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SUPER EL NIÑO AWARENESS AND PREPAREDNESS PRACTICES AMONG RICE FARMERS IN NUEVA ECIJA

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ABSTRACT

This study assessed the awareness of rice farmers in Nueva Ecija regarding Super El Niño and their preparedness practices using a descriptive-correlational research design involving 75 respondents. Results showed that farmers were moderately aware of its nature and characteristics but highly aware of its agricultural effects and recommended preparedness measures. They also consistently practiced preparedness strategies, particularly in climate information and farm decision-making, and farm and livelihood risk management. Educational attainment was significantly related to all dimensions of awareness and preparedness, while other demographic variables showed significant relationships with selected dimensions. Moreover, all dimensions of awareness had significant positive relationships with preparedness practices (r = 0.276 to 0.717). The findings emphasize the importance of strengthening farmers' awareness to improve preparedness and reduce the potential impacts of Super El Niño on rice production.

KEYWORDS: *Super El Niño, awareness, preparedness practices, rice farmers, Nueva Ecija*

INTRODUCTION

El Niño, which is characterized as extended dry spells, diminished rainfall and limited water for irrigation could threaten rice production with dire consequences for crop growth and farm productivity due to. This is especially true in Nueva Ecija, one of the country's major rice producing provinces. The National Irrigation Administration estimates that some 20 percent of the country's rice farms may be hit by irrigation shortages during the 2024 El Niño, putting some 50,000 hectares in Nueva Ecija and nearby provinces in Central Luzon at risk (Reyes, 2024).

The research arrives as government agencies are stepping up their preparations for a possible Super El Niño. PhilRice is promoting the adoption of climate-resilient practices such as shifting the cropping calendar, planting early maturing and drought-tolerant varieties, practice of Alternate Wetting and Drying and the use of climate information in farm decision making (Gavino, 2026). The Department of Agriculture has also boosted support for irrigation, climate-risk mapping, localized planning, and the provision of drought-tolerant seeds and other climate-resilient interventions (Cabuenas, 2026). This study, therefore, aims to find out the level of awareness and preparedness practices of rice farmers in Nueva Ecija toward Super El Niño and to determine if higher awareness is associated with higher preparedness. The findings may help local agricultural offices and relevant agencies improve their climate-risk communication and preparedness programs for rice farmers.

Objectives

This study aims to describe the awareness of rice farmers of Nueva Ecija regarding Super El Niño and their preparedness practices.

Specifically, this study seeks to attain the following objectives:

1. To describe the demographic profile of rice farmers in Nueva Ecija in terms of:
   - 1.1 sex;
   - 1.2 age;
   - 1.3 civil status;
   - 1.4 highest educational attainment;
   - 1.5 monthly income; and
   - 1.6 number of years in farming industry.
2. To describe the awareness of rice farmers in Nueva Ecija regarding Super El Niño in terms of:
   - 2.1 nature and characteristics of Super El Niño;
   - 2.2 effects on water irrigation availability;
   - 2.3 effects on rice production;
   - 2.4 climate information and early advisories; and
   - 2.5 recommended risk-reduction and preparedness measures.
3. To describe the preparedness practices towards Super El Niño of rice farmers in Nueva Ecija in terms of:
   - 3.1 water and irrigation management;
   - 3.2 crop and cropping-system adjustment;
   - 3.3 climate information and farm decision-making;
   - 3.4 access and utilization of agricultural support services; and
   - 3.5 farm and livelihood risk management.
4. To determine the relationship between the demographic profile of rice farmers in Nueva Ecija and their Super El Niño awareness.
5. To determine the relationship between the demographic profile of rice farmers in Nueva Ecija and their preparedness practices towards Super El Niño.
6. To determine the relationship between the Super El Niño awareness of rice farmers in Nueva Ecija and their preparedness practices towards Super El Niño.

METHODOLOGY

a. Research design

This study employed a descriptive-correlational research design to determine the level of awareness and preparedness practices of rice farmers in Nueva Ecija regarding Super El Niño. The descriptive component focused on assessing the farmers' awareness of the nature and characteristics of Super El Niño, its potential effects on water and irrigation availability, and its implications for rice production. It also examined their preparedness practices in addressing the possible impacts of the phenomenon, particularly in terms of water conservation, irrigation management, and farm management strategies. Meanwhile, the correlational component aimed to determine whether a significant relationship existed between the farmers' awareness of Super El Niño and their preparedness practices. Through this design, the study sought to establish whether the level of awareness of rice farmers was significantly associated with their adoption of appropriate preparedness measures to mitigate the potential effects of Super El Niño on agricultural activities, particularly rice production.

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b. Respondents

This study surveys 75 rice farmers from the province of Nueva Ecija, Philippines, particularly from the municipalities of Aliaga, Llanera, Bongabon, and the city of Cabanatuan. Nueva Ecija is recognized as one of the country's major rice-producing provinces, with extensive agricultural areas devoted to rice cultivation. The selected localities also provide access to rice farming communities with potentially varying experiences in agricultural production, water availability, and irrigation management.

c. Instruments

The study utilized a researcher-made questionnaire designed to assess rice farmers' awareness of Super El Niño and their preparedness practices in Nueva Ecija. The instrument underwent pilot testing, which yielded a Cronbach's alpha of 0.857 for the Super El Niño Awareness Questionnaire and 0.877 for the Farmers' Preparedness Practices Questionnaire. These results indicate good internal consistency, establishing the reliability of both questionnaires for use in the actual data gathering.

d. Data Gathering Procedure

The researcher personally administered the survey questionnaires to the 75 rice farmers from the selected areas of Nueva Ecija. Each respondent was given approximately 10–15 minutes to complete the questionnaire. Participation was entirely voluntary, and respondents were informed that the information gathered would be treated confidentially and used solely for research purposes.

f. Statistical Analysis

The data gathered in this study were analyzed using both descriptive and inferential statistics. For the descriptive analysis, the mean and standard deviation were utilized to determine and describe the level of awareness of rice farmers regarding Super El Niño and the extent of their preparedness practices. The mean was used to identify the average responses of the participants for each indicator, while the standard deviation measured the variability or dispersion of their responses. Meanwhile, for the inferential analysis, the Pearson product-moment correlation coefficient (Pearson's r) was employed to determine whether a significant relationship existed between the farmers' awareness of Super El Niño and their preparedness practices. The analysis was conducted at the 0.01 and 0.05 levels of significance to determine whether the observed relationship between the variables was statistically significant.

RESULTS AND DISCUSSION

This section presents the data analysis results and discusses the findings in relation to the research objectives.

1. Profile of the Respondents

Table 1.1. Distribution of the Respondents According to Sex

Sex	Frequency	Percentage (%)
Male	49	65.3
Female	26	34.7
Total	**75**	**100.00**

Table 1.1 presents the distribution of the 75 respondents according to sex. The findings show that 49 respondents (65.3%) are male, while 26 respondents (34.7%) are female. This indicates that male respondents constitute the majority of the participants in the study. The results suggest that more male farmers participated in the survey than female farmers. However, both male and female farmers are represented, providing perspectives from both groups regarding their awareness of Super El Niño and their preparedness practices.

Table 1.2. Distribution of the Respondents According to Age

Age	Frequency	Percentage (%)
30 to 39	15	20.0
40 to 49	31	41.3
50 to 59	7	9.3
60 and above	22	29.3
Total	**75**	**100.00**

Table 1.2 presents the distribution of the 75 respondents according to age. The findings show that the largest group consists of farmers aged 40 to 49 years, with 31 respondents (41.3%). This is followed by those aged 60 and above, with 22 respondents (29.3%), and those aged 30 to 39, with 15 respondents (20.0%). Meanwhile, the smallest group belongs to the 50 to 59 age bracket, with only 7 respondents (9.3%). This indicates that most of the respondents belong to the 40 to 49 age group, suggesting that middle-aged farmers comprise a significant portion of the study respondents.

Table 1.3. Distribution of the Respondents According to Civil Status

Civil Status	Frequency	Percentage (%)
single	3	4.0
married	66	88.0
widowed	6	8.0
Total	**75**	**100.00**

Table 1.3 presents the distribution of the 75 respondents by civil status. The findings reveal that the majority of the respondents are married, comprising 66 individuals (88.0%). Meanwhile, 6 respondents (8.0%) are widowed, while only 3 respondents (4.0%) are single. This means that most of the participating farmers are married, suggesting that many respondents may have family responsibilities and household needs to consider when preparing for climate-related events such as Super El Niño. These responsibilities may influence their decisions regarding farm management, resource allocation, and preparedness measures during prolonged drought or water shortages.

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Table 1.4. Distribution of the Respondents Based on Their Highest Educational Attainment

Highest Educational Attainment	Frequency	Percentage (%)
Elementary Level	28	37.3
High School Level	27	36.0
College Level	16	21.3
Graduate Studies	4	5.3
Total	**75**	**100.00**

Table 1.4 presents the distribution of the 75 respondents by highest educational attainment. The findings show that the majority of the respondents completed elementary education, with 28 individuals (37.3%). This is closely followed by those who reached or completed high school, with 27 respondents (36.0%). Meanwhile, 16 respondents (21.3%) attained college education, while only 4 respondents (5.3%) pursued graduate studies. The results indicate that most of the participating farmers have elementary or high school educational backgrounds.

Table 1.5. Distribution of the Respondents Based on Their Monthly Income

Monthly Income	Frequency	Percentage (%)
less than 13,727	14	18.7
13, 278 - 27,454	28	37.3
27, 455 - 54,909	25	33.3
54,910 - 109,818	8	10.7
Total	**75**	**100.00**

Table 1.5 presents the distribution of the 75 respondents by monthly income. The findings reveal that the majority of the respondents have a monthly income of 13,278- 27,454, comprising 22 individuals (37.3%). Meanwhile, 25 respondents (33.3%) have a monthly income of 27,455-54,909 and 14 respondents (18.7%) have a monthly income of less than 13,727, while 8 respondents (10.7%) have a monthly income of 54,910-109,818.

The findings indicate that the respondents are predominantly from lower- to middle-income households, with only a small proportion belonging to higher-income groups. The respondents may have limited to moderate financial resources to support their daily needs and other expenses. Their economic status may influence their purchasing power, access to resources, financial decisions, and overall standard of living.

Table 1.6. Distribution of the Respondents Based on the Number of Years in the Farming Industry

Number Of Years in Farming Industry	Frequency	Percentage (%)
6 to 10	17	22.7
11 to 15	11	14.7
16 to 20	11	14.7
20 and above	36	48.0
Total	**75**	**100.00**

Table 1.6 presents the distribution of years in the farming industry of the 75 respondents according to their monthly income. The findings reveal that the majority of the respondents have years in the farming industry of 20 and above, comprising 36 individuals (48.0%). Meanwhile, 17 respondents (22.7%) have years in the farming industry of 6- 10 (22.7%), while 11 respondents (14.7%) have years in the farming industry of 11- 15 and 16 to 20 with 11 respondents each (14.7%).

The findings indicate that the largest proportion of respondents have been engaged in the farming industry for 20 years and above, suggesting that many of them possess extensive farming experience and practical agricultural knowledge. Their long years of involvement may have contributed to their understanding of farming practices, crop management, and strategies for addressing agricultural challenges. Moreover, the findings also highlight that farming has served as a long-term source of livelihood for many respondents. Their accumulated experience may also influence their decision-making, adaptability to changing agricultural conditions, and willingness to adopt new farming technologies and practices.

2. Awareness of Rice Farmers

Table 2.1. Awareness Of Rice Farmers in Nueva Ecija Regarding Super El Niño in Terms of Nature and Characteristics

Nature and Characteristics of Super El Niño		Weighted Mean	Verbal Interpretation
1	The term Super El Niño is commonly used to describe an exceptionally strong El Niño event rather than a separate type of climate phenomenon.	**2.93**	Moderately Aware
2	The occurrence of El Niño in the Pacific Ocean can influence rainfall patterns in Nueva Ecija even though the province is far from the Pacific's equatorial region.	**2.83**	Moderately Aware
3	The Oceanic Niño Index (ONI) is one indicator used to monitor El Niño by measuring sea-surface temperature anomalies in a specific region of the equatorial Pacific	**2.68**	Moderately Aware
4	Scientists use sea-surface temperature anomalies in a defined region of the equatorial Pacific to help classify the strength of El Niño events.	**3.08**	Moderately Aware
5	The weakening of El Niño does not necessarily mean that normal rainfall conditions will immediately return to all agricultural areas in the Philippines.	**3.31**	Highly Aware
Overall Mean		**2.97**	Moderately Aware

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Table 2.1 shows that rice farmers in Nueva Ecija are moderately aware of the nature and characteristics of Super El Niño (M=2.97). The highest mean of 3.31 indicates that farmers are highly aware that the weakening of El Niño does not necessarily mean an immediate return to normal rainfall conditions. Meanwhile, the lowest mean of 2.68 relates to the Oceanic Niño Index (ONI) as an indicator for monitoring El Niño. This means that although farmers have a general understanding of Super El Niño, further information dissemination is needed to strengthen their awareness of its scientific indicators and characteristics.

Table 2.2. Awareness of Rice Farmers in Nueva Ecija Regarding Super El Niño In Terms of Effects on Water Irrigation Availability

	Effects on Water Irrigation Availability	Weighted Mean	Verbal Interpretation
1	Reduced irrigation water availability during Super El Niño can force farmers to adjust their planting schedules or reduce the area planted.	**3.48**	Highly Aware
2	Higher temperatures during Super El Niño can increase water loss through evaporation from irrigation canals, reservoirs, and farm fields.	**3.40**	Highly Aware
3	When reservoir levels fall, government and water authorities routinely prioritize municipal drinking supplies over agricultural irrigation, enforcing strict water cuts or complete suspensions for farms.	**3.31**	Highly Aware
4	Farmers located at the tail end of irrigation canals may experience reduced water delivery when irrigation supplies become limited.	**3.39**	Highly Aware
5	High temperatures can increase crop water requirements by increasing water loss through evapotranspiration.	**3.44**	Highly Aware
Overall Mean		**3.40**	Highly Aware

Table 2.2 shows that rice farmers in Nueva Ecija are highly aware of the effects of Super El Niño on water irrigation availability (M=3.40). The highest mean of 3.48 indicates farmers' awareness that reduced irrigation water availability may require adjustments in planting schedules or a reduction in cultivated areas. Meanwhile, the lowest mean (M=3.31) relates to the prioritization of municipal drinking water over agricultural irrigation during declining reservoir levels. This suggests that farmers have a high level of awareness of the potential effects of Super El Niño on irrigation resources, particularly the limitations in water supply and the need to adjust farming practices accordingly.

Table 2.3. Awareness Of Rice Farmers in Nueva Ecija Regarding Super El Niño in Terms of Effect on Rice Production

	Effect on Rice Production	Weighted Mean	Verbal Interpretation
1	High temperatures during rice flowering can increase spikelet sterility, reducing the number of grains that develop.	**3.35**	Highly Aware
2	Rice fields that depend entirely on rainfall are generally more vulnerable to prolonged dry spells than fields with reliable irrigation supplies.	**3.29**	Highly Aware
3	Drought-related reductions in rice harvest can decrease the quantity of palay available for sale and household consumption.	**3.37**	Highly Aware
4	Reduced rice harvests caused by drought can lower farm income when the decrease in production is not offset by higher selling prices or lower costs.	**3.40**	Highly Aware
5	Drought-tolerant rice varieties can help reduce yield losses under certain water-limited conditions, although their performance depends on the severity and timing of drought.	**3.55**	Highly Aware
Overall Mean		**3.39**	Highly Aware

Table 2.3 presents the awareness of rice farmers regarding the effects of Super El Niño on rice production. The results show an overall weighted mean of 3.39, interpreted as Highly Aware. Among the indicators, the use of drought-tolerant rice varieties obtained the highest mean of 3.55, suggesting that farmers recognize the importance of planting varieties that can withstand limited water conditions. On the other hand, the vulnerability of rain-fed rice fields to prolonged dry spells received the lowest mean of 3.29. Despite this difference, all indicators were interpreted as Highly Aware. Farmers understand the possible consequences of drought on crop yield, grain development, and farm income, as well as the importance of adopting suitable farming practices to minimize production losses.

Table 2.4. Awareness of Rce Farmers in Nueva Ecija Regarding Super El Niño in Terms of Climate Information and Early Advisories

	Climate Information and Early Advisories	Weighted Mean	Verbal Interpretation
1	PAGASA's weather advisories provide useful information about El Niño and its possible effects on rice farming.	**3.27**	Highly Aware
2	Prolonged dry periods can reduce the availability of irrigation water for rice production.	**3.32**	Highly Aware
3	El Niño can significantly affect rainfall patterns in Nueva Ecija.	**3.44**	Highly Aware
4	Climate forecasts can help farmers determine appropriate rice planting schedules.	**3.45**	Highly Aware
5	Access to accurate climate information is important in preparing for Super El Niño.	**3.44**	Highly Aware
Overall Mean		**3.38**	Highly Aware

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Table 2.4 shows the level of awareness of rice farmers in Nueva Ecija regarding climate information and early advisories, with an overall weighted mean of 3.38, interpreted as Highly Aware. Among the five statements, the importance of climate forecasts in determining appropriate rice planting schedules received the highest mean of 3.45. This was followed by the awareness that El Niño can significantly affect rainfall patterns in Nueva Ecija, with a mean of 3.44. Meanwhile, the usefulness of PAGASA's weather advisories obtained the lowest mean of 3.27. Although it ranked lowest, it was still interpreted as Highly Aware. This means farmers recognize the value of climate information in making farming decisions, particularly in adjusting planting schedules and preparing for possible changes in rainfall.

Department of Agriculture (2026) emphasized that weather monitoring and updated crop calendars are important measures for reducing the effects of El Niño on Philippine rice production. The agency highlighted the need to adjust planting schedules according to local weather and water conditions, strengthen irrigation management, and promote climate-resilient agricultural practices. These recommendations support the present findings that farmers are highly aware of the possible changes in rainfall patterns caused by El Niño and the importance of using climate information to prepare for agricultural risks.

Table 2.5. Awareness of Rice Farmers in Nueva Ecija Regarding Super El Niño in Terms of Recommended Risk-Reduction and Preparedness Measures

Recommended Risk-Reduction and Preparedness Measures		Weighted Mean	Verbal Interpretation
1	Drought-tolerant rice varieties can help reduce the risks associated with limited water availability.	**3.59**	Highly Aware
2	A farm contingency plan can help farmers prepare for prolonged drought.	**3.44**	Highly Aware
3	Government agricultural assistance programs can help farmers cope with the effects of El Niño.	**3.47**	Highly Aware
4	Alternative livelihood activities can help farmers cope with reduced income from rice production.	**3.48**	Highly Aware
5	Implementing appropriate preparedness measures can reduce the potential losses associated with severe water shortages.	**3.55**	Highly Aware
Overall Mean		**3.50**	Highly Aware

Table 2.5 highlights the level of awareness of rice farmers concerning recommended risk-reduction and preparedness measures for Super El Niño. The results (M=3.50) demonstrate that participants are well-acquainted with strategic approaches to mitigate the impacts of extended dry spells. The indicator addressing drought-resistant rice cultivation received the highest mean score of 3.59, highlighting the participants' recognition of crop selection during water-scarce periods. This was closely followed by executing suitable proactive strategies (M=3.55). Conversely, establishing a farm contingency plan marked the minimum mean score of 3.44. Nevertheless, every item is interpreted as highly aware, implying that agricultural producers comprehend the necessity of implementing adaptive strategies, accessing support mechanisms, and pursuing alternative income streams to diminish vulnerabilities throughout Super El Niño events.

3. Preparedness Practices

Table 3.1. Preparedness Practices Towards Super El Niño of Rice Farmers in Nueva Ecija in Terms ff Water and Irrigation Management

Water And Irrigation Management		Weighted Mean	Verbal Interpretation
1	The availability of water in irrigation systems and other accessible water sources is monitored before rice planting.	**3.44**	Always
2	Water-conservation practices are implemented to maximize the efficient use of available water in rice fields.	**3.35**	Always
3	I coordinate with irrigation organizations and other farmers regarding the scheduling and distribution of irrigation water.	**3.45**	Always
4	Alternative water sources are utilized when the regular irrigation supply becomes insufficient.	**3.37**	Always
5	I adjust my irrigation practices in response to changes in water availability during prolonged dry periods.	**3.37**	Always
Overall Mean		**3.40**	Always

Table 3.1 presents the preparedness practices of rice farmers in Nueva Ecija in terms of water and irrigation management. The results (M=3.40) indicate that farmers consistently practice measures to manage their available water resources. Monitoring the availability of irrigation water before planting recorded the highest mean of 3.44, followed by coordinating with irrigation organizations and other farmers regarding water distribution, with a mean of 3.45. Meanwhile, utilizing alternative water sources and adjusting irrigation practices during prolonged dry periods both received the lowest mean of 3.37. Despite these differences, all indicators were interpreted as Always. This shows that farmers regularly monitor, coordinate, and manage their water resources as part of their efforts to maintain rice production during periods of limited water availability.

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Table 3.2. Preparedness Practices towards Super El Niño of rice farmers in Nueva Ecija in terms of Crop and Cropping-System Adjustment

	Crop and Cropping-System Adjustment	Weighted Mean	Verbal Interpretation
1	I select rice varieties with drought-tolerant characteristics to minimize potential production losses during water shortages.	**3.27**	Always
2	Rice planting schedules are adjusted based on available climate information and anticipated dry periods.	**3.35**	Always
3	I consider modifying my cropping calendar to reduce the potential effects of prolonged drought on rice production.	**3.20**	Often
4	I diversify my farm production by incorporating other suitable crops into my rice-based farming system.	**3.19**	Often
5	Vegetable production or livestock raising is integrated into farming activities to reduce dependence on rice cultivation alone.	**3.27**	Always
Overall Mean		**3.25**	Always

Table 3.2 presents the preparedness practices of rice farmers in Nueva Ecija in terms of crop and cropping-system adjustment. The results (M=3.25) indicate that farmers regularly adopt adjustments in their farming activities to prepare for possible drought conditions. Adjusting rice planting schedules based on climate information obtained the highest mean of 3.35, suggesting that farmers consider weather conditions when planning their planting activities. In contrast, diversifying farm production by incorporating other suitable crops received the lowest mean of 3.19, followed closely by modifying the cropping calendar, with a mean of 3.20; both were interpreted as Often. These findings suggest that while farmers consistently consider climate information and suitable rice varieties, practices involving crop diversification and changes in cropping schedules are not implemented as regularly.

Table 3.3. Preparedness Practices towards Super El Niño of Rice Farmers in Nueva Ecija in Terms of Climate Information and Farm Decision-making

	Climate Information and Farm Decision-making	Weighted Mean	Verbal Interpretation
1	I regularly obtain weather forecasts and climate advisories from PAGASA and other reliable information sources.	**3.35**	Always
2	Climate-related information is obtained to anticipate changes in rainfall patterns and water availability.	**3.39**	Always
3	Weather forecasts and seasonal climate advisories are considered when determining appropriate rice planting schedules.	**3.60**	Always
4	Technical advice from agricultural extension workers is sought when making farm management decisions related to drought conditions.	**3.44**	Always
5	I exchange climate-related information and farming practices with fellow farmers through community networks, radio, or digital communication platforms.	**3.45**	Always
Overall Mean		**3.45**	Always

Table 3.3 presents the preparedness practices of rice farmers in Nueva Ecija in terms of climate information and farm decision-making. The overall weighted mean of 3.45, interpreted as Always, indicates that farmers consistently use climate-related information when making decisions about their farming activities. Among the indicators, considering weather forecasts and seasonal climate advisories when determining rice planting schedules obtained the highest mean of 3.60. This suggests that farmers place considerable importance on weather information in planning their agricultural activities. On the other hand, regularly obtaining weather forecasts and climate advisories from PAGASA and other reliable sources received the lowest mean of 3.35, although it was still interpreted as Always. Overall, the findings show that farmers regularly rely on climate information, seek technical advice, and exchange knowledge with other farmers to guide their farm management decisions during potential drought conditions.

The Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA, n.d.) emphasized that climate impact assessments provide important information on rainfall conditions, agricultural drought, and potential threats to crop production. These assessments can help farmers, agricultural technicians, and policymakers identify appropriate responses to climate-related risks. This supports the present study's findings concerning the use of reliable climate information in farm management decisions.

Table 3.4. Preparedness Practices towards Super El Niño of Rice Farmers in Nueva Ecija in Terms of Access and Utilization of Agricultural Support Services

	Access and Utilization of Agricultural Support Services	Weighted Mean	Verbal Interpretation
1	Information about government agricultural programs and interventions intended to support climate change adaptation is regularly sought.	**3.24**	Often
2	I participate in agricultural training programs and extension activities related to climate change adaptation and drought management.	**3.27**	Always
3	I utilize available agricultural technologies and farm inputs, such as certified seeds and appropriate farm machinery, to improve farm productivity and resilience.	**3.37**	Always

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4	Technical assistance from agricultural extension workers is sought to improve the implementation of climate-adaptive rice farming practices.	**3.25**	Always
5	I avail myself of government-supported agricultural insurance programs to protect my farm investment against potential production losses	**3.33**	Always
Overall Mean		**3.29**	Always

Table 3.4 presents the preparedness practices of rice farmers in Nueva Ecija in terms of access to and utilization of agricultural support services. The overall weighted mean of 3.29, indicates that farmers generally make use of available agricultural support services to strengthen their preparedness for Super El Niño. Among the indicators, utilizing agricultural technologies and farm inputs, such as certified seeds and appropriate machinery, obtained the highest mean of 3.37. This suggests that farmers recognize the importance of using available resources to maintain farm productivity. Meanwhile, regularly seeking information about government agricultural programs and interventions received the lowest mean of 3.24, interpreted as Often. The findings indicate that although farmers utilize agricultural technologies, participate in training, and seek technical assistance, there is still room to improve their access to information about government support programs and interventions.

Bermejo (2026) reported the findings of a nationwide evaluation conducted by the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA) regarding the Rice Competitiveness Enhancement Fund–Rice Extension Services Program (RCEF-RESP). The evaluation revealed that agricultural extension services contributed to improvements in rice production practices, including the use of certified inbred seeds, improved crop management, and the development of farm mechanization skills.

Table 3.5. Preparedness Practices Towards Super El Niño of Rice Farmers in Nueva Ecija in Terms of Farm and Livelihood Risk Management

Farm and Livelihood Risk Management		Weighted Mean	Verbal Interpretation
1	Agricultural activities are diversified to reduce dependence on income generated solely from rice production.	**3.57**	Always
2	I engage in alternative income-generating activities, such as vegetable production or livestock raising, to supplement my farm income.	**3.27**	Always
3	Alternative livelihood opportunities are explored when prolonged drought threatens the productivity of rice farms.	**3.40**	Always
4	I explore available agricultural insurance and government assistance programs to help mitigate potential financial losses from crop damage or failure.	**3.52**	Always
5	I adopt appropriate farm management strategies to minimize potential production and income losses during prolonged periods of drought.	**3.48**	Always
Overall Mean		**3.45**	Always

Table 3.5 presents the preparedness practices of rice farmers in Nueva Ecija in terms of farm and livelihood risk management. The results reveal (M=3.45) that farmers regularly adopt strategies to lessen the possible effects of drought on their income and agricultural activities. Diversifying agricultural activities to avoid depending solely on rice production obtained the highest mean of 3.57. This was followed by exploring agricultural insurance and government assistance programs, with a mean of 3.52. Meanwhile, engaging in alternative income-generating activities, such as vegetable production and livestock raising, received the lowest mean of 3.27, although it was still interpreted as Always. These findings indicate that farmers recognize the importance of having alternative sources of income, utilizing available support programs, and adopting appropriate farm management strategies to minimize potential financial losses during prolonged drought.

Pede et al. (2024) examined livelihood diversification and household welfare among smallholder rice farmers in Central Luzon, Philippines. Using long-term farm-level data, their study revealed that diversifying income sources helped farming households manage income fluctuations and maintain financial stability. The researchers found that livelihood diversification served as a survival strategy for many rice-farming households and helped protect farm profits against unfavorable climatic conditions.

Table 4. Correlational Analysis Between the Demographic Profile of Rice Farmers in Nueva Ecija and Their Super El Niño Awareness

Demographic Profile	Super El Niño Awareness				
	1	**2**	**3**	**4**	**5**
Sex	-0.053	0.153	0.083	.269*	0.199
Age	0.068	0.211	0.123	0.171	0.025
Civil Status	0.204	0.278*	0.068	0.306**	0.137
Highest Educational Attainment	0.421**	0.396**	0.300**	0.508**	0.387**
Monthly Income	0.197	0.135	0.213	0.114	0.233*
Number of Years Farming	-0.152	0.102	0.029	0.079	-0.002

*****. Correlation is significant at the 0.01 level (2-tailed)***
****. Correlation is significant at the 0.05 level (2-tailed)***

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Table 4 presents the correlation between the demographic profile of rice farmers in Nueva Ecija and their awareness of Super El Niño. The five indicators of awareness are: (1) Nature and Characteristics of Super El Niño, (2) Effects of Super El Niño, (3) Effects on Rice Production, (4) Climate Information and Early Advisories, and (5) Recommended Risk-Reduction and Preparedness Measures. The results show that the highest educational attainment has a significant positive relationship with all five dimensions of awareness, with correlation coefficients of r = 0.421, r = 0.396, r = 0.300, r = 0.508, and r = 0.387, respectively. The strongest relationship is observed in climate information and early advisories (r = 0.508). Meanwhile, civil status is significantly related to awareness of the effects of Super El Niño (r = 0.278) and climate information and early advisories (r = 0.306). Sex also shows a significant relationship with climate information and early advisories (r = 0.269), while monthly income is significantly related to recommended risk-reduction and preparedness measures (r = 0.233). In contrast, age and number of years farming do not show significant relationships with any of the five dimensions. Overall, the findings suggest that educational attainment is the demographic characteristic most consistently associated with farmers' awareness of Super El Niño.

The findings of the present study are supported by Mustafa et al. (2023), who examined the relationship between farmers' socioeconomic characteristics, climate change awareness, and adaptation strategies. The study revealed that educational attainment, farming experience, off-farm income, and access to agricultural extension services were significantly associated with farmers' awareness of climate change. Education is an important factor in understanding climate-related information and identifying appropriate agricultural adaptation measures. These findings support the present study's results, particularly the significant positive relationships between educational attainment and all five dimensions of Super El Niño awareness. The stronger relationship observed in climate information and early advisories (r = 0.508) further suggests that farmers with higher educational attainment tend to demonstrate greater awareness of climate forecasts and agricultural risk information.

Table 5. Correlational Analysis Between the Demographic Profile of Rice Farmers in Nueva Ecija and Their Preparedness Practices towards Super El Niño

Demographic Profile	**Preparedness Practices**				
	1	**2**	**3**	**4**	**5**
Sex	0.245*	-0.005	0.034	-0.153	-0.026
Age	0.006	-0.001	0.054	0.084	0.050
Civil Status	0.352**	0.204	0.057	0.037	0.138
Highest Educational Attainment	0.403**	0.435**	0.391**	0.362**	0.463**
Monthly Income	0.158	0.227*	0.268*	0.242*	0.219
Number of Years Farming	0.046	0.148	0.111	0.121	0.128

*****.Correlation is significant at the 0.01 level (2-tailed)***
****. Correlation is significant at the 0.05 level (2-tailed).***

Table 5 presents the correlation between the demographic profile of rice farmers in Nueva Ecija and their preparedness practices towards Super El Niño. The five indicators of preparedness practices are: (1) Water and Irrigation Management, (2) Crop and Cropping-System Adjustment, (3) Climate Information and Farm Decision-Making, (4) Access and Utilization of Agricultural Support Services, and (5) Farm and Livelihood Risk Management. The results show that highest educational attainment has a significant positive relationship with all five dimensions of preparedness practices, with correlation coefficients of r = 0.403, r = 0.435, r = 0.391, r = 0.362, and r = 0.463, respectively. The strongest relationship is observed in farm and livelihood risk management (r = 0.463). Meanwhile, civil status is significantly related to water and irrigation management (r = 0.352), while sex also shows a significant relationship with the same dimension (r = 0.245). Monthly income has significant relationships with crop and cropping-system adjustment (r = 0.227), climate information and farm decision-making (r = 0.268), and access and utilization of agricultural support services (r = 0.242). In contrast, age and number of years farming do not show significant relationships with any of the five preparedness dimensions. Overall, the findings suggest that educational attainment is the demographic characteristic most consistently associated with farmers' preparedness practices towards Super El Niño.

Farin et al. (2024) examined the knowledge, attitudes, and practices of rice farmers across the seven provinces of Central Luzon, Philippines, regarding climate change. Their study revealed that although farmers generally possessed knowledge of climate-related risks and favorable attitudes toward adaptation, they did not consistently implement climate-smart agricultural practices. The researchers emphasized the importance of agricultural training, disaster risk reduction education, and improved access to appropriate farming technologies. These findings support the present study by highlighting the relevance of education and agricultural information in strengthening preparedness practices.

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Table 6. Correlational Analysis Between Super El Niño awareness of rice farmers in Nueva Ecija and their preparedness practices towards Super El Niño.

Super El Niño Awareness	Preparedness Practices				
	1	2	3	4	5
1	0.532**	0.471**	0.374**	0.513**	0.544**
2	0.627**	0.390**	0.310**	0.307**	0.296**
3	0.573**	0.369**	0.305**	0.379**	0.276*
4	0.717**	0.419**	0.377**	0.303**	0.396**
5	0.602**	0.499**	0.382**	0.240**	0.375**

***. Correlation is significant at the 0.01 level (2-tailed)*
**. Correlation is significant at the 0.05 level (2-tailed).*

Table 6 presents the correlation between the awareness of rice farmers in Nueva Ecija regarding Super El Niño and their preparedness practices. The five awareness indicators are: (1) Nature and Characteristics of Super El Niño, (2) Effects of Super El Niño, (3) Effects on Rice Production, (4) Climate Information and Early Advisories, and (5) Recommended Risk-Reduction and Preparedness Measures. These are correlated with the five preparedness dimensions: (1) Water and Irrigation Management, (2) Crop and Cropping-System Adjustment, (3) Climate Information and Farm Decision-Making, (4) Access and Utilization of Agricultural Support Services, and (5) Farm and Livelihood Risk Management. The results reveal that all relationships are positive and statistically significant, with correlation coefficients ranging from r = 0.240 to r = 0.717. The strongest relationship is between awareness of climate information and early advisories and water and irrigation management (r = 0.717). This is followed by the relationship between awareness of the effects of Super El Niño and water and irrigation management (r = 0.627). Meanwhile, the weakest relationship is between awareness of recommended risk-reduction and preparedness measures and access and utilization of agricultural support services (r = 0.240). The findings suggest that farmers with higher awareness of Super El Niño also tend to demonstrate better preparedness practices, particularly in managing water and irrigation resources.

The findings of the present study are supported by Baron (2024), who examined the relationship between climate change awareness and adaptation strategies among upland and lowland rice farmers in the Philippines. The study revealed a significant positive relationship between farmers' awareness of climate change and their implementation of agricultural adaptation strategies. The findings indicated that farmers with greater awareness of climate-related risks tended to demonstrate higher levels of adaptation.

CONCLUSION

- The majority of the respondents were male, aged 40–49 years old, married, and had attained elementary education. This indicates that the respondents were predominantly middle-aged farmers with basic educational backgrounds. Their demographic characteristics provide an overview of the farming population represented in the study.
- The respondents demonstrated varying levels of awareness across the five dimensions of Super El Niño. They were Moderately Aware of its nature and characteristics (M = 2.97), but Highly Aware of its effects on water irrigation availability (M = 3.40), rice production (M = 3.39), climate information and early advisories (M = 3.38), and recommended risk-reduction and preparedness measures (M = 3.50). This indicates that farmers have a better understanding of its possible agricultural effects and appropriate responses than its scientific characteristics.
- Rice farmers generally demonstrated consistent preparedness practices across all five dimensions. They obtained an overall interpretation of Always in water and irrigation management (M = 3.40), crop and cropping-system adjustment (M = 3.25), climate information and farm decision-making (M = 3.45), access and utilization of agricultural support services (M = 3.29), and farm and livelihood risk management (M = 3.45). Among these, climate information and farm decision-making and farm and livelihood risk management recorded the highest means. This suggests that farmers regularly adopt different strategies to minimize the possible effects of prolonged drought on their agricultural activities and income.
- The findings revealed that highest educational attainment had a significant positive relationship with all five dimensions of Super El Niño awareness. Civil status was significantly related to awareness of its effects and climate information and early advisories. Meanwhile, sex was significantly related to climate information and early advisories, while monthly income was significantly related to recommended risk-reduction and preparedness measures. Age and number of years in farming showed no significant relationships with any of the awareness dimensions. These findings indicate that educational attainment is the demographic characteristic most consistently associated with farmers' awareness of Super El Niño.
- The results showed that highest educational attainment had a significant positive relationship with all five dimensions of preparedness practices. Civil status and sex were significantly related to water and irrigation management, while monthly income was significantly related to crop and cropping-system adjustment, climate information and farm decision-making, and access and utilization of agricultural support services. On the other hand, age and number of years in farming had no significant relationships with the preparedness dimensions. This suggests that educational attainment is also an important demographic characteristic associated with farmers' preparedness practices.
- The findings revealed significant positive relationships between all five dimensions of Super El Niño awareness and all five dimensions of preparedness practices, with correlation coefficients ranging from r = 0.276 to r = 0.717. The strongest relationship was observed between awareness of climate information and early advisories and water and irrigation management (r = .717). This indicates that farmers with higher awareness of Super El Niño also tend to demonstrate better preparedness practices. Therefore, strengthening farmers' awareness, particularly regarding climate information and early advisories, may help support their efforts to prepare for and manage the possible effects of Super El Niño.

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