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Income Utilization by Agrarian Reform Beneficiaries in Collectively Managed Sugarcane Farms

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Abstract:

This study investigates how 158 agrarian reform beneficiaries (ARBs) engaged in collectigely managed sugarcane farms in Central Philippines utilized their income. Focusing on four key areas -- farm operations and maintenance, organizational and social development, legal and financial obligations, and expansion and diversification -- the research assesses the extent to which income was reinvested to sustain and grow their agricultural enterprises. The study further analyzes how income utilization varies according to age, sex, tenure as agrariain reform beneficiaries, highest educational attainment, and average monthly family income. Significant differences were found in income utilization practices across various groups, particularly in legal and financial obligations and expansion and diversification, with notable variances based ont tenure, and income levels. The findings suggest that targeted support programs, such as financial literacy training and legal counselling, are essential to address the specific needs of ABRs, especially in enhancing their productivity, sustainability, and market reach. The study provides recommendations for policymakers, farmers' organizations and other stakeholders to improve the livelihood and long-term success of ARBs.

Keywords: Income utilization, agrarian reform beneficiaries, collectively managed sugarcane farms, sustainability

Introduction:

Nature of the Problem

A critical prerequisite to ending hunger in the developing world is the legitimate ownership of land its productive use. In the Philippines, the experience of the San Vicente Tenant Reform Farmers Association (STARFA) in Bay, Laguna, exemplifies how collective land ownership can promote food security and sustainable livelihoods. STARFA farmers, beneficiaries of the Comprehensive Agrarian Reform Program (CARP), successfully transitioned to collectively managed farming, transforming idle lands into productive areas while improving household incomes (Makita, 2016). This aligns with the core tenets of food sovereignty, emphasizing farmer control over production and land (De la Cruz, 2017).

Sugarcane production, which provides employment for around 700,000 Filipinos and contributes approximately PHP 70 billion annually to the economy, is driven maninly by smallholders who face sustainability and equity challenges (FFTC-AP, 2020). Collectively managed farms, while offering potential for inclusive growth, still struggle with limited support, unequal income distribution, and lack of sustainability mechanisms (Network of Asia Pacific Producers, 2018; Solidaridad, 2020).

La Via Campesina's (2021) "Food Sovereignty: A Manifesto for the Future of Our Plant" echoes these ideals, reinforcing the role of small-scale, sustainable agriculture in ending hunger. Similarly, the United Nations' Sustainable Development Goal 2 (SDG 2) - "End hunger, achieve food security and improved nutrition, and promote sustainable agriculture" -- recognizes equitable land access and control over productive resources. Asa signatory to the SDGs, the Philippines is committed to policies that fulfill these global objectives.

The CARP, established under Republic Act 6657 in 1988, represents the country's largest initiative to promote equitable land distribution. As of 2024, over 2,486 million agrarian reform beneficiaries (ARBs) have been served since 1972, with 1.3 million ARBs residing in more than 2,200 agrarian reform communities. (Department of Agrarian Reform,, 2024; Licas News, 2022). Despite this progress, implementation has been uneven, particularly in Negros, where powerful landowners in the sugar industry have resisted redistribution efforts, leading to tensions and casualties (Lawphil, 2021).

A notable model is the experience of AMANO and NAFWA in Central Philippines, as documented by

Orlino and Dimanalanta (2023) in their case study "Collective Farming Towards Workers-Owned, Workers-Managed Enterprises." These social groups applied social solidarity economy principles to transform their organization into cooperative-like enterprises, yielding regular dividends and socio-economic benefits for members and communities.

His deep concern for sugarcane farmers, having worked closely with them as the president of a development-oriented foundation, drove the researcher to pursue this study. His longstanding commitment to helping ARBs reinvest their income toward building sustainable social enterprises served as the foundation for this research.

Current State of Knowledge

Reinvestment of income is crucial for the sustainability and growth of agricultural cooperatives. Studies have shown that smallhoder farmers often face challenges in meeting basic needs, which hampers their ability to reinvest in their farms. Improving incomes and competitivenss is essential for these farmers to achieve a decent standard of living and sustain their agricultural activities. According to Sustainable Food Lab (n.d.), investing in smallholder supply chains can lead to benefits such as long-term supply security, improved quality and yields, greater supply chain transparency, and new market creation.

The OECD (2020) underscores the necessity for responsive governance, equitable access to resources, and support systems that promote innovation and sustainability in rural communities. The Diffusion of Innovations Theory by Everett Rogers (2003)explains how many long-tenured farmers fall into the "late majority" or "laggards" categories, highlighting their preference for traditional practices and resistance to change, suggesting the need for targeted training to encourage innovation adoption. In line with this, the Social Capital Theory (Putnam, 2000) asserts that trust, shared norms, and community participation enhance cooperation, which is crucial for organizational sustainability and efficient resource sharing among ARBs.

The United Nations (2020) emphasizes that SDG 8 promotes sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all, encouraging innovation, entrepreneurship, and resource efficiency in production and consumption. SDG 12 advocates for responsible consumption and production, highlighting the need to minimize waste, use natural resources sustainably, and foster sustainable business practices, particularly in agriculture and rural economies.

The Comprehensive Agrarian Reform Law (Republic Act No. 6657) of the Philippines emphasizes the provision of support services to ARBs to enhance agricultural productivity and income, thereby fostering rural development. The law encourages landowners to invest the agrarian reform program proceeds into industrialization and employment generation, promoting broader economic development (Official Gazette of the Republic of the Philippines, 1988). Additionally, by encouraging investments in farm development, research, extension services, and human resource advancement, the Sugarcane Industry Development Act (SIDA) of 2015 (Republic Act No. 10659) was passed with the goal of increasing the productivity and international competitiveness of the Philippine sugarcane industry (SIDA, 2015).

Mechanization is essential for increasing agricultural output, but smallholder farmers encounter obstacles such as high costs, restricted financing availability, and a lack of technical expertise as noted by Pingali et al. (2021). Younger farmers still face resource constraints even though they are typically more receptive to mechanized farming methods. On the other handm, elderly farmers often oppose structured group organizations, highlighting the need for focused training to promote older farmers' increased involvement in organized farm management.

Akter and Rutsaert (2021) investigated how organizational structures and gender norms affect farmers' adoption of agricultural technologies in Bangladesh and discovered that the efficacy and longevity of communal farming projects were constrained by the absence of robus, participatory decision-making frameworks, even in cases where farmers had access to money and technical assistance. In a separate study by Mulianga et al. (2020), it was found that collective farming under irrigated schemes in Kenya improved access to resources and increase production efficiency, governance issues such as lack of clear organizational structures and poor leadership significantly hindered the sustainability and performance of farming groups.

Similarly, Nchanji and Bellwood-Howard (2021) observe that farmer organizations across Africa often excelled in cooperation and achieving short-term production goals but struggled with formal governance, transparency, and accountability mechanisms, limiting their ability to grow and remain sustainable. Finally, Kante et al. (2020) found that more experienced farmers exhibit reluctance to embrace new agricultural innovations because they are more likely to adhere to old farming methods and have less faith in emerging technologies.

Theoretical Underpinnings

This study is anchored on Mankins' Theory of Utilization and Tobin's Q Theory of Investment, integrating organizational and economic perspectives to examine how ARBs in Central Philippines utilize income from collectively managed sugarcane production.Geoffrey B. Mankins' (2004) theory posits that maximizing the effective use of available resources is critical to achieving optimal organizational performance. In the context of this study, the theory helped asses how ARBs -- treated as part of a cooperative system --

alocate and utilize income not only for individual benefit but also for strengthening their collectively managed farms. The theory udnerscores the importance of managing time, talent, capital, and operational processes efficiently to produce the highest possible output and long-term value. Applying this lens, the study examine whether ARBs effectively reinvest their income into farm productivity, community development, or capacity-building -- key indicators of resource utilization.

Complementing this is Tobin's Q Theory of Investment (Tobin, 1969), which explains how investment decisions are shaped by the ratio of the market value of an asset to its replacement cost. For collectively managed farm,s, the theory provided insight into how ARBs evaluate the returns on reinvestments in land, tools, or cooperative facilities versus directing income toward household needs or other expenditures (Garnett et al., 2013).

Together, these theoretical perspectives provided a multidimensional foundation for analyzing income utilization among ARBs. Mankins' framework emphasizes the efficiency and strategic deployment of resources at the operational level, while Tobin's Q Theory offers a macroeconomic view of investment decisions based on value and return. By combining these,the study uncovered how ARBs balance immediate consumption with reinvestment decisions, contribnuting to both personal well-being and the sustainability of their sugarcane cooperatives.

Objectives of the Study

This study aimed to determine the extent of income utilization by agrarian reform beneficiaries in collectively managed sugarcane farms in Central Philippines during Milling Year 2025. Specifically, the study sought to answer the following questions: 1) the extent of income utilization oby agrarian reform beneficiaries when grouped according to the domains farm operations and maintenance, organizational and social development, legal and financial obligations, and expansion and diversificaation; 2) the extent of income utilization by agrarian reform beneficiaries in collectively managed sugarcane farmers when grouped according to age, tenure as agrarian reform beneficiaries, and average monthly family income; and, 3) the significant difference in the extent of income utilization by agrarian reform beneficiaries when grouped and compared to the aforementioned variables.

Methodology:

This section presents a discussion of the research methodology used, the subjects and respondents of the study, the research instruments used, the validity and reliability of the instruments, the procedure for data gathering, and the statistical tools and procedures for data analysis.

Research Design

This study used a descriptive research design which is a quantitative research method used to describe the characteristics of a population or phenomenon being studied (Creswell, 2014). This method focuses on the "what" aspect of the subject and involves collecting data that provide insights into the current status of the subject, often through surveys, observations, or analysis of existing records. Koh and Owen (2024) assert that the behavioral sciences, epidemiology, education, and nutrition use descriptive research, which studies their status. It stems from teh idea that observation, analysis, and description may solve issues and enhance procedures.

The design was the most appropriate for this research as the methodology aims to discover what prevails in the present condition of relationships, processes, effects, and developing trends in this type of sugarcane production. Furthermore, the design involved observing and describing the behavior of a subject without influencing it.

Study Respondents

From a total population of 266, the study surveyed 158 agrarian reform beneficiaries in collectively managed sugarcane farms. These ARBs are members of four small farmer organizations in Central Philippines. Conducted almost two weeks of data gathering, the ARBs willingly participated. The respondents were sugarcane farmers whose organizations were found in four (4) local government units.

Majority of the ARBs surveyed were 55 years old and above, were either elementary or high school graduates (lower educational level), and were earning P5,500 and above monthly. Half of the sample size has been ARbs for less than 25 years, while the remaining half (79) has been ARBs for a longer period of time (25 years and above). The sample size was determined through stratified random sampling, a technique in research that ensures specific subgroups within a population are represented proportionally. By dividing the population into distinct groups, or strata, and then randomly selecting samples from each stratum, this method improves the accuracy and representatives of finding (Hasan, 2024), making it the most suitable sampling method for the determination of the sample size because in this stratification, the strata are formed based on members' shared attributes or characteristics, such as income or educational attainment.

Instrument

A researcher-made survey questionnaire was utilized to gather data for the study. The questionnaire was divided into two parts: Part I focused on the demographic profile of respondents, which included their age, sex, highest educational attainment, tenure as agrarian reform beneficiaries, and average monthly family income. Part II consisted of 32 items or questions to determine ARBs income utilization in (4) key domains, such as farm operations and maintenance, organizational and social devellpment, legal and financial obligations, and expansion and diversification. There were eight (8) items per domain to evaluate the extent of income utilization of ARBs. The responses were measured using a 5-point Likert scale, where 5 represented "Always," 4 indicated "Often," 3 indicated "Sometimes," 2 stood for "Seldom," and 1 as "Almost Never". It was subjected to validity (4.85-excellent) and reliability (0.950-excellent).

Data Gathering Procedure

Once the validity and reliability of the instrument had been confirmed, the researcher prepared a formal letter addressed to the officials of the small farmer oragnizations to request permission to conduct the study. Once approved, the researcher worked with ARB organization leaders and members to determine the appropriate participants. The researcher provided translations of the questionnaire items in Hiligaynon, to ensure participants's comprehension of the items. The researcher personally administered the survey with the help of his staff. The purpose of the study was explained and the sugarcane farmers were oriented on how to accomplish the questionnaire. Informed consent was given by the participants. The anonymity of respondents and confidentiality of information were ensured all throughout the process. SPSS software was then used to encrypt and examine the collected data.

Data Analysis and Statistical Treatment

This study used the descriptive and analytical schemes in the treatment of data. The results of the study were analyzed per the objectives as follows:

Objective No. 1 used the descriptive-analytical scheme to determine the extent of income utilization by ARbs according to the age, tenure as agrarian reform beneficiaries, and average monthly family income.

Objective No. 2 used the descriptive analytical scheme and mean to extent of income utilization by ARBs accrodign to the following domains: farm operations and maintenance, organizational and social development, legal and financial obligations, and expansion and diversification.

Objective No. 3 used the descriptive-analytical scheme to determine the extent of income utilization by ARBs when grouped according to demographic variables.

Objective No. 4 used the comparative-analytical scheme and Mann-Whitney U test to determine if there is a significant difference in the extent of income utilization by ARBs when grouped and compared according to demographic variables.

Ethical Consideration

The research on income utilization by agrarian reform beneficiaries (ARBs) in collectively managed sugarcane farms in Central Philippines adhered to the provisions of the Data Privacy Act of 2012 (RA 10173), ensuring the confidentiality and protection of participants' rights. Informed consent was obntained, emphasizing voluntary participation, the option to withdraw at any time, and reassurance that their access to support services would remain unaffected. Strict confidentiality measures were observed, with data collection and storage limited to authorized researchers. Results were presented in a way that preserved anonymity, and all ethical concerns were addressed promptly to uphold the integrity of the study. Adhering to these protocols helped maintain ethical and legal standards throughout the research.

Results and Discussion

This section presents, analyzes, and interprets the data that were gathered consistent with its predetermined objectives.

Table 1

Profile of the Respondents

Variables	Categories	Frequency	Percentage
Age	Younger (below 55 years old)	41	25.95
	Older (55 years old and above)	117	74.05
	Total	**158**	**100**
Tenure as Agrarian Reform Beneficiaries	Shorter (less than 25 years)	79	50
	Longer (25 years and more)	79	50
	Total	**158**	**100**
Average Monthly Family Income	Lower (less tha P5, 500)	75	47.47
	Higher (P5,500 and above)	83	52.53
	Total	**158**	**100**

Table 1 presents data on the profile of respondents who were 158 agrarian reform beneficiaries (ARBs) working in collectively managed sugarcane farms in Central Philippines. More than 70% or the majority (117) of ARBs surveyed were 55 years old and above and belonged to the older category of respondents. Only 25.95 percent, or 41, were below 55 years old or belonged to the younger category.

The data suggest a predominantly older demographic engaged in agricultural activities within these communities. The age distribution may influence the adoption of innovative farming techniques and the sustainability of agricultural practices. Galang's (2021) "Land Tenure, Access to Credit, and Agricultural Performance of Agrarian Reform Beneficiaries, Farmer-beneficiaries and Other Rural Workers" study examines factors affective the agricultural performance of ARBs.

Regarding tenure as agrarian reform beneficiaries, the two categories of respondents tied having 50% of the sample size farmers who have been ARBs for more than 25 years (longer) and those who have been beneficiaries for less than 25 years (shorter). The equal distribution of ARBs with longer tenure and those with shorter tenure suggests a balanced mix of experience and newer perspectives within the collectively managed sugarcane farms. This balance, however, may present both opportunities and challenges. While longer-tenured ARBs bring institutional knowledge and farming expertise, newer beneficiaries may be more open to adopting modern farming techniques and innovations. Therefore, it is important to foster collaboration between the two groups to ensure that traditional practices are preserved where effective, while also encouraging modernization and diversification to improve farm productivity and income sustainability. Reyes et al. (2022) support these findings and implications as their study discovered that ARBs in Iloilo, a combination of older
and newer sugarcane farmers, contributed positively to farm development when mentorship programs were implemented. Experienced ARBs acted as mentors, while newer beneficiaries introduced innovative practices, creating a synergistic effect that enhanced farm operations and income generation.

Regarding average family monthly income, while some farmers are profiting economically from collective farming, a sizeable portion (47.47%) still struggles to maximize their earnings, as indicated by the income distribution of agrarian reform beneficiaries, where a slight majority (52.53%) earn higher incomes. A significant portion (47.47%) remains in the lower-income bracket. The discrepancy points to the need for focused interventions, such as marketing strategies, access to financial services, and capacity-building programs in farm management. Reducing the disparity and fostering more equal growth among agrarian reform recipients can be achieved by raising farm productivity and financial literacy among the lower-income group.

Gonzales and Salazar (2020) have a similar finding in their study on agrarian reform communities in Negros Occidental, revealing that while collective farming improved overall household earnings, a significant income gap persisted among ARBs due to differences in farm size management, adoption of technology, and participation in value-adding activities. The researchers emphasized the need for continuous support services to ensure that all agrarian reform beneficiaries benefit equally from agricultural reforms.

Table 2

Extent of Income Utilization by Agrarian Reform Beneficiaries in Farm Operations and Maintenance

Items	Mean	Interpretation

As an agrarian reform beneficiary in a collectively managed sugarcane farm, I...		
1. allocate funds for timely cultivation and production in the sugar farm commensurate to the size of the production area	4.26	Great Extent
2. allocate funds for the acquisition of additional farm equipment and machinery	4.16	Great Extent
3. understand that the use and utilization of income results in productivity by way of collective sugar production management and marketing, with sugarcane having a natural supply chain product	4.22	Great Extent
4. allocate income for farm inputs such as fertilizers, pesticides, and irrigation maintenance	4.00	Great Extent
5. set aside funds for farm mechanization, including tractors and other farm equipment	4.04	Great Extent
6. formulate and establish guidelines in production and income utilization as an organization in the collective efforts of sugarcane production, such as working hours and income utilization	3.74	Great Extent
7. allocate income for proper waste management and compliance with environmental regulations related to sugarcane farming	4.00	Great Extent
8. hire an adequate number of farm workers according tot he land area for efficient and quality production	4.23	Great Extent
Overall Mean	4.08	Great Extent

Table 2 presents data on the extent of income utilization by ARBs in collectively managed sugarcane farms in farm operations and maintenance. The overall mean score of 4.08, indicates ARBs' great extent of income utilization, with item 1, "allocate funds for timely cultivation and production in the sugar farm commensurate to the size of the production area," obtaining the highest mean rating of 4.26, interpreted as great extent. Item 6, "formulate and establish guidelines in production and income utilization as an organization in the collective efforts of sugarcane production, such as working hours and income utilization," got the lowest mean rating of 3.74, suggesting a great extent of income utilization.

Items 1 and 6 got the same interpretation, which is a "great extent," however, the latter recorded the lowest mean rating, revealing that respondents utilized income the least in this domain. These findings indicate a critical point for improvement. The results suggest that although ARBs are conscientious about their individual farm operations, they place less attention on creating official, group organizational norms that may simplify operations and guarantee fair income distribution. The results highlight a possible flaw in the groups' collaborative management and institutional governance that, if ignored, may eventually compromise the long-term viability and fair distribution of agricultural benefits. As a result, formal policy-making, participative planning, and organizational system building inside ARB organizations need to be given top priority.

These results are consistent with the research by Akter and Rutsaert (2021), which emphasizes the importance of robust farmer organizations and participatory decision-making frameworks in enhancing smallholder farmers' productivity and resource management. Their study found that the sustainability of collective agricultural endeavors was undermined by the lack of official organizational rules and inclusive governance structures, even in cases where operational support was robust. Additionally, their findings support the current study's conclusions on individual efforts and organized, participatory governance, which guarantee the efficient and equitable running of farms and the use of income.

Table 3

Extent of Income Utilization by Agrarian Reform Beneficiaries in Collectively Managed Sugarcane Farms in Organizational and Social Development

Items	Mean	Interpretation
As an agrarian reform beneficiary in a collectively managed sugarcane farm, I...		
1. undergo financial management training and workshops crucial for project management, production and income utilization	3.51	Great Extent
2. invest in crop diversification, livestock raising, or agro-tourism to reduce dependence on sugarcane and create additional income sources	3.53	Great Extent
3. ensure sustainability of the project with sugarcane as the major source of livelihood and by ensuring clear financial planning and management, including diversification of income utilized from sugarcane production	3.70	Great Extent
4. train and develop potential and capable members and leaders for sustainability and continuous economic viability through income generation	3.37	Moderate Extent

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5. invest in sustainable agricultural practices, such as organic farming and soil conservation, consistent with existing environmental laws	3.68	Great Extent
6. utilize part of the income to explore sugarcane by-products (e.g. muscovado sugar, ethanol production, handicrafts) to increase profitability and market reach	2.92	Moderate Extent
7. allocate funds for marketing strategies, partnerships with cooperatives, and direct selling to consumers to reduce reliance on middlemen and increase revenue	3.22	Moderate Extent
8. contribute a portion of earnings to cooperative funds for healthcare, education and housing support	3.20	Moderate Extent
Overall Mean	3.39	Moderate Extent

Table 3 reveals data on the extent of income utilization of agrarian reform beneficiaries in collectively managed sugarcane farms organizational and social development. The overall mean score is 3.39, indicating sugarcane farmers' moderate extent of income utilization. Item 3, "ensure sustainability of the project with sugarcane as the major source of livelihood and by ensuring clear financial planning and management, including diversification of income utilized from sugarcane production," obtained the highest mean score of 3.70, interpreted as a "great extent." On the other hand, item 6, "utilize part of the income to explore sugarcane by-products (e.g. muscovado sugar, ethanol production, handicrafts) to increase profitability and market reach," got the lowest mean rating of 2.92, indicating ARBs' moderate extent of income utilization in this domain.

Both items with the highest and the lowest mean scores, received the same interpretation which is a "moderate level." However, the item with the lowest mean rating shows the weakness of agrarian reform beneficiaries when it comes to utilizing income to maximize productivity. The moderate utilization of income suggests that while sugarcane farmers are aware of the potential for value-added sugarcane by-products, they may face barriers in fully embracing diversification strategies. The possible barriers include lack of technical knowledge, inadequate capital, insufficient support systems, or limited market access. These factors could prevent farmers from exploring new business opportunities despite recognizing their potential to improve profitability and market reach.

Khandaker et al. (2020) support these implications as their findings revealed the importance of market access and technical training in overcoming barriers to income diversification. Moreover, their research results proved that smallholder farmers, though interested in diversifying income through value-added products, however, they lacked the necessary skills, and access to technology and information on profitable markets.

Table 4

Extent of income utilization by Agrarian Reform Beneficiaries in Collectively Managed Sugarcane Farms in Legal and Financial Obligations

Items	Mean	Interpretation
As an agrarian reform beneficiary in a collectively managed sugarcane farm, I...		
1. allocate a portion of sugarcane income for land amortization payments under The Comprehensive Agrarian Reform Program	3.52	Great Extent
2. dedicate funds to mandatory obligations for workers and members such as the Social Security System, PhilHealth, and Pag-IBIG	3.07	Moderate Extent
3. set aside income for business permits, renewal for legal identity, and maintain legal operations to Cooperatives Development Authority and Securities and Exchange Commission and to the Department of Labor and Employment	4.08	Great Extent
4. ensure that farm workers receive fair wages based on the nd regional national minimum wage laws and agrarian reform labor standards	4.05	Great Extent
5. ensure proper tax declarations and payments, including agricultural income tax and other tax obligations	4.12	Great Extent
6. engage with agrarian reform agencies and legal aid organizations to mediate and resolve disputes with corresponding legal costs	3.54	Great Extent
7. seek guidance from local government units and tax agencies for early and complete tax payments and to maximize available tax exemptions and incentives for agrarian reform beneficiaries	4.15	Great Extent

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8. seek legal guidance from lawyers pertaining to amortization and issues of land ownership and other obligations for purposes of less expense	2.39	Low Extent
Overall Mean	3.62	Great Extent

Table 4 presents information reflecting the extent of income utilization of agrarian reform beneficiaries in collectively managed farms in Legal and Financial Obligations. The overall mean score is 3.62, reflecting a great extent of income utilization by ARBs.

Item 7, "seek guidance from local government units and tax agencies for early and complete tax payments, and to maximize available tax exemptions and incentives for agrarian reform beneficiaries," got the highest mean score of 4.15, indicating respondents' great extent of income utilization The lowest mean score is in item 8, "seek legal guidance from lawyers pertaining to amortization and issues of land ownership and other obligations for purposes of less expense," 2.39, suggesting ARBs' low extent of income utilization in this domain.

Resarch results suggest that whereas beneficiaries of agrarian reform are quite active in requesting help from tax authorities and local government entities for tax-related issues, they are far less active in acquiring legal advice regarding land ownership, amortization, and associated responsibilities. Based on the data disparity, the legal facets of land tenure are either less understood, given less priority, or seen as more complicated and frightening than tax compliance, which is seen as urgent and essential. Due to the low level of involvement in legal proceedings, farmers may be at risk for land disputes, foreclosure, or lost opportunities to protect their property rights. As a result, it is evident that recipients of agrarian reform require more intensive legal education programs as well as easily accessible legal assistance.

Castillo's (2020) study supports this implication by revealing that beneficiaries of agrarian reform are underserved in terms of legal education and services, primarily because of the lack of awareness, financial constraints, and geographic barriers. Castillo's findings confirm that in the absence of intentional interventions, ARBs will likely continue to face vulnerabilities related to financial obligations and land tenure security.

Table 6

Extent of Income Utilization by Agrarian Reform Beneficiaries in Collectively Managed Sugarcane Farms in Expansion and Diversification

Items	Mean	Interpretation
As an agrarian reform beneficiary in a collectively managed sugarcane farm, I...		
1. re-invest in community and organization structures beneficial to the organization and the local community from income derived from sugarcane production	2.93	Moderate Extent
2. invest in collaboration with local businesses and cooperatives, with assistance from financial institutions, to secure better market access and fair pricing	3.54	Great Extent
3. utilize income to meet and comply with eligibility requirements for agriculture grants, subsidies, and financial assistance programs that support rural development	3.96	Great Extent
4. invest in crop diversification, livestock raising, or agro-tourism to reduce dependency on sugarcane and to create additional income streams	3.75	Great Extent
5. utilize part of the income to explore sugarcane by-products (e.g. muscovado sugar, ethanol production, handicrafts) to increase profitability and market reach	2.71	Moderate Extent
6. set aside a percentage of income for emergency situations, unexpected expenses, and future investments for farm improvement	3.27	Moderate Extent
7. utilize income to meet eligibility requirements for agriculture grants, subsidies, and financial assistance programs that support rural development	3.75	Great Extent
8. expand services and projects as additional and alternative sources of income as encouraged by the agrarian reform law	3.84	Great Extent
Overall Mean	3.44	Moderate Extent

The data in Table 6 reveal the extent of income utilization by agrarian reform beneficiaries in collectively managed sugarcane farms in expansion and diversification. The overall mean score of 3.44 suggests a moderate extent of income utilization by sugarcane farmers.

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Item 3, "utilize income to meet and comply with eligibility requirements for agriculture grants, subsidies, and financial assistance programs that support rural development," received the highest mean score of 3.96, indicating a great extent of income utilization by ARBs. Item 5, "utilize part of the income to explore sugarcane by-produces (e.g. muscovado sugar, ethanol production, handicrafts) to increase profitability and market reach," got the lowest mean score of 2.71, showing a moderate extent of income utilization in this domain.

The results imply that ARBs are either unwilling or do not have the resources to diversify into value-added products such as ethanol, muscovado sugar, and handicrafts. This can result from insufficient market knowledge, restricted access to cash, or a lack of technical expertise. Even though respondents are prepared to participate in rural development initiatives and meet grant and subsidy eligibility requirements (as evidenced by Item 3's higher score), they may still consider diversification to be a riskier or more complicated endeavor, mainly if they believe it is called for specialized knowledge or a sizeable upfront investment. These results suggest that although the ARBs are open to opportunities that help them with their fundamental farming operations, they might not yet have the courage or resources to pursue more creative or varied sources of income.

The results are consistent with the research by Baloyi and Mpekoa (2020), which found that market barriers, restricted access to financial resources, and a lack of technical skills were the main barriers keeping farmers from diversifying their revenue sources. The findings also indicate that although farmers expressed interest in financial initiatives related to agriculture, they frequently exhibited hesitancy to invest in new projects because of concerns regarding technical know-how and potential rewards.

Table 7

Difference in the Extent of Income Utilization by Agrarian Reform Beneficiaries in Collectively Managed Sugarcane Farms in Central Philippines in Farm Operations and Maintenance according to the aforementioned variables

Variable	Category	N	Mean Rank	Mann Whitney U	p-value	*Sig. Extent*	Interpretation
Age	Younger	41	107.39	1255.000	0.000		Significant
	Older	117	69.73				
Tenure as Agrarian Reform Beneficiaries	Shorter	79	105.10	1098.000	0.000	0.05	Significant
	Longer	79	53.90				
Average Monthly Family Income	Lower	75	91.77	2192.000	0.001		Significant
	Higher	83	68.41				

The following tables contain data showing the comparative analysis in the extent of income utilization of sugarcane farmers in collectively managed sugarcane farms in the farm operations and maintenance, organizational and social development, legal and financial obligations, and expansion and diversification when grouped and compared according to age, tenure as agrarian reform beneficiaries, and average monthly family income.

Data on the table reveal p-values obtained based on the ratings given by ARBs according to the aforementioned variables reveal significant differences in respondents' income utilization when grouped and compared according to age, tenure as ARBs, and average monthly family income. The p-values for the said demographic variables are 0.000, 0.000, and 0.001 respectively, all below the 0.05 significance level, indicating that the differences are statistically significant.

Therefore, the null hypothesis which states, "There is no significant difference in the extent of income utilization of agrarian reform beneficiaries in collectively managed farms in Central Philippines when grouped and compared according to the aforementioned variables," is rejected.

The data indicate that younger sugarcane farmers have a higher extent of income utilization in farm operations and maintenance than older farmers. This finding is supported by Gonzales and Reyes (2021), who observed that younger farmers tend to be more aggressive and strategic in reinvesting farm income into operations, as well as by Mallari et al. (2020), who found that younger generations are more open to innovation and adaptive farm practices, leading to

When it comes to tenure as agrarian reform beneficiaries, the results reveal that those with shorter tenure exhibit a higher extent of income utilization than their counterparts with longer tenure.

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This conforms with Santos and de Guzman (2022), who explained that new ARBs are often more focused on establishing their farms and tend to invest more heavily in inputs and operational needs.

Regarding average monthly family income, respondents with lower incomes have a higher extent of

income utilization than farmers with higher incomes. This is supported by Lansigan et al. (2019), who found that smallholder farmers with limited financial resources are more likely to allocate a greater proportion of their income to essential farm maintenance. Similarly, Ortega and Ramos (2021) confirm this trend, stating that lower-income households demonstrate more disciplined spending on productive inputs to sustain farm yields.

Table 8

Differences in the Extent of income Utilization by Agrarian Reform Beneficiaries in Collectively Managed Sugarcane Farms in Central Philippines in Organizational and Social Development when grouped and compared according to variables

Variable	Category	N	Mean Rank	Mann Whitney U	p-value	*Sig. Extent*	Interpretation
Age	Younger	41	111.84	1072.500	0.000		Significant
	Older	117	68.17				
Tenure as Agrarian Reform Beneficiaries	Shorter	79	111.34	605.000	0.000	0.05	Significant
	Longer	79	47.66				
Average Monthly Family Income	Lower	75	95.81	1889.000	0.000		Significant
	Higher	83	64.76				

Table 8 presents comparative data on the extent of income utilization by ARBs in collectively managed sugarcane farms in organizational and social development when grouped and compared according to age, tenure as ARBs, and average monthly family income.

The *p-values* obtained based on respondents' ratings according to the aforementioned variables show significant differences in the extent of income utilization of ARBs when grouped and compared accordign to age, tenure as ARBs, and average monthly family income. The said variables obtained p-values of 0.000, 0.000, and 0.000, which are all below the 0.05 significance level. Therefore, the hypotesis which states, "There is no significant difference in the extent of income utilization by agrarian reform beneficiaries in collectively managed sugarcane farms when grouped and compared according to the aforementioned variables," is rejected.

Older ARBs, those with longer tenure, and respondents with higher family incomes consistently recorded lower mean rank scores in terms of income utilization in this domain, suggesting a possible diminishing engagement or prioritization of collective or organizational activities among these groups.

Based on the work of Salazar and De Guzman (2020), older and longer-tenured farmers often demonstrate a preference for maintaining traditional practices rather than investing in organizational advancements, potentially limiting broader development initiatives in agrarian communities.

Furthermore, higher-income farmers may prioritize individual or family-centered investments rather than community development, as indicated by the findings of Bautista and Mendoza (2022), who observed that farmers with greater economic security tend to shift their focus from collective organizational development to personal farm expansion or other private ventures. These insights highlight the need for targeted interventions that re-engage older, longer-tenured, and wealthier ARBs in organizational and social development efforts to ensure equitable participation across all demographics.

Therefore, the null hypothesis that states, "There is no significant difference in the extent of income utilization by agrarian reform beneficiaries when grouped and compared according to the aforementioned variables," is rejected.

The results indicate that age, tenure as agrarian reform beneficiaries, and average monthly family income significantly influence the extent of income utilization of ARBs in organizational and social development. Younger, ARBs, those with shorter tenure, and those with lower family incomes demonstrated higher income utilization compared to their counterparts. These findings imply that younger and newer beneficiaries, as well as those with limited financial resources, may be more motivated or compelled to maximize their available income for organizational and social initiatives. This observation is consistent with the study by Garcia and Alinsub (2020), which highlighted that younger and economically constrained farmers tend to be more entrepreneurial and resourceful, thus proactively engaging in developmental activities to secure their livelihoods.

Similarly, new entrants into agrarian programs often possess a strong drive to establish stability and social structures within their farming communities. According to Lorenzo and Loresco (2021), shorter-tenured farmers are more dynamic in participating in cooperative and organizational activities because they perceive a greater need to strengthen their economic positions. On the other hand, older farmers and those with higher incomes may show less urgency, possibly due to complacency, secure financial standing, or reduced adaptability to organizational innovations.

Table 9

Differences in the Extent of Income Utilization by Agrarian Reform Beneficiaries in Collectively Managed Sugarcane Farms in Legal and Financial Obligations when grouped and compared according to variables

Variable	Category	N	Mean Rank	Mann Whitney U	p-value	*Sig. Extent*	Interpretation
Age	Younger	41	105.70	1324.500	0.000		Significant
	Older	117	70.32				
Tenure as Agrarian Reform Beneficiaries	Shorter	79	106.56	983.000	0.000		
	Longer	79	52.44			0.05	Significant
Average Monthly Family Income	Lower	75	96.01	1874.000	0.000		Significant
	Higher	83	64.58				

Table 9 presents comparative data on the extent of income utilization by ARBs in collectively managed sugarcane farms in legal and financial obligations according to age, tenure and average monthly family income.

The *p*-values obtained based on respondents' ratings according to age, tenure and average monthly family income show significant differences in income utilization by ARBs in collectively managed sugarcane farms when grouped and compared according to the aforementioned variables.

The said variables obtained *p*-values of 0.000, 0.000, and 0.000, which are all below the 0.05 significance level. Therefore, the hypotesis which states, "There is no significant difference in the extent of income utilization by agrarian reform beneficiaries in collectively managed sugarcane farms when grouped and compared according to the aforementioned variables," is rejected.

The study findings reveal significant differences suggest that young farmers, male and those with lower family incomes tend to utilize their income more effectively in managing their legal and financial obligations. These results have implications for policy development programs aimed at enhancing the capacity of farmers to manage financial and legal responsibilities. Younger farmers may be receptive t to adopting modern financial practices or technologies, while older ARBs may require targeted support and training to improve their financial literacy. The gender-based difference, with male farmers showing slightly higher income utilization, may suggest a need for gender-sensitive approaches in agricultural and financial education. Additionally, the lower-income farmers' higher-income utilization rate could reflect a stronger need for efficient financial management due to limited resources. This suggests that programs focusing on financial management, legal compliance, and efficient resource utilization should prioritize younger farmers, make farmers, and those with lower incomes.

These findings align with the research of Nguyen et al. (2021), income farmers, despite their limited resources, often show higher levels of income utilization as they have fewer financial cushions and must optimize their resources.

Table 10

Differences in the Extent of Income Utilization by Agrarian Reform Beneficiaries in Collectively Managed Sugarcane Farms iin Expansion and Diversification when grouped and compared according to variables

Variable	Category	N	Mean Rank	Mann Whitney U	p-value	*Sig. Extent*	Interpretation
Age	Younger	41	103.55	1412.500	0.000		Significant
	Older	117	71.07				
Tenure as Agrarian Reform Beneficiaries	Shorter	79	106.65	976.000	0.000	0.05	Significant
	Longer	79	52.35				
Average Monthly Family Income	Lower	75	96.03	1872.500	0.000		Significant
	Higher	83	64.56				

Table 10 presents comparative data on the extent of income utilization by ARBs in collectively managed sugarcane farms in expansion and diversification according to age, tenure and average monthly family income.

The *p*-values (0.000, 0.000, and 0.000 respectively) obtained based on respondents' ratings according to age, tenure and average monthly family income show significant differences in income utilization by ARBs in collectively managed sugarcane farms when grouped and compared according to the aforementioned variables.

The said variables are all below the 0.05 significance level. Therefore, the hypotesis which states, "There is no significant difference in the extent of income utilization by agrarian reform beneficiaries in collectively managed sugarcane farms when grouped and compared according to the aforementioned variables," is rejected.

The significant differences in the extent of income utilization by agrarian reform beneficiaries in the area of Expansion and Diversification across variables such as age, sex, tenure as agrarian reform beneficiaries, and average monthly family income suggest that demographic and socio-economic factors critically shape financial decision-making among ARBs.

Younger farmers, those with shorter tenure, males, and lower-income respondents show higher engagement in expansion and diversification activities. This aligns with the findings of Pasha et al. (2022), who highlighted that younger and newer entrepreneurs are generally more risk-tolerant and aggressive in pursuing diversification strategies. Similarly, Kim and Park (2020) emphasized that financial behaviors and investment patterns are strongly influenced by socio-economic characteristics, including income and gender, with men often exhibiting higher financial risk-taking behavior than women. Moreover, lower-income farmers' higher income utilization towards expansion supports the findings of Nguyen et al. (2021), who found that financial constraints often motivate smallholders to diversify to mitigate risks and stabilize incomes.

These insights imply that tailored financial and capacity-building programs that consider age, tenure, sex, and income disparities are essential to foster inclusive and sustained rural development.

Conclusions:

Agrarian reform beneficiaries (ARBs) generally utilized their income to a great extent across farm operations and maintenance, organizational and social development, legal and financial obligations, and expansion and diversification. However, specific areas, such as seeking legal guidance and exploring sugarcane by-products for profitability, received only low to moderate attention, indicating opportunities for improvement in strategic financial management. Significant differences were observed when respondents were grouped according to age, tenure as ARBs, and average monthly family income. Younger ARBs, those with shorter tenure, and higher-income ARBs demonstrated more proactive and productive utilization of income, especially in enhancing farm operations, complying with legal obligations, and diversifying livelihood activities. Older ARBs and those with longer tenure showed a more moderate approach to income utilization, particularly in innovation and expansion areas. This suggests a need for targeted interventions to encourage reinvestment and business growth among these groups.

There were no significant differences in farm operations and organizational development when grouped by sex and highest educational attainment, suggesting relatively uniform practices across these demographic groups in basic farm management and social development activities.

Significant differences were noted in legal and financial obligations, and expansion and diversification when respondents were grouped by tenure as ARBs. Those with shorter tenure were more likely to utilize income extensively for compliance and expansion efforts.

Across all groups, the low extent of income utilization for activities such as seeking legal guidance, exploring sugarcane by-products, and reinvesting in organizational structures suggests the necessity of sustained education, mentoring, and technical assistance to help ARBs maximize their income's impact, enhance farm productivity, ensure legal compliance, and promote sustainable business expansion.

Acknowledgment

After months of hard work, the author’s study has finally reached its culmination. This study marks a significant achievement in the author’s academic, professional, and personal journey.

Having worked with small agrarian reform beneficiaries (ARBs) for over two decades, the author has developed a deep interest in improving sugar farm productivity among ARBs. This endeavor, the author believes, must be a shared mission with stakeholders and partners, of which the author is an integral part.

Completing this study fulfills an important part of the author’s path as a rural development worker and agrarian reform advocate, especially among sugar workers. With this in mind, the author dedicates this work to the thousands of ARBs he has worked with, who have served as both inspiration and motivation. Their struggles and aspirations shaped the study’s title and gave depth to its content, content that the author hopes will positively impact their lives.

The author extends heartfelt thanks to his staff, who offered assistance during field visits—an essential part of his role, which involves 80 percent community immersion with sugar workers and marginal farmers in agrarian reform communities.

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The author takes pride in being part of the growing and shining STIWNU community.

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