
Gawat" (A Period of Scarcity) as a Social Phenomenon: A Comparison of Challenges among Local Farmers

CECILIO O. MOLINA, JR.

Pangasinan State University-School of Advanced Studies
ceciliomolinajr@yahoo.com

ARMANDO D. JUNIO, Ph.D

Pangasinan State University-School of Advanced Studies

Abstract — This study examined the profile of farmers in the 58 barangays of Umingan, Pangasinan, during May to August 2025, assessed the challenges brought by Gawat across economic, social, political, and environmental dimensions, and determined the relationship between farmers' profile variables and these challenges. The study found that many farmers were older, married, and predominantly male, with most having reached basic secondary education. The challenges brought by Gawat were widely experienced across the four dimensions, including income deficits, limited access to credit, delays in subsidies, weakened community support, ineffective programs, and soil degradation. Results showed that age, sex, civil status, educational attainment, and main crop season income had no significant relationship with the challenges experienced by farmers. In contrast, area cultivated showed a significant relationship, indicating that challenge severity increases as farm size expands. Estimated marginal means further confirmed a positive relationship between cultivated land area and the magnitude of challenges. These findings suggest that Gawat is broadly experienced across farmer groups, but its severity becomes greater among those cultivating larger areas.

Keywords: *gawat, scarcity, lean moths, Pangasinan*

I. INTRODUCTION

Rural economies in developing countries are predominantly reliant on agriculture and natural resources, which serve as the foundation for livelihoods and community development (Allieu, 2019). In the Philippine agrarian landscape, smallholder farmers faced various challenges that hindered their resilience, most notably seasonal resource scarcity. In the Ilocos Region, this vulnerability was prominently exemplified by the Pangasinan phenomenon of "Gawat."

In Lorenzo Fernandez Cosgaya's *Diccionario Pangasinan-Español* (1731/1865), *gawat* was defined as the vulnerable period before the rice harvest when subsistence reserves ran low and new crops were still seedlings (as cited in Rosario, 2025). This lean period traditionally manifested from July to September, a timeframe widely recognized in Philippine agriculture as a period of severe household food insecurity and income dips between main harvest cycles (PhilRice, 2020). Consequently, during those months, farming families were forced into a state of vulnerable anticipation, managing dwindling food stocks without any structural guarantee of immediate relief (Rosario, 2025; World Bank, 2022).

While Rosario (2025) analyzed *Gawat* in terms of its cultural significance, and other studies focused primarily on economic and food insecurity (PhilRice, 2020; World Bank, 2022), there remained a critical research gap in analyzing how these phenomena manifested across broader social, political, and environmental domains at the municipal level.

Furthermore, few studies had examined how these seasonal experiences varied across different demographic characteristics, this study investigated the challenges and opportunities of local farmers experienced during *Gawat* in eastern Pangasinan, across the 58 barangays of Umingan, Pangasinan. Specifically, the research examined the economic, social, political, and environmental dimensions of *Gawat*, focusing on how those seasonal challenges and opportunities connected with the farmers' socio-economic profiles.

Finally, the study analyzed the variations and relationships between those encountered challenges and received opportunities, while evaluating the hard and soft infrastructure support provided by local government units to help farmers navigate that period. In conclusion, those findings served as the foundational basis for a proposed capacity-building program. Significantly, this research expands the discourse on *Gawat* by establishing that this seasonal phenomenon

extends beyond transitory income shocks to affect the social, political, and environmental realities of rural households. Practically, the empirical data provide the Umingan municipal government, barangay councils, and localized non-government organizations (NGOs) with a targeted baseline to address structural deficiencies

Literature Review

Hardship among local farmers during lean months after rice planting imposes economic, social, political, and environmental challenges that span from local Philippine communities to the broader ASEAN region. Economically, farmers face difficulty raising capital to finance their farms; in Lao PDR, credit cooperatives are scarce, and farmers have no access to international markets (IRRI, 2023). Across ASEAN, food price shocks and rising production costs continue to challenge farming households despite increased agricultural production (ASEAN, 2025). In Bangladesh, 11.9 million people faced acute food insecurity during the lean season due to high food inflation and constrained economic access to food (Global Report on Food Crisis, 2024). Environmentally, climate disruptions including extreme weather events worsen farmer vulnerability throughout the region (ASEAN, 2025).

In the Philippine context, these multi-dimensional challenges are particularly pronounced among local rice farmers. Fertilizer costs reached ₱4,186- ₱8,738 per hectare, with the average cost of production increasing from ₱65,000 in 2023 to ₱75,000 in 2024 while farm productivity remained stagnant (Lim, 2025). Socially, 64.6% of rice farming households in Calauan, Laguna experienced food insecurity, with farming families reducing meal frequencies and dietary quality during lean months (UKDR UPLB, 2025). In Nueva Ecija, 80% of farming families are married with multiple dependents, creating heavy household dependency burdens during seasonal scarcity when income is minimal (Lagasca et al., 2024). Demographically, the average age of Filipino farmers is now 55–59 years, with over 50% falling in the 41–60 age bracket across provinces, creating vulnerability as older farmers face seasonal scarcity with reduced physical capacity (Palis, 2020; SEARCA, 2023).

Environmentally, extreme climatic events pose significant challenges to Philippine rice farmers during lean seasons. Strong typhoons, destructive floods, and drought impact heavily on

agriculture and fisheries every year (PhilRice, 2018). In Central Luzon, water stress during the dry season forces farmers to invest in private irrigation systems, diverting scarce cash from food purchases and creating additional financial burdens (Delos Reyes & Santos, 2023). Politically, agricultural programs face funding constraints, with limited government support reaching farmers during critical lean periods. The Philippine agricultural water sector suffers from long-standing systemic gaps in public management, including failures in state planning and poor operation and maintenance (Inocencio & Barker, 2018).

In the Ilocos Region, these multi-dimensional challenges are prominently exemplified by the Pangasinan phenomenon of "Gawat." In Lorenzo Fernandez Cosgaya's *Diccionario Pangasinan-Español* (1731/1865), gawat was defined as the vulnerable period before the rice harvest when subsistence reserves run low and new crops are still seedlings (as cited in Rosario, 2025). This lean period traditionally manifests from July to September, a timeframe characterized by severe household economic vulnerability (income dips), social strain (food insecurity), and environmental stress (crop risks). While Rosario (2025) analyzed Gawat in terms of its cultural significance, and other studies have focused primarily on economic and food insecurity dimensions, there remains a critical research gap in analyzing how Gawat manifests across broader social, political, and environmental domains at the municipal level in Pangasinan. In Pangasinan specifically, 5.7K farmers were affected by weather disturbances in October 2025, including typhoons that caused havoc to mostly rice farmers during their first cropping season (Philippine News Agency, 2025), illustrating the environmental challenges that compound economic hardship during Gawat.

The literature confirms that hardship among local farmers during lean months after rice planting is a multi-dimensional phenomenon affecting economic, social, political, and environmental realities of rural households from ASEAN to Pangasinan. Across ASEAN, farmers face credit constraints, rising costs, and climate disruptions (ASEAN, 2025; IRRI, 2023). In the Philippines, landlessness, aging farmers, input cost inflation, and extreme weather intensify vulnerability during lean seasons (Lim, 2025; Palis, 2020; SEARCA, 2023). At the local Pangasinan level, Gawat represents a culturally specific manifestation of these economic, social, political, and environmental challenges, with the traditional July–September timeframe creating localized vulnerability that reflects but also differs from ASEAN and national patterns.

II. METHODOLOGY

This chapter deals with respondents and sampling technique, instrumentation, data collection and statistical treatment

Respondent of the Study

This study examined the 'Gawat' phenomenon, a recurring lean season between cropping cycles from June-September characterized by reduced income, depleted food stocks, and heightened economic vulnerability among the rice farming households across all 58 barangays of Umingan, Pangasinan.

A total of 400 respondents were selected through purposive-convenience sampling, all of whom were household heads actively engaged in palay farming. In cases where the male household head was absent, the female spouse actively managing farm operations and household decision-making served as the respondent.

The study included both Registry System for Basic Sectors in Agriculture (RSBSA)-registered and non-registered farmers, whether tenants or landowners, as long as palay farming constituted their primary source of income from the 58 barangays of Umingan, Pangasinan.

Statistical Treatment of the Study

The following statistical measures and methods were used to derive valid and reliable results and interpret the data.

The researcher utilized frequency counts, percentages, and ranks to describe the socio-economic profile of respondents for Statement of the Problem number 1, which covered age, sex, civil status, number of dependents, educational background, main crop season income, land ownership, land size, and source of capital.

For Statements of the Problem numbers 2, the researcher employed the Average Weighted Mean (AWM) and a 5-point Likert scale to evaluate challenges encountered by local rice farmers brought phenomenon 'Gawat' in Umingan, Pangasinan. The results of the Average Weighted Mean

were interpreted using a five-level scale of measurement. The table below illustrates the specific mean intervals and their corresponding qualitative descriptors used to assess the severity of the 'Gawat' challenges:"

Scale	Mean Scale	Descriptive Equivalent	Transmuted Rating
5	4.50-5.00	Highly Agree (HA)	Extremely Challenging (EC)
4	3.50-4.49	Agree (A)	Very Challenging (VC)
3	2.50-3.49	Moderately Agree (MA)	Moderate Challenging (MC)
2	1.50-2.49	Disagree (D)	Slightly Challenging (SC)
1	1.00-1.49	Strongly Disagree (SD)	Not a Challenging (NC)

For Statement of the Problem number 3, the researcher applied MANOVA to determine significant differences across the profile variables in terms of challenges brought by the phenomenon "Gawat".

III. RESULTS AND DISCUSSION

Chapter 1 Profile of the Farmers n=400

Variables	Categories	f	%
Age	Below 40	67	16.75
	40 - 59	237	59.25
	60 and above	96	24.00
Sex	Male	351	87.75
	Female	49	12.25
Civil Status	Married	360	90.00
	Widowed	24	6.00
	Single	2	0.50
	Common Law Partner	14	3.50
Educational Background	Elementary Graduate	29	7.25
	Elementary Level	31	7.75
	High School Graduate	250	62.50
	High School Level	52	13.00
	College Graduate	9	2.25
	College Level	8	2.00
	Technical Vocational	21	5.25
Main Crop Season Income	₱10,000 and below	336	84.00
	₱10,001 to ₱15,000	54	13.50
	more than ₱15,000	10	2.50
Land Area Cultivated	Below 1 hectare	133	33.25
	1 hectare and above	267	66.75
Cooperative Membership	Member	72	18.00
	Not a member	328	82.00

The data revealed that the majority of rice farmers across the 58 barangays of Umingan, Pangasinan, were predominantly male (87.75%) and fell within the 40–59 age bracket (59.25%). These results reflect the "aging farmer phenomenon" currently observed among local farmers in the Philippines, where the agricultural workforce is increasingly composed of an older generation. A similar finding was reported by Palis (2020), who documented that over 50% of Filipino rice farmers fell in the 41–60 age bracket across provinces like Agusan del Norte, Iloilo, and Isabela.

On the other hand, a notably small number of female participants was observed, representing only 12.25% of the total respondents. This disparity highlights the traditional gender concentration within the region's rice farming sector and underscores the challenge of engaging women and the younger demographic in active agricultural production. This aligned with national trends where males dominated farm management roles despite efforts to promote gender inclusivity (PhilRice, 2023).

When analyzed according to their civil status, the rice farmer in Umingan, Pangasinan were predominantly married which accounted for 360 (90.00%) rice farmers. This high rate of marriage implied a shared responsibility between spouses and a heavy burden of household dependency, suggesting that seasonal resource scarcity during Gawat did not merely disrupt individual livelihoods but directly threatened the food security and socioeconomic stability of entire families. Similarly, Lagasca et al. (2024) found that 80% of farmers in Licab, Nueva Ecija were married, which illustrated that family-oriented responsibility was a defining characteristic of rice farming across the region.

The data revealed that the majority of rice farmers in Umingan, Pangasinan, were high school graduates $n=250$ (62.50%), indicating that most of the respondents have completed basic secondary education. In contrast, the proportion of farmers who completed a college degree was relatively low, at only $n=9$ (2.25%). The remaining distribution was scattered across minor proportions representing those who attained partial college education, technical-vocational training, or varying levels of elementary and incomplete secondary schooling. This educational distribution highlights the need for accessible, practical training fields, especially during 'Gawat.' When farmers run out of money during these lean months, their formal basic education does not provide the advanced management skills needed to navigate such severe economic crises. This directly reinforces the empirical data of Peña and Bathan (2023), who established that targeted

training and localized agricultural seminars are essential to eliminate technical inefficiencies among traditional producers.

With regards to main crop season income during 'Gawat,' the majority of respondents 336 or 84.00% earned ₱10,000 or less. Conversely, only 10 or 2.50% earned more than ₱15,000, while the remaining 54 or 13.50% fell within the ₱10,001 to ₱15,000 range. The results indicated that rice farmers from various 58 barangay in Umingan, Pangasinan, face significant financial constraints during this period, leaving them heavily dependent on the upcoming palay harvest for economic recovery. This finding paralleled results from Sanglay et al., (2021), who reported that the majority of Philippine rice farmers earned monthly incomes below ₱10,000, reinforcing low earnings patterns among tenant-dominated households.

The data show that a predominantly large portion of the respondents (82.00%, $f=328$) do not hold cooperative membership. Being a non-member of a cooperative heavily intensifies the challenges farmers experience during the 'Gawat' period by cutting them off from collective resources. In the absence of a cooperative framework, most of these independent producers are excluded from low-interest credit lines and subsidized farming materials, forcing them to navigate seasonal hardships without an organizational safety net. The results resonate on the study of Liu et al. (2023) in *Frontiers in Sustainable Food Systems*, who find that rural cooperatives function as a critical defense mechanism against household poverty vulnerability; their study established that unassociated smallholders experience significantly higher economic distress during seasonal economic downturns due to a total lack of collective risk-sharing networks and resource pooling.

Challenges Encountered by Farmers Brought by Gawat

The farmers across the 58 barangays of Umingan, Pangasinan, were surveyed to evaluate the extent of the challenges brought by the phenomenon “Gawat”, a recurring period of scarcity. The resulting data, presented in the following tables.

TABLE 1
LEVEL OF ECONOMIC CHALLENGES TO LOCAL FARMERS BROUGHT BY GAWAT

Indicators	Mean	Verbal Description
1. In times of Gawat, farm input costs (e.g., fertilizers, seeds, pesticides, fuel) have sharply increased, reducing my profit as a farmer."	3.78	Very Challenging
2. Limited access to formal credit facilities during "Gawat" forces me to rely on informal lenders with high interest rates.	3.84	Very Challenging
3. During Gawat, delays in government subsidies and financial paid have worsened my cash flow problems.	3.87	Very Challenging
4. During Gawat, limited availability of financial support has hindered my ability to secure funding for my farm.(e.g. crop insurance, cooperative loans)	3.82	Very Challenging
5. Insufficient financial support from government programs during "Gawat" hinders my ability to recover from economic shocks.	3.84	Very Challenging
General Weighted Mean	3.83	Very Challenging

Legend: 1.0-1.49 Not Challenging (NC) 1.5 - 2.49 Slightly Challenging (SC) 2.5 - 3.49 Moderately Challenging (MC)
3.5-4.49 Very Challenging (VC) 4.5-5 Extremely Challenging (EC)

Economic Challenges

The economic impact of the Gawat phenomenon on local farmers across the 58 barangays of Umingan, Pangasinan, was characterized by heightened financial insecurity, delayed assistance, and limited access to formal credit, as reflected in the General Weighted Mean of 3.83 translated as “Very Challenging”.

The most pressing issue identified was the delay in government subsidies and financial aid as evidenced by a weighted mean of 3.87 interpreted as “Very Challenging”, which stood out as the primary

source of economic distress. This finding aligns with Amaglobeli et al. (2024), who identify the delayed distribution of subsidized agricultural resources as a major failure of state-led programs. The authors observe that when such subsidies are delayed, the resulting lack of ready cash may force farmers such as those in Umingan, Pangasinan into desperate survival strategies. These include reducing food consumption or liquidating productive assets like equipment and livestock, actions which ultimately compromise the farm's future productivity to meet immediate survival needs. Such delays left farming households without essential financial support, intensifies economic challenges among farmers amid “Gawat” phenomenon.

In contrast, despite obtaining the lowest mean among the indicators, the sharp increase in farm input costs was rated 3.78, interpreted as “Very Challenging”. The significant economic distress caused by escalating input aligns with the findings of Lim (2025), who reports that rising agricultural expenses are equivalent to a direct drop in real income for farming households. Furthermore, the author also identifies fertilizer as the most expensive production input, with costs reaching as high as ₱8,738 per hectare. This suggest a financial strain among farmer in Umingan Pangasinan is further compounded by high costs for fuel and irrigation, which directly lower the primary driver of income loss. Most importantly, the study confirms that when such costs diminish financial viability, low-income households are forced into desperate coping mechanisms, such as allocating less spending on essential needs like nutritious food and healthcare just to survive (Lim, 2025).

TABLE 2
LEVEL OF SOCIAL CHALLENGES TO LOCAL FARMERS BROUGHT BY GAWAT

Indicators	Mean	Verbal Description
1. The social impacts of "Gawat" have led to reduced access to nutritious food, affecting household health and well-being.	3.75	Very Challenging
2. Limited access to healthcare services during "Gawat" exacerbates our family's health issues related to food insecurity and poor living conditions.	3.75	Very Challenging
3. Community support networks have been insufficient in helping farmers like me to cope with social and economic challenges during "Gawat."	3.76	Very Challenging
4. Social isolation due to rural location and lack of connectivity during "Gawat" hinders my access to information and resources.	3.84	Very Challenging
5. Inequitable distribution of resources and opportunities during "Gawat" perpetuates poverty among small-scale farmers like me.	3.87	Very Challenging
General Weighted Mean	3.79	Very Challenging

Legend: 1.0-1.49 Not Challenging (NC) 1.5 - 2.49 Slightly Challenging (SC) 2.5 - 3.49 Moderately Challenging (MC)
3.5-4.49 Very Challenging (VC) 4.5-5 Extremely Challenging (EC)

Social Challenges

The social impact of the Gawat phenomenon on local farmers across the 58 barangays of Umingan, Pangasinan, was characterized by pervasive resource inequity, social isolation, and a strain on household well-being, as reflected in the General Weighted Mean of 3.79, translated as "Very Challenging."

The most pressing issue identified was the inequitable distribution of resources and opportunities, as evidenced by a weighted mean of 3.87 interpreted as “Very Challenging,” which stood out as the primary source of social distress. This structural barrier closely aligns with the industry analysis of Ichwandiani and Hassan (2025), who demonstrated that systemic issues such as policy fragmentation and severe resource inequities intensify the vulnerabilities of traditional Filipino smallholders. This is closely followed by social isolation and lack of connectivity (Mean=3.84), which further hinders the farmers’ ability to access vital information and recovery resources.

TABLE 3
LEVEL OF POLITICAL CHALLENGES TO LOCAL FARMERS BROUGHT BY
GAWAT

Indicators	Mean	Verbal Description
1. The programs and policies provided by local and national governments, as well as NGOs, during the "Gawat" period were not effective to me as farmer.	3.82	Very Challenging
2. Inconsistent enforcement of agricultural regulations during "Gawat" creates uncertainty and challenges for farmers.	3.71	Very Challenging
3. Lack of representation in policy-making processes during "Gawat" limits farmers' influence on agricultural policies.	3.75	Very Challenging
4. Corruption and bureaucratic inefficiencies during "Gawat" hinder the effective implementation of agricultural support programs.	3.80	Very Challenging
5. Insufficient funding for agricultural development programs during "Gawat" restricts their impact on farmers' livelihoods.	3.88	Very Challenging
General Weighted Mean	3.79	Very Challenging

Legend: 1.0-1.49 Not Challenging (NC) 1.5 - 2.49 Slightly Challenging (SC) 2.5 - 3.49 Moderately Challenging (MC)
3.5-4.49 Very Challenging (VC) 4.5-5 Extremely Challenging (EC)

Political Challenges

The political dimension of the "Gawat" phenomenon for local farmers in Umingan, Pangasinan, is marked by significant governance gaps and systemic inefficiencies, as evidenced by the General Weighted Mean of 3.79, translated as Very Challenging (VC).

The most prominent political concern identified is the insufficient funding for agricultural development programs, which obtained the highest mean of 3.88 (Very Challenging). This highlights a critical shortage of financial backing for initiatives intended to stabilize livelihoods, rendering most interventions underpowered during the gawat season. This is closely followed by the ineffectiveness of government and NGO programs having weighted mean of 3.82 (Very Challenging), which indicates that even when policies exist, they may fail to address the specific, practical needs of the farmers on the ground. According to Cruz (2022) noted that Philippine agriculture remains constrained by inadequate public spending, with agriculture receiving only 1.5% of the national budget in 2021, far below the allocations observed in comparable countries such as Indonesia, Thailand, and Vietnam. This underfunding weakens both long-term agricultural development and crisis response capacity, making financial support a critical issue during Gawat periods.

On the other hand, the inconsistent enforcement of agricultural regulations received the lowest mean of 3.71. While this remains within the Very Challenging. This result is supported by Espino et al. (2024), whose phenomenological study on Davao City farmers' experiences with agricultural policy solutions reports inconsistency of support from government programs, where some farmers receive assistance at certain times and are neglected at others, leading to dissatisfaction and a sense of livelihood insecurity.

TABLE 4
LEVEL OF ENVIRONMENTAL CHALLENGES TO LOCAL FARMERS BROUGHT BY GAWAT

Indicators	Mean	Verbal Description
1. Soil degradation due to intensive farming practices during "Gawat" reduces my agricultural productivity and increases costs.	3.85	Very Challenge
2. Climate-related events exacerbated by "Gawat" frequently damage my crops and disrupt farming schedules.	3.80	Very Challenge
3. Water scarcity during "Gawat" affects irrigation systems, impacting my crop yields and farming efficiency.	3.75	Very Challenge
4. Environmental degradation during "Gawat" exacerbates the impacts of climate change on my agricultural productivity.	3.76	Very Challenge
5. Limited access to climate-resilient technologies during "Gawat" hinders my adaptation efforts.	3.84	Very Challenge
General Weighted Mean	3.80	Very Challenge

Legend: 1.0-1.49 Not Challenging (NC) 1.5 - 2.49 Slightly Challenging (SC) 2.5 - 3.49 Moderately Challenging (MC)
3.5-4.49 Very Challenging (VC) 4.5-5 Extremely Challenging (EC)

Environmental Challenges

The environmental impact of the Gawat phenomenon on local farmers in Umingan, Pangasinan, was characterized by a degradation of natural productive assets and a critical gap in adaptive capacity, as reflected in the General Weighted Mean of 3.80, interpreted as a "Challenge."

The most pressing environmental issue identified was soil degradation due to intensive farming practices (mean = 3.85). Sabijon and Asio (2021), citing Lal (2015), emphasized that soil degradation involves the deterioration of soil's physical, chemical, and biological properties, thereby constraining agricultural productivity. Closely following this is the limited access to climate-resilient technologies (mean = 3.84), which reflects either low utilization of available innovations or systemic barriers to access. Similarly, Cruz (2022), in her Future-proofing Philippine Agriculture and Food Systems study, emphasized that systemic inefficiencies and governance gaps hinder the distribution of adaptive technologies to smallholder farmers. These studies confirm that restricted access to climate-resilient technologies is a critical challenge, leaving farmers vulnerable to shifting environmental conditions during *Gawat*.

In contrast, while still identified as a significant hurdle, water scarcity affecting irrigation systems received the lowest mean of 3.75 translated as “Very Challenging”. This finding reflects the reality of water as an uncontrollable factor during specific farming periods and suggests that public irrigation infrastructure is often insufficient or unreliable. As a result, farmers are forced to bear the cost of private water access during difficult seasons such as *Gawat*. This reality is heavily supported by Inocencio and Barker (2018), who argue that the Philippine agricultural water sector suffers from long-standing systemic gaps in public management, specifically recurring failures in state planning, inadequate design, and poor operation and maintenance (O&M). Furthermore, they document a significant trend where Filipino farmers are increasingly forced to make private investments in pumps and shallow tube wells just to secure a reliable water supply

To determine if the challenges brought by phenomenon “*Gawat*” by the respondents significantly varied according to their profile, a Multivariate Analysis of Variance (MANOVA) was conducted using Hotelling's Trace. The multivariate test results, as summarized in the table above, provided a comprehensive comparison of challenges across nine profile variables.

TABLE 5
MULTIVARIATE COMPARISON OF CHALLENGES ACROSS PROFILE OF FARMERS

Profile Variables	F.	Sig.
Age	.84	.57
Sex	.75	.56
Civil Status	1.36	.18
Number of Dependents	.78	.77
Educational Attainment	.62	.92
Main Crop Season Income	1.49	.16
Land Ownership	.61	.83
Land Area Cultivated	2.45	.05*
Membership in Organization	.57	.69

Note: Multivariate tests performed using Hotelling's Trace

Multivariate Comparison

The statistical analysis reveals that among the variables tested, only Area Cultivated showed a significant result ($p = 2.45$, Sig. = .05). This suggests that while the *Gawat* phenomenon is a collective experience of the farmers from the 58 barangays of Umingan, Pangasinan, the severity and type of challenges it brings are scale-dependent. This finding resonates with Hu et al. (2024), who demonstrated that cultivated land scale significantly influences farmer outcomes, specifically ecological efficiency. While their study focuses on efficiency in China, the parallel underscores that farm size is a decisive factor shaping agricultural experiences.

The finding suggests that farmers in Umingan, Pangasinan with more land deal with higher farm input costs for fertilizers and seeds, increased irrigation service fees, and greater logistical expenses for transporting larger harvests. The impact of farm size on these challenges is further shown in the Estimated Marginal Means (See Figure 1).

Conversely, variables such as Age ($p = .57$), Sex ($p = .56$), Civil Status ($p = .18$), Educational Attainment ($p = .92$), and Main Crop Season Income ($p = .16$) showed no significant multivariate effect. The absence of statistical significance among these demographic profile variables indicates that the challenges brought by the *Gawat* phenomenon are structural in character and are experienced collectively by farmers. These challenges manifest across multiple

dimensions: economically, through rising input costs, limited access to credit, and delays in subsidies; socially, through reduced access to nutritious food, inadequate healthcare, and weakened community support; politically, through ineffective programs, inconsistent regulation, corruption, and lack of representation; and environmentally, through soil degradation, water scarcity, crop damage, and limited access to climate-resilient technologies.

In other word, these shared challenges among farmers do not discriminate by age, gender, education, or income. While the severity of impact may vary depending on the scale of land cultivated, the underlying economic, social, political, and environmental burdens remain common across the farming community.

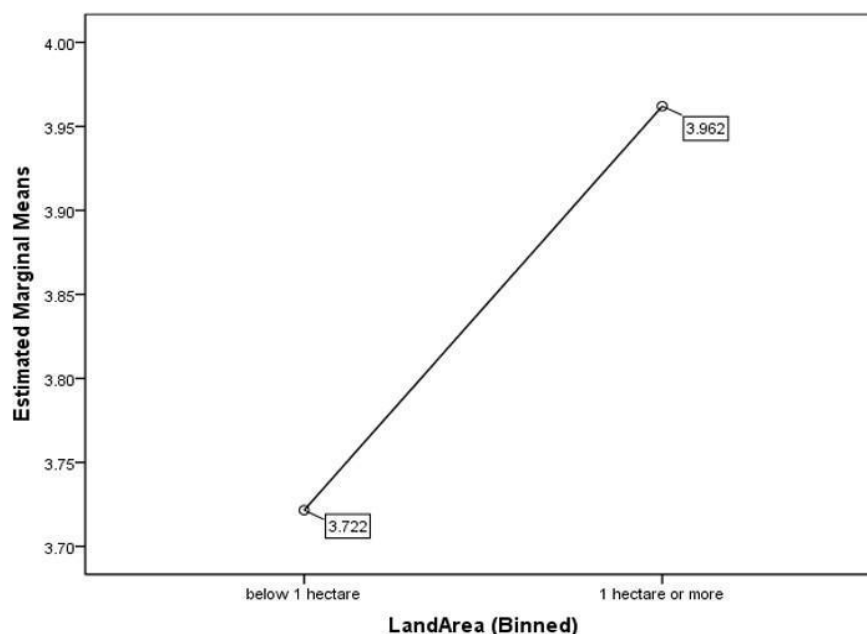


FIGURE 1.
RELATIONSHIP BETWEEN LAND AREA CULTIVATED AND THE MAGNITUDE OF CHALLENGES

Relationship Between Land Area Cultivated and the Magnitude of Challenges

The data indicates a direct relationship between the size of the cultivated area and the intensity of challenges reported. Farmers cultivating below 1 hectare recorded a mean score of 3.722, while those cultivating 1 hectare or more showed a notably higher mean score of 3.962.

This positive slope suggests that the magnitude of farming hurdles increases significantly as the operational scale expands.

IV. CONCLUSION

Based on the result and discussions, the following conclusion were drawn:

1. The assessment of rice farmers in Umingan, Pangasinan, demonstrated how specific socio-demographic and economic profile variables directly compound the severity of the 'Gawat' phenomenon. The prevalence of an aging, married, and predominantly male workforce underscored a traditional farming structure burdened by intense family dependency during this lean period. While basic secondary education was common, these formal profile attributes failed to provide the advanced resource management skills required to mitigate the severe income deficits that characterize 'Gawat', leaving households entirely reliant on the upcoming harvest for survival.

This vulnerability was structurally amplified by the lack of organizational alignment, as the overwhelming majority of independent producers held no cooperative membership. Operating without institutional safety nets, these farmers were forced to navigate the compounding economic, social, political, and environmental pressures of the 'Gawat' phenomenon in total isolation. Ultimately, these findings indicate that overcoming the 'Gawat' phenomenon requires moving beyond individual coping mechanisms, utilizing farmer profile data to design targeted institutional policies, localized training, and mandatory cooperative integration.

2. Gawat imposes widespread, structural challenges on farmers in Umingan, Pangasinan. Delayed subsidies worsen household cash flow; unequal resource distribution and poor connectivity deepen marginalization; insufficient agricultural funding weakens program support; and intensive farming drives soil degradation. These challenges affect farmers across demographic groups but intensify with larger cultivated areas. Addressing Gawat requires coordinated financial, social, political, and environmental interventions focused on timely aid, equitable resource access, sustained program funding, and soil- and climate-resilient practices.

-
3. Demographic profile variables of rice farmers (age, sex, civil status, education, and income) showed no significant relationship with the challenges from Gawat. Only area cultivated showed a significant relationship: larger land area is associated with greater magnitude of challenges. Estimated marginal means illustrate this positive relationship between cultivated area and challenge severity.

REFERENCES

- [1.] Amaglobeli, D., Benson, T., & Mogues, T. (2024). Agricultural producer subsidies: Navigating challenges and policy considerations. IMF Notes, 2024(001). International Monetary Fund. <https://www.imf.org/en/Publications/IMF-Notes/Issues/2024/09/16/Agricultural-Producer-Subsidies-Navigating-Challenges-and-Policy-Considerations-554441>
- [2.] Cruz, D. D. A. (2022). Future-proofing Philippine agriculture and food systems: Lessons from the COVID-19 pandemic (UP CIDS Discussion Paper 2022-04). University of the Philippines Center for Integrative and Development Studies.
- [3.] Espino, L. C., Callao, J. K. O., Colindres, D. C., & Francisco, J. B. (2024). Fostering agricultural policy solutions: Understanding the lived experiences of Davao City farmers through phenomenological inquiry. International Journal of Research and Innovation in Social Science, 8(11), 3322–3343.
- [4.] Frontiers in Sustainable Food Systems. (2023, October 9). Food security in ASEAN: progress, challenges and future. Frontiers in Sustainable Food Systems. <https://www.frontiersin.org/journals/sustainable-food-systems/articles/10.3389/fsufs.2023.1260619/full>
- [5.] Global Report on Food Crisis. (2024). Acute food insecurity outlook is mixed for several Asian countries. Food Security Portal. <https://asia.foodsecurityportal.org/node/2891>
- [6.] Hu, X., Lin, X., Wen, G., Zhou, Y., Zhou, H., Lin, S., & Yue, D. (2024). The impact of cultivated land fragmentation on farmers' ecological efficiency of cultivated land use based on the moderating and mediating effects of the cultivated land management scale. Land, 13(10), 1628. <https://doi.org/10.3390/land13101628>
- [7.] Ichwandiani, R., & Hassan, S. H. (2025, February). Industry analysis: Agriculture in Philippines (ARC BCS ID: BCS010). ASEAN Research Center, Asia School of Business.
- [8.] Inocencio, A., & Barker, R. (2018). Current challenges in agricultural water resource development and management in the Philippines. DLSU Business & Economics Review, 28(0), Article 3. <https://doi.org/10.59588/2243-786X.1548>
- [9.] IRRI. (2023, October 18). Industry experts discuss the current challenges and future of rice research in Southeast Asia. International Rice Research Institute. <https://www.irri.org/news-and-events/news/industry-experts-discuss-current-challenges-and-future-rice-research-southeast>

-
- [10.] Lal, R. (2015). Restoring soil quality to mitigate soil degradation. *Sustainability*, 7(5), 5875–5895. <https://doi.org/10.3390/su7055875>
- [11.] Lim, C. T. N. (2024). Empirical analysis of rice prices, production, and consumption in the Philippines: Implications for self-sufficiency policy. *Review of Integrative Business and Economics Research*, 13(2), 19–41.
- [12.] Liu, J., Yang, M., & Zhang, Z. (2023). Can rural cooperatives reduce poverty vulnerability of smallholder households? Evidence from rural Western China. *Frontiers in Sustainable Food Systems*, 7, 1222455. <https://doi.org/10.3389/fsufs.2023.1222455>
- [13.] Philippine News Agency. (2025, October 5). 5.7K farmers in Pangasinan affected by weather disturbances. <https://www.pna.gov.ph/articles/1260356>
- [14.] Rosario, F., Jr. (2025, June 19). Rosario highlights concept of "gawat" in Pangasinan rice culture. Department of Linguistics – University of the Philippines Diliman. <https://linguistics.upd.edu.ph/news/rosario-highlights-concept-of-gawat-in-pangasinan-rice-culture/>
- [15.] Sabijon, J. R., & Asio, V. B. (2022). Morphophysical and nutrient characteristics of degraded soils in Sta. Rita, Samar, Philippines. *Mindanao Journal of Science and Technology*, 20(1), 1–22. <https://doi.org/10.61310/MNDJSTE.0954.22>
- [16.] Sanglay, P. D., Apat, E. C., Sumague, J. A., & Tec, E. T. (2021). Financial literacy and income distribution of rice farmers. *International Journal of Accounting, Finance and Education*, 2(3), 1–21.
- [17.] SEARCA. (2023, February 22). Aging farmers could add to food insecurity. <https://www.searca.org/press/aging-farmers-could-add-food-insecurity>
- [18.] UKDR UPLB. (2025). Comparative analysis of household food insecurity among rice and pineapple farming households in Calauan, Laguna. University of the Philippines Los Baños. <https://www.ukdr.uplb.edu.ph/etd-undergrad/13311/>
- [19.] Xiaoling Li, & Xianrong Wu. (2021). The impact of social norms on rice farmers' behavior of organic fertilizers application: Mediating effect of value perception and moderating effect of education level. *International Journal of Low-Carbon Technologies*, 16(4), 1492–1503. <https://doi.org/10.1093/ijlct/ctab074>
-