and limited statistical records. This study, conducted in 2025, examined farmers' challenges and offered insights to enhance resilience and sustainability.

➢ *Definition of Terms*

To ensure clarity and a better understanding of the key concepts used in this study, the following terms are defined based on their relevance to the research.

➢ *Agriculture*

- Conceptual: The scientific practice involving soil cultivation, crop production, and livestock rearing to sustain human needs.
- Operational: Refers to activities or areas where individuals grow crops or raise livestock.

➢ *Backbone*

- Conceptual: A crucial support structure for a system or organization.
- Operational: Refers to the foundational role of agriculture in sustaining the local economy and society.

➢ *Climate Change*

- Conceptual: Long-term alteration in climate patterns, often linked to human activity and greenhouse gas emissions.
- Operational: Refers to changing weather patterns and their impact on farming activities.

➢ *Coping Mechanisms*

- Conceptual: Strategies employed to handle stress or adapt to challenges.
- Operational: Refers to specific actions farmers take to address environmental and economic difficulties.

➢ *Environmental Barriers*

- Conceptual: Physical, ecological, or social factors that limit accessibility or functionality.
- Operational: Refers to natural and systemic obstacles farmers face in their activities.

➢ *Food Security*

- Conceptual: Consistent access to sufficient, safe, and nutritious food for a healthy life.
- Operational: Refers to farmers' role in ensuring food availability for their community.

➢ *Land Tenure*

- Conceptual: The legal or customary rights governing land ownership and usage.
- Operational: Refers to farmers' access and rights to the land they cultivate.

➢ *Resilience*

- Conceptual: The ability to recover or adapt to challenges or adversities, such as climate or economic pressures.
- Operational: Refers to farmers' capacity to sustain livelihoods despite environmental or economic challenges.

➢ *Sustainable Agriculture*

- Conceptual: Agricultural practices that maintain environmental health and economic viability for future generations.
- Operational: Refers to methods of farmers adopting to balance productivity and sustainability.

➢ *Sustainable Livelihoods*

- Conceptual: A means of living that ensures long-term environmental and community well-being.
- Operational: The strategies farmers use to sustain income and resources while protecting their environment.

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CHAPTER TWO
REVIEW OF RELATED LITERATURE & STUDIES

This section presents previous works, both local and foreign, that relate to the topic. It lays a foundation for the study by showing what has already been researched and where the current study fits.

- *Local Literature*

The status of crop production innovations in the Philippines is very important in assessing whether the country can attain an optimum level of productivity and income. In addition, the ever-growing requirements for food, caused by an increasing population, have significantly increased the need for a more productive and safer food supply. Therefore, identification and appraisal of innovative strategies in crop production in the Philippines are necessary. (Cagasan and Dogello, 2021).

More than that, Agriculture 4.0 can provide an opportunity for transforming Philippine agriculture under the One Department of Agriculture Agenda. What's notable is the steady increase in integrating digitalization and highly advanced technologies with emphasis on precision farming. As a result, Agriculture 4.0 resulted in enhanced farm mechanization in the Philippines, reaching 2.679 hp/ha from 2.31 hp/ha in 2013. (Coredero and Park, 2023).

The government has taken its lending programs up with more vigor, which aids smallholder farmers in accessing retail loan access across the country. However, challenges such as the lack of markets and low prices have significantly impacted the repayment capacity and credit ratings of small farmers and fisherfolk in the Philippines. As a result, lending programs cannot thrive without considering the broader context of value chain financing. (Bayudan-Dacuycuy, Ballesteros, Baje, and Ancheta, 2022).

Simultaneously, the impacts of exports on Gross Domestic Product, employment, and loans granted in productions were determined in the light of agriculture GDP of the Philippines. Fixed effect model revealed in findings that all the explanatory variables which are export to GDP, employment, and loans granted in productions lagged by one period have a significant impact on the agriculture GDP.(Patrick Diaz, 2022).

On the other hand, the Philippines' agriculture sector lags in structural transformation as opposed to rapid economic growth of the country. According to the report, there are policy and investment options outlined; review of programs of the Department of Agriculture; examination of best practices of other countries on agricultural reforms and investments; and recommendation of future agricultural policies and improvements. (World Bank, 2020).

Moreover, a research on the perceptions of 112 farmers about the development of sustainable and cost-effective integrated pest management strategies indicated that farmers are aware of the benefits and drawbacks of pesticide application. Although expensive, local farmers agreed to use these methods in order to raise rice production and their income as well. (Cabasan, et al., 2019).

With the Philippines being an agricultural country, promoting inclusive growth and developing more sustainable agriculture and food systems is necessary. These are systems that will definitely be resilient to calamities, which can effectively adapt to the impacts of climate change. Its main aim is to enhance the agriculture sector for achieving food self-sufficiency, uplifting rural communities, and increasing farm level incomes. Agriculture is believed to account for around 40% of the gross domestic product, with two-thirds of jobs emerging from agriculture. Sanchez, 2015.

Still, agriculture remains one of the contributors to the Philippine economy, although the contribution is dwindling steadily. Many workers and consumers still rely on this sector for their living and food. Based on the data from the Philippine Statistics Authority, the agricultural sector accounts for 32% of total employment, which is around 12 million workers. However, its contribution to GDP has been on the decline despite its large workforce. (Pascual, 2017).

Moreover, many individuals lack sufficient understanding or exposure to farm-related occupations. Although the majority hold positive views regarding the economic and societal aspects of working in the sector, they remain hesitant about its long-term benefits, particularly concerning respect in society and the application of relevant skills. (Mercado and Osbahr, 2023).

Lastly, climate-resilient agriculture reflects the priorities of different countries and stakeholders toward achieving more efficient, effective, and equitable food systems. These systems address challenges in environmental, social, and economic dimensions across productive landscapes. Although still evolving, many practices under climate-resilient agriculture already exist globally and are used by farmers to cope with various production risks. (Climate-Resilient Agriculture in the Philippines, 2018)

- *Foreign Literature*

The scope of agriculture is broad, including cultivation, domestication, and land use for large-scale food production. The evolution of agricultural practices, including irrigation systems and landscape modification, is especially emphasized as having shaped civilizations like those in Mesopotamia and the Andes. Thus, the authors argue that agriculture represents a strategic human

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shift toward manipulating soil and plant populations, leading to increased dependency on domesticated species. (Harris and Fuller, 2014).

Agriculture has received renewed focus lately, especially after decades of neglect in many countries. This renewal reflects renewed interest in its ability to attack poverty head-on, addressing both food and rising insecurity. Key challenges lie in securing property rights, enhancing R&D for seeds and inputs, improving irrigation and rural infrastructure, and stabilizing food prices. Moreover, the role of agriculture in economic development, the impacts of the Green Revolution, and strategies for rural development and poverty reduction are discussed. (Deither and Effenberger, 2012).

In addition, agricultural producers across the world are exposed to a variety of risks from market as well as production-related factors such as pests and climatic extremes. More importantly, a farmer's response to these risks is influenced by socio-economic factors such as education, income, and cultural values, but low institutional support and a lack of capital restrain them from becoming more adaptable.(Duong et al., 2019).

Moreover, their interlinkages have been fundamental in food production and poverty reduction through an approach that covers the linkages of household assets, nutrient management (phosphorus), water resources, and soil quality. The relevance of the study grounds the argument on the need to address ecological and economic interdependencies that can lead to poverty traps. Although agrochemical inputs increase short-term productivity, they eventually degrade soil quality, thus reinforcing poverty. Hence, diversified energy sources and conservation tillage are suggested to enhance soil health and support sustainable agricultural practices. (Radosavljevic et al., 2020).

Another note is that the combined effects of identified farm-level factors explain only a small percentage of the variance in satisfaction, indicating that other social, economic, or personal factors also contribute to well-being. This finding points out the need for developing strategies that enhance not only farm productivity but also farmers' quality of life. By focusing on social sustainability, the study makes it clear that farmers should be seen not only as producers but as people whose satisfaction is critical for long-term agricultural success and community resilience. (Sabillón et al., 2021).

It also investigates whether out-grower schemes are effective in improving market access for smallholder farmers. Major findings include that such schemes offer important support, including inputs, technical training, and stable markets. This means the productivity and income of participating farmers will increase. Nevertheless, some negative implications, including dependence on buyers and unbalanced power relations, have been identified. In this regard, the integration of clear agreements with capacity-building initiatives and strong government policies is fundamental to ensure the out-grower models will be optimized in the implementation of sustainable agriculture. (International Labour Organization, 2017).

Similarly, in low-income groups, the barriers include a lack of variety in food, lack of transportation, and the perception that the benefits of food assistance were not widely accepted. As such, the study suggests standardized metrics to improve the comparability of research and inform policies that promote farmers' markets. (Freedman et al., 2014).

Community environments, federal food programs, and public policies also contribute to the sustainability of farmers' markets. Best practices include the expansion of food assistance programs and bonus vouchers for low-income communities. Altogether, these studies emphasize the socio-economic and policy dimensions of improving farmers' income and market accessibility. (Candace Young et al., 2013).

Meanwhile, the role of FPOs to perform this new task of small and marginal farming through this alternative model of cooperative farming is found to be explored. The PRISMA framework and thematic analysis identified mixed emotions towards FPOs, which were primarily due to a scarcity of capital, technical skill, and institutional innovation. FPOs improve marketing strategies and productivity, while the success of these depends on case-sensitive agricultural conditions. Therefore, a deeper understanding of the impact of FPOs vis-à-vis cooperative and contract farming legislation is critical for the development of sustainable agriculture, particularly in India. (Sayani Roy Chowdhury et al., 2024).

Agricultural productivity directly impacts poverty reduction by increasing incomes and stimulating rural economies. The major pathways include higher farm incomes through yield increases, rural and non-farm employment generation, and improved access to food with lower consumer prices. These benefits can, however be only sustained if more and better access of technology, relatively good infrastructure facilities, and some relaxation in the policies are dealt with. Improving reforms of agricultural research related to small scale farmers can hugely help in promoting efforts for speedy reduction of poverty. (Schneider and Gugerty, 2011).

- *Local Studies*

According to Jiva (2025) there are many barriers that farmers face, including poor infrastructure, limited access to capital, inadequate irrigation systems, and soil erosion. In addition, small-scale farmers face high costs for quality seeds, loss of agricultural land to urbanization, and the unavailability of modern tools. Apart from these issues, marketing difficulties, problems caused by pesticide use, and high production costs hinder their progress.

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Similarly, Gomez (2024) also discusses how the El Niño phenomenon aggravates these challenges, which has resulted in tremendous agricultural losses and states of calamity. Communities and policymakers are collaborating to develop long-term solutions to mitigate climate-related risks in agriculture.

Meanwhile, Paracale et al. (2024) emphasized that rice is the staple food of the Philippines, and the importance of rice depends on the efforts of Filipino farmers. However, the following problems are affecting them: uncertainties about land tenure, limited access to the market, impacts of environmental factors, and social problems. More than that, the study analyzes the effects of government policies on rice production and distribution and presents solutions to better farmers' conditions and enhance the strength of the agricultural sector.

In contrast, Agaton and Guno (2023) cite solar irrigation as an emerging solution to promote sustainable agriculture in regions facing water and energy scarcity. This case study explores the benefits and challenges of adopting solar-powered irrigation systems (SPIS) among small-scale farmers in the Philippines. Although it has economic and environmental advantages, the adoption of SPIS faces obstacles such as high investment costs, skepticism regarding reliability, and limited knowledge about the technology.

Besides, Depositario et al. (2024) explained that agricultural and agribusiness activities for a long time were associated with unfavorable social, economic, and environmental behaviors, thereby highly affecting small producers. Specifically, agribusiness enterprises in the Philippines are increasingly adopting sustainability strategies that create business opportunities, enhance community quality of life, and conserve natural resources while addressing environmental degradation.

Similarly, Lapniten (2021) describes the increasing trend of land conversion for commercial vegetable farming that is more lucrative and easier on the labor force than traditional tinawon rice farming. Moreover, the younger generations are leaving farming, as they find it hard and less attractive than urban life. These changes lead to soil degradation, water scarcity due to chemicals and deforestation, and the loss of traditional knowledge and culture, such as that of the Ifugao people. These changes lead to environmental and cultural impacts, including loss of biodiversity and pollution of water bodies.

Contrary to this, Cruz et al. (2023) mention that farm income is increased by an average of USD0.85 for each peso spent on marketing activities among members of agricultural cooperatives. The factors affecting participation in cooperatives include gender, adoption of processing technologies, price-seeking behavior, cooperative memberships, and farming experience. Moreover, the farther the farmer is from sources of technology, the more likely they are to participate in cooperatives. The study, therefore, suggests the enhancement of cooperative membership and capacity building to improve marketing efficiency and technology adoption among farmers.

The country has also experienced challenges in the economic front. However, organic agriculture in the Philippines is still on its developmental stage according to Maghirang (2024). After the passage of the "Organic Agriculture Act of 2010" (RA 10068), support from the government has accelerated; however, it only covers 52,500 hectares. Organic farming holds the promise of replacing traditional crops like rice and sugarcane without compromising on their yield, along with ecological advantages.

Furthermore, Christy (2024) emphasizes that agriculture remains a cornerstone of the Philippine economy, with many Filipinos residing in rural areas and depending on farming for their livelihoods. In 2022, the sector contributed ₱1.78 trillion, or 8.9% of the GDP, employing about a quarter of the workforce. Despite its significance, growth in the agriculture sector remains slow due to issues such as land conversion for urbanization, natural disasters, and insufficient technological support. Therefore, advancing agriculture through innovation, technological advancements, and policies focused on farmer welfare is crucial.

Finally, Palis (2020) explains that most farmers do not want their children to pursue rice farming. Instead, they encourage them to pursue college education for non-farming careers in cities or elsewhere. Logistic regression results reveal that the age and number of children increase the likelihood that farmers aspire for at least one child to follow in their footsteps. Conversely, gender, land tenure, and the economic status of the province discourage this aspiration. Ultimately, the physical and economic hardships of rice farming are the primary reasons farmers want their children to avoid farming as a livelihood.

- *Foreign Studies*

According to Khapayi and Celliers (2016), the barriers between young farmers in South Africa transition from subsistence farming to commercial agriculture. More specifically, inadequate infrastructure, lack of transport, poor marketing skills, and limited access to land form some of the specific challenges facing the youth. Thus, addressing the problem requires better infrastructure, organized training venues, and group marketing initiatives for farmers. Moreover, systemic barriers also confine the emerging farmers and prevent them from expanding to bigger commercial farming practices. Therefore, the need to improve infrastructure and targeted support through training programs and collaborative marketing will foster economic growth.

Similarly, R. Tuni et al. (2022) discussed the challenges smallholder farmers face in Malawi in commercializing their produce. Some of the major barriers are the lack of credit access, transport systems, and market information. Solutions proposed include improving infrastructure, offering credit support, and educating farmers to increase their market preparedness. Therefore, integrated

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packages of infrastructure development, credit provision, and farmer education can significantly enhance productivity and well-being.

In contrast, Niki A. Rust et al. (2021) focus on farmers in Hungary and the UK, highlighting a shift in how they acquire agricultural knowledge. Most farmers now rely on peer networks and online influencers rather than traditional experts like agricultural extension officers. The study also points to a gap between farmers and academic researchers, who are often perceived as disconnected from practical farming realities.

Tacconi et al. (2024) investigate the drivers of agricultural diversity among Tasmanian farmers. For some, diversification is a hedge against financial risks through planting multiple crops, while for others, it is a commitment to environmental sustainability or niche market demand. This diversity of motivations calls for tailored policies and programs, including subsidies, training, or market development, targeted toward the particular objectives of farmers. Tailored approaches are required to make full use of agricultural diversity in supporting sustainable agriculture.

Similarly, Ndambiri et al. (2013) analyze the awareness of climate change and its impacts such as erratic rainfall patterns and drought by Kenyan farmers. Most farmers are not able to adapt because of limited resources and knowledge. The best-educated farmers and those who live closer to water and markets are more likely to use effective strategies like crop diversification or irrigation systems. In the meantime, investment in education, water management, and market access would be an imperative for policy intervention to improve farmer resilience to climatic shocks.

Atube et al. (2021) also discuss some adaptation strategies applied by farmers in Uganda. Adaptation strategies used by farmers, such as crop rotation and the use of drought-resistant crops, have been common practices, but variables like income, credit access, and farm size play a more important role. It is required that microfinance, agricultural subsidy, and education become the backbone for food security under changing climatic conditions.

Similar is the case of Yaqoob et al. (2022), who state that agricultural productivity and land intensification are crucial factors for sustainable economic growth in South Asia. Due to scarce land resources and high population density, climate-smart farming techniques and technological innovations have to be implemented. Precision farming tools, seed varieties, and conservation methods can be used to improve productivity while decreasing environmental degradation. Policymakers should promote such innovations to strike a balance between economic growth and sustainability.

Ibrahim et al. (2024) study the welfare and income of sorghum farmers in Nigeria with a focus on education, farm size, and access to credit as factors for success. Mechanized farming and modern technologies are encouraged to enhance productivity and labor productivity. The limited resources and lack of knowledge create obstacles to these improvements. So, providing resource access, training in modern techniques, and information distribution are vital steps to uplift the smallholder farmer's livelihoods.

On the other hand, Jouzi et al. (2017) discuss the dual benefits of organic farming for environmental protection and economic empowerment, especially for small-scale farmers. However, the transition to organic farming is not without its challenges, such as lower yields in the initial phases and complex certification procedures. This education and outreach program can therefore be useful for guiding farmers in adopting and maintaining organic farming practice while maximizing the benefits of the practice.

Lastly, Mungai et al. (2024) examines the views of the experiences of agricultural extension staff in central Malawi are of difficulties as well as opportunities for service delivery. Key themes describe agricultural practices, land management and training methods provided by government agencies, NGOs as well as private groups. Based on the findings, the study recommends strengthening partnerships, extending advisory services on climate change, and applying mobile technologies to enhance outreach efforts.

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CHAPTER THREE
METHODOLOGY

This chapter outlines the research design, study location, participants, sampling methods, instruments, and data analysis procedures used in the study.

➢ *Research Design*

This study used qualitative research design, which aimed to explore and understand the experiences and perspectives of farmers in Barangay Dolores. Qualitative research is appropriate for this study as it allowed for an in-depth exploration of the farmers' experiences, challenges, and strategies in their agricultural practices. The study focused on gathering rich, descriptive data that provides insights into the respondents' thoughts, behaviors, and practices in relation to farming.

Qualitative research design is a methodological approach applied in the study of understanding phenomena, based on non-numerical data collection, such as words, images, or observations. These approaches allowed researchers to obtain detailed and descriptive information from participants, with an emphasis on the perspectives and experiences of the participants in specific contexts.

➢ *Research Locale*

This study was conducted in Barangay Dolores, Sto. Domingo, Nueva Ecija. Barangay Dolores is an agricultural town where farming is the predominant source of livelihood for its residents. The location provided an understanding of issues and opportunities of local farmers engaged in sustainable agriculture. This area is a common agricultural area, and the farmers here face challenges like limited access to modern farming tools, unpredictable weather patterns, and fluctuating market prices. Thus, it would be an ideal location to study their struggles and coping mechanisms.

Fig 2 Locale of the Study

➢ *Participants of the Study*

The population participants for this study comprised all the farmers who actively farm in Barangay Dolores and other. These farmers were primarily help in generating data since they may be able to give adequate explanations of the realities faced, including the challenges experienced by farmers, coping strategies in place, and sustainable ways used. A purposive sampling technique was employed to select participants in the study. This non-random sampling technique is concerned with identifying those who have characteristics relevant to the study. Farmers were selected based on such factors as:

Years of experience in farming, which offers a range of perspectives, from seasoned professionals to newer farmers. The types of crops or livestock they manage, to understand diverse agricultural practices. Their experiences with challenges such as climate change, market access, or lack of resources.

➢ *Sampling Technique*

This study used a purposive sampling technique, a non-probability sampling method where participants are deliberately selected based on specific characteristics, knowledge, or expertise relevant to the research objectives. It ensures that people who can best provide the most valuable and relevant information to answer the research question are included. In this case, purposive sampling is appropriate since it enables selection of farmers who have more experience in giving a meaningful insight into the challenges and farming practices in Barangay Dolores.

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- *Research Instrument*

The research instruments used in this study are semi-structured interview guides. Interview guides are developed to address specific topics, including the challenges farmers face, coping mechanisms, and access to resources, but also provide freedom for participants to voice their thoughts and offer rich, detailed narratives. These tools ensure the systematic collection of qualitative data, allowed the researchers to critically analyze and understand the issues farmers face in sustaining their livelihoods. Using such instruments, the study attempted to capture the complexities of farmer realities and inform actionable recommendations.

- *Data Gathering Procedure*

The data gathering and interpretation process for this study followed a clear method to ensure accuracy, reliability, and ethical compliance. The researchers selected participants using purposive sampling, focusing on farmers in Barangay Dolores who had relevant farming experience and could share insights about challenges, coping strategies, and sustainable practices in agriculture. Before starting the interviews, the researchers explained the study's purpose and scope, assured confidentiality, and obtained informed consent from all participants. The main data collection tool was a semi-structured interview guide, which allowed flexibility in asking for deeper responses. The researchers conducted face-to-face interviews and used field observations with a checklist to record the farming environment, tools, and actual conditions. Data gathering took place over four weeks, with all interviews recorded (with consent) and supported by detailed field notes. After collection, the recorded interviews were transcribed verbatim, and the field notes and checklists were combined. Thematic analysis was applied to spot recurring patterns and themes in the participants' responses. This process involved getting familiar with the transcripts, coding key ideas, grouping similar codes into broader themes, and checking them for consistency and relevance to the research goals. The researchers summarized socio-demographic data using frequency and percentage to clearly present the participants' profiles. They presented the findings in narrative form, supported by direct quotes from participants for authenticity, while tables summarized the demographic data. This process allowed the results to reflect the real-life experiences of the farmers and provide a strong basis for recommendations on improving their resilience and promoting sustainable agriculture.

- *Data Analysis*

This study undertook thematic analysis to synthesize the collected qualitative data from farmers in Barangay Dolores. Thematic analysis is used to ascertain, analyze, and interpret recurrent patterns or themes within the collected data, illuminating the personal experiences, constraints, and issues of farmers within their farming systems. The obtained responses were also be systematically organized to reveal and identify recurring themes such as their profile, farming activities, and uses of machinery/equipment. Frequency and percentage was also used to summarize the socio-demographic data of the participants to have a complete understanding of their background and farming practices.

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CHAPTER FOUR
PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This chapter introduces the qualitative results from farmer interviews conducted in Barangay Dolores. Through thematic analysis, nine major themes emerged, showcasing their challenges, coping mechanisms, and resilience. The first half is on challenges such as volatile prices, climate change, and land insecurity. The second half discusses how they adapt through sideline activities, flexible farming, and peer assistance. Finally, the chapter unveils their silent strength through thriftiness, family assistance, and simple innovations.

➢ *Socio-Demographic Profile of the Participants*

- *Age of the Participants*

Most farmers interviewed in Barangay Dolores are in their 40s and 50s, a reflection of the aging workforce in Philippine agriculture. One participant shared, *"Dati, malakas pa ako magbungkal kahit maghapon, pero ngayon mabilis na akong mapagod."(I used to be strong enough to work all day, but now I get tired quickly.)* This quiet admission reveals more than just age-it points to a national issue: the lack of youth entering agriculture. These aging farmers, though seasoned and experienced, often work without mechanized tools or younger support. According to Palis (2020), aging Filipino rice farmers are less inclined to pass farming on to their children, primarily due to the physical and financial challenges they themselves experienced. The burden of an aging labor force continues to weigh heavily on the sector, threatening long-term sustainability.

- *Years of Farming Experience of the Participants*

Behind every fruitful harvest is a farmer with a long story to tell. Most of the farmers had been working in agriculture for more than two decades, with some reaching over 40 years of farming experience. A few had between 10 to 20 years of experience, while only a small number had less than a decade in the field. One shared, *"Bata pa lang ako, nasa bukid na ako. Hanggang ngayon, ito pa rin ang kabuhayan ko." (When I was just a child, I was already on the farm. To this day, this is still my livelihood.)* Yet despite their years of experience, many remain locked in traditional practices, unable to access modern farming techniques.

Gomez (2024) emphasized that experience, while valuable, cannot substitute for innovation. Older farmers who have not had access to education or training on new techniques are less equipped to compete in modern agricultural economies.

- *Use of Farming Machinery and Equipment of the Participants*

A farmer bent over a plow, pulling with raw strength, is not just a symbol of hard work-it a symbol of necessity. It shows that 13 of the participants still use manual labor, relying on asarol, carabaos, and their own hands. One participant admitted, *"May hand tractor sa kapitbahay, pero hindi ko afford. Kaya asarol pa rin gamit ko." (There's a hand tractor at the neighbor's, but I can't afford it. So I still use a hoe.)* The struggle to modernize is not rooted in unwillingness but in poverty.

Cordero & Park (2023) pointed out that Agriculture 4.0-digital and precision farming-remains far from the reach of poor farmers, who lack capital, education, and institutional support to make the shift.

➢ *Primary Challenges and Struggles Faced by Farmers*

In the quiet fields of Barangay Dolores, every sunrise marks not just another workday—but another battle for survival. These farmers, despite their devotion to the land, face hardships that go beyond what most can imagine. As the interviews revealed, their struggles are deeply rooted in three painful realities: unstable prices, unpredictable weather, and insecure land ownership. Yet through it all, they carry on—with silent endurance and unwavering hope.

One of the most pressing problems these farmers face is the unstable price of their produce. After months of labor—planting, watering, weeding, harvesting—they are often met not with reward, but with disappointment. One participant said, *"Kapag mababa ang presyo, halos wala kaming kita." (When prices are low, we have almost no income.)* This speaks of the harsh truth: no matter how abundant their harvest, they still come up short. Another added with quiet frustration, *"Parang sugal ang pagsasaka—minsan kikita, minsan lugi." (Farming is like gambling—sometimes you make a profit, sometimes you lose.)* Farming, for them, has become a gamble—uncertain, unstable, and unfair. Meanwhile, a third participant shared the most painful part of it all: *"Wala kaming choice minsan kundi ibenta kahit mura. May utang kami, may kailangang bayaran." (Sometimes we have no choice but to sell even if it's cheap. We have debts, we have to pay something.)* Because of debt and survival needs, they are forced to accept low prices from middlemen, even when it means incurring losses.

These voices show us that the issue is not a lack of effort—it's a lack of power. The pricing system does not protect them. They are at the mercy of traders and buyers who dictate the value of their produce. Their harvests—fruits of sweat and sacrifice—are exchanged for just enough to survive another cycle. The result is emotional exhaustion and financial stagnation. According to Perez et al. (2019), this market imbalance is a recurring issue among smallholder farmers who lack access to cooperatives or protected pricing systems.

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As if unstable prices weren't enough, another heavy burden the farmers carry is the unpredictability of the weather. Where once they relied on instinct and ancestral knowledge to guide their planting, now even the seasons betray them. One participant described, **"***Kapag tag-ulan, natatangay ng baha ang tanim." (During the rainy season, the crops are washed away by the floods.)* This is not just about failed crops—it is about lost time, wasted effort, and dashed hope. In addition, another participant said, *"Hindi na namin alam kung kailan ang tamang panahon ng pagtatanim."* (*We no longer know when the right time to plant is.)* Their connection to the land is strong, but the climate is changing faster than they can adjust. Furthermore, a third participant added, "Yung dating panahon na alam naming uulan sa ganitong buwan, hindi na namin maramdaman ngayon." *(The weather we used to know would rain this month, we can't feel it anymore.)* This shift has left them feeling helpless, no longer able to rely on what they once knew.

These responses reveal not just the effect of climate change on crops, but on the farmers' sense of control and identity. When they say, "*hindi na namin alam,*" *(we do not know anymore).* It is a cry of confusion from people who once found certainty in the earth and sky. Their resilience is being tested by a reality that changes too quickly, without warning or support. Sabino et al. (2021) affirmed that without climate-adaptive tools and education, small farmers remain highly vulnerable to these shifting patterns.

And while nature and market are already against them, there is yet another silent burden they face: the land they till is often not even theirs. One participant explained plainly, *"Nangungupahan lang ako ng lupa, kaya limitado ang kaya kong gawin." (I only rent land, so what I can do is limited.)* This lack of ownership limits their confidence to invest in long-term improvements. On the other hand, another participants shared, *"Sa amin kasi, minana lang. Pero walang titulo, kaya hindi rin kami sigurado kung kanino talaga." (It's ours, we just inherited the land. But there's no title, so we're not sure who it really belongs to).* Their rights are not written down; they exist only in memories and verbal agreements. To make matters worse, a third participant said, **"***Dahil wala kaming titulo, hindi kami makautang sa bangko o makakuha ng tulong mula sa gobyerno." (Because we don't have a title, we can't get a loan from the bank or get help from the government.)* Without land titles, they are invisible in the eyes of formal institutions.

These reflections show how land, which should symbolize stability, becomes a source of fear. Farmers are unable to dream bigger or build better because the land they farm might be taken from them at any time. It's not just their productivity that suffers—it's their dignity and peace of mind. Micabalo & De la Cruz (2024) argue that tenure insecurity is a key barrier to rural development and financial inclusion.

➢ *Adaptation Strategies to Sustain Livelihoods*

Though saddled with heavy loads, farmers in Barangay Dolores do not just survive—they innovate. Not only do they survive adversity, but they also learn to thrive in spite of it. By using their creativity, flexibility, and collective know-how, they are able to make a little stretch a lot. Their techniques aren't always apparent to the naked eye, but they bear witness to the strengths of resilience.

When the farm doesn't produce enough to sustain a household, farmers don't give up—they and find creative ways that farmers keep their families afloat. One participant shared *"Nag-aalaga ako ng manok o naglalako ng gulay para may dagdag kita." (I raise chickens or sell vegetables to earn extra income.)* This response reflects how farmers no longer depend on crops alone. Instead, they raise poultry, sell vegetables, or take small side jobs like farm laboring or sari-sari store operations. These efforts, while modest, serve as financial lifelines when the harvest fails or prices crash.

Another participant expressed that they try to find part-time work on nearby farms or do manual labor outside planting season to make ends meet. Some even collect recyclable materials or transport produce for a fee during off-season. While farming remains their identity, these other roles help sustain daily needs.

A third participant admitted that selling vegetables around the barangay brings in faster cash compared to waiting for crop income: *"Hindi sapat ang ani minsan, kaya naglalako na lang din ako para may panggastos." (Sometimes the harvest is not enough, so I just sell to make ends meet.)*

These responses show the ingenuity and determination of Filipino farmers. Rather than quitting agriculture, they build multiple streams of income around it. For them, diversification is not a luxury—it is a necessity. It is a strategy for resilience, helping them ride out low seasons, bad weather, and price drops. The effort to juggle side hustles, backyard livestock, and informal trade reflects their strength and adaptability in the face of uncertainty.

Pede et al. (2024) assert that livelihood diversification is crucial for smallholder resilience, especially in Southeast Asia where farming incomes are unstable. Diversification provides risk management and stabilizes household consumption. In rural areas with no insurance or formal safety nets, these secondary livelihoods make survival possible.

In the face of unpredictable rainfall and extreme weather, farmers in Barangay Dolores have learned not to rely on the calendar, but on their instincts and experience. Their survival depends on adapting quickly—changing planting schedules, switching crops, and moving with the seasons instead of being caught by them.

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One participant shared, *"Maaga akong nagtatanim para maiwasan ang baha." (I plant early to avoid flooding.)* This proactive approach shows how deeply farmers analyze their environment, even without formal weather tools. By planting earlier than usual, they avoid the worst of flood-prone periods. Another participant explained that they avoid crops that are too sensitive during the rainy season and instead try alternative varieties. A third participant noted that they sometimes shift from rice to corn or root crops depending on the conditions, *"Kapag alam naming uulan nang madalas, mas pipiliin naming magtanim ng mais o kamote kaysa palay." (When we know it will rain often, we would rather plant corn or sweet potatoes than rice.)* These changes may seem simple—but for farmers, they are major decisions. It involves changing techniques, adjusting expectations, and risking unfamiliar outcomes just to protect their small harvests.

The farmers' decision to change their planting schedules or shift crops reveals both resilience and vulnerability. On one hand, they are quick thinkers—adjusting strategies based on observed patterns. But on the other, their dependence on guesswork and the absence of technical guidance means every change is a risk. Still, they choose to adapt rather than surrender.

Sabino et al. (2021) explain that while many of these actions are informal, they are legitimate and effective adaptive strategies. Crop switching and flexible scheduling—though not institutionally guided—are grounded in lived experience. With better access to localized weather data and agricultural support, such efforts could become even more effective and less risky.

In times of uncertainty, farmers often find strength not from formal institutions, but from one another. In Barangay Dolores, the research revealed that community support and peer advice play a vital role in helping farmers navigate farming decisions and everyday challenges. One participant expressed this simply, *"Minsan may ayuda, minsan wala." (Sometimes there is help, sometimes there is not.)* This highlights how unreliable government assistance can be. Farmers are promised help through subsidies or seminars, yet many of these are delayed, insufficient, or inconsistent. As a result, farmers turn to more dependable sources—their fellow farmers.

A second participant shared that instead of waiting for help, they simply talk to others in the barangay or watch YouTube videos to learn new techniques. They stated, "*Sa barangay lang ako natututo. Minsan YouTube rin kapag may data." (I only learn in the barangay. Sometimes in YouTube too when I have data.)* This points to how informal education and peer advice are now more accessible than institutional support.

A third particpant noted, *"Pag may bagong tanim 'yung kapitbahay ko at okay naman ang kita, sinusubukan ko rin."(When my neighbor has a new crop and the income is okay, I try it too.)* Such copying behavior isn't laziness—it's strategic. In the absence of technical training or agricultural extension officers, experience-sharing within the community has become a form of collective learning and survival.

These responses emphasize how social capital fills the gap left by unreliable institutions. The farmers of Barangay Dolores rely on each other for advice, information, and encouragement. Rather than being isolated, they form informal knowledge networks built on trust, observation, and shared struggle. While government said is sporadic, community learning is always there—free, practical, and based on lived experience.

Salazar et al. (2020) affirm that in rural Philippine settings, peer-to-peer learning and community engagement are among the most consistent and accessible support systems for farmers. In the absence of strong institutional presence, these networks become lifelines—not only for technical knowledge, but for emotional resilience and encouragement.

- *Coping Mechanisms and Strategies*

Having discussed how farmers modify their activities to survive, this section discloses how they emotionally and practically adapt to adversity. Such measures testify not only to survival—but also to inner strength, discipline, and hope. Farmers survive day by day not only by sowing seeds, but also through hard decisions that safeguard their families and their future.

In the face of unpredictable income, the farmers of Barangay Dolores have learned to live with extreme discipline. Even when they earn little, they find ways to save or stretch what they have. One partial plainly shared: *"Pag may sobrang kita, itatabi para sa panahon ng taghirap." (If there is excess income, it will be saved for times of hardship.)* This behavior shows that they plan not just for tomorrow, but for the next storm, the next crop failure, or the next price drop. Saving is not just financial—it is a mindset of survival.

Another participant mentioned skipping meals or relying on simple food to stretch their limited budget. Though the exact phrase was not verbatim in your transcript, the interview notes reflect this strategy: minimizing spending on daily necessities, sacrificing comfort to protect long-term stability.

A third participant reflected that they sometimes borrow small amounts from neighbors or relatives, but avoid taking big loans because of the pressure it creates. They said they'd rather *"makisama kaysa mangutang nang malaki," (partnering rather than borrowing heavily.)* implying social harmony over debt dependency.

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These statements reveal the quiet strength of rural discipline. Farmers know that help may not come from outside, so they must become their own safety net. They prioritize needs over wants, plan ahead, and stretch every peso. While poverty limits their choices, their wisdom in handling hardship keeps them going.

Salazar et al. (2020) pointed out that in many farming households, informal financial coping strategies—like saving during peak months or relying on community ties—play a bigger role than formal financial systems. These practices may be unseen, but they are powerful tools for rural resilience.

In Barangay Dolores, farming is rarely done alone. It is a family affair—built on teamwork, shared responsibility, and sacrifice. One participant reflected this by sharing: *"Kaming pamilya ang nagtutulungan sa pagtatanim at pag-aani." (Our family works together to plant and harvest.)* This shows how family labor is not just practical—it is essential. When hiring workers is too expensive, children, spouses, and siblings become the core labor force. Another participant noted that even their children, at a young age, learn how to help with watering plants or assisting during harvest.

A third participant shared that sometimes, their family even works together with other relatives on nearby farms—helping each other during peak seasons. This practice strengthens not only productivity but relationships.

These stories show that farming is more than livelihood—it is a shared life. Family members learn from each other, protect each other, and grow through hardship together. In the absence of formal support or hired workers, they depend on love and trust to get the job done. This kind of unity fosters not just efficiency—but resilience.

According to the Food and Agriculture Organization (FAO, 2019), intergenerational cooperation and knowledge-sharing within farming families are vital for rural survival. Children who grow up farming develop a natural understanding of agricultural cycles, while elders pass down their wisdom through action. Strengthening this bond ensures that farming knowledge continues, and that families are able to support each other physically, emotionally, and economically.

Though many farmers in Barangay Dolores still rely on manual labor, some are starting to embrace simple forms of technology. One participant shared: *"Gumagamit na kami ng hand tractor at reaper para mapabilis ang gawain." (We are now using a hand tractor and reaper to speed up the work.)* This reveals a shift in mindset—not just toward convenience, but survival. Older farmers, especially, are now seeing the value of machinery in reducing physical strain and speeding up farm processes. Another participant mentioned that while they cannot afford big equipment, they sometimes borrow tools or rent from others when needed.

A third participant said *"Minsan para malaman namin kung paano gamitin nanonood kami sa Youtube o kaya sa Facebook kapag may load" (Sometimes to learn how to use it, we watch YouTube or Facebook when I have data connection.)* Instead of waiting for formal training, they teach themselves through accessible and low-cost online tools.

These responses show that technology is not out of reach—it is slowly creeping into rural lives. Though usage remains limited by poverty and poor infrastructure, the willingness is there. What these farmers need is more access, training, and financial assistance to fully transition from labor-heavy practices to modern, efficient methods.

According to Pede et al. (2024), even basic technological upgrades such as reapers, seeders, or mobile learning platforms can dramatically improve farming output and reduce farmer fatigue. But without intervention in the form of subsidies or training programs, most smallholders remain stuck in traditional methods despite their readiness to innovate.

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CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This final chapter summarizes the main findings, draws conclusions from the results, and offers recommendations for future actions and studies.

A. Summary of Findings

➢ *Socio Demographic Profile*

- *Age*

The majority of participants fell within the 40–59 age group, indicating an aging workforce in local agriculture. This demographic detail suggests that younger generations are increasingly disengaged from farming, possibly due to perceptions of hardship and low income. An aging labor force presents challenges in sustaining long-term agricultural productivity and points to a looming generational gap in food production.

- *Years of Farming Experience*

Most farmers had between 10 to 20 years of experience, suggesting that farming is both a long-term vocation and a generational livelihood. Despite their wealth of hands-on knowledge, many participants remain disconnected from formal agricultural training or exposure to innovations. This gap between experience and advancement hampers the sector's growth and modernization.

- *Usage of Farming Machinery and Equipment*

Only 35% of the participants reported using any form of mechanized tools; most still relied on hand tools and animal labor. Financial constraints and lack of access to credit or government assistance were the primary reasons for low adoption of modern equipment. This lack of mechanization not only slows production but also increases physical strain, particularly among older farmers.

➢ *Primary Challenges and Struggles Faced by Farmers*

- *Fluctuating Market Prices*

The volatility of crop prices emerged as one of the most pressing concerns. Many farmers admitted that they had to sell their products at low prices just to settle debts or afford daily necessities. This dynamic turned farming into a risky endeavor, where profitability was never guaranteed and long-term planning was nearly impossible.

- *Climate Change*

Impacts Participants shared that unpredictable weather patterns had deeply disrupted their farming activities. Floods and droughts altered planting cycles and reduced yields, leaving them confused and unprepared. The farmers no longer relied on traditional seasonal knowledge, and many expressed the urgent need for updated climate-related information or support systems.

- *Land Tenure Issue*

A significant number of farmers operated on land they did not legally own. Some rented parcels while others cultivated inherited land without formal titles. This insecurity limited their willingness to invest in improvements and excluded them from government programs requiring documented land ownership—further deepening their vulnerability.

➢ *Adaptation Strategies to Sustain Livelihoods*

To adjust to their challenging environment, farmers diversified their income by raising poultry, doing side jobs, or selling vegetables. Many adapted their planting calendars based on observed weather shifts and occasionally changed crops depending on seasonal expectations. These adaptive behaviors were often community-driven and based on mutual learning and experience-sharing among neighbors.

➢ *Coping Mechanisms and Strategies for Sustainable Practices*

Coping strategies included saving money during good harvests, relying on family members for labor, and occasionally renting or borrowing basic machinery. Some farmers accessed agricultural knowledge through social media and local networks to compensate for the lack of formal training. These efforts, though modest, demonstrate perseverance, creativity, and communal resilience.

In everyday language, this study paints a picture of hardworking farmers who face many problems—low crop prices, harsh weather, and uncertain land ownership. Yet, they continue to find ways to make farming work. They plant early to avoid floods, raise chickens for extra money, borrow tools from neighbors, and help each other out. They save what they can and work with family

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to keep going. While the government and institutions offer little support, the farmers' creativity and unity help them survive. This research hopes to give voice to their experiences—and guide future solutions that are rooted in their realities.

B. Conclusion

- The findings of the study indicate that most farmers in Barangay Dolores belong to the age bracket of 40 to 59 years old. This is a cause for concern in agriculture since fewer youths are coming into the profession because farming is said to be challenging and with little remuneration. If the trend persists, then the long-term viability of farming among rural communities is imperiled.
- Despite the farmers having several years of experience, they do not have formal training or access to sophisticated equipment. The farming activities are still traditional, and this constrains productivity and resilience in the current dynamics of the agricultural sector. The lack of innovation restrains development and leaves farmers reliant on conventional ways.
- The farmers' problems of unstable farm gate prices for their produce, climate change, and insecure land rights are still unresolved and continue to impact their lives. Unless they have a steady income or ownership of land, most are not motivated to expand their farms or invest in improved equipment. These perennial concerns keep farmers stuck in uncertainty and low incomes.
- Even with these challenges, the farmers still show resilience through adaptive strategies and robust communal support. They modify their planting habits, find alternative sources of revenue, and co-operate as neighbors and families. Their discipline, creativity, and cohesion are an example of the robustness of rural communities and the will to survive under limited resources.

C. Recommendations

- To strengthen the future of agriculture, greater efforts must be made to attract younger generations into farming. The Department of Agriculture (DA) and the Department of Education (DepEd) are encouraged to introduce youth-focused agricultural programs in schools and communities, highlighting farming as a respectable and sustainable profession. Secondly, there should be age-appropriate training sessions—providing basic training for new and young farmers and advanced, updated information for seasoned ones. Making farming equipment more readily available by providing rental centers or subsidies on equipment would similarly simplify the work load for elderly farmers and enhance efficiency.
- Long-standing agricultural problems can be addressed through concerted efforts by agencies like the Department of Agrarian Reform (DAR), the Philippine Crop Insurance Corporation (PCIC), and PAGASA. Enhancing land tenure by streamlining land titling procedures would make farmers invest in their land with confidence. Farm gate price stabilization by support mechanisms like farmer cooperatives or guaranteed pricing may safeguard farmers from exploitation. Besides, proper weather forecasting and provision of climate-resilient seeds would reduce the effects of extreme weather and help prepare better.
- To enable farmers to adapt better, the local government units (LGUs) and Agricultural Training Institute (ATI) must encourage farmer innovation through barangay-level workshops and community-based training. These workshops can deal with crop diversification, shifting planting dates, and cultivating supplemental livelihood like poultry or vegetable production. Encouraging farmer-to-farmer learning and local experimentation will make them more competent to respond flexibly to shifting environmental and economic conditions.
- Strengthening cooperation among farmers should be further facilitated to enhance community resilience. Strategies that advocate for family-based labor systems, common tool and storage facility access, and cooperative group labor can greatly relieve the burden on individual farmers. Microfinance, crop insurance, and emergency relief should also be made accessible to assist them in managing crises. Further, incorporating wellness services and mental health care can help farmers deal with the emotional strain of their work.
- The development of long-term collaborations between government institutions, NGOs, and schools is crucial for maintaining farming communities. The creation of local farmer learning centers can make it possible to have regular access to training, data, and peer-to-peer cooperation. Such centers can also be places where the recording of both conventional and innovative agricultural knowledge is undertaken, safekeeping culture while enhancing innovation and long-term sustainability.

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APPENDICES
APPENDIX A

➢ *Guide Questions*

Dear Participant,

Thank you for taking the time to participate in this study. The purpose of this research is to explore the challenges that farmers face in their daily lives and their efforts toward achieving a sustainable future. Your responses will remain confidential and used solely for academic purposes.

➢ *Socio-Demographic Profile.*

- Can you share your age?

✓ What is the impact of age on farming?

- What is the duration of your farming experience?

✓ Why did you become a farmer?

- What farming tools and equipment do you use?

✓ Do you think new tools make farming easier? Why or why not?

➢ *Challenges and Struggles in Farming*

- *Fluctuating Market Prices*

✓ *Are you Aware of Fluctuations in Market Prices for Agricultural Products?*

▪ How do you keep track of these price changes?

✓ *How do changes in market prices affect your farming income?*

▪ What strategies do you use to cope with low market prices?

✓ *Have you Experienced Significant Financial Losses due to Market Fluctuations?*

▪ How do you recover from these losses?

- *Climate Change Impacts.*

✓ *How has Climate Change Affected Agriculture?*

▪ Can you identify the most significant impacts that certain weather conditions have had on your crops?

✓ *How do you Adjust to Changes in the Weather?*

▪ Can you find any aid for coping with the challenges of climate change?

- *Land Tenure Problems.*

✓ *Have you Faced or are you Facing a Land Ownership Issue?*

▪ How would these issues affect your farm-related decisions, if any?

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- ✓ *How can Land Tenure Problems be Resolved?*
  - Are you seeking legal or government assistance for this matter?
- ➢ *Adaptation Strategies and Coping Mechanisms.*
- *How do you Manage to Stay Financially Stable in these Circumstances?*
- ✓ What are the most successful approaches to follow up on this?
- *Despite the Challenges, what Drives you to Persist in Farming?*
- ✓ Do you have any support system like family or community organizations?
- *Are you Utilizing any Novel Technologies or Approaches in Farming?*
- ✓ From where do you typically gather information or training on the latest farming techniques?

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APPENDIX B
DOCUMENTATIONS

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APPENDIX C
REQUEST LETTER TO CONDUCT RESEARCH

Republic of the Philippines
Department of Education
REGION III – CENTRAL LUZON
SCHOOLS DIVISION OFFICE OF NUEVA ECIJA
JULIA ORTIZ LUIS NATIONAL HIGH SCHOOL
BRGY. SAGABA, STO. DOMINGO, NUEVA ECIJA

Application to Conduct Student Research

March 14, 2025

RACQUEL C. DIAZ
School Principal IV
Julia Ortiz Luis National High School
Brgy. Sagaba Sto. Domingo
Nueva Ecija, 3133

Dear Ma'am:

We, the undersigned students of **11-HUMSS A**, respectfully seek your kind permission to conduct a research study entitled **"Challenges Of Farmers: Pursuing For A Sustainable Future".**

The title and scope of the proposed research study have been deliberated, discussed, and approved in concept by the undersigned and our research adviser, whose signature is affixed below. We assure you that the study will be conducted with utmost adherence to ethical research standards.

Attached herewith is a copy of the manuscript, which has undergone pre-oral defense, for your reference.

We sincerely appreciate your time and consideration of this request. We look forward to your favorable response.

Very truly yours,

KOBE ALEJO
KHALEX JAN DELA CRUZ
CHIENETH GRACE GRANDE
KIESHA VENICE VALIENTE

Noted by:

ROMARC B. CORONEL
Research Teacher

MELANIE V. YAMBOT
OIC- Assistant School Principal

Approved by:

RACQUEL C. DIAZ
School Principal IV

Address: Sagaba, Sto. Domingo, Nueva Ecija
Email: Julia.ortiz1945@gmail.com
Facebook Page: Julia Ortiz Luis National High School 300814

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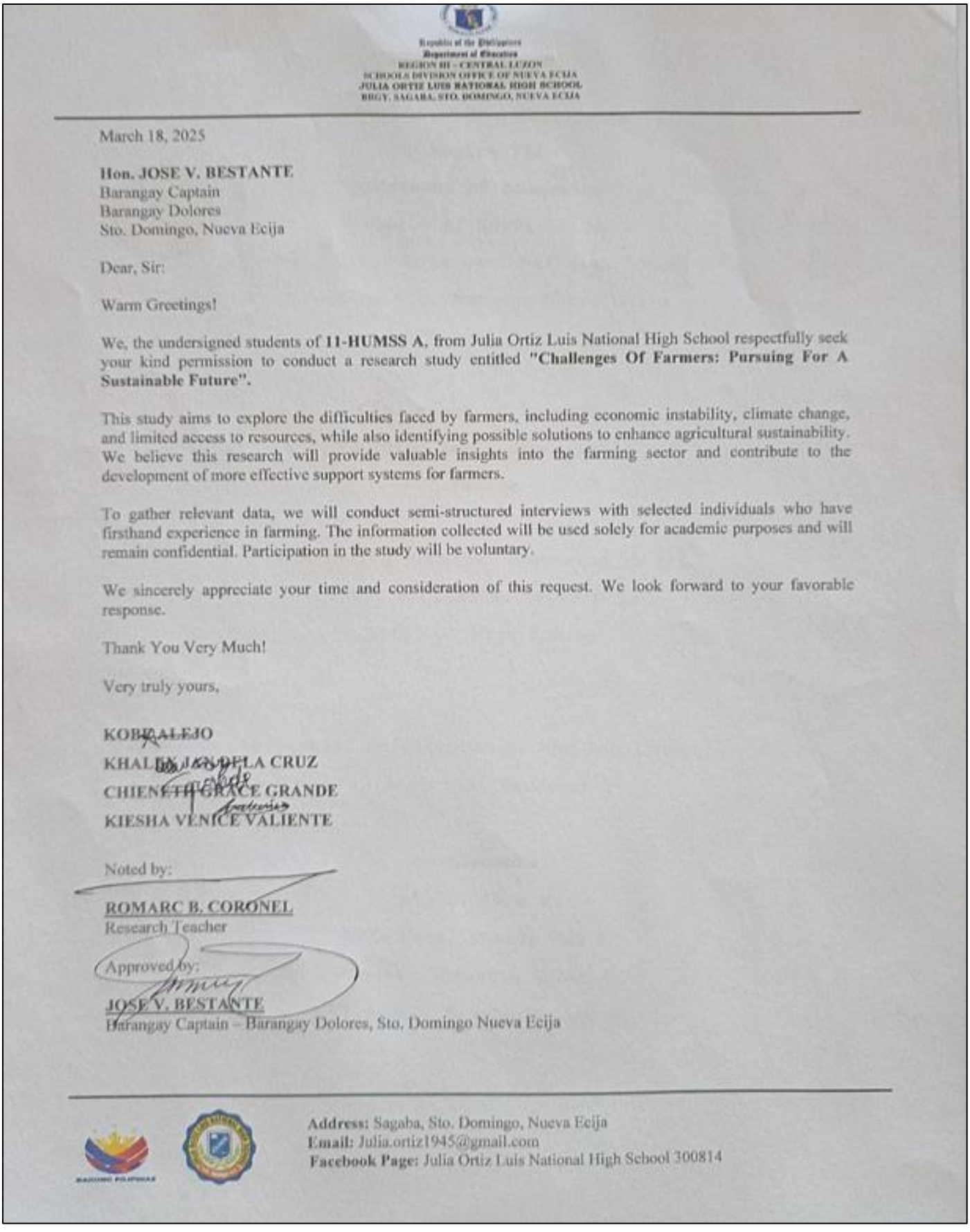
APPENDIX D
REQUEST LETTER TO THE BARANGAY



Republic of the Philippines
Department of Education
REGION III – CENTRAL LUZON
SCHOOLS DIVISION OFFICE OF NUEVA ECIJA
JULIA ORTIZ LUIS NATIONAL HIGH SCHOOL
BRGY. SAGABA, STO. DOMINGO, NUEVA ECIJA

March 18, 2025

Hon. JOSE V. BESTANTE
Barangay Captain
Barangay Dolores
Sto. Domingo, Nueva Ecija

Dear, Sir:

Warm Greetings!

We, the undersigned students of **11-HUMSS A**, from Julia Ortiz Luis National High School respectfully seek your kind permission to conduct a research study entitled **"Challenges Of Farmers: Pursuing For A Sustainable Future".**

This study aims to explore the difficulties faced by farmers, including economic instability, climate change, and limited access to resources, while also identifying possible solutions to enhance agricultural sustainability. We believe this research will provide valuable insights into the farming sector and contribute to the development of more effective support systems for farmers.

To gather relevant data, we will conduct semi-structured interviews with selected individuals who have firsthand experience in farming. The information collected will be used solely for academic purposes and will remain confidential. Participation in the study will be voluntary.

We sincerely appreciate your time and consideration of this request. We look forward to your favorable response.

Thank You Very Much!

Very truly yours,

KOBE ALEJO
KHALEN JANDELA CRUZ
CHIENETH GRACE GRANDE
KIESHA VENICE VALIENTE

Noted by:

ROMARC B. CORONEL
Research Teacher

Approved by:

JOSE V. BESTANTE
Barangay Captain – Barangay Dolores, Sto. Domingo Nueva Ecija

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