

*Farmers' Information Sources Vis-à-Vis Knowledge, Attitude and Practices
on the Rice Competitiveness Enhancement Fund – Seed Program*

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Abstract

The study aimed to determine the knowledge, attitude, and practices (KAP) of farmers from Magalang, Pampanga, Philippines on the national government's Rice Competitiveness Enhancement Fund (RCEF) - Seed Program. It also identified the farmers' sources of information on the programs and their relationship to their KAP. This inferential quantitative research was conducted through a survey among 244 farmers from the Municipality of Magalang, Pampanga. Data was analyzed through the Frequency Distribution Table, Mean, and Chi-square test. Results evidenced that most of the respondents were males, aged 50-59 years old, married, and were high school graduates. In terms of their sources of information on the RCEF-Seed Program, their primary source is the Local Government Unit (LGU). This is followed by the farmers' cooperative and associations, and the barangay officials. The respondents are knowledgeable on the objectives and processes of the Seed Program. They also have a positive attitude toward the program as they strongly agree on the parameters of the Seed Program. In terms of practices, the farmers participated in the Seed Program by always acquiring free seeds and following the protocols imposed by the LGU in the program. The findings also presented a significant relationship between the respondents' sources of information on the RCEF-Seed Program to their knowledge, attitude, and practices. As such, it is recommended that the Local Government Units and other implementing agencies should continue their focus on promoting the programs and reinforce the encouragement to the farmers to avail and engage in the programs.

Keywords: Philippine Agriculture, Seed Program, Information Sources

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Introduction

Rice is a crucial staple food for almost half the world's population, but increasing its production to meet growing demand faces significant challenges, including climate change, limited agricultural land, labor, and water, and rising input costs. Yet, by 2035, rice production must rise by 114 million tons (Prasad et al, 2017; Rao et al. 2017).

In the Philippines, rice is the third most imported agricultural item. The country depends on rice imports to meet the rising demand driven by population growth (Hou, 2020). The Philippine government introduced the Rice Tariffication Law (RTL), which led to the establishment of the Rice Competitiveness Enhancement Fund (RCEF) to address the issue. The RTL not only eased restrictions on rice imports but also generated government revenue through tariffs. RCEF was created with an annual budget of approximately USD 200 million (PhP 10 billion) for a six-year period, starting in 2019 (Balié et al. 2021).

The provisions of the law state that, from the expected tariff revenues, RCEF is established and used to give direct assistance to farmers and subsidize innovative government activities to strengthen the rice industry. Specifically, the RCEF aims to give farmers additional rice farm machinery and equipment spearheaded by the Philippine Center for Postharvest Development and Modernization (PhilMech). Also, funds are used to develop, propagate, and promote inbred rice seeds to farmers facilitated by the Philippine Rice Research Institute (PhilRice). In addition, financial assistance is made available to rice farmers through credits managed by the Land Bank of the Philippines and the Development Bank of the Philippines. Furthermore, extension services by PhilMech, the Agricultural Training Institute (ATI), and the Technical Education and Skills Development Authority (TESDA) are also given allocation (Tobias, 2019; & Placido, 2019).

PhilRice, serving as the lead implementing agency of the RCEF-Seed component, receives 30 percent of the fund to develop and promote improved rice seeds (Balié et al. 2021). Amidst the COVID-19 pandemic, the RCEF-Seed Program made possible the “Ahon Lahat, Pagkaing Sapat (ALPAS) Kontra COVID-19” program by providing various support programs during the pandemic. Assistance to farmers is made possible through the provision of seeds and fertilizer that complement the effort of the RCEF Seed Component for the RCEF-targeted 947 inbred rice municipalities (Department of Budget and Management, 2020).

Still, the implementation of the law and the RCEF programs has sparked mixed reactions and concerns. These concerns relate to the law's impact on Filipino farmers and national food security, and the effectiveness of RCEF Programs in aiding the needs of the farmers in strengthening their rice production (Balié et al. 2021).

Thus, the researchers find it significant to preliminary assess its effectiveness to its beneficiaries, primarily in Magalang, Pampanga, Philippines. In a similar way, the sources of information on the program are identified in relation to the farmers' KAP. This is to make possible the forwarding of necessary recognition of best practices and recommendations for program implementation improvement.

Methodology

This research project employed a quantitative research design. This method is also known as the iterative process wherein the evaluation of the data gathered is being exerted by the researcher. It is the method that elaborates objective measurement, the statistical, numbers, and numerical analysis of data collected through questionnaires and surveys to explain a certain (Trefry, 2018).

The study was conducted in the Municipality of Magalang, involving all 27 barangays. To carry out the research, the researchers collaborated with the local government unit (LGU) to identify and obtain lists of the registered farmers being the target respondents. Permission from the LGU was likewise sought to ensure that the research was conducted with the necessary support and authorization.

To gather data, the researchers used a survey questionnaire that was carefully designed and structured based on the research objectives and relevant literature. This questionnaire contained questions and items that aimed to capture the necessary information about the knowledge, attitudes, and practices of the farmers regarding the Rice Competitiveness Enhancement Fund (RCEF) - Seed Program. The data collected from the survey was then analyzed using several statistical methods, including the Frequency Distribution Table (FDT), mean (average), and Chi-square Test. These statistical tools allowed the researcher to process and interpret the data to draw meaningful insights and make conclusions about the research objectives and questions.

Results

Table 1. *Socio-demographic Profile of the Respondents*

Age Range	Frequency	Percentage
27-29	2	0.82
30-39	10	4.1
40-49	53	21.72
50-59	86	35.24
60-69	62	25.41
70-79	29	11.89
80-85	2	0.82
Sex		
Male	213	87.30
Female	31	12.70
Civil Status		
Single	15	6.15
Married	207	84.83
Widowed	16	6.56
Separated	2	0.82
Common Law/Live in	4	1.64
Educational Attainment		
Elementary graduate	56	22.95
Elementary undergraduate	13	5.33
High School graduate	77	31.55
High School undergrad	24	9.83
Technical Vocational	23	9.43
College undergrad	25	10.25
Bachelor's Degree	23	9.43
Master's/Doctor's Degree	3	1.23

Table 1 shows the respondents' distribution in terms of age, sex, civil status and educational attainment. The respondents were mostly males (87.30%), between 50-59 years of age (35.24%), were married (84.83%) and are high school graduates (31.55%).

Table 2. *Sources of Information on the RCEF-Seed Program of the Respondents*

Sources of Information	Frequency	Percentage
Television	3	1.25
Social Media Platforms	1	0.42
LGUs	183	76.25
Co-farmers	11	4.58
Barangay Officials	47	19.58
Farmers' Cooperative & Associations	53	22.08
Radio	0	0
Friends or Family	0	0
Communication Materials such as leaflets, brochures and posters	0	0

As reflected in Table 2, the respondents' primary source of information is the local government unit (LGU) with 76.25%. This affirms the efficiency of the implementation of the LGU mandate which is to support and facilitate communication to the farmer-beneficiaries. Specifically, the LGU relays to the farmer organizations and farmer-beneficiaries the details of seed distribution, such as schedule, drop-off points, and health protocols needed to follow. They also facilitate and support information flow about the capacity enhancement activities with regard to the program that will be held within their province/barangay.

Moreover, farmers' cooperatives and associations are also sources of information with 22.08% as well as barangay officials (19.58%). With the limitations brought about by the COVID-19 pandemic, barangay officials and farmers' cooperatives and associations were tasked to facilitate and communicate the delivery of seeds to the farmer-beneficiaries to limit the crowd.

Table 3. *Knowledge of the Respondents on the RCEF-Seed Program*

Statements	Frequency of Correct Answer	Percentage of Correct Answers
The RCEF Seed Program is intended for the development, propagation, and promotion of inbred rice and organization of rice farmers into seed grower cooperatives and associations engaged in seed production.	228	95%
The eligible beneficiaries of RCEF Seed are individual farmers who are not listed in the RSBSA.	201	83.75%
One of the goals of RCEF Seed is to mobilize and strengthen local seed production.	231	96.25%
The eligible beneficiaries of RCEF Seed are individual farmers who are not a member of DA-Accredited Farmers Organization.	190	79.16%
The RCEF Seed Program lowers the postharvest losses of the farmers.	183	76.25%

It is acceptable in the RCEF Seed Program that the rice farm cultivated by the beneficiary is not located in the target province/area.	187	77.91%
The DA Philippine Rice Research Institute (DA-PhilRice) led the implementation of the RCEF Seed Program.	216	90%
There are no health Protocols during the distribution of bags of seeds.	215	89.58%
During seed distribution the farmers will sign the Farmer Acknowledgement Receipt (FAR) and will receive a QR Code which contains the RSBSA Number, name of the farmer, number of bags and the variety selected.	236	98.33%
It is not a goal of RCEF Seed Program to increase the organizations of farmers who will engage in seed production or trade.	209	87.08%
OVERALL	209.6	87.33%

The research findings reflected in Table 3 indicate a strong level of knowledge among the respondents regarding various aspects of the RCEF Seed Program: program goals, eligibility criteria, and distribution process.

Most (95%) of the respondents are well aware of the program's objectives, which include the development, propagation, and promotion of inbred rice. They also understand the program's aim to organize rice farmers into seed grower cooperatives and associations engaged in seed production.

Moreover, a majority, around 84%, possess knowledge about the requirements for program eligibility. This includes being listed on the Registry System for Basic Sectors in Agriculture (RSBSA) of the Department of Agriculture (DA), belonging to the DA-Accredited Farmers Organization (known to 79.16% of respondents), and residing in the program's target area. Compliance with these criteria ensures that only eligible beneficiaries, as per Department of Agriculture guidelines, can access the program's full benefits.

Meanwhile, approximately 90% of the respondents are well-informed about the health protocols in place during seed distribution amidst the COVID-19 pandemic. Furthermore, nearly all, approximately 98.33%, are knowledgeable about the procedures during seed distribution, which involve farmers signing the Farmer Acknowledgment Receipt (FAR) and receiving a QR code containing essential information. These findings indicate a strong understanding of the laws, guidelines, and procedures established for the program's implementation.

Table 4. *Attitude of the Respondents on the RCEF-Seed Program*

Statements	SA	A	D	SD
I believe that the RCEF Seed Program objective to develop, disseminate, and promote inbred rice to the organization of rice farmers, seed grower cooperatives and associations engaged in seed production increases farmers' income.	53.75%	29.17%	12.08%	5%
I think it is appropriate that the eligible beneficiaries of the RCEF Seed Program are individual farmers listed in the RSBSA.	70.83%	7.92%	4.17%	17.08%

I believe that one of the goals of the RCEF Seed Program is to boost local seed production and help promote our own products.	70.83%	22.92%	3.33%	2.92%
I believe it is suitable that the beneficiary's farm area is in the target province/area.	76.25%	17.92%	1.25%	4.58%
I believe DA-PhilRice should lead the implementation of the RCEF Seed Program because it is the government agency that specializes in this field of study.	87.92%	8.33%	2.5%	1.25%
I believe that there should be health protocols during the distribution of seeds to prevent the spread of COVID-19.	92.5%	5.42%	0.83%	1.25%
I think the methods used to distribute the seeds are easy and convenient for the farmers and the program implementers.	90.83%	6.25%	2.92%	0%
I believe that the seed distribution process helps to make the implementation of the program more controlled and organized.	92.92%	5%	2.08%	0%
I believe that the RCEF Seed Program reduces the postharvest losses of farmers which brings benefits to them.	70.83%	19.17%	4.17%	5.83%
I think that the RCEF Seed Program goal to increase the adoption of certified inbred seeds by supporting the development of varieties will help promote local seeds.	83.34%	12.5%	2.08%	2.08%

The research findings indicate a highly positive outlook among the respondents regarding various aspects of the RCEF Seed Program: program objectives, eligibility criteria, implementation, and distribution process.

Specifically, more than half (53.75%) of respondents strongly agree that the program's primary goal, which is to promote inbred seeds among farmers, has the potential to increase their income. Additionally, 70.83% firmly believe that the program effectively reduces postharvest losses, ultimately benefiting them.

Moreover, the majority, 70.83% of respondents, strongly agree that the program's eligibility criteria, which include being individual farmers listed in the RSBSA and operating farmland within the target province/area, are acceptable. This affirmation aligns with the Department of Agriculture's definition of eligible beneficiaries for the RCEF-Seed Program. While non-RSBSA-listed farmers may also receive free seeds, listed farmers are prioritized. Additionally, 87.92% of respondents strongly agree that the Department of Agriculture-Philippine Rice Research Institute (DA-PhilRice) is the appropriate lead implementing agency for the program. DA-PhilRice's specialization in rice research and development makes it well-suited for this role.

Furthermore, 92.5% of respondents strongly agree that health and safety protocols must be strictly observed during seed distribution to prevent the spread of COVID-19. This aligns with local government agencies' practices to ensure safe distribution during the pandemic, including scheduled barangay distributions, body temperature checks, social distancing, and the use of sanitizers and alcohol.

Focusing on the process of seed distribution, 90.83% of respondents strongly agree that the methods used are convenient for both farmers and implementers, and 92.92% believe these procedures enhance program control and organization. A majority, 70.83%, strongly agree that the program's goal to boost local seed production will help promote local products, while 83.34% strongly agree that the program's aim to increase the adoption of certified inbred

seeds supports the development of local seeds. These perceptions are in line with the program's overarching goals to enhance local seed production and encourage the adoption of certified inbred seeds to bolster competitiveness in the global rice market.

Table 5. *Practices of the Respondents on the RCEF-Seed Program*

Statements	Always	Sometimes	Never
I inquire to the Municipal Agriculture Office regarding on the requirements needed to be a RCEF Seed Program recipient.	27.5%	25.42%	47.08%
I receive/get Information, education and communication (IEC) materials on high-yielding and cost-reducing technologies in rice production during the distribution of bags of seeds.	35%	45.83%	19.17%
I watch/read/listen to television, newspapers, social media and radio to get an update and information about RCEF Seed Program.	39.58%	43.75%	16.67%
I give information regarding RCEF Seed Program to my family and friends to update them.	46.67%	38.33%	15%
I ask or inquire for the schedule of the distribution of seeds in the Municipal Agriculture office.	40%	23.33%	36.67%
I encourage my fellow farmers to participate in the RCEF Seed Program	65.42%	27.5%	7.08%
I follow health and safety protocols during seed distribution.	97.5%	1.67%	0.83%
I bring the requirements needed to acquire bags of seeds during seeds distribution.	77.92%	4.58%	17.5%
I get my bags of seeds whenever there is a distribution.	94.58%	4.58%	0.84%
I support the RCEF Seed program's goal of using inbred seeds.	89.17%	6.67%	4.16%

The practices of the respondents reflect proactive engagement with the RCEF Seed Program. There are 27.05% of respondents consistently visit the Municipality, while 25.42% occasionally visit their municipal building to gather information about the program. Moreover, 40% of respondents routinely seek the seed distribution schedule from the Municipal Agriculture Office. These practices demonstrate their initiative to access the program's details.

Moreover, there are 45.83% of respondents occasionally receive Information, Education, and Communication (IEC) materials during seed distribution, in alignment with the Department of Agriculture's distribution practices. These materials provide valuable insights into high-yielding and cost-effective agricultural technologies. Furthermore, 43.75% of respondents rely on television, radio, and social media to stay updated about the program. Meanwhile, 46.67% of respondents share program information with their families and friends, and 65.42% encourage fellow farmers to participate. This underscores the importance of information exchange and peer influence in the agricultural community.

Nearly all or 97.5% of respondents consistently adhere to health and safety protocols during seed distribution, while 77.92% bring the required documentation. These practices align with the Department of Agriculture's guidelines, which involve physical distancing, sanitizer/alcohol use, temperature checks, and presenting valid identification and RSBSA stubs during seed collection. Further, 94.58% of respondents always claim their seed bags, and 89.17% actively support the program's objective to use certified inbred seeds.

Table 6. *Relationship between the Respondents' Sources of Information vs KAP*

Variables	Pearson Chi-Square Value	Asymp. Sig (2-	Remarks
Sources of Information Vs Knowledge	223.533	.000	Significantly related at 1%
Sources of Information Vs Attitude	239.379	.000	Significantly related at 1%
Sources of Information And Practices	239.056	.000	Significantly related at 1%

As evident from the data presented in Table 6, a noteworthy relationship exists between the sources of information used by the respondents and their knowledge, attitude, and practices regarding the RCEF-Seed Program. This relationship highlights the significant influence of key information sources, such as the Local Government Unit (LGU), farmer cooperatives, and barangay officials, on the respondents' substantial knowledge, positive attitude, and active participation in the Seed Program.

This finding corroborates the research conducted by Wang et al. (2021), which emphasizes the valuable role that interventions and support from relevant organizations can play in increasing farmers' attention and engagement in activities of relevance. This insight underscores the importance of effective communication and collaboration between these influential entities and the agricultural community to ensure the program's success and the achievement of its objectives.

Conclusion

The study's findings strongly suggest that the RCEF-Seed Program, administered by the Department of Agriculture in collaboration with local government units, has garnered favorable recognition among the farming community. The farmers not only possess significant knowledge about the program but also exhibit a positive attitude and active participation in its various facets.

As a result of these positive outcomes, it is recommended that Local Government Units and other responsible implementing agencies maintain their efforts in promoting and supporting the RCEF-Seed Program. Continuous outreach and communication can reinforce the encouragement for farmers to actively engage with and avail themselves of the program's benefits. This can contribute to the program's sustainability and its ability to fulfill its objectives effectively.

Furthermore, it is advised that future research endeavors delve deeper into the qualitative aspects of farmers' experiences with the program. Conducting qualitative studies can provide richer insights into the personal experiences, challenges, and successes of farmers involved in the RCEF-Seed Program. Such research can complement the quantitative findings presented in this study, offering a more comprehensive understanding of the program's impact on farmers' livelihoods and agricultural practices.

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