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Socio-Economic Analysis on Rice Crisis Production

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Abstract- ***Financial, market, emotional, food security, and livelihood issues were the five elements of the study's analysis of the socioeconomic effects of the rice crisis in Rosales, Pangasinan. The findings showed that most of the burden was financial pressure, especially income reduction, and that market price volatility further reduced farmers' negotiating leverage and increased earnings uncertainty. Emotional difficulties decreased resilience and productivity and were mostly associated with debt accumulation and repayment obligations. Despite receiving a lower rating, food inadequacy brought attention to dietary quality tradeoffs and emphasized the significance of variety for household survival. In contrast to urban regions, livelihood disturbances revealed systemic vulnerabilities in rural communities, such as migratory pressures and uneven effects. The results show that the rice crisis is a complex socioeconomic issue that destabilizes farmers in a number of ways rather than being a single economic disruption. To increase resilience and guarantee the sustainability of rice farming communities in Rosales, Pangasinan, the conclusion highlights the critical need for integrated interventions, including price stabilization, easily accessible credit, livelihood diversification, food security programs, and rural development initiatives.***

Index Terms- ***Emotional, Financial, Food Security, Livelihood, Market***

I. INTRODUCTION

To ensure food security, the International Rice Research Institute (IRRI) highlights rice as a significant source of calories and essential nutrients (Hashim, et al., 2024), however, due to variables including population growth, the effects of climate change on yields, and competition for water resources, the globe is facing an increasing problem of rice scarcity (Indriani, et al., 2025). In connection to this, a rice crisis, according to Lee (2026), is when rice production or availability significantly declines, resulting in price increases and possible food shortages. Bringing about food security, the International Rice Research Institute (IRRI) highlights rice as a critical source of calories and key nutrients (Hashim, et al., 2024). However, due to factors including population growth, the impact of climate change on yields, and competition for water resources, the globe is facing an increasing problem of rice scarcity (Sachan, et al., 2021). This crisis brought to light the need for more resilient food systems as well as the fragility of the world's rice markets worldwide.

Rice crises are nothing new in the Philippines, where the majority of the population consumes rice. Due to its heavy reliance on imports, the nation is vulnerable to changes in the price of rice around the world (Ofreneo, 2026). Government initiatives to achieve rice self-sufficiency have yielded mixed results, with obstacles like poor infrastructure, farmers' restricted access to credit, and climate change impeding advancement (Santiboon, et al., 2024).

Despite being a province that produces rice, Rosales, Pangasinan, ought to have rice shortages. One of the provinces in the Philippines that was greatly impacted by the rice crisis is agricultural methods, farmer income, and market access, all of which can have an impact on how severe a crisis is. It is among the regions of the Philippines where the rice crisis had a major impact. Pangasinan is the nation's third-largest rice grower (Herliana, et al., 2025), however, researchers have not looked yet directly into Rosales' vulnerabilities or the effects of a crisis. Making educated decisions requires an understanding of how a rice crisis would appear in Rosales. The province is regarded as one of the finest producers of rice in the nation and is well-known for its enormous rice fields. Both the price of rice and the income of farmers have decreased as a result of the drop in demand for locally grown rice. In addition to endangering the farmers' livelihood, the circumstance may have made poverty in the region worse. A number of internal and foreign causes have contributed to the rice crisis. Rice producers' yields and productivity have decreased due to internal problems such soil

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degradation, water constraint, and antiquated agricultural methods. Moreover, the difficulties local agricultural farmers face has been made worse by external factors such as changes in the environment, trade regulations, and market swings. These elements have combined to create a complicated and multidimensional dilemma that jeopardizes Rosales' social well-being, economic stability, and food security. Nevertheless, there is still a significant study void pertaining to the situation of Rosales, Pangasinan, notwithstanding their contributions. Although more comprehensive studies provide insightful viewpoints, they can lack the amount of detail required to guide focused local responses. Therefore, a quantitative analysis that explores the dynamics of the rice crisis in Rosales and thoroughly examines its effects on agriculture and the economy is required.

The findings of the study may shed light on the issue and advise decision-makers, farmers, and other interested parties on the essential actions to lessen the effects of the rice crisis. The study's importance stems from its ability to add to the body of information regarding the effects of the rice crisis in a particular area. To solve the issue and strengthen the resilience of the rice business, the study may also offer evidence-based suggestions to farmers, legislators, and other interested parties. Rosales, Pangasinan's rice crisis is an urgent problem with significant ramifications for the region's agricultural and economic prosperity. This research proposal offers a chance to produce practical insights and guide policy decisions to lessen the effects of the crisis and promote resilience within the local agricultural sector through a quantitative study that fills the current research gap.

II. METHODOLOGY

The study employed a descriptive–correlational quantitative research design to examine the agricultural and socio-economic impacts of the rice crisis in Rosales, Pangasinan. Data were collected using a self-developed structured questionnaire measured through a Likert scale. The instrument was validated by experts and pilot tested, with reliability assessed using Cronbach's alpha. The respondents consisted of 354 rice farmers using Cochran's formula (0.05 margin of error) and stratified random sampling to ensure barangay representation. Data were gathered through face-to-face surveys during farmer meetings and other accessible venues after obtaining informed consent. Collected data were analyzed using descriptive statistics such as frequency, percentage, weighted mean, independent t-test, and ANOVA.

III. RESULTS AND DISCUSSIONS

Table I. Level of Socio-Economic Crisis Production in terms of Financial Challenges

In terms of financial difficulties, Table 1 shows the perceived degree of the socioeconomic crisis production. The dramatic drop in rice farmers' income with a reflected weighted mean of 3.77 is the most severe impact that farmers have to deal with, indicating that income loss is the biggest financial obstacle the respondents confront.

Indicators	Weighted Mean	Descriptive Equivalent
1. The rice crisis has caused a significant decrease in my income from rice farming.	3.77	Strongly Agree
2. I have struggled to maintain a steady income due to fluctuations in rice prices during the crisis.	3.73	Strongly Agree
3. Decreased profitability from rice farming has impacted on my ability to cover household expenses.	3.67	Strongly Agree
4. I have had to seek additional sources of income outside of rice farming to make ends meet.	3.68	Strongly Agree
5. The rice crisis has	3.71	Strongly

led to financial strain and uncertainty about the future of my farming livelihood.		Agree
Average Weighted Mean	3.71	Strongly Agree

The information in Table I illustrates the financial difficulties rice farmers encounter during a socioeconomic crisis, with the drop in rice farming revenue being the most urgent problem echoing a weighted mean of 3.77. Liu (2026) highlights income instability as farm households' primary vulnerability during market volatility. Similar trends were noted in the Philippines by Epule, et. Al (2021), who noted that price volatility and structural inefficiencies in the rice market caused rice farmers' incomes to drop dramatically. The weighted mean values in the table highlight the widespread extent of financial distress by indicating that farmers strongly agree across all categories. Price changes make it difficult to prevent a consistent income as magnified with a weighted mean of 3.73. This reflects the wider issue of agricultural price instability, which academics have long recognized as a major obstacle to rural economic resilience. According to Grewal, et. Al (2021), price fluctuation damages farmers' confidence in the sustainability of their livelihoods in addition to undermining profitability. This is consistent with the farmers' assessment of financial uncertainty with a weighted mean of 3.71, which highlights the planning and psychological difficulties that come with unstable economies. According to Sokra, et . al (2026), farming income uncertainty frequently results in lower investment in agricultural inputs, which prolongs cycles of vulnerability and low productivity.

Regardless of whether it is slightly lower, the indicator on decreased profitability affecting household costs with a weighted mean of 3.67, nevertheless, shows how income loss has a noticeable effect on domestic financial management. Studies like those by Nodin, et al (2023) have demonstrated that household-level effects of agricultural crises frequently demonstrate up as lower expenditure on nutrition, healthcare, and education, which increases the likelihood of long-term poverty. This implies that although farmers view a drop in income as the most immediate shock, household welfare ripple effects are as well important in determining socioeconomic outcomes.

The need to look for other sources of income with a noticeable weighted mean of 3.68, is consistent with research on rural livelihood diversification. Ellis (2000) noted that when agricultural revenue is insufficient to meet household requirements, diversification is frequently a survival tactic rather than a purposeful decision. This frequently translates into seasonal migration, informal labor, or small-scale entrepreneurial endeavors in the Philippine environment, which may offer temporary respite but seldom replace steady agricultural income.

When combined, the overall weighted mean of 3.71 shows that farmers strongly agree that the rice crisis has severely damaged their financial circumstances. This supports the claim that socioeconomic crises in agriculture are structural risks to rural resilience rather than just decreased profitability. Policy changes that stabilize rice prices, increase market accessibility, and offer safety nets to protect people from income shocks are necessary to address these issues. Without such actions, the cycle of financial hardship and uncertainty that has been shown in literature and data is likely to continue, endangering the long-term viability of communities that grow rice.

Table 2 Level of Socio-Economic Crisis Production in terms of Market Price Instability

Indicators	Weighted Mean	Descriptive Equivalent
1. Market prices for rice have been highly unstable during the rice crisis.	3.7	Strongly Agree
2. Fluctuations in rice prices have made it difficult to predict future earnings from rice sales.	3.72	Strongly Agree
3. I have experienced challenges in negotiating fair prices	3.64	Strongly Agree

for my rice produce in the market.		
4. Price volatility has contributed to income uncertainty and financial insecurity for rice farmers.	3.68	Strongly Agree
5. The rice crisis has exposed vulnerabilities in the market that have affected farmers' economic well-being.	3.78	Strongly Agree
Average Weighted Mean	3.71	Strongly Agree

According to Table 2, rice farmers strongly concur that their livelihoods have been greatly impacted by market price volatility during the rice crisis, with an average weighted mean of 3.71. The exposure of market vulnerabilities is the highest-rated indicator with a weighted mean of 3.78, indicating that farmers believe structural flaws in the rice industry are a significant factor in their financial instability. This is consistent with the study showing that agricultural markets in underdeveloped nations frequently lack resilience mechanisms, making farmers extremely vulnerable to shocks from the outside world.

The cyclical nature of staple crop markets is exemplified by the volatility of rice prices with a weighted mean of 3.7 and the challenge of forecasting future earnings with a weighted mean of 3.72. Epule, et. Al (2021) assert that price volatility in rice markets is especially detrimental since rice is a staple meal and a major source of income, thus changes impact both producers and consumers at the same time. Due to farmers decreased revenue and households' increased food expenses, this dual effect exacerbates the socioeconomic crisis.

A weighted mean of 3.64 indicates systemic problems with market access and bargaining power that make it difficult to negotiate reasonable rates. Due to their reliance on middlemen and fragmented supply chains, smallholder farmers frequently lack influence in price negotiations, according to Sokra, et. Al (2026). With a weighted mean of 3.68, this poor negotiating stance increases income uncertainty, perpetuating the data cycle of financial instability. These indicators' convergence emphasizes that market volatility is a systemic vulnerability rather than just a transient disturbance. The broad consensus among farmers across all metrics indicates that fluctuations in rice prices jeopardize both immediate financial security and the sustainability of long-term livelihoods. This is supported by the study of Durand-Morat and Mulimbi (2024) which frames price volatility as a major cause of rural poverty and economic fragility.

When every factor is considered, data shows that rice farmers view fluctuation in market prices as a key aspect of the socioeconomic crisis, with repercussions ranging from erratic incomes to diminished negotiating strength. This interpretation is supported by Indriani, at. Al (2025), which highlights how staple crop market volatility increases vulnerability, disturbs household wellbeing, and reveals structural flaws in agricultural economies. Interventions including better market infrastructure, stronger farmer cooperatives to increase bargaining power, and price stabilization regulations are necessary to address these issues.

Table 3 Level of Socio-Economic Crisis Production in terms of Emotional Challenges

Indicators	Weighted Mean	Descriptive Equivalent
1. I have accumulated debt because of borrowing to cover expenses during the rice crisis.	3.58	Strongly Agree
2. Financial stress related to debt repayment has affected my mental well-being and farm productivity.	3.44	Strongly Agree
3. The rice crisis has increased pressure to repay loans, leading to higher	3.41	Strongly Agree

levels of stress.		
4. I have faced difficulties in accessing credit and financial assistance to support my farming activities.	3.41	Strongly Agree
5. Farm debt incurred during the crisis has limited my ability to invest in farm improvements and expansion.	3.55	Strongly Agree
Average Weighted Mean	3.48	Strongly Agree

With an average weighted mean of 3.48, or "Strongly Agree," Table 3 illustrates the emotional difficulties rice farmers encounter during the socioeconomic crisis. The highest indicator, with a weighted mean of 3.58, indicates that debt accumulation is a significant burden, demonstrating how financial strain translates into psychological distress. This result is consistent with research like that conducted by Gerber et al. (2019), which highlights how debt among farmers frequently results in increased anxiety and decreased output, establishing a feedback loop between emotional and financial hardship.

With a weighted mean of 3.44, the effect of debt repayment stress on agricultural productivity and mental health highlights the connection between psychological health and economic uncertainty. According to research by Liu (2026), there is a clear correlation between financial stress and both greater susceptibility to burnout and decreased job efficiency in farming households. In a similar vein, the pressure to repay loans, which has a weighed mean of 3.41, indicates the ongoing stressors found in rural livelihoods, where emotional strain is exacerbated by limited credit availability. With a weighted mean of 3.41, farmers also report having difficulty getting financial aid, which is consistent with research by Herliana and Khoerani (2025) showing that poor credit availability limits resilience in times of crisis and reinforces poverty traps. With a weighted mean of 3.55, the inability to make investments in agricultural upgrades because of debt further demonstrates the connection between emotional difficulties and limited growth prospects, which exacerbates long-term susceptibility. Overall, the statistics and literature support the idea that debt and financial stress during times of crisis weaken farmers' emotional resilience in addition to causing economic instability. This dual burden emphasizes the necessity of integrated solutions, which combine financial assistance with mental health services to improve farming communities' psychological and economic well-being.

Table 4 Level of Socio-Economic Crisis Production in terms of Food Inadequacy Challenges

Indicators	Weighted Mean	Descriptive Equivalent
1. The rice crisis has heightened concerns about food security and access to nutritious food for my family.	3.23	Agree
2. Decreased income from rice farming has impacted on my ability to afford a balanced diet.	3.08	Agree
3. I have had to make sacrifices in food consumption to cope with financial constraints caused by the crisis.	3.05	Agree
4. Food insecurity has led to nutritional deficiencies and health problems among family members.	2.84	Agree
5. The rice crisis has underscored the importance of diverse food sources and income streams for better resilience.	3.25	Agree
Average Weighted Mean	3.09	Agree

With an average weighted mean of 3.09, Table 4 shows that rice farmers generally concur that the crisis has led to issues with food inadequacy. Maxwell and Smith (1992) contend that livelihood diversification is a crucial resilience strategy against food insecurity, and the highest indicator, with a weighted mean of 3.25, highlights the significance of diversifying food sources and income streams. The vulnerability of farming households is highlighted by concerns about food security and access to nutrient-dense food, with a weighted mean of 3.23. This is in line with Hashim, et. al (2024) finds that income shocks directly lower dietary quality in rural populations. Reduced income has an impact on the ability to afford a healthy diet with a weighted mean of 3.08, and food consumption sacrifices with a weighted mean of 3.05 are coping strategies that frequently result in lower nutritious intake. This is consistent with Sokra, et. Al (2026) observation that households must prioritize caloric adequacy above nutritional diversity due to financial constraints. Despite receiving the lowest rating, nutritional deficiencies and health issues with a weighted mean of 2.84 are nonetheless significant, supporting the findings of Santiboon, et.a al (2024), who connected food insecurity to long-term health concerns. Overall, the facts and literature support the necessity for integrated food security and income diversification measures because food inadequacy during crises is not only about decreased consumption but also about degraded nutrition and resilience.

Table 5 Level of Socio-Economic Crisis Production in terms of Livelihood Shocks

Indicators	Weighted Mean	Descriptive Equivalent
1. Rural communities in my area have become more vulnerable to economic shocks due to the rice crisis.	3.49	Strongly Agree
2. The economic impacts of the rice crisis have disproportionately affected rural livelihoods compared to urban areas.	3.45	Strongly Agree
3. Vulnerabilities in rural livelihoods have been exacerbated by limited access to resources and support services.	3.42	Strongly Agree
4. I have observed increased migration from rural areas to urban centers because of economic hardships caused by the crisis.	3.25	Strongly Agree
5. The rice crisis has highlighted the need for targeted interventions to strengthen rural livelihoods and resilience.	3.57	Agree
Average Weighted Mean	3.44	Strongly Agree

The highest indicator, with a weighted mean of 3.57, emphasizes the need for focused interventions to strengthen rural resilience, echoing Liu's (2026) framework on sustainable livelihoods, which emphasizes the significance of institutional support in mitigating vulnerability. Table 5 highlights livelihood shocks experienced by rural communities during the rice crisis, with an overall weighted mean of 3.44, interpreted as "Strongly Agree." With a weighted mean of 3.49, farmers also perceive increased community vulnerability, which is in line with Herliana, et. al (2025) observation that rural economies are disproportionately vulnerable to shocks because of their reliance on agriculture and lack of diversification.

According to Epule, et. al (2021), who noted that rural households frequently lack access to infrastructure and services that cushion urban people during crises, the disproportionate impact on rural and urban livelihoods, with a weighted mean of 3.45, reflects structural inequities. These vulnerabilities are further exacerbated by limited access to resources and support services, with a weighted mean of 3.42, supporting results by Parajulee, et. al (2026) about

the role of resource constraints in deepening livelihood fragility. Vinci, et. al (2023) identified rural-to-urban migration as a response to economic suffering, but it frequently introduces new issues. Migration to urban centers, with a weighted mean of 3.25, demonstrates a coping technique. In general, livelihood shocks during the rice crisis reveal systemic rural vulnerabilities, highlighting the critical need for focused, resilience-building measures, according to data and literature.

IV. CONCLUSION

Owing to the combined data from Rosales, Pangasinan, the socioeconomic crisis has taken several forms, including financial, market, emotional, food security, and livelihood shocks, all of which increase rice farmers' vulnerability. The most pressing issue was financial difficulties, especially a drop in income, and market volatility increased uncertainty by weakening farmers' negotiating position and earnings predictability. Productivity and resilience were further undermined by emotional strain, which was primarily linked to debt accumulation and repayment obligations. Despite receiving a lower rating, food inadequacy brought attention to dietary quality tradeoffs and emphasized the significance of variety for household survival. Lastly, livelihood shocks revealed structural vulnerabilities in rural areas, such as migratory pressures and disparate effects in comparison to metropolitan areas.

When considered collectively, these results show a multifaceted problem in which mental suffering, nutritional compromise, and diminished rural resilience are all directly linked to economic instability. Academic research supports this interdependence by highlighting the fact that agricultural crises are systemic disturbances that impact social, psychological, and health effects rather than discrete financial occurrences. Farmers view the situation as both acute and systemic, necessitating more than temporary relief, according to the convergence of strong agreement across indices.

These findings demonstrate how serious and multifaceted the problem is, directly endangering farmers' food security, income stability, and general economic resilience. The Local Government Units and financial organizations like Land Bank and rural banks should implement a low-interest, farmer-friendly financing program designed for crisis recovery and production needs, given the high levels of emotional difficulties found in the study.

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