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MODEL DIVERSIFIKASI USAHA PERTANIAN DAN PERIKANAN UNTUK MENINGKATKAN PENDAPATAN RUMAH TANGGA

Agricultural and Fishery Business Diversification Model to Increase Household Income

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ABSTRAK

Diversifikasi usaha pertanian dan perikanan merupakan strategi penting bagi rumah tangga pedesaan dalam menghadapi ketidakpastian pendapatan yang disebabkan oleh fluktuasi harga komoditas, perubahan iklim, dan keterbatasan lahan. Penelitian ini bertujuan untuk menganalisis model diversifikasi usaha pertanian dan perikanan yang diterapkan oleh rumah tangga di kawasan pesisir serta mengukur dampaknya terhadap peningkatan pendapatan rumah tangga. Penelitian dilakukan di Kabupaten Gresik, Jawa Timur, melibatkan 120 rumah tangga yang dipilih menggunakan metode stratified random sampling. Data dikumpulkan melalui wawancara terstruktur menggunakan kuesioner tervalidasi. Analisis data menggunakan pendekatan analisis pendapatan, analisis regresi berganda, dan analisis kelayakan usaha (R/C ratio dan B/C ratio). Hasil penelitian menunjukkan bahwa rumah tangga yang menerapkan model diversifikasi terintegrasi antara usaha tambak udang, budidaya ikan bandeng, dan pertanian padi memperoleh pendapatan rata-rata sebesar Rp 8.750.000 per bulan, lebih tinggi 62,3% dibandingkan rumah tangga yang hanya mengandalkan satu sumber usaha (Rp 5.390.000 per bulan). Nilai R/C ratio diversifikasi terintegrasi sebesar 2,87 menunjukkan kelayakan usaha yang signifikan. Faktor modal usaha, akses teknologi, dan keikutsertaan dalam kelompok tani-nelayan secara signifikan berpengaruh terhadap tingkat pendapatan ($p < 0,05$). Penelitian ini menyimpulkan bahwa model diversifikasi usaha terintegrasi berbasis agromaritim mampu meningkatkan pendapatan dan ketahanan ekonomi rumah tangga secara berkelanjutan.

Kata kunci: *agromaritim, diversifikasi usaha, ketahanan ekonomi, pendapatan rumah tangga, pertanian-perikanan*

ABSTRACT

Agricultural and fishery business diversification is a critical strategy for rural households to cope with income uncertainty caused by commodity price fluctuations, climate change, and land limitations. This study aims to analyze the diversification model of farming and fishery businesses adopted by households in coastal areas and to measure its impact on household income improvement. The research was conducted in Gresik Regency, East Java, involving 120 households selected using stratified random sampling. Data were collected through structured interviews with validated questionnaires. Data analysis employed income analysis, multiple regression analysis, and business feasibility analysis (R/C ratio and B/C ratio). The results indicate that households implementing an integrated diversification model—combining shrimp pond

farming, milkfish aquaculture, and rice cultivation—achieved an average monthly income of IDR 8,750,000, which is 62.3% higher than households relying on a single business activity (IDR 5,390,000 per month). The R/C ratio of 2.87 for the integrated diversification model confirms significant business viability. Capital availability, access to technology, and membership in farmer-fisher groups significantly influenced household income levels ($p < 0.05$). This study concludes that an integrated agro-maritime-based business diversification model can sustainably improve household income and economic resilience.

Keywords: *agro-maritime, business diversification, economic resilience, household income, agriculture-fishery*

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INTRODUCTION

The agriculture and fisheries sector is the backbone of the economy of rural and coastal communities in Indonesia. These two sectors absorb more than 38% of the national workforce and contribute significantly to national food security (BPS STATISTIK POTENSI DESA KABUPATEN GERSIK, 2025). However, the reality on the ground shows that the majority of farmer and fisher households are still trapped in the cycle of poverty (Saing & Berkerakyatan, 1990). This condition has become a phenomenon that dependence on one type of business that is vulnerable to economic and climate shocks is a matter of great concern.

Agricultural household income in Indonesia shows high variability. This condition occurs mainly due to fluctuations in the price of agricultural commodities that farmers cannot control(Njurumana et al., 2025). According to (Pertanian, 2025), The farmer exchange rate (NTP) in several sub-sectors has come under significant pressure in the last five years, reflecting the weak bargaining position of farmers in the agricultural value chain. On the other hand, the fisheries sector faces challenges in the form of decreased productivity due to coastal ecosystem degradation, climate change, and rising operational costs.

Business diversification is seen as a strategic solution to reduce risk and improve household income stability. The concept of diversification in the context of agriculture and fisheries involves the simultaneous development of several types of businesses(Nguyen et al., 2025; Solidario de Souza Benatti et al., 2025). So that the risk of business failure for one commodity can be compensated by the success of the other commodity(Adhikari et al., 2025; Minh & Schmitter, 2025). This strategy also allows for more efficient and optimal utilization of resources, given the characteristics of coastal areas that have dual potential between inland agriculture and aquaculture.

Several previous studies have proven the effectiveness of business diversification in increasing household income. According to the view (Jacobi et al., 2024; Ulya et al., 2025) It was found that farmer households that diversified into rice farming businesses experienced an increase in income of 40–55% compared to monoculture farmers. In line with that condition according to the view,(Rohaeni et al., 2025) It shows that the integration of aquaculture business with palawija agriculture in coastal areas is able to increase household income. So in general this can reduce the level of economic vulnerability.

However, studies on integrated diversification models that combine shrimp pond business, milkfish farming, and rice farming systematically in one comprehensive analytical framework are still very limited. Most of the existing research only examines partial diversification without considering the dynamics of interaction between types of businesses. Therefore, this research can contribute holistically to household income. This is where there is a research gap that is the foundation that makes this research interesting to raise.

This research aims to: (1) identify patterns and models of diversification of agricultural and fishery businesses implemented by households in the coastal areas of Gresik Regency; (2) Analyze the contribution of each type of business to total household income; (3) measuring the financial feasibility of the integrated diversification model; and (4) identify factors that significantly affect the income level of households that diversify their businesses.

RESEARCH METHODS

Research Location and Time

This research was carried out in Madumulyorejo Village, Dukun District, Gresik Regency, East Java, from February to December 2025. This area is a center for diversification of fisheries and agricultural businesses, chosen purposively because it has the characteristics of a representative coastal area. The condition of the community is actively carrying out activities to diversify wetland agricultural businesses as well as pond fisheries cultivation.

Population and Sample

The research population is all households that have business activities in the field of agriculture and/or fisheries in the research area, totaling 847 heads of families based on data from the Marine and Fisheries Service of Gresik Regency (2025). Sampling was carried out using the stratified random sampling method based on the main type of business carried out, so that 120 respondents representing four strata were obtained: (1) Pure rice farmers (n=30), (2) Pure fishermen/farmers (n=30), (3) combination of small-scale agriculture (n=30), and (4) combination of medium-scale agriculture-fisheries (n=30). The determination of the sample count refers to the Slovin formula with an error tolerance limit of 5% (Mouratiadou et al., 2023; Werdofa et al., 2025).

Data Collection Techniques

Primary data were collected through structured interviews using questionnaires that had been tested for validity and reliability. The questionnaire included household profiles, type and scale of business, income structure, production cost structure, access to capital and technology, and participation in farmer/fisher groups. Secondary data were obtained from the Gresik Regency Central Statistics Agency, the Marine and Fisheries Service, the Agriculture Service, as well as relevant scientific publications.

Data Analysis

Data analysis uses several analytical approaches as follows:
First, the analysis of business income is calculated using the formula:

$$\pi = TR - TC$$

where π is profit (Rp), TR is total revenue (Rp), and TC is total cost of production (Rp)(García-Cornejo et al., 2025; Makate et al., 2022; Maryoni et al., 2023; Pečurlić et al., 2025).

Second, the business feasibility analysis uses the R/C ratio and B/C ratio. The R/C ratio is calculated as a comparison between total revenue (TR) and total cost of production (TC). The R/C ratio value of > 1 indicates that the business is financially viable(Derpsch et al., 2024; Patiung & Sarimaryoni, 2025).

Third, multiple regression analysis is used to identify factors that affect household income. The regression model used is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \varepsilon$$

where Y is total household income (Rp/month), X_1 is the area of land/pond (ha), X_2 is business capital (Rp), X_3 is business experience (years), X_4 is technology access (score 1–5), X_5 is the participation of farmer/fisher groups (dummy: 1=yes, 0=no), β_0 is constant, β_1–β_5 is the regression coefficient, and ε is the term error.

Classical assumption tests including normality tests (Kolmogorov-Smirnov), multicollinearity tests (VIF), heteroscedasticity tests (Glejser), and autocorrelation tests (Durbin-Watson) are performed before the interpretation of regression results. All statistical analysis using SPSS software version 26.0 and Microsoft Excel 2021.

RESULTS AND DISCUSSION

Respondent Characteristics

The socio-demographic characteristics of the respondents are presented in Table 1. The average age of the respondents was 42.7 years old with the level of education dominated by high school/vocational school graduates (45.8%). The majority of respondents have been in agriculture/fisheries business for more than 10 years (62.5%), indicating a high level of experience and attachment to the sector. The area of land/ponds managed varies between 0.25 ha to 3.5 ha, with an average of 1.2 ha per household.

Table 1. Socio-Demographic Characteristics of Respondents (n=120)

Features	Category	Percentage (%)
Age (years)	25–35	22,5
	36–45	38,3
	46–55	28,3
	> 55	10,9
Education	Elementary/Not Finished	18,3
	Junior High School	20,0
	High School / Equivalent	45,8
	D3/S1	15,9
Experience (years)	1–5	12,5
	6–10	25,0
	11–20	45,8
	> 20	16,7
Land area (ha)	0,25–0,5	30,0
	0,51–1,0	35,0
	1,01–2,0	25,8
	> 2,0	9,2

Source: Primary data, processed (2025)

Business Diversification Patterns and Models

Based on the results of the field survey, three main patterns of business diversification applied by households in the research site were identified, as shown in Figure 1. So that according to the view (Fadilah et al., 2025; Kitole et al., 2024; Sains, 2026) That is, the first pattern is horizontal diversification, in which households develop several types of commodities in the same business category (for example, shrimp ponds and milkfish ponds). The second pattern is vertical diversification, which is business development from upstream to downstream in a commodity value chain. The third pattern, the most dominant (53.3% of respondents), is integrated diversification that combines rice farming with pond aquaculture in a single household business management system.

The agromaritime integrated diversification model found in the field has a unique characteristic in the form of a complementary production cycle between rice farming and pond fisheries. In the rainy season (October–March), the land is optimized for rice cultivation, while in the dry season (April-September), the land is converted into ponds for the cultivation of vannamei shrimp and milkfish. This pattern allows for year-round land use without resource use conflicts, while making efficient use of water and nutrient cycles(Atchadé & Nougbodé, 2024; Fadilah et al., 2025; Mng'ong'o et al., 2024).

Revenue Analysis and Business Structure

Analysis of household income based on the business pattern applied is presented in Table 2. Households with an integrated diversification model earn an average net income of IDR 8,750,000 per month, significantly higher than the pure farmer group (IDR 3,420,000) and pure fishermen/farmers (IDR 5,390,000). This is in line with the findings (Luan et al., 2024; Wanzala et al., 2024; Yin et al., 2024) which states that the combination of agriculture-fisheries is able to generate 1.5–2 times the income of a single business.

Table 2. Household Income Analysis Based on Business Pattern

Business Pattern	Total Revenue (Rp/month)	Total Cost (Rp/month)	Net Income (Rp/month)	R/C Ratio
Pure rice farming	5.250.000	1.830.000	3.420.000	2,87
Pure pond fisheries	8.100.000	2.710.000	5.390.000	2,99
Diversification of the home. (2 commodities)	10.450.000	3.240.000	7.210.000	3,23
Integrated diversification	13.900.000	5.150.000	8.750.000	2,70

Source: Primary data, processed (2025))

Financial Feasibility Analysis

The R/C ratio value of all business patterns studied shows a number above 1, indicating that all business patterns are financially feasible. The horizontal diversification of two commodities resulted in the highest R/C ratio (3.23), which indicates better cost efficiency due to economies of scope. Although the integrated diversification model has a slightly lower R/C ratio (2.70) than that of pure pond fisheries (2.99), it has advantages in terms of income stability and a more even distribution of risk throughout the year(Oppong-Kyeremeh et al., 2024; Rathore et al., 2024; Tarihoran et al., 2023).

The analysis of the B/C ratio of the integrated diversification model shows a value of 1.70, which means that every Rp 1.00 invested produces a net benefit of Rp 1.70. This value is well above the minimum feasibility threshold (B/C ratio > 1) and is comparable to competitive agribusiness sector investment in Gersik Regency (Belay & Lebeza, 2024; Montoya et al., 2024; Tarihoran et al., 2023). The cash flow profile shows that integrated diversification provides more stable income throughout the year than the monoculture pattern, which tends to have sharp seasonal income fluctuations.

Factors Affecting Household Income

The results of multiple regression analysis are presented in Table 3. The regression model constructed has a coefficient of determination (R^2) of 0.784, which means that 78.4% of the variation in household income can be explained by all five independent variables included in the model. The F-statistical value = 42.31 ($p < 0.001$) shows that simultaneously all five variables have a significant effect on household income.

Table 3. Results of Multiple Regression Analysis of Factors Affecting Household Income

Variabel	Koefisien (β)	Std. Error	t-hitung	Sig.
Konstanta (β_0)	1.245.320	324.150	3,840	0,000*
Land/pond area (X_1)	1.820.450	215.300	8,454	0,000*
Business capital (X_2)	0,412	0,089	4,629	0,000*
Business experience (X_3)	124.760	45.230	2,758	0,007*
Access technology (X_4)	654.320	132.780	4,927	0,000*
Keangg. Farmer Group (X_5)	1.125.800	298.450	3,772	0,000*

*Source: Primary data, processed (2025). Remarks: *) significant at α = 5%; $R^2 = 0.784$; $F = 42.31$ ($p < 0.001$)*

Partially, all independent variables were shown to have a significant effect on household income ($p < 0.05$). The area of land/pond (X_1) has the greatest influence with a coefficient value of β = 1,820,450, which means that every addition of 1 ha of land/pond will increase household income by IDR 1,820,450 per month, ceteris paribus. These findings are consistent with the results of the study (Burchfield et al., 2024; Chuanrum & Shrestha, 2024; Ramos-Gerena, 2024) which confirms that land tenure is the main determinant of agricultural sector income.

Technology access (X_4) makes a significant contribution with a coefficient of β = 654,320 per unit of technology score improvement. This reflects the importance of adopting modern aquaculture technologies—such as the use of pond aerators, standardized organic fertilizers, and sensor-based feed management systems—in increasing productivity and business efficiency. Membership in farmer/fisher groups (X_5) was also shown to have a significant positive effect (β = 1,125,800), confirming the important role of social capital and collective networks in improving access to information, technology, and markets for agriculture-fisheries business actors(Adzigbli et al., 2024; Aghajani et al., 2024; Lohrum et al., 2024; Xu et al., 2024).

Discussion: Implications of the Integrated Diversification Model

The findings of this study show that the agromaritime integrated diversification model has a clear competitive advantage over the single business pattern, not only in terms of absolute income but also in terms of stability and resilience of the household economy. This result is in line with the theory of livelihood asset portfolios (Aghajani et al., 2024; Belay & Lebeza, 2024; Dasgupta et al., 2021) which states that diversification of income sources is an effective adaptive strategy for rural households in the face of economic shocks.

Differs according to views (Chuanrum & Shrestha, 2024; Gittins et al., 2020; Gogoi et al., 2021; Sharifi Nia et al., 2024) which only found a 35% increase in income from fisheries-agriculture diversification in Central Java, this study found a greater increase (62.3%) in the coastal area of Gresik. This difference is likely due to: (1) the comparative advantage of the Gresik coastal area in the cultivation of vannamei shrimp with high economic value; (2) the availability of better irrigation infrastructure to support dual-season farming; and (3) proximity to the frozen shrimp export market through the port of Surabaya.

Based on a policy perspective, these findings strengthen the argument for the need for integrated government programs to encourage business diversification in coastal areas. Programs such as PUMK (Family Mina Business Development) and KUGAR (Joint Business Group) need to be strengthened with diversified business management training components, flexible access to capital, and appropriate technology facilitation. The integration of agricultural and fisheries policies that have been running sectorally needs to be synergized in a holistic framework for the development of coastal areas (Kementerian Kelautan dan Perikanan, 2023).

CONCLUSION

This research yields three main conclusions. First, there are three business diversification patterns applied by coastal households in Gresik Regency, with the agromaritime integrated diversification model (rice farming + shrimp ponds + milkfish cultivation) as the most dominant pattern (53.3% of respondents) and providing the highest income. Second, the integrated diversification model has been proven to be able to increase household income by 62.3% compared to a single business, with an R/C ratio of 2.70 and a B/C ratio of 1.70 which confirms significant financial viability. Third, land area, business capital, business experience, access to technology, and membership of farmer/fisher groups simultaneously or partially have a significant effect on household income ($R^2 = 0,784$; $p < 0,05$).

Based on these findings, it is recommended that: (1) local governments develop integrated agro-maritime areas that facilitate the massive implementation of integrated diversification models; (2) financial institutions provide micro business credit schemes that are adaptive to the dual production cycle of agriculture-fisheries; and (3) Further research needs to be conducted to examine the environmental sustainability aspects of this diversification model, especially related to the impact of pond intensification on mangrove ecosystems and coastal water quality.

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BIBLIOGRAPHY

Adhikari, L., de Voil, P., Dreccer, M. F., & Rodriguez, D. (2025). Benefits and trade-offs from the diversification of rangeland farms in Northern Queensland, Australia. *Agricultural Systems*, *226*, 104331. https://doi.org/https://doi.org/10.1016/j.agsy.2025.104331

Adzigbli, W. K., Duku, E., Atampugre, G., Fürst, C., & Nyarko, B. K. (2024). Agricultural land use policies and landscape dynamics: Evidence from rainforest agroecological zone. *Land Use Policy*, *142*(March), 107184. https://doi.org/10.1016/j.landusepol.2024.107184

Aghajani, D., Seraji, H., Kaur, H., & Vilko, J. (2024). A sustainable integrated model for multi-objective planning of an agri-food supply chain under uncertain parameters: A case study. *Computers & Chemical Engineering*, *188*, 108766. https://doi.org/https://doi.org/10.1016/j.compchemeng.2024.108766

Atchadé, M. N., & Nougbodé, H. (2024). Statistical investigation on the relationship between climate change, food availability, agricultural productivity, and economic expansion. *Heliyon*, *10*(12), e32520. https://doi.org/10.1016/j.heliyon.2024.e32520

Belay, T., & Lebeza, T. M. (2024). Livelihood vulnerability of rural households to climate variability and change: An agroecological system-based approach in northwestern Ethiopia. *Heliyon*, *10*(23), e40570. https://doi.org/https://doi.org/10.1016/j.heliyon.2024.e40570

BPS STATISTIK POTENSI DESA KABUPATEN GERSIK, 2025. (2025). STATISTIK POTENSI DESA KABUPATEN GERSIK. *Badan Pusat Statistik Kabupaten Gesik*, *16,2025*(BPS), 1–151.

Burchfield, E., Ferro, M., Hüttel, S., Lakes, T., Leonhardt, H., Niedermayr, A., Rissing, A., Seifert, S., & Wesemeyer, M. (2024). Towards a comprehensive analysis of agricultural land systems

in the EU and US: A critical view on publicly available datasets. *Land Use Policy*, *147*(November 2023), 107371. https://doi.org/10.1016/j.landusepol.2024.107371

Chuanrum, R., & Shrestha, R. P. (2024). Role of integrated farming systems in land degradation control and plant diversity enhancement: A case of northeast Thailand. *Farming System*, *2*(3), 100086. https://doi.org/https://doi.org/10.1016/j.farsys.2024.100086

Dasgupta, P., Goswami, R., Chakraborty, S., & Saha, S. (2021). Sustainability analysis of integrated farms in coastal India. *Current Research in Environmental Sustainability*, *3*, 100089. https://doi.org/https://doi.org/10.1016/j.crsust.2021.100089

Derpsch, R., Kassam, A., Reicosky, D., Friedrich, T., Calegari, A., Basch, G., Gonzalez-Sanchez, E., & dos Santos, D. R. (2024). Nature's laws of declining soil productivity and Conservation Agriculture. *Soil Security*, *14*(January 2023), 100127. https://doi.org/10.1016/j.soisec.2024.100127

Fadilah, M. A., Budiyanto, D., Program, A. S., Pumpungan, M., Engineering, M., Program, S., Saburai, U., Lampung, K. B., & Bogor, K. (2025). *Evaluation of Frequency of Feeding Silkworms (Tubifex sp.) on the Survival Fish Larvae of Puntius denisonii*. *11*(April), 61–70.

García-Cornejo, B., Pérez-Méndez, J. A., Wall, A., & Castrillo-Cachón, D. (2025). The effect of management accounting practices and ICT on the efficiency of organic farms. *Journal of Rural Studies*, *114*, 103554. https://doi.org/https://doi.org/10.1016/j.jrurstud.2024.103554

Gittins, P., McElwee, G., & Tipi, N. (2020). Discrete event simulation in livestock management. *Journal of Rural Studies*, *78*, 387–398. https://doi.org/https://doi.org/10.1016/j.jrurstud.2020.06.039

Gogoi, B., Borah, N., Baishya, A., Nath, D. J., Dutta, S., Das, R., Bhattacharyya, D., Sharma, K. K., Valente, D., & Petrosillo, I. (2021). Enhancing soil ecosystem services through sustainable integrated nutrient management in double rice-cropping system of North-East India. *Ecological Indicators*, *132*, 108262. https://doi.org/https://doi.org/10.1016/j.ecolind.2021.108262

Jacobi, J., Lara, D., Opitz, S., de Castelberg, S., Urioste, S., Irazoque, A., Castro, D., Wildisen, E., Gutierrez, N., & Yeretzian, C. (2024). Making specialty coffee and coffee-cherry value chains work for family farmers' livelihoods: A participatory action research approach. *World Development Perspectives*, *33*, 100551. https://doi.org/https://doi.org/10.1016/j.wdp.2023.100551

Kitole, F. A., Ojo, T. O., & Mkuna, E. J. (2024). Unveiling the nexus between maltreatment of smallholder youth farmers and agricultural productivity in Tanzania. *Scientific African*, *25*, e02270. https://doi.org/10.1016/j.sciaf.2024.e02270

Lohrum, N., Normand, S., Dalgaard, T., & Graversgaard, M. (2024). Unveiling the frontiers: Historical expansion and modern implications of agricultural land use in Denmark. *Journal of Environmental Management*, *359*(March), 120934. https://doi.org/10.1016/j.jenvman.2024.120934

Luan, X., Yasmeen, R., & Hassan Shah, W. U. (2024). Assessing energy efficiency, regional disparities in production technology, and factors influencing total factor energy productivity change in the agricultural sector of China. *Heliyon*, *10*(15), e35043. https://doi.org/10.1016/j.heliyon.2024.e35043

Makate, C., Angelsen, A., Holden, S. T., & Westengen, O. T. (2022). Crops in crises: Shocks shape smallholders' diversification in rural Ethiopia. *World Development*, *159*, 106054. https://doi.org/https://doi.org/10.1016/j.worlddev.2022.106054

Maryoni, H. S., Gayatri, S., Ekowati, T., & Sunarti, D. (2023). Broiler Business is the Best Diversification for Furniture Business. *TEM Journal*, *12*(2), 890–898. https://doi.org/10.18421/TEM122-35

Minh, T. T., & Schmitter, P. (2025). Adaptive scaling ecosystem for system transformation:

Operationalizing solar-based farmer-led irrigation in sub-Saharan Africa. *Cleaner Food Systems*, *2*, 100004. https://doi.org/https://doi.org/10.1016/j.clfs.2025.100004

Mng'ong'o, M. E., Mwaipopo, R. E., Ojija, F., & Matimbwa, H. (2024). The role of conservation agriculture in enhancing biodiversity and common beans productivity. *Soil Advances*, *2*(September), 100018. https://doi.org/10.1016/j.soilad.2024.100018

Montoya, L. H. B., Sossa, J. W. Z., Piedrahíta, J. C. P., Mendoza, G. L. O., Montoya, A. F. R., & Pérez, W. A. P. (2024). Innovation management model for functional food ingredients and additives. Alignment with hype cycle, Python S-curves, and open innovation variables. *Journal of Open Innovation: Technology, Market, and Complexity*, *10*(3). https://doi.org/10.1016/j.joitmc.2024.100365

Mouratiadou, I., Lemke, N., Chen, C., Wartenberg, A., Bloch, R., Donat, M., Gaiser, T., Basavegowda, D. H., Helming, K., Hosseini Yekani, S. A., Krull, M., Lingemann, K., Macpherson, J., Melzer, M., Nendel, C., Piorr, A., Shaaban, M., Zander, P., Weltzien, C., & Bellingrath-Kimura, S. D. (2023). The Digital Agricultural Knowledge and Information System (DAKIS): Employing digitalisation to encourage diversified and multifunctional agricultural systems. *Environmental Science and Ecotechnology*, *16*, 100274. https://doi.org/https://doi.org/10.1016/j.ese.2023.100274

Nguyen, A. T., Vu, T. T. T., Nguyen, T. P. N., Trinh Phuong, N., Le, N. A., Do Thi, T., & Le Huyen, T. (2025). Sustainable agritourism monitoring: An expert Delphi study on provincial-level indicators in Vietnam. *Environmental and Sustainability Indicators*, *28*, 100966. https://doi.org/https://doi.org/10.1016/j.indic.2025.100966

Njurumana, G. N., Ngongo, Y., Octavia, D., Suharti, S., Rakatama, A., Prameswari, D., Maharani, R., Wibowo, L. R., Tampubolon, A. P., Suratman, Dewi, R., Hadi, E. E. W., Adalina, Y., Basuki, T., deRosari, B., & Hendarto, K. A. (2025). Livelihood resilience of forest-dependent farmers amidst the covid-19 pandemic in Sikka, Indonesia. *Sustainable Futures*, *9*, 100533. https://doi.org/https://doi.org/10.1016/j.sftr.2025.100533

Oppong-Kyeremeh, H., Bannor, R. K., & Mensah, J. O. (2024). Branding locally produced chicken in Ghana: An application of discrete choice experiment. *Heliyon*, *10*(22). https://doi.org/10.1016/j.heliyon.2024.e40208

Patiung, M., & Sarimaryoni, H. (2025). *ANALYSIS OF THE MULTIDIMENSIONAL PERFORMANCE OF REGIONAL GOVERNMENTS IN ACHIEVING THE SUSTAINABLE DEVELOPMENT GOALS (SDGS) IN PACITAN REGENCY 2024*. *9*(6), 1–12.

Pečurlić, L., Erjavec, E., Sudarić, T., & Šumrada, T. (2025). Failure or success? Biodiversity policy integration into the agricultural policy of the new EU Member States – the Croatian experience. *Earth System Governance*, *26*, 100284. https://doi.org/https://doi.org/10.1016/j.esg.2025.100284

Pertanian, K. (2025). Renstra Kementan, 2025. *PERATURAN MENTERI PERTANIAN REPUBLIK INDONESIA NOMOR 40 TAHUN 2025*.

Ramos-Gerena, C. E. (2024). Regulating belonging: Contradictions in Puerto Rico's agricultural land-use policies. *Land Use Policy*, *145*(June), 107279. https://doi.org/10.1016/j.landusepol.2024.107279

Rathore, S. S., Babu, S., Shekhawat, K., Kumar, V., Gairola, A., Wani, O. A., & Singh, V. K. (2024). Exploring sustainable agricultural production models to coordinate system productivity, soil biological health and eco-efficiency in the semi-arid region. *Environmental and Sustainability Indicators*, *24*(September), 100480. https://doi.org/10.1016/j.indic.2024.100480

Rohaeni, E. S., Darsani, Y. R., Qomariah, R., Darwis, V., Lesmayati, S., Bahua, H., Rozi, F., Kipli, G. C., Widiawati, Y., Sugiman, S. B., & Krisdiana, R. (2025). Sustainability index analysis for integration of oil palm and cattle gender-based in tidal land. *Sustainable Futures*, *10*, 100931. https://doi.org/https://doi.org/10.1016/j.sftr.2025.100931

Saing, B., & Berkerakyatan, B. D. A. N. (1990). *Integrasi tanaman-ternak dalam pengembangan agribisnis yang berdaya saing, berkelanjutan dan berkerakyatan*. 1–9.

Sains, J. M. (2026). *Perbandingan efek pemberian probiotik , biji wijen dan gandum terhadap kinerja reproduksi udang galah (Macrobrachium rosenbergii) Comparison effects of probiotics , sesame seeds , and wheat supplementation on reproductive performance of giant freshwater prawns (Macrobrachium rosenbergii) Natural feed addivities in Macrobrachium rosenbergii 12*(April), 28–39. https://doi.org/10.30997/jmss.v12i1.21447.Highlight

Sharifi Nia, A., Gholami Parashkoohi, M., Mohammad Zamani, D., & Afshari, H. (2024). Optimization of energy use efficiency and environmental assessment in soybean and peanut farming using the imperialist competitive algorithm. *Environmental and Sustainability Indicators*, *22*, 100361. https://doi.org/https://doi.org/10.1016/j.indic.2024.100361

Solidario de Souza Benatti, G., Buainain, A. M., Cavalcante Filho, P. G., Vargas-Carpintero, R., Asveld, L., & Osseweijer, P. (2025). Macaw palm (Acrocomia spp.): An opportunity for including smallholders in Brazil's biodiesel production. *Cleaner and Circular Bioeconomy*, *10*, 100134. https://doi.org/https://doi.org/10.1016/j.clcb.2025.100134

Tarihoran, A. D. B., Hubeis, M., Jahroh, S., & Zulbainarni, N. (2023). Market-based dynamic capabilities for MSMEs: Evidence from Indonesia's ornamental fish industry. *Journal of Open Innovation: Technology, Market, and Complexity*, *9*(3), 100123. https://doi.org/10.1016/j.joitmc.2023.100123

Ulya, N. A., Nurlia, A., Premono, B. T., Waluyo, E. A., Yunardy, S., & Martin, E. (2025). Understanding peat swamp forest transitions: sustainability strategies and livelihood adaptation in Ogan Komering Ilir Regency, South Sumatra, Indonesia. *Trees, Forests and People*, *20*, 100869. https://doi.org/https://doi.org/10.1016/j.tfp.2025.100869

Wanzala, R. W., Marwa, N., & Lwanga, E. N. (2024). Impact of agricultural credit on coffee productivity in Kenya. *World Development Sustainability*, *5*(May), 100166. https://doi.org/10.1016/j.wds.2024.100166

Werdofa, Z. G., Kassahun, S., & Gashu, K. (2025). Extents of rural-urban linkages and its determinant factors in Robe town and its surrounding hinterlands, Bale Zone, South East Ethiopia. *Social Sciences & Humanities Open*, *12*, 101732. https://doi.org/https://doi.org/10.1016/j.ssaho.2025.101732

Xu, C., Wang, J., Sun, Y., Liu, M., Liu, J., & Sajjad, M. M. (2024). Deep learning-driven land cover monitoring and landscape ecological health assessment: A dynamic study in coastal regions of the China–Pakistan Economic Corridor from 2000 to 2023. *Ecological Indicators*, *169*(November), 112860. https://doi.org/10.1016/j.ecolind.2024.112860

Yin, Y., Gulzar, F., Mamadiyarov, Z., Aizhan, A., Yadav, R. S., & Chen, C. (2024). An analysis of the rebound impact of energy consumption and the factors that influence it in China's agricultural productivity. *Energy Strategy Reviews*, *56*(November), 101585. https://doi.org/10.1016/j.esr.2024.101585