# Farmers perception of local farmer technicians (LFTs) in rice production: The case of Mauswagon ARC Cooperative in Bonifacio, Misamis Occidental, Philippines

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**Abstract:**

This study explores farmers' perceptions regarding the contributions of Local Farmer Technicians (LFTs) to rice production within Mauswagon ARC Cooperative, located in Bonifacio, Misamis Occidental, Philippines. LFTs serve as vital community resources, connecting innovative agricultural techniques with traditional farming practices. They are instrumental in advancing sustainable agricultural practices, improving efficiency, and aiding farm administration. The investigation evaluated the technical proficiency, training quality, accessibility, and impact on productivity expertise, training quality, accessibility, and impact on productivity and profitability of LFTs through interviews. The study examined the relational dynamics between farmers and LFTs, emphasizing trust, collaboration, and their influence on adopting modern methods. The results demonstrate that farmers regard LFTs as trustworthy and efficient, valuing their pest management, fertilizer application, and water conservation assistance. LFTs were recognized for linking government initiatives to the requirements of smallholder farmers. Challenges include limited access to LFT services due to budget constraints and difficulties tailoring advice to specific farmers. Given these constraints, LFTs have significantly improved rice production by increasing yields, reducing costs, and fostering collaborative learning among farmers. However, ongoing capacity enhancement and institutional support are needed to ensure LFTs stay updated on agricultural developments and guarantee long-term viability. Strengthening support systems can enhance resilience and development in rural farming communities.

**Keywords:** Local Farmer Technicians, Rice Production, Technical Proficiency.

## Introduction

Agriculture is considered one of the main economic sectors contributing to the Philippines, as it engages most people who can contribute to food security; however, it has some significant problems, such as a labor shortage and an unsatisfactory level of skills. In addition, a crucial dimension of this sector is its need to enhance performances in value chains for agriculture (Aguda et al., 2022; DA-RFO 8, 2022). One central factor in improving the overall performance of the agricultural sector is the role of Local Farmer Technicians (LFT) (Peñaflor-Elorde et al., 2024). They should offer technical support and assistance to small-scale farmers, optimize farming practices, increase productivity, and adjust variable market conditions (Gonzales Jr. et al., 2020). In fact, the study conducted on the extension needs of small-scale farmers in the Biliran Province, Philippines, revealed that farm clients need to be trained and assisted in diagnosing and controlling plant and animal pests and diseases and the introduction of new technology in farming (Nierras, 2016). It aims to increase the effectiveness and quality of government extension services delivered to rice farmers to achieve food staples sufficiency in the country.

Apparently, the local government units have been entrusted as the prime service providers for these services to help facilitate the adoption of new farming methods and technologies (DA-RFO 8, 2022). However, the number of extension technicians is insufficient to reach a considerable number of farmers, hence more extension personnel are needed (Casinillo, 2022). The existing ratio of rice farmers to Local Government Unit (LGU) technicians is more significant than 150:1. By contributing to the expansion of the existing LGU extension workforce through the LFT Program; more farmers will then be able to access new and improved technologies as well as other farm support interventions (Casinillo & Seriño, 2022). The LFT is responsible for giving the farmers the information and expertise they would have to understand, select a particular innovation, and communicate this knowledge to the farmer. The agent has taken to being regarded as an instructor by the farmer in this work, who teaches him how to apply knowledge and acts as a conduit for knowledge of it technically. Along with this official training for the job, the agent gains technical know-how and data that he is supposed to pass on to the farmers (Birkhaeuser et al., 1991). The key challenge confronting agricultural extension in the twenty-first century is to develop low-cost, sustainable service delivery systems that extend beyond knowledge exchange to assist farmers as the prime agents of change in their communities. These programs should enhance farmers' skills to learn and innovate, organize for more productive production and marketing, and demand extension services (Maryani et al., 2017). Assistance from local leaders to an extension agent can be critical in many ways. They may take up specific tasks when the agent is away, participate in local extension organizations' building process, and directly contribute to spreading new ideas and practices by practicing them in their fields and being a contact point for an agent with the farmers. With their help, the extension agent will be able to reach many more farmers than he could have reached working individually. Collaborative work with local leaders strengthens ties with the local farmers, gets them more sympathetic towards the extension service, and puts them in a better situation to participate in outreach work. As equal partners in the LFT Program, the Department of Agriculture (DA) and LGUs have collaborated to promote and disseminate rice farm technology to rice farmers (Peñaflor-Elorde et al., 2024). This strategy has been designed for expansion, considering a long-time objective of providing farmer-to-farmer extension services. The Local Farmer Technicians Program recruits skilled and experienced rice farmers to be collaborators and hands-on participants in developing modern post-production and production practices (Peñaflor-elorde et al., 2024). Implementation of government programs will be targeted in barangays within municipalities of irrigated rice-producing provinces if the latter have low yields in their rice

harvests (Casinillo & Seriño, 2022; Maryani et al., 2017). One of the leading extension delivery systems of the DA is the LFT program. Since the program aims to establish a core of skilled and knowledgeable rice farmers in LGUs, LFTs may contribute to developing and refining modern technologies relevant to the rice crop and post-harvest (Peñaflor-Elorde et al., 2024; PRRI, 2015).

In general, the study determined the farmers' perception of Local Farmer Technicians and the extension services they provide to the rice farmer-members of Mauswagon ARC Cooperative in Bonifacio, Misamis Occidental. Specifically, the study will: (1) determine the socio-demographic and economic profile of the farmer-respondents; (2) determine what assistance and services were provided to the respondents; (3) determine the respondents' level of interaction with the LFTs; (4) determine the respondents' assessment of the LFTs' performance in terms of knowledge and techniques sharing; (5) determine the respondents' level of satisfaction of the LFTs' services; (6) identify the weaknesses and challenges faced by LFTs as perceived by the farmer respondents; and (7) propose policy recommendations to improve the LFT program. Indeed, LFT was of tremendous value to agricultural technicians, particularly in understaffed municipal agricultural offices. Digging deeper into how farmers perceive LFTs and the extension services they provide in rice production will give insights into the level of interaction they have with the farmers, their satisfaction, and how they assess their knowledge and technique-sharing performance. This study may provide relevant information on the absence of literature on LFT performance. Moreover, finding out the challenges faced by the LFTs in delivering extension services as perceived by their farmer clientele may provide policy recommendations to improve and reorganize the LFT program of both the DA and the LGUs.

**Methodology**

Barangay Lower Usogan, Bonifacio, Misamis Occidental, Philippines is the location of the study. The study covered seven sitios of Barangay Usogan, one of the five barangays comprising TIALULIN ARC. Barangay Lower Usogan, the center of the study, has a functional ARBO, the Mauswagon ARC Cooperative. The organization is a duly registered cooperative with the Cooperative Development Authority. Presently, it has 103 active members, of which 92 are rice farmers. Based on the municipal agriculture office data, barangay Liloan has an agricultural land area of 382.1636, of which 80% is irrigated rice land. The average production per one hectare of rice area is 4.82 tons per cropping, which is above the national average of 4.17 metric tons per hectare in 2023, according to the Philippine Rice Research Institute. The respondents of the study are 92 active rice farmer-members of *Agrarian Reform Community Cooperative (MarCCO*), of which 46 are Agrarian Reform Beneficiaries (ARBs) and 46 non-ARBs. These respondents were identified based on the list of members and addresses provided by the cooperative. A letter request was sent to each farmer requesting their consent to be interviewed.

Complete enumeration was employed in the study to capture the responses of the organization's rice farmer members. All 92 identified rice farmer members of the Mauswagon ARC Cooperative were the subject of the data gathering. They were called to be interviewed at the cooperative office, and some were also visited at their respective houses.

**Table 1**. Distribution of the respondents in barangay Mauswagon per sitios

| Sitios | Total number of respondents |
|---|---|
| Sitio 1 | 15 |
| Sitio 2 | 12 |
| Sitio 3 | 17 |
| Sitio 4 | 13 |
| Sitio 5 | 13 |
| Sitio 6 | 14 |
| Sitio 7 | 8 |
| **Total** | **92** |

**Research Instrument and Data Collection**

The data are gathered via the pre-tested researchers developed questionnaire. To ensure its applicability, the questions are translated into the local dialect so that farmers understand every question. To collect the data, the interviewee conducts interviews with the respondents using a questionnaire. Personal information, interactions with local farmer technicians, knowledge and techniques about rice growing, yield, income, and quality of rice crops, as well as remarks and overall satisfaction, were asked using the instrument.

**Data Analysis**

Descriptive statistics were used, such as means, frequency counts, percent, mean, and standard deviation, to describe the socio-demographic and economic profile of the farmer-respondents; assistance and services provided, the level of interaction and satisfaction as well as the performance of LFTs.

## Results and Discussion

The distribution of the respondents, as reflected in Table 2, across the seven sites is very balanced, with minor variations in the number of participants from the different areas. The highest number of respondents comes from Sitio 3 at 18.48% with n=17, then followed by Sitio 1 at 16.30% with n=15 and Sitio 6 at 15.22% with n=14. Sitios 4 and 5 are also equal; all respondents are 14.13%, with n=13. Sitio 2 accounts for 13.04% (n=12), while Sitio 7 was the lowest at 8.70% (n=8). Diversification in the distribution would outline a diversified sample across the sitios since most locations within them contain almost equal shares, except that of Sitio 7, which seemed less laden with responses. This, in turn, means that opinions brought up by diversified segments of society are well accounted for by the study.

**Table 2**. Distribution of respondents across address

| Sitios | Total number of respondents | Percentage |
|---|---|---|
| Sitio 1 | 15 | 16.30 |
| Sitio 2 | 12 | 13.04 |
| Sitio 3 | 17 | 18.48 |
| Sitio 4 | 13 | 14.13 |
| Sitio 5 | 13 | 14.13 |
| Sitio 6 | 14 | 15.22 |
| Sitio 7 | 8 | 8.70 |
| **Total** | **92** | **100.00** |

Table 3 displays descriptive statistics about the demographic and economic characteristics of farmers. The farmers' ages range between 33 and 70, with a mean and median age of 50, which implies that the sample was predominantly middle-aged. The standard deviation of 8.57 years indicates a very high variability in the distribution of ages. The average experience period with farming ranges from 5 to 45 years, with a mean and median of 21 years; hence, most of the participants have had a long period of farming

experience. A relatively small standard deviation of 8.30 years suggests a homogeneous length of farming experience in this group. Farm sizes vary between one and three hectares and the average median ranges at 1.75 hectares. This small standard deviation of 0.45 hectares signifies that farm sizes differ very little, thus indicating the existence of small-scale operations for most farmers. Monthly household incomes vary between ₱11,000.00 and ₱50,000.00, with an average of ₱19,000.00 and a median of ₱19,000.00. This size of standard deviation at ₱8,622.93 shows that the income among farmers was entirely spread out, which could mean relatively different economic profiles within the surveyed group. In general, results indicate a sample of middle-aged, experienced farmers with small-scale farms and wide variations in household monthly income and this result is consistent in (Casinillo, 2020).

**Table 3**. Descriptive statistics of age, years in farming, farm size, and income of the farmers

| Variables | Frequency | Percentage |
|---|---|---|
| ***Age*** | | |
| 18-25 | 0 | 0.00 |
| 26-35 | 4 | 4.35 |
| 36-45 | 24 | 26.08 |
| 46-55 | 39 | 42.39 |
| 56-60 | 15 | 16.30 |
| 61 and above | 10 | 10.88 |
| Total: 92<br>Minimum: 33.00<br>Maximum: 70.00 | <br>Mean: 50.00<br>Median: 50.00 | <br>Std. dev.: 8.57 |
| ***Years in farming*** | | |
| 5-10 | 5 | 5.43 |
| 11-15 | 17 | 18.48 |
| 16-20 | 19 | 20.65 |
| 21-25 | 32 | 34.78 |
| 26-30 | 9 | 9.78 |
| 31+ | 10 | 10.88 |
| Minimum: 5.00 | Mean: 21.00 | Std. dev.: 8.30 |
| Maximum: 45.00 | Median: 21.00 | |
| ***Farm size*** | | |
| 1-1.5 | 37 | 40.00 |
| 1.6-2.0 | 35 | 38.04 |
| 2.1-2.5 | 14 | 15.22 |
| 2.6 and above | 6 | 6.52 |
| Minimum: 1.00 | Mean: 1.75 | Std. dev.: 0.45 |
| Maximum: 3.00 | Median: 1.75 | |
| ***Monthly income (PHP)*** | | |
| 11,000.00-15,000.00 | 22 | 23.91 |
| 15,100.00-20,000.00 | 35 | 38.04 |
| 20,100.00-25,000.00 | 12 | 13.04 |
| 25,100.00-30,000.00 | 7 | 7.62 |
| 30,100.00-35,000.00 | 10 | 10.87 |
| 35,100.00-40,000.00 | 3 | 3.26 |
| 40,100.00 and above | 3 | 3.26 |
| Minimum: 11,000.00 | Mean: 19,000.00 | Std. dev.: 8,622.93 |
| Maximum: 50,000.00 | Median: 19,000.00 | |

Table 4 reflects the distribution of respondents across sex, marital status, educational attainment, tenurial status, and other sources of income. It suggests that females form a

significant majority of the sample. Of the 92 responses, 65 are female, making up 70.65% of the total, while the remaining 27 males make up 29.35%. The distribution implies that women play a larger role or are more actively represented in the context of this study (Ajibola et al., 2015). In terms of marital status, 93.48% (n=86) are married, while a meager 6.52% (n=6) are widowed. This information points out that most participants are likely to have a spouse within their household; thus, there may be effects on how decisions in the household regarding work labor distribution and economic-related activities might be made. Wives who are employed may be in a better position to negotiate for better marital power due to the economic resources they can contribute (Ajibola et al., 2015). The under-representation of the widowed indicates that single-headed households are not very common in the population studied. This distribution of marital status reveals the dominance of traditional family structures among the respondents.

The distribution of respondents by educational achievement shows that farmers have a wide range of educational backgrounds. The largest category, which accounts for 29.35% (n=27), consists of people who have attended college. Some almost similar individuals have graduated with their high school certificates, accounting for 28.26% (n=26) of all responses. Those who have only partially completed high school make up 20.65% (n=19), indicating that a considerable proportion of the population has low formal education. Of these, 14.13% are college graduates, while 7.61% have completed vocational training. This could be an account of a population that is fairly distributed in terms of different levels of educational achievement; most of the population has at least some high school or college education, but very few have undertaken vocational training and attained college. Such a difference in educational degrees may impact different abilities, opportunities, and approaches to livelihood activities for the respondents (Casinillo & Seriño, 2022).

In terms of tenurial status, 82.61% (n=76) fall into the landowner category. This means that most respondents have forms of tenures that could make them more stable and invest more in agricultural activities. Only 17.39% (n=16) are leaseholders, indicating a lower percentage lack direct ownership of the land they cultivate. The pervasiveness of landownership in the sample suggests a very high level of land security that may influence farming practices and long-term planning. However, the existence of leaseholders shows that land access for cultivation does not have to entail ownership, and it may represent the respondents' diversified economic or social conditions that may impact their financial stability. The data from farmers with additional sources of income reveal that close to one hundred percent of the respondents, 98.91% (n=91), have supplementary revenue streams aside from their principal farming operations. Only 1.09% (n=1) depend solely on farming for survival.

This would imply a high-income diversification for farmers that could be used to offset risks about agricultural production, such as variable yields or market prices. It also means that more than farming alone may be needed to meet household needs, and hence, most of the respondents must have been engaged in other sources of income-generating activities. Such diversity mirrors the economic realities of the respondents and underscores the importance of a diverse revenue stream as a guarantee for financial security. Previous research has demonstrated ongoing gender differences in access to and use of agricultural technologies among smallholder farmers (Ajibola et al., 2015).

**Table 4**. Distribution of respondents across sex, marital status, educational attainment, tenurial status, and sources of income

| Variables | Total number of respondents | Percentage |
|---|---|---|
| ***Sex*** | | |
| Male | 27 | 29.35 |
| Female | 65 | 70.65 |
| **Total** | **92** | **100.00** |
| ***Marital status*** | | |
| Married | 86 | 93.48 |
| Widowed | 6 | 6.52 |
| **Total** | **92** | **100.00** |
| ***Educational attainment*** | | |
| High School | 19 | 20.65 |
| High school graduate | 26 | 28.26 |
| College Level | 27 | 29.35 |
| College graduate | 13 | 14.13 |
| Vocational | 7 | 7.61 |
| **Total** | **92** | **100.00** |
| ***Tenurial status*** | | |
| Owner | 76 | 82.61 |
| Leaseholder | 16 | 17.39 |
| **Total** | **92** | **100.00** |
| ***With other sources of income*** | | |
| Yes | 91 | 98.91 |
| None | 1 | 1.09 |
| **Total** | **92** | **100.00** |

Table 5 shows the data on farmers' alternative sources of income reveal a wide variety of extra livelihood activities. Salaried employment is the most common source, accounting for 25% (n=23) among the respondents, which indicates that a good share of farmers depend on formal or informal jobs for additional financial security. Next in line are honorarium, sari-sari store operations, and the government's Pantawid Pamilyang Pilipino Program (4Ps), whose shares amount to 9.78% (n=9) among the respondents. Animal production and child support are reported by 8.70% (n=8) which includes family support and small livestock enterprises to supplement household income. Duck raising (6.52%, n=6) and hog production (5.43%, n=5) highlight the importance of animal-based income-generating activities. Overseas remittances, SSS old-age pensions, and farm work are less essential sources, only 3.26% each (n=3). The usual activities are vegetable production, tailoring, and carpentry, composing 2.17% (n=2) and 1.09% (n=1), respectively. The diversification of these sources of income highlights the ability of farmers to widen their livelihood opportunities. This suggests that the members of the households surveyed may not be dependent solely on farming activities but rather maintain multiple income sources to sustain their livelihood (Casinillo, 2020; Casinillo, 2022). While some are reliant on off-farm employment or government support, others help sustain their households through entrepreneurship or by other family members. This diversity speaks to farm families' economic hardships and how they strive to remain financially secure. Income diversification can be an effective poverty-reduction strategy if it is continuously examined and assessed in terms of its political economy dimensions, including productivity, equity, and the sustainability of rural livelihood activities, with a focus on vulnerable and marginalized groups

**Table 5**. Farmers' other source of income

| Another source of income | Total number of respondents | Percentage |
|---|---|---|
| Salary | 23 | 25.00 |
| 4Ps | 9 | 9.78 |
| Honorarium | 9 | 9.78 |
| Sari-sari store | 9 | 9.78 |
| Animal production | 8 | 8.70 |
| Support from children | 8 | 8.70 |
| Duck raising | 6 | 6.52 |
| Hog production | 5 | 5.43 |
| Remittance abroad | 3 | 3.26 |
| SSS pension | 3 | 3.26 |
| Farm labor | 3 | 3.26 |
| Vegetable prod | 2 | 2.17 |
| Tailoring | 2 | 2.17 |
| Carpentry | 1 | 1.09 |
| **Total** | **92** | **100.00** |

**Assistance Accessed by Farmers from Partners in the Community**

The data on assistance and services availed from the cooperative, as shown in Table 6, relate to the significant role the *MarCCO* assumes in support of farmers. Among the most embraced services are FME rental and marketing support, adopted by 96.74% (n=89) of the respondents. This infers that almost all farmers rely on the organization for operational help and market connections, which are vital to enhancing productivity and increasing income. The research illustrates the significance of rural infrastructure and services in facilitating equitable opportunities and strengthening the livelihoods of the rural populace (Mphande, 2016). Loans are another of the popular services provided, with 84.78% (n=78) of the respondents using loan services from the cooperative. Savings services are used by 56.52% (n=52), implying that there is moderate engagement with the cooperative for financial management and security. Mortuary services are used by a smaller portion of the sample (6.52%, n=6), implying that such advantages are less commonly required or utilized. Other forms of support are uncommon, with only 2.17% (n=2) of respondents. An assortment of replies exists; therefore, the cooperative's influence is vast in covering needs from operational to financial aspects. The services help farmers build resilience and capacity to manage issues such as productivity and personal financial planning (Red et al., 2021). Thus, *MarCCO*'s critical position in the community's agricultural ecology is underlined.

**Table 6**: Assistance/services accessed from Cooperatives.

| Assistance* | Total number of respondents | Percentage |
|---|---|---|
| FMEs rental | 89 | 96.74 |
| Marketing | 89 | 96.74 |
| Loan | 78 | 84.78 |
| Savings | 52 | 56.52 |
| Mortuary | 6 | 6.52 |
| Others | 2 | 2.17 |
| Total | 92 | 100.00 |

**Frequency of Interactions with Local Farmer Technicians**

The data in Table 7 on farmers' encounters with LFTs show that the vast majority, 77.17% (n=17), have dealt with them in their area. This demonstrates a high level of contact between farmers and LFTs, implying that these technicians play an essential role in giving advice, assistance, or services to the farming community. However, 22.83% (n=21) of respondents stated that they had no encounters with LFTs, showing that this resource has yet to be accessed or dealt with by this population segment. This could be due to a variety of

issues, including a lack of understanding, unavailability of LFTs, or divergent demands among farmers. This suggests a gap in the availability and accessibility of extension services and technical support required for small-scale farmers to adopt more productive technologies and practices (Red et al., 2021; Casinillo, 2022). The high-level involvement with LFTs stresses their importance in enabling agricultural development and knowledge dissemination, but some farmers' lack of participation may indicate an area for future improvement in outreach or service delivery.

**Table 7**: Farmers who had any dealings with the LFTs in their area.

| Any dealings? | Total number of respondents | Percentage |
|---|---|---|
| Yes | 71 | 77.17 |
| None | 21 | 22.83 |
| **Total** | 92 | 100.00 |

Table 8 shows the frequency of farmers' interactions with LFTs. Most of the respondents, 46.74%, or n=43, contact LFTs once monthly. This indicates that more farmers communicate often with the LFTs, possibly during certain times of the season or certain periods in the production phase. A smaller percentage, 23.91% (n=22), only very occasionally consults LFTs, and this could be attributed to either the lack of access or a lack of perceived need for their services. At 5.43% (n=5), there are weekly meetings, and rarely daily at 1.09% (n=1). There were also no responses at 22.83% (n=21), thus showing no understanding or knowledge about LFT services. These data indicate that although a significant proportion of farmers use LFTs regularly, there is still room to enhance the frequency and coverage of its services, especially among those who connect rarely or never. This will help provide technical knowledge and support to a larger part of the farming community

**Table 8**. Frequency of interactions with LFTs.

| Frequency | Total number of respondents | Percentage |
|---|---|---|
| Daily | 1 | 1.09 |
| Weekly | 5 | 5.43 |
| Monthly | 43 | 46.74 |
| Rarely | 22 | 23.91 |
| No response | 21 | 22.83 |
| **Total** | **92** | **100.00** |

## Conclusion

The majority or most of the respondents were female, aged 46-55, married, landowners with 21-25 years of farm experience, 1-1.5 hectares of farm size, monthly income between PhP15,000.00 and PhP20,000.00, and High School graduates. The respondents received services and assistance from their LFTs in terms of pest and disease management, irrigation, post-harvest technology, soil management, marketing, and other farm-related technical knowledge. In addition, most farmers contact LFTs monthly, but some rarely use them due to a lack of skill or access. Some farmers believe they are more competent than LFTs due to trust issues. Farmers perceive LFTs as effective, moderately beneficial, or uncertain. Over half stated they have a reasonable impact, increasing income, particularly for those changing rice cultivation. Farmers generally expressed satisfaction with the LFTs, with some neutral or dissatisfied, while others declined to respond, suggesting service improvements. Farmers in LFTs need more resources, equipment, and training. Environmental and climate issues, lack of coordination, financial incentives, poor monitoring, and logistical problems necessitate modernization and relationship-building. The study recommends that the Department of Agriculture (DA) or any government institutions operating within the community should prioritize giving farm inputs to lower farmers' production costs and

accelerate an increase in productivity that will lead to a rise in income. Local Farmer Technicians should be taught how to utilize technology such as mobile platforms to facilitate prompt advisory services and gather feedback from farmers. Plus, enhanced communication and engagement between the LFTs and farmers can encourage systematic interactions and consultation between them. One way to do this is to establish feedback mechanisms such as surveys, suggestion boxes, or digital applications. As for future research, factors affecting the perception of farmers toward LFTs should be evaluated using statistical models to strengthen the current findings of the study.

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