East Asian Journal of Multidisciplinary Research (EAJMR)
Vol. 5, No. 11, 2026: 4389 - 4402

Smallholder Robusta Coffee Farming in North Lombok, Indonesia

Iqlimawati Iqlimawati[1], Taslim Sjah[2*], I Ketut Budastra[3]
Agribusiness Postgraduate Program, Faculty of Agriculture, University of Mataram, Mataram, Indonesia
Corresponding Author: Taslim Sjah taslim.sjah@unram.ac.id

A R T I C L E I N F O

Keywords: Robusta Coffee, Smallholder Farming, Mixed Cropping, Household Objectives, North Lombok

Received : 12, September
Revised : 14, October
Accepted: 17, November

©2026 Iqlimawati, Sjah, Budastra : This is an open-access article distributed under the terms of the Creative Commons Atribusi 4.0 Internasional.

A B S T R A C T

This study aimed to describe why farmers grow coffee, how they organise cultivation, and the practical support suggested by their farming circumstances. A survey covered 50 farmers selected purposively and through referrals across five subdistricts. Survey summaries and qualitative field descriptions were organised by topic and interpreted using a farming systems perspective. Increasing or supplementing income was the stated objective of 64% of respondents, while 20% identified personal consumption. Mixed cropping was practised by 90%, commonly involving cocoa, banana, and durian. Field accounts described farmers' own labour, family assistance, reciprocal group work, and specialist grafting services. Maintenance practices were established, although harvest-maturity terminology and farm records were inconsistent. The findings suggest that assistance should consider household purposes, companion crops, and existing cooperation. Practical priorities include garden-based learning, clearer harvest criteria, and simple seasonal records.

DOI prefix: https://doi.org/10.55927/eajmr.v5i11.44
ISSN-E: 2828 – 1519 (Online)
https://eajmrformosa.my.id/index.php/eajmr

INTRODUCTION

Robusta coffee is part of the farming activities of rural households in North Lombok, Indonesia. Understanding its place in these households requires attention to why farmers grow it, which other crops share their land, and how everyday work is organised. Local research has examined the coffee supply chain in Gangga and the assistance needed by coffee farmers in Slelos. These studies identify relevant connections between production, farmer organisation, and market access (Magfirahti, Tanaya, & Sjah, 2021; Sjah et al., 2025). Zainuri, Sjah, Budastra, Dipokusumo, and Iqlimawati (2025) also identify price fluctuations, uneven bean quality, and weak bargaining positions as challenges for the local Robusta sector. A descriptive account of farming practices can complement this work by showing the circumstances in which proposed improvements would be implemented.

This study aims to describe smallholder Robusta coffee farming in North Lombok through farmers' stated objectives, land and cropping arrangements, routine cultivation, and organisation of labour. It examines these elements together to identify practical support suited to the sampled farms. The following literature review establishes the farming systems perspective and the basis for comparing this descriptive account with previous agronomic, economic, and institutional studies.

THEORETICAL REVIEW

Household objectives and the farming systems perspective

A farming systems perspective treats household resources, farm enterprises, and their economic setting as interconnected (Dixon, Gulliver, & Gibbon, 2001). For smallholders who manage coffee together with other crops, the relevant decision extends beyond the coffee plot: it includes allocating land, labour, and expenditure among activities. This perspective provides the organising framework for the present paper, linking farmers' stated purposes with their crop mix, cultivation practices, and arrangements for obtaining labour and assistance.

Economic motivations are prominent in research on Indonesian smallholders. Sjah, Budastra, Tanaya, and Halil (2021) examined income and risk considerations in crop selection in North Lombok drylands. In coffee, Ibnu, Glasbergen, Offermans, and Arifin (2015) found that certification preferences were mainly economically driven. These studies address different decisions, but both highlight the importance of understanding farmers' priorities. Neither a preference for higher earnings nor participation in a commercial crop necessarily establishes an intention to specialise. Accordingly, this study distinguishes income-related purposes from household consumption and interprets coffee within respondents' wider farming activities.

Mixed gardens and the assessment of performance

Coffee grown with other crops requires attention to both plant interactions and household uses. Piato et al. (2020), in a meta-analysis of Robusta shade studies, found that responses varied with plant characteristics and growing conditions. Consequently, recording companion species is a starting point for

understanding a garden, rather than a measure of its shade management or productivity. The distinction is particularly relevant when a survey records crop presence but does not measure canopy cover, planting density, or competition for resources.

Economic assessment also needs to extend beyond coffee output. Jezeer, Verweij, Santos, and Boot (2017) examined the financial performance of shaded coffee and cocoa systems, while Eriesta, Sjah, and Idris (2022) evaluated agroforestry in Central Lombok using revenues, costs, and financial ratios. In nearby community forests, Sukardi, Ichsan, Febryano, Idris, and Dipokusumo (2022) identified and prioritised multipurpose crops, including coffee, cocoa, banana, and durian. Together, this literature indicates why crop composition, crop preferences, and financial outcomes should be distinguished. The present study documents composition; it does not rank crop combinations by profitability.

Cultivation practices and locally appropriate learning

Agronomic research provides evidence about how particular practices perform, whereas descriptive surveys establish which practices farmers report. Byrareddy, Kouadio, Mushtaq, and Stone (2019) monitored fertilizer management over ten years in Indonesian and Vietnamese Robusta farms. Atikah, Suhartanto, and Wachjar (2024) assessed maintenance pruning in Malang and reported improvements in productive branching and fruit production. These studies make input management and pruning relevant subjects for local learning, but their results cannot establish the effectiveness of reported practices in an unmeasured setting. Distinguishing whether a practice occurs from how it is performed helps identify the additional observations needed before recommending changes.

Cooperation, quality communication, and farm records

Farmer organisations can connect growers with services and markets, but membership alone provides little information about the benefits received. Ibnu, Offermans, and Glasbergen (2018) documented differences in perceived benefits across organisational arrangements among Indonesian coffee farmers. Vicol, Neilson, Hartatri, and Cooper (2018) showed that the benefits of relationship-coffee interventions could be distributed unevenly. These findings support examining actual participation, labour cooperation, and access to assistance alongside membership. Local supply-chain research likewise makes information exchange between growers and buyers relevant to understanding farm-level decisions (Magfirahti et al., 2021).

Farm records provide another connection between practices and decisions. Wulandari, Karyani, Ernah, and Alamsyah (2023) found associations between financial recording and education, recording-related training, and financing experience among Indonesian potato farmers. This evidence suggests questions about recording support, while the different commodity and research design limit direct transfer to coffee. For a mixed garden, records need to distinguish

products, expenditures, and labour contributions before the economic implications of a change can be assessed.

Positioning the present study

The reviewed literature addresses farmer preferences, agronomic performance, agroforestry economics, and organisational relationships through different units and methods of analysis. This paper brings these concerns together in a descriptive account of the sampled North Lombok farms. Its contribution is to show how household purposes, mixed cropping, routine practices, and cooperation coexist, and to identify practical questions for assistance. The framework guides the organisation of the findings; it is not a causal model, and the available aggregate data do not test relationships among its components.

METHODOLOGY

Study setting and respondents

The study draws on the descriptive component of a broader investigation of Robusta coffee farming in North Lombok Regency, West Nusa Tenggara Province, Indonesia. The descriptive design matches the aim of documenting farm circumstances and reported practices. Research design texts emphasise aligning questions, data sources, and analysis with the purpose of an inquiry (Creswell & Creswell, 2018; Kumar, 2019). The unit of analysis was the coffee farm managed by each respondent. Five subdistricts were included: Bayan, Kayangan, Gangga, Tanjung, and Pemenang. Locations were selected purposively because of the presence of active Robusta farmers and their relevance to local coffee activities.

The sample comprised 50 farmers, with 10 respondents in each subdistrict. Initial participants were selected purposively for their active involvement in coffee farming and willingness to provide information. Selecting participants for their relevant experience is consistent with purposeful sampling as discussed by Patton (2015). Further participants were identified through referrals from farmers, farmer-group leaders, and extension personnel. This approach enabled recruitment where a complete farmer register was not readily available. Referral sampling can favour connected networks, making the recruitment process relevant to interpretation (Kirchherr & Charles, 2018). Equal allocation across subdistricts ensured their inclusion but did not produce a probability sample or population-weighted estimates.

Information sources and analysis

The underlying information was collected through farmer interviews, questionnaires, field observation, and documentation. Interviews and observations provide complementary ways of documenting people's accounts and their working context (Patton, 2015). The descriptive records, summarised in 2026, covered farmer characteristics, purposes and reasons for growing coffee, land area and tenure, companion crops, maintenance, labour arrangements, and harvesting. This article uses the aggregate survey tables and qualitative

descriptions in those records. Published studies provide context for discussing the findings.

Analysis combined frequencies, percentages, selected means, and a narrative synthesis organised around the study objectives. The topics were chosen to describe household purposes, farm structure, daily practices, and cooperation; they are not presented as themes derived from formal coding of interview transcripts. The qualitative accounts are paraphrased, and no direct quotations are used. The denominator for percentages is 50 respondents unless stated otherwise. Responses about companion crops overlap because a farmer could report more than one species.

Land area was converted from are to hectares, using 100 are = 1 ha. Coffee area refers to land containing coffee and may also contain companion crops. Farming experience is treated as general agricultural experience because the descriptive records do not consistently distinguish coffee-specific experience.

The analysis describes reported conditions and documented practices. It does not estimate causal relationships, farm efficiency, profitability, or the effectiveness of proposed assistance. Production values were not used to compare yields because product form and reference periods were insufficiently standardised. These choices follow the principle that survey measures and reporting limits should be explicit (Kelley, Clark, Brown, & Sitzia, 2003). Findings apply to the participating farmers, with broader relevance considered through comparison with published research.

RESULTS AND DISCUSSION

Farmers and their purposes for growing coffee

Most respondents had a substantial agricultural background. Farming was the main occupation of 43 respondents (86%), and mean farming experience was 21.42 years. Forty-two respondents (84%) were aged 30–59 years. Education ranged from primary school to tertiary qualifications. These characteristics provide context for discussing learning and farm decisions, although experience and schooling alone do not establish technical proficiency. Men accounted for 48 respondents and women for two; this interview composition does not measure the contribution of women to household farming work.

Farmers expressed several purposes for growing Robusta coffee (Table 1). Nineteen respondents identified increasing income and 13 identified supplementing income. Together, these categories represented 64% of the sample. Ten respondents (20%) identified personal consumption. The remaining responses concerned obtaining maximum output, an interest in coffee, or its saleability. Keeping these categories visible helps retain the range of purposes recorded in the survey.

Table 1. Stated purposes for growing Robusta coffee

Purpose	Farmers (n)	Percentage (%)
Increasing income	19	38
Supplementing income	13	26
Personal consumption	10	20
Obtaining maximum output	5	10
An interest in coffee	2	4
Saleability in the market	1	2
Total	**50**	**100**

The predominance of income-related purposes is consistent with the economic emphasis in Indonesian farmers' certification preferences reported by Ibnu et al. (2015). The comparison concerns motivation: certification choices in that study and reasons for maintaining coffee here are different decisions. The present survey adds a household-consumption dimension, reported by one-fifth of respondents, which a solely sales-oriented interpretation would overlook. Assistance can therefore begin by clarifying whether a household seeks additional earnings, a convenient supply for consumption, or both. The aggregate summaries do not establish whether these purposes correspond to differences in investment, output, or sales.

A separate question recorded farmers' reasons for choosing coffee. Perceived agroclimatic suitability was reported by 18 respondents (36%), favourable market prospects by 11 (22%), and additional income by six (12%). Five respondents (10%) mentioned inspiration from friends, four (8%) considered maintenance easy, and two (4%) mentioned encouragement from their group. The remaining four respondents each referred to demand, saleability, price, or taste. These responses show that farmers considered environmental, economic, and social factors. Perceived suitability is a farmer assessment and does not substitute for a measured land-suitability evaluation.

The distinction between purposes and reasons also prevents an overly narrow interpretation of coffee farming. Some respondents had other occupations, including teaching, trading, wage work, and livestock activities, although their respective income contributions could not be calculated. Sjah et al. (2021) considered income and risk in crop choices in North Lombok drylands. The present findings complement that perspective by documenting coffee alongside other household activities; they do not demonstrate that the observed combinations reduced risk. A preference for additional income should therefore not be interpreted as an intention to specialise in coffee.

Coffee within small mixed gardens

Respondents managed an average of 1.59 ha of land, including an average of 0.80 ha containing coffee. Coffee-containing areas ranged from 0.25 to 3.50 ha. These areas should not be treated as land devoted exclusively to coffee because

other crops frequently occupied the same plots. Mixed cropping was reported by 45 farmers (90%), while five reported monoculture. The dominant setting was therefore a garden in which coffee coexisted with other crops.

Cocoa, banana, and durian were the most commonly reported companion crops (Table 2). Other species included avocado, vanilla, coconut, clove, ginger, sengon, and porang.

Table 2. Companion crops reported on coffee farms

Companion crop	Farmers (n)	Percentage (%)
Cocoa	37	74
Banana	25	50
Durian	24	48
Avocado	7	14
Vanilla	5	10
Coconut	5	10
Clove	4	8
Ginger	1	2
Sengon	1	2
Porang	1	2

These frequencies show the occurrence of species among farms. They do not measure the area, tree population, output, or income contribution of each species. Because responses overlap, the table cannot be used to divide respondents into exclusive coffee–cocoa or coffee–durian farm types.

This crop composition has practical implications for garden management. Advice about spacing, pruning, or fertilizer should begin by identifying the crops already present and their intended uses. Companion crops may provide products or shade, but their actual functions depend on planting arrangements and management. The survey did not measure canopy cover, crop-specific resource use, or the timing of receipts. It therefore supports recognition of diversity without demonstrating that diversification increased income or reduced risk.

The 90% incidence of mixed cropping establishes its prominence in this sample, but it is not directly comparable with the shade treatments analysed by Piato et al. (2020). Their synthesis evaluated growth, yield, and quality responses under differing conditions; this survey recorded the presence of companion crops. It therefore cannot determine whether particular combinations improved coffee performance. The useful implication is to assess canopy conditions and farmers' purposes for companion crops before proposing changes to garden composition.

This distinction also applies to economic comparisons. Jezeer et al. (2017) showed why coffee and cocoa yield alone was insufficient for assessing the

financial performance of shaded systems. Eriesta et al. (2022) used revenues, costs, and financial ratios to assess agroforestry in Central Lombok. In contrast, the present crop inventory identifies products that should enter such an assessment but cannot establish financial advantages. Future comparison of mixed and monoculture gardens would need consistent coffee and companion-crop receipts, input expenditure, and labour valuation.

Land access also varied. Thirty respondents (60%) grew coffee entirely on their own land, 15 (30%) entirely on community-forestry land known as Hutan Kemasyarakatan (HKm), and five (10%) on both. These figures describe farmers' tenure categories, not shares of land area, and do not establish tenure effects on investment. The prominence of cocoa, banana, and durian alongside coffee resembles the crop portfolio documented by Sukardi et al. (2022) in Central Lombok HKm areas. However, their study ranked crop priorities, whereas Table 2 reports occurrence. Frequency here should not be interpreted as a preference ranking or used to transfer their priorities directly to North Lombok.

Routine cultivation and the use of local skills

All respondents relied on rainfall for their coffee plants. This makes seasonal water availability relevant to routine management, but the records do not demonstrate drought losses during the study period. Thirty-four farmers (68%) reported applying fertilizer, while 16 reported no application. Among the whole sample, 30 applied fertilizer once a year and four twice a year. The recorded materials included manure, NPK, and other organic or inorganic products. Information on composition, quantity, treated area, and timing was not sufficiently consistent to evaluate nutrient adequacy.

Byrareddy et al. (2019) examined fertilizer management through repeated observations of Indonesian and Vietnamese Robusta farms. The present survey provides a more limited measure: participation in fertilizer use and reported application frequency. Thus, the finding that 68% applied fertilizer cannot establish adequate nutrition, excessive use, or an expected yield response. The comparison identifies a practical information need: recording materials, quantities, application dates, and treated areas, followed by soil or plant assessment where appropriate, before prescribing changes.

Seasonal observation could extend beyond input use. Kath et al. (2020) documented temperature sensitivity in Robusta production across Southeast Asian farms, while Markum et al. (2025) described climate-related crop vulnerability and community adaptation in Lombok's Sesaot agroforestry area. These studies support recording weather conditions alongside crop development in future farm monitoring. They do not establish climate-related losses in the present sample.

Weeding and pruning were established practices. Manual weed cutting was reported by 41 farmers (82%), and twice-yearly weeding by 37 (74%). All respondents reported pruning. Forty-seven (94%) reported annual pruning and, in a separate response, 47 reported pruning after harvest. Atikah et al. (2024) measured improvements in productive branching and fruit production under maintenance pruning in Malang. Here, the data establish reported adoption and timing, without measuring technique or crop response. The comparison shifts the

extension question from whether farmers prune to how pruning is performed and assessed. Demonstrations could build on existing experience while documenting local responses.

Grafting was another documented part of coffee management. Field descriptions referred to skilled workers from Selelos who provided grafting services. Their involvement indicates access to practical expertise within the local farming community. Farmers' recalled dates and plant ages were not sufficiently consistent to assess changes in production attributable to grafting. Nevertheless, the presence of experienced practitioners offers a possible basis for demonstrations that combine local skills with technical guidance and follow-up observation.

Family labour and cooperation among farmers

The field accounts describe farm work as drawing on several sources of labour. Farmers commonly began with their own work, obtained family assistance and reciprocal help from group members, and hired workers when additional help was needed. The accounts also described cooperation between farmer groups. This organisation of work places household effort and local relationships alongside cash payments in the operation of coffee farms.

Reciprocal labour, or gotong royong, can be understood as an arrangement for organising tasks among participants. The records support its presence but do not quantify the hours contributed or the obligations associated with returning assistance. Such work may avoid an immediate wage payment while still using time that has economic value. It should therefore be distinguished from both hired labour and an absence of labour cost.

Farmer-group membership was reported by 47 respondents (94%). This creates an identifiable route through which garden visits, discussions, and demonstrations might be organised. Membership does not establish the frequency of meetings, participation in decisions, or effectiveness of services. The assessment in Slelos by Sjah et al. (2025) identified institutional support and training among the needs of local coffee farmers. That evidence supports considering group services, while the present survey provides a description of membership and reported cooperation.

The 94% membership rate indicates an organisational entry point for assistance, but it cannot be equated with effective service provision. Ibnu et al. (2018) assessed perceived benefits across organisational arrangements, while Vicol et al. (2018) examined how opportunities from closer buyer relationships could be captured unevenly. Compared with those studies, the present evidence describes membership and reported cooperation without measuring benefit distribution. Follow-up assessment should therefore examine attendance, access to training and buyers, and participation in decisions, including the circumstances of farmers outside groups.

These arrangements suggest an approach to learning that starts with existing tasks. A group visit could examine a member's pruning practice or discuss how work is shared during harvest. A grafting practitioner could demonstrate a procedure and return to observe plant survival and development.

These are proposed uses of the documented networks, rather than programmes evaluated by this study. Their usefulness would depend on participation, practical relevance, and the ability to follow up after the demonstration.

Harvesting and communication about quality

All respondents reported picking coffee by hand and described their harvesting as selective. Their descriptions of fruit maturity, however, differed. Forty-two farmers (84%) reported the local pelangi category, described as approximately 80% red fruit mixed with other maturity stages. Eight farmers (16%) reported a fully red category. These proportions represent farmers' descriptions and were not independently measured in harvest samples.

The finding gives a concrete example of why everyday terminology matters. A farmer and a buyer may use the same term, selective harvesting, while expecting different fruit mixtures. A practical discussion could use visible fruit samples to agree on maturity categories and handling requirements. The Coffee Guide explains the importance of quality requirements and communication in coffee trade (International Trade Centre, 2021). In the present setting, such communication would need to be linked to the labour required and the terms offered for different harvest lots.

Harvest responsibility rested with the farmer in 41 cases (82%) and was shared with the buyer in nine (18%); farmer responsibility does not imply working without assistance. Magfirahti et al. (2021) described product, financial, and information flows in the Gangga coffee supply chain, while Hanifa, Sjah, and Budastra (2026) highlighted coordination among farmers, processors, and distributors. This survey adds a specific farm-level issue for such coordination: farmers who all described harvesting as selective nevertheless reported different maturity categories. Agreeing on observable categories before harvest could make buyer information more useful, although the effects on prices, quality, and labour costs remain unmeasured.

All respondents also reported collecting fallen cherries. Their subsequent handling and whether they were kept separate from tree-picked fruit were not consistently documented. The practice should therefore be described without assuming either contamination or quality loss. Clarifying the intended use and handling of different materials would make future quality discussions more specific. Additional sorting or picking work should be considered together with any change in sales receipts, because a higher price alone would not establish a higher net return.

Practical support suited to farming circumstances

The findings point to support that can begin with farmers' purposes and existing arrangements. An initial garden discussion could establish why the household maintains coffee, which companion crops it values, and who undertakes the main tasks. This would help farmers and extension personnel select manageable changes. The farming systems perspective of Dixon et al. (2001) provides a basis for considering these connections when planning assistance.

Simple records would support those discussions. Income information was available for only 10 respondents, and seasonal amounts had been expressed as monthly averages. Complete costs were unavailable, so the records cannot establish regular monthly receipts, net profit, or coffee's contribution to household income. Wulandari et al. (2023) analysed factors associated with financial recording among potato farmers; this study instead identifies incomplete information in the available coffee records and cannot explain its causes. Their findings make recording assistance worth examining, without establishing its likely effect here. A short seasonal record could separate coffee and other crop sales, purchases, paid work, and family or reciprocal labour.

Garden-based learning could combine these records with observation. Farmers and facilitators could examine existing pruning, discuss fertilizer materials and application areas, and agree on a small change to observe through the following season. Where harvest quality is the concern, farmers and buyers could compare clearly described lots and record the work and receipts involved. Such activities would help establish whether a proposed practice is worthwhile under local conditions.

Support also needs connections between farm advice and other agribusiness services. In their study of North Lombok mangoes, Zainuri and Sjah (2023) identified weaknesses within and between production, processing, marketing, and supporting services. Although that study concerns another crop, it provides a local example of why quality improvement should be discussed with the people who supply inputs, advise farmers, and buy their products.

Groups and experienced practitioners are possible partners in this work because they already appear in the field accounts. Assistance should also remain accessible to farmers outside those networks. The proposed activities are practical implications of the descriptive findings, not a ranked programme or a demonstration of intervention success. Their value would need to be reviewed with the participating households.

Study limitations

The sample was purposive and referral-based, with equal numbers from each subdistrict. Its results cannot be interpreted as population estimates. The analysis used aggregate summaries and qualitative field descriptions rather than a linked respondent-level dataset or a corpus of interview transcripts. Consequently, it cannot establish associations between farmers' objectives, crop combinations, and management choices, and it does not claim qualitative saturation. Self-reported practices may differ from independently observed performance. Missing cost data, uncertain production units, and incomplete information on companion crops restrict economic and productivity assessment. These limitations define the paper's contribution as a description of the sampled farms and a basis for more focused observation and discussion.

CONCLUSIONS AND RECOMMENDATIONS

Smallholder Robusta coffee farming in the North Lombok sample combined income-related purposes, household consumption, mixed gardens, and

several forms of labour organisation. Increasing or supplementing income was the stated purpose of 64% of respondents, while 20% identified personal consumption. Most farmers managed coffee alongside other crops, particularly cocoa, banana, and durian. The field accounts described a role for family assistance, reciprocal group work, and local grafting specialists.

Routine cultivation was already established through weeding, pruning, fertilizer use on some farms, and hand harvesting. The main descriptive lesson is that coffee management takes place within household and garden circumstances that vary among farmers. Harvest-maturity terminology and incomplete records illustrate specific areas where clearer information could support decisions. The findings do not establish profitability, the superiority of mixed cropping, or the causes of production differences.

Extension personnel and farmer groups should begin assistance with discussions of household purposes and the existing crop mix. Practical garden visits can build on farmers' maintenance experience and local grafting skills. Farmers and buyers should agree on observable harvest-maturity categories and handling arrangements. Simple seasonal records should accompany these activities so that changes in work, purchases, output, and receipts can be reviewed. Further research should follow the same farms over successive seasons and document the contribution of companion crops and different sources of labour.

FURTHER STUDY

Further studies should examine the economic sustainability, productivity, and livelihood strategies of smallholder Robusta coffee farmers in North Lombok, Indonesia, with particular attention to mixed-cropping systems, household income diversification, climate adaptation, and market access.

ACKNOWLEDGMENT

The authors thank the University of Mataram for funding and facilitating this research. We also thank the participating farmers and the individuals and institutions that assisted the study.

REFERENCES

Atikah, N., Suhartanto, M. R., & Wachjar, A. (2024). Pemangkasan meningkatkan produktivitas tanaman kopi Robusta (Coffea canephora Pierre ex. A. Froehner) di Malang, Jawa Timur [Pruning increases the productivity of Robusta coffee plants in Malang, East Java]. Buletin Agrohorti, 12(2), 294–303. doi:10.29244/agrob.v12i2.51583

Byrareddy, V., Kouadio, L., Mushtaq, S., & Stone, R. (2019). Sustainable production of Robusta coffee under a changing climate: A 10-year monitoring of fertilizer management in coffee farms in Vietnam and Indonesia. Agronomy, 9(9), 499. doi:10.3390/agronomy9090499

Creswell, J. W., & Creswell, J. D. (2018). Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.). Thousand Oaks, CA: Sage.

Eriesta, N., Sjah, T., & Idris, M. H. (2022). Economic analysis of agroforestry applications by dryland forest farmer group in Pelambik Village, Central

Lombok District, Indonesia. Advances in Social Science, Education and Humanities Research, 686, 5–11. doi:10.2991/978-2-494069-21-3_2

Hanifa, R. S., Sjah, T., & Budastra, K. (2026). Analisis sinergi kolaboratif antara petani, industri pengolahan, dan distributor dalam rantai nilai agribisnis untuk meningkatkan daya saing komoditas kopi [Analysis of collaborative synergy among farmers, processing industries, and distributors in the agribusiness value chain to improve coffee competitiveness]. Jurnal Economina, 5(1), 487–499. doi:10.55681/economina.v5i1.1820

Ibnu, M., Glasbergen, P., Offermans, A., & Arifin, B. (2015). Farmer preferences for coffee certification: A conjoint analysis of the Indonesian smallholders. Journal of Agricultural Science, 7(6), 20–34. doi:10.5539/jas.v7n6p20

Ibnu, M., Offermans, A., & Glasbergen, P. (2018). Certification and farmer organisation: Indonesian smallholder perceptions of benefits. Bulletin of Indonesian Economic Studies, 54(3), 387–415. doi:10.1080/00074918.2018.1506093

International Trade Centre. (2021). The coffee guide (4th ed.). Geneva, Switzerland: Author. Retrieved from https://www.intracen.org/media/5718

Jezeer, R. E., Verweij, P. A., Santos, M. J., & Boot, R. G. A. (2017). Shaded coffee and cocoa – Double dividend for biodiversity and small-scale farmers. Ecological Economics, 140, 136–145. doi:10.1016/j.ecolecon.2017.04.019

Kath, J., Byrareddy, V. M., Craparo, A., Nguyen-Huy, T., Mushtaq, S., Cao, L., & Bossolasco, L. (2020). Not so robust: Robusta coffee production is highly sensitive to temperature. Global Change Biology, 26(6), 3677–3688. doi:10.1111/gcb.15097

Kelley, K., Clark, B., Brown, V., & Sitzia, J. (2003). Good practice in the conduct and reporting of survey research. International Journal for Quality in Health Care, 15(3), 261–266. doi:10.1093/intqhc/mzg031

Kirchherr, J., & Charles, K. (2018). Enhancing the sample diversity of snowball samples: Recommendations from a research project on anti-dam movements in Southeast Asia. PLOS ONE, 13(8), e0201710. doi:10.1371/journal.pone.0201710

Kumar, R. (2019). Research methodology: A step-by-step guide for beginners (5th ed.). London, England: Sage.

Magfirahti, R., Tanaya, I. G. L. P., & Sjah, T. (2021). Supply chain of Robusta coffee in Gangga District, North Lombok Regency. Advances in Social Science, Education and Humanities Research, 556, 304–308. doi:10.2991/assehr.k.210525.095

Markum, Sjah, T., Idris, M. H., Aji, I. M. L., Fikry, M. Y., & Rahman, F. A. (2025). Agroforestry practices and community resilience to the impact of climate change in Sesaot Forest Area, Lombok, Indonesia. Jurnal Penelitian Pendidikan IPA, 11(5), 849–859. doi:10.29303/jppipa.v11i5.11258

Patton, M. Q. (2015). Qualitative research & evaluation methods: Integrating theory and practice (4th ed.). Thousand Oaks, CA: Sage.

Piato, K., Lefort, F., Subía, C., Caicedo, C., Calderón, D., Pico, J., & Norgrove, L. (2020). Effects of shade trees on robusta coffee growth, yield and quality. A meta-analysis. Agronomy for Sustainable Development, 40, 38. doi:10.1007/s13593-020-00642-3

Sjah, T., Budastra, I., Tanaya, I. G. L. P., & Halil. (2021). Crop selection in dryland of North Lombok Regency: Farmers search for more money and less risk. IOP Conference Series: Earth and Environmental Science, 913(1), 012017. doi:10.1088/1755-1315/913/1/012017

Sjah, T., Budastra, I., Zaini, A., Maryati, S., Danasari, I. F., & Iqlimawati. (2025). The conditions of coffee farmers in Slelos Village, North Lombok, Indonesia, and needed facilitation for improving their livelihood. Formosa Journal of Multidisciplinary Research, 4(11), 5393–5402. doi:10.55927/fjmr.v4i11.589

Sukardi, L., Ichsan, A. C., Febryano, I. G., Idris, M. H., & Dipokusumo, B. (2022). Determination of the type of multy purpose tree species (MPTS) plant featured in the area of community forest (HKm) Central Lombok. International Journal of Design & Nature and Ecodynamics, 17(4), 579–584. doi:10.18280/ijdne.170412

Vicol, M., Neilson, J., Hartatri, D. F. S., & Cooper, P. (2018). Upgrading for whom? Relationship coffee, value chain interventions and rural development in Indonesia. World Development, 110, 26–37. doi:10.1016/j.worlddev.2018.05.020

Wulandari, E., Karyani, T., Ernah, & Alamsyah, R. T. P. (2023). What makes farmers record farm financial transactions? Empirical evidence from potato farmers in Indonesia. International Journal of Financial Studies, 11(1), 19. doi:10.3390/ijfs11010019

Zainuri, & Sjah, T. (2023). Improving quality of mango fruits in North Lombok, Indonesia through the improvement of agribusiness system. Agricultural Science Digest, 43(3), 356–361. doi:10.18805/ag.DF-542

Zainuri, Sjah, T., Budastra, I. K., Dipokusumo, B., & Iqlimawati. (2025). Challenges and opportunities for North Lombok Robusta coffee. Empiricism Journal, 6(4), 2445–2452. doi:10.36312/g7brmj38