THE ROLE OF AGRICULTURAL EXTENSION WORKERS IN INCREASING CASHEW FARMING PRODUCTIVITY THROUGH CULTIVATION TECHNIQUE IMPROVEMENT EFFORTS IN WAIBAO VILLAGE, TANJUNG BUNGA SUBDISTRICT, EAST FLORES REGENCY

(Peran Penyuluh Pertanian Dalam Meningkatkan Produktivitas Usaha Jambu Mete Melalui Upaya Peningkatan Teknik Budidaya Di Desa Waibao, Kecamatan Tanjung Bunga, Kabupaten Flores Timur)

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ABSTRACT

This study aims to (1) determine the profile of cashew plantation businesses in Waibao Village, Tanjung Bunga District, East Flores Regency (2) determine the role of extension workers according to farmer's perceptions in increasing cashew farming productivity through efforts to improve cultivation techniques in Waibao Village, Tanjung Bunga District, East Flores Regency. The results of the study indicate that the profile of cashew farming based on the application of cultivation techniques taught by agricultural extension workers to farmers including watering, fertilization, pest and disease control, and harvesting and post-harvest is very helpful for farmers have implemented cultivation techniques taught by extension workers and the results of the application of these cultivation techniques have an impact on cashew farming productivity. The role of extension workers as aducators in providing information, guiding and motivating farmers in increasing cashew farming productivity through efforts to improve cultivation techniques including control, and harvesting and post-harvest is in the role category with a percentage of 58,94%.

Keywords: Cashew, Improvement of Cultivation Techniques, Role of Extension Workers

ABSTRAK

Penelitian ini bertujuan untuk (1) mengetahui profil usaha perkebunan jambu mete di Desa Waibao, Kecamatan Tanjung Bunga, Kabupaten Flores Timur (2) mengetahui peran penyuluh menurut persepsi petani dalam meningkatkan produktivitas usahatani jambu mete melalui upaya perbaikan teknik budidaya di Desa Waibao, Kecamatan Tanjung Bunga, Kabupaten Flores Timur. Hasil penelitian menunjukkan bahwa profil usahatani jambu mete berdasarkan penerapan teknik budidaya yang diajarkan penyuluh pertanian kepada petani meliputi penyiraman, pemupukan, pengendalian hama dan penyakit, serta panen dan pasca panen sangat membantu petani telah menerapkan teknik budidaya yang diajarkan penyuluh dan hasil penerapan teknik budidaya tersebut berdampak pada produktivitas usahatani jambu mete. Peran penyuluh sebagai aduktor dalam memberikan informasi, membimbing dan memotivasi petani dalam meningkatkan produktivitas usahatani jambu mete melalui upaya perbaikan teknik budidaya meliputi pengendalian, serta panen dan pasca panen berada pada kategori berperan dengan persentase sebesar 58,94%.

Kata kunci: Jambu Mete, Peningkatan Teknik Budidaya, Peran Penyuluh

INTRODUCTION

Agricultural development in the plantation sub-sector is directed at accelerating production growth, supporting industrial development, and increasing the utilization of natural resources such as land and water. The types of crops cultivated in the plantation sector include long-lived crops such as cashew, coffee, and cloves (Purwaningrum, 2018).

Cashew trees have the following characteristics: Cashew is a perennial plant with an upright stem that can reach a height of 10–12 meters, cashew roots are sensitive to waterlogging or anaerobic conditions, this plant begins to flower at around 2.5–3 years of age, provided there is a dry season lasting 4–6 months, and the cashew tree can live up to 60 years, although its productive age is usually around 50 years (Pranowo & Purwanto, 2011).

Bagus (2016) explain that cashew nuts make a significant contribution to Indonesia's economy, including as a source of foreign exchange, a source of income for farmers, raw materials for the food industry, and in job creation. Cashew nuts can be consumed whole, roasted, shelled, or salted. They are typically processed using deep frying (Alasalvar & Shahidi, 2009).

BPS (Statistics Indonesia, 2022) stated that cashew production in Indonesia's plantations increased from 137 thousand tons in 2016 to 170.40 thousand tons in 2021. The Eastern Indonesia Region (Kawasan Timur Indonesia or KTI) has become a priority area for the development of cashew plantations. Some of the major cashew-producing regions in KTI, and their contributions to national cashew production, include: Southeast Sulawesi (47.5%), South Sulawesi (20.4%), East Nusa Tenggara / NTT (5.0%), and Bali (3.5%)

NTT Plantation Office (2004) explain about the production and development of cashew farming in NTT that has continued to increase from year to year, both in terms of production volume and cultivated land area. According to the Directorate General of Plantations (2020), the production and land area for cashew in NTT Province increased over a 3-year period (2018–2020), with the production increasing by 1.19% from 2018 to 2019 and 3.25% from 2019 to 2020. Meanwhile, the land area increased by 0.084% from 2018 to 2019 and 2.79% from 2019 to 2020.

Based on data from BPS (East Flores Regency in Figures, 2020), Tanjung Bunga Subdistrict is one of the subdistricts in East Flores Regency that has become a cashew-producing area, with production continuously increasing from 2016 to 2019:

- 2016: 1,791.18 tons
- 2017: 1,863 tons
- 2018: 1,960.0 tons
- 2019: 3,867 tons

Waibao Village is one of the villages in East Flores Regency that relies on cashew farming as a source of household income. According to the East Flores Forestry and Plantation Office (2019), the cashew planting area in this village in 2018 was 3,076 hectares, but the productivity level was still very low at 1,626 kg/ha, compared to Riangduli Village in the same subdistrict, which had a planting area of 2,903 ha and productivity of 2,113 kg/ha.

The low productivity of cashew in Waibao Village is caused by several factors, including: Limited harvest time, which only lasts about three months per year (August to October), and lack of crop maintenance, due to limited capital and poor implementation of agricultural cultivation techniques. The performance of agricultural extension workers must be evaluated based on their main duties and functions, as outlined in Law No. 16. Based on preliminary survey results, it is suspected that the low cashew farming productivity in this village is related to how agricultural extension

workers perform their roles. One key role of extension workers that directly relates to improving farming techniques is efforts to enhance farmers' knowledge and skills.

Based on the background described above, the purpose of this study is to: Understand the profile of cashew farming in Waibao Village, Tanjung Bunga Subdistrict, East Flores Regency, and analyze the role of agricultural extension workers in increasing the productivity of cashew farming through improvements in cultivation techniques, from the farmers' perspectives in Waibao Village, Tanjung Bunga Subdistrict, East Flores Regency.

RESEARCH METHODOLOGY

1. Research Location and Time

This research was conducted in Waibao Village, Tanjung Bunga Subdistrict, East Flores Regency. Data collection was carried out over a period of one month, from May 2 to June 2, 2025.

2. Data Collection Methods

The data collection method used in this research was a survey method. The data used consisted of primary and secondary data. Primary data were obtained through direct interviews with respondents using a structured questionnaire, observations, and documentation. Secondary data were obtained from literature, relevant government agencies/institutions, and supporting books or documents relevant to the research topic.

3. Data Analysis Methods

This study used ordinal scales, quantified using a simplified Likert Scale.

1. To answer the first research question regarding the profile of cashew farming, a qualitative descriptive analysis was used.
2. To answer the second research question regarding the role of agricultural extension workers in increasing cashew productivity through improvements in cultivation techniques, a quantitative descriptive analysis was used. This was done by comparing the percentage value of the average score to the maximum score, and then referring to a reference table.

Table 1. Reference Categories for Respondent Distribution Based on the Percentage Value Of Average Score Achievement Against the Maximum Score

No	Percentage of Maximum Score Achievement	Category of Agricultural Extension Worker's Role	Frequency (People)	Percentage (%)
1	20-35	Very Not Influential		
2	36-51	Not Influential		
3	52-67	Moderately Influential		
4	68-83	Influential		
5	84-100	Very Influential		
Total			$\sum Fr$	100

Source: Nikolaus, (2016)

Table 2. Reference Categories for Respondent Distribution Based on the Percentage of Maximum Score Achievement from the Average Score (Simplified)

No	Percentage of Maximum	Category of	Frequency	Percentage (%)

	Score Achievement	Agricultural Extension Worker's Role	(People)	
1	33,33-55,55	Very Not Influential		
2	55,55-77,77	Influential		
3	77,77-100	Very Influential		
	Total		$\sum Fr$	100

RESULTS AND DISCUSSION

General Overview of the Research Location

Waibao Village is one of the villages located in Tanjung Bunga Subdistrict, East Flores Regency, East Nusa Tenggara Province. This village is one of 14 villages in Tanjung Bunga Subdistrict, where the majority of the population works as farmers, with cashew being the main agricultural product.

Respondent Characteristics

This research was conducted in Waibao Village with a sample of 35 respondents. Most farmer respondents were in the 47–61 years old age group, totaling 13 people (37%), while the smallest age group was 17–31 years old, with 4 people (11.5%). The other respondents fell into the 32–46 years category (8 people or 22.9%) and >62 years category (10 people or 28.6%).

Based on the research, most respondents were male with a total of 19 people (54.29%), while 16 respondents (45.71%) were female. In terms of education, the majority of respondents had an elementary school (SD) education, totaling 24 people (68.57%), while the least were university graduates (S1) with 2 people (5.7%). Other respondents had junior high school (SMP) education (6 people or 17.15%) and senior high school (SMA) education (3 people or 8.58%). As for farming experience, 12 respondents (34.29%) had 16–30 years of experience, 9 respondents (25.71%) had 1–15 years, 8 respondents (22.85%) had 31–45 years, and 6 respondents (17.15%) had more than 45 years of farming experience.

Profile of Cashew Farming in Waibao Village: Cultivation Techniques and Productivity

Waibao Village is one of the villages in Tanjung Bunga Subdistrict with great potential for cashew development, as most of its residents rely on cashew farming as their main source of income. According to Latif et al. (2022), the role of agricultural extension workers significantly influences productivity, meaning the performance of extension workers has a positive impact on increasing productivity.

Cashew farm income in Waibao Village is relatively high, with an average annual income of Rp 34,128,229. The marketing structure is categorized as oligopsony, with two main marketing channels:

- Channel 1: Farmer → Subdistrict-level Collecting Trader (PPK) → Inter-island Trader (PAP)
- Channel 2: Farmer → Inter-island Trader (PAP)

The marketing performance of cashew shows that Channel 2 yields higher marketing margins than Channel 1. Based on the research results, the cultivation techniques taught by agricultural extension workers have been applied by the farmers and have had a positive impact on the productivity of their cashew farming.

The Role of Extension Workers as Educators in Improving Cashew Farm Productivity

The results show that the achievement of the role of agricultural extension workers in increasing the productivity of cashew farming through improvements in cultivation techniques in Waibao Village—measured based on the total score of the questionnaire—was 557. When interpreted in terms of maximum score achievement, this equals 58.94%. After comparing this value with the reference score range, it falls into the category of 55.55%–77.77%. Therefore, it can be concluded that extension workers do play a role in improving the productivity of cashew farming in Waibao Village through efforts to enhance cultivation techniques.

1. The Role of Agricultural Extension Workers as Educators in Cashew Nut Processing

Table 3. Farmers' Perceptions of the Role of Agricultural Extension Workers in Cashew Nut Processing

Percentage of Maximum Score Achievement	**Category**	**Frequency (People)**	**Percentage (%)**
33,33-55,55	Not Involved	11	31,43
>55,55-77,55	Involved	15	42,86
>75,55-100	Not Involved	9	25,71
Total		**35**	**100**

Source: Reseacrh result, 2025

Table 3 shows that the cashew nut processing taught by the extension workers falls into the "Involved" category, with a total of 15 people (42.86%).

2. The Role of Agricultural Extension Workers as Educators in Cashew Cultivation Techniques and Practices

Table 4. Farmers' Perceptions of the Role of Agricultural Extension Workers in Cashew Cultivation Techniques and Practices

Percentage of Maximum Score Achievement	Category	Frequency (People)	Percentage (%)
33,33-55,55	Not Involved	12	34,29
>55,55-77,55	Involved	19	54,29
>75,55-100	Not Involved	4	11,42
Total		**35**	**100**

Source: Reseacrh result, 2025

Table 4 shows that the role of extension workers in teaching cashew cultivation techniques and practices in Waibao Village falls into the "Involved" category, with a total of 19 people (54.29%).

3. The Role of Agricultural Extension Workers as Educators in Solving Problems in Cashew Cultivation

Table 5: Farmers' Perceptions of the Role of Extension Workers in Addressing Problems Faced by Farmers

Percentage of Maximum Score Achievement	Category	Frequency (People)	Percentage (%)
33,33-55,55	Not Involved	17	48,58
>55,55-77,55	Involved	13	37,14
>75,55-100	Not Involved	5	14,28
Total		**35**	**100**

Source: Reseacrh result, 2025

Table 5 shows that extension workers were not involved in addressing issues related to irrigation, as well as harvest and post-harvest activities experienced by farmers in cashew cultivation in Waibao Village, with a frequency of 17 farmers (48.58%).

4. The Role of Agricultural Extension Workers as Educators in Providing New Ideas

Table 6: Farmers' Perceptions of the Role of Extension Workers in Teaching New Knowledge in Cashew Cultivation

Percentage of Maximum Score Achievement	Category	Frequency (People)	Percentage (%)
33,33-55,55	Not Involved	8	22,86
>55,55-77,55	Involved	16	45,72
>75,55-100	Not Involved	11	31,42
Total		**35**	**100**

Source: Reseacrh result, 2025

Table 6 shows that 16 farmer respondents (45.72%) stated that extension workers played a role in teaching new knowledge in cashew cultivation, particularly in maintenance practices such as fertilization and pest and disease control.

5. The Role of Agricultural Extension Workers as Educators in Introducing New Technology

Table 7: Farmers' Perceptions of the Role of Extension Workers in Introducing Technology for Cashew Cultivation

Percentage of Maximum Score Achievement	Category	Frequency (People)	Percentage (%)
33,33-55,55	Not Involved	17	48,58
>55,55-77,55	Involved	12	34,28
>75,55-100	Not Involved	6	17,14
Total		**35**	**100**

Source: Reseacrh result, 2025

Table 7 shows that extension workers did not play a role in introducing new technology for harvesting cashew nuts, as indicated by 17 farmer respondents (48.58%).

6. The Role of Agricultural Extension Workers as Educators in Irrigation Techniques for Cashew Cultivation

Table 8: Farmers' Perceptions of the Role of Extension Workers in Teaching Irrigation Techniques for Cashew Cultivation

Percentage of Maximum Score Achievement	Category	Frequency (People)	Percentage (%)
33,33-55,55	Not Involved	19	54,28
>55,55-77,55	Involved	10	28,58
>75,55-100	Not Involved	6	17,14
Total		**35**	**100**

Source: Reseacrh result, 2025

Table 8 shows that extension workers did not play a role in teaching irrigation techniques for newly planted cashew trees, as indicated by 19 farmer respondents (58.28%).

7. The Role of Agricultural Extension Workers as Educators in Fertilization Techniques for Cashew Cultivation

Table 9: Farmers' Perceptions of the Role of Extension Workers in Teaching Fertilization Techniques for Cashew Cultivation

Percentage of Maximum Score Achievement	Category	Frequency (People)	Percentage (%)
33,33-55,55	Not Involved	12	34,28
>55,55-77,55	Involved	15	42,86
>75,55-100	Not Involved	8	22,86
Total		**35**	**100**

Source: Reseacrh result, 2025

Table 9 shows that extension workers played a role in teaching fertilization techniques for cashew cultivation, as indicated by 15 farmer respondents (42.86%).

8. The Role of Agricultural Extension Workers as Educators in Pest and Disease Control Techniques

Table 10: Farmers' Perceptions of the Role of Extension Workers in Teaching Pest and Disease Control Techniques in Cashew Cultivation

Percentage of Maximum Score Achievement	Category	Frequency (People)	Percentage (%)
33,33-55,55	Not Involved	12	34,29
>55,55-77,55	Involved	16	45,71
>75,55-100	Not Involved	7	20
Total		**35**	**100**

Source: Reseacrh result, 2025

Table 10 shows that extension workers played a role in teaching pest and disease control techniques in cashew cultivation, as indicated by 16 farmer respondents (45.71%).

9. The Role of Agricultural Extension Workers as Educators in Teaching Harvest and Post-Harvest Handling

Table 11: Farmers' Perceptions of the Role of Extension Workers in Teaching Harvest and Post-Harvest Handling in Cashew Cultivation

Percentage of Maximum Score Achievement	Category	Frequency (People)	Percentage (%)
33,33-55,55	Not Involved	22	62,86
>55,55-77,55	Involved	12	34,28
>75,55-100	Not Involved	1	2,86
Total		**35**	**100**

Source: Reseacrh result, 2025

Table 11 shows that extension workers did not play a role in teaching harvest and post-harvest handling in cashew cultivation, as indicated by 22 farmer respondents (62.86%).

The research results indicate that the achievement of the role of agricultural extension workers in improving the productivity of cashew farming through efforts to enhance cultivation techniques in Waibao Village, as calculated based on the total score of the questionnaire, reached 557. When interpreted against the maximum possible score, this represents 58.94%. Compared to the reference value, this falls within the percentage range of 55.55%–77.77%. Therefore, it can be concluded that extension workers played a role in improving the productivity of cashew farming in Waibao Village through efforts to improve cultivation techniques.

CONCLUSION AND RECOEMMENDATION

Conclusion

Based on the results of the research conducted, it can be concluded that:

1. The application of cultivation techniques taught by agricultural extension workers to farmers affects the productivity of cashew farming.
2. The role of extension workers as educators in providing information, guiding, and motivating farmers to improve the productivity of cashew farming through the enhancement of cultivation techniques—including irrigation, fertilization, pest and disease control, as well as harvest and post-harvest handling—falls into the "Involved" category, with a percentage of 58.94%.

Recommendation

Based on the results of the research above, the researcher offers the following suggestions:

1. Farmers should be more proactive in applying cultivation techniques such as irrigation, harvest, and post-harvest handling so that cashew farming productivity can be increased.
2. Extension workers should be more active in carrying out regular mentoring to help farmers more effectively implement the cultivation techniques that have been taught.

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