



## The Role of Islamic Finance, Workers, and Added Value in the Agromaritime Sector on Economic Growth: A Study of Indonesia, Malaysia, and Brunei Darussalam

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### Article History

Received:

4 October 2025

Revised:

15 December 2025

Accepted:

12 January 2026

Keywords:

Added value, agromaritime sector, economic growth, Islamic finance, labor.

Kata Kunci:

Keuangan Islam, nilai tambah, pertumbuhan ekonomi, sektor agromaritim, tenaga kerja.



**Abstract.** The agromaritime sector faces various problems that hinder its potential to contribute optimally to economic growth. This study aims to analyze the role of Islamic finance sharing in the agromaritime sector, agricultural sector labor, and the added value of the agromaritime sector on economic growth in Indonesia, Malaysia, and Brunei Darussalam from 2019Q1 to 2023Q4 using the Autoregressive-Distributed Lag (ARDL) panel data model. The results of the analysis revealed that all independent variables showed a significant impact on economic growth in the long and short term. Islamic finance is able to provide alternative financing to encourage the agromaritime sector that supports inclusive economic activities. In addition, labor in the agricultural sector also plays a negative significant role on economic growth, indicating that improving the quality and quantity of labor in this sector can accelerate economic growth. The added value of the agromaritime sector has proven to contribute positively to economic growth. These findings underscore the importance of integrating Islamic finance with the development of the agromaritime sector and improving the quality of labor to achieve sustainable economic growth.

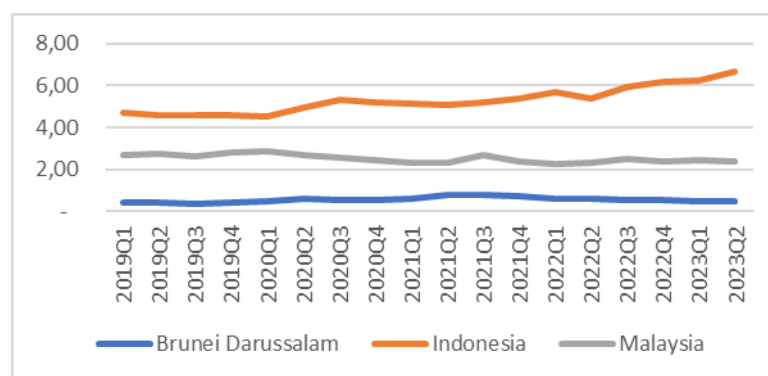
**Abstrak.** Sektor agromaritim menghadapi berbagai permasalahan yang menghambat potensinya untuk berkontribusi optimal terhadap pertumbuhan ekonomi. Penelitian ini bertujuan untuk menganalisis peran bagi hasil keuangan Islam di sektor agromaritim, tenaga kerja sektor pertanian, dan nilai tambah sektor agromaritim terhadap pertumbuhan ekonomi di Indonesia, Malaysia, dan Brunei Darussalam dari kuartal 1 tahun 2019 hingga kuartal 4 tahun 2023 dengan menggunakan model data panel Autoregressive-Distributed Lag (ARDL). Hasil analisis menunjukkan bahwa seluruh variabel independen menunjukkan pengaruh yang signifikan terhadap pertumbuhan ekonomi dalam jangka panjang dan jangka pendek. Keuangan Islam mampu memberikan alternatif pembiayaan untuk mendorong sektor agromaritim yang mendukung kegiatan ekonomi inklusif. Selain itu, tenaga kerja di sektor pertanian juga berperan signifikan negatif terhadap pertumbuhan ekonomi, hal ini menunjukkan bahwa peningkatan kualitas dan kuantitas tenaga kerja di sektor ini dapat mempercepat pertumbuhan ekonomi. Nilai tambah sektor agromaritim terbukti berkontribusi positif terhadap pertumbuhan ekonomi. Temuan ini menggarisbawahi pentingnya mengintegrasikan keuangan Islam dengan pengembangan sektor agromaritim dan meningkatkan kualitas tenaga kerja untuk mencapai pertumbuhan ekonomi berkelanjutan.

## INTRODUCTION

Southeast Asia is confronting a worrying strategic challenge of food security, with high poverty rates and a lack of access to food and nutrition despite its abundant land and maritime wealth (Wisnu, 2013). The management of natural and environmental resources on land and at sea, also known as agromaritime resources, is the focus of development goals, which serve as the primary engine propelling the economy (Rustiadi et al., 2019). Many countries' economies rely heavily on the agricultural sector, particularly in developing countries, where it is frequently the primary source of income and employment for an enormous portion of the population (Hidayah et al., 2022). In addition, the maritime sector contributes significantly to global economic performance (Nham & Ha, 2023). In this setting, effective and innovative finance is critical to enhancing production and welfare in the agricultural sector (Agbodji & Johnson, 2021), as well as the sustainability of the marine sector (Sun et al., 2024).

Islamic finance is one form of financing that is gaining attention. Financing originating from Islamic finance has been proven to have a positive impact on productivity and the economy (Amalia et al., 2019; Amri et al., 2022; Kismawadi, 2024; Budiman, 2021; Harp et al., 2021). With its distinct principles, such as a prohibition of *riba* (interest) and investing in halal areas, it offers a potentially fairer and more sustainable alternative to the traditional financial system (Salman & Nawaz, 2018). Several key concepts regulate financing in Islamic finance, such as profit and loss sharing (Dayyan & Chalil, 2020; Lubis & Ramadhoni, 2019).

Islamic finance's potential will most likely be used by Southeast Asian countries to strengthen the agromaritime industry, which has an economic impact. This is inseparable from the expansion of the Islamic finance industry in Southeast Asia, which is the fastest in the world (Ghozali et al., 2019). Especially for the three Muslim countries with the largest proportion of Muslim population in ASEAN, such as Indonesia, Brunei Darussalam, and Malaysia (Kristina, 2021) where demand from the vast Muslim population is a major factor driving the expansion of this industry. Several empirical research have indicated that Islamic financing can help to improve the economy (Ambariyanto et al., 2023; Ang & McKibbin, 2007; Anggraini, 2019; Calderón & Liu, 2003; Kassim, 2016). Where Indonesia, Malaysia, and Brunei Darussalam have begun employing Islamic financial instruments to promote the agromaritime sector, which is an appealing prospect for these countries.



Source: Islamic Financial Services Board, 2024.

Figure 1 Percentage of sharia-compliant financing for agromaritime sector activities in Brunei Darussalam, Indonesia, and Malaysia, Q1 2019–Q4 2023

According to Figure 1, Indonesia has the highest percentage of sharia compliant financing for the agromaritime sector activity, with an average of 5.3%. Malaysia has an average value of 2.52%, while Brunei Darussalam has an average value of 0.53%, indicating a consistent trend. The application of Islamic finance

has long been the focus in Indonesia, Malaysia, and Brunei Darussalam (Maulana, 2023). Where Islamic finance has been empirically proven to have a positive impact on economic growth (Muye & Hassan, 2016; Menne et al., 2023). Especially for the agromaritime sector, Islamic finance has a very important role in strengthening the sector (Anwar et al., 2020) and is an alternative concept to realize sustainable and inclusive economic growth (Ahmad et al., 2023). In this narrative, it is important to emphasize that although in general countries that do not implement Islamic finance seem to have better economic growth based on empirical data, there are unique and advantages in the application of Islamic economics in the countries reviewed in this article. These advantages, such as transparency, fairness, and sustainability, have a real positive impact on the people live. For example, in Indonesia, the application of sharia economic principles in the agricultural sector not only improves the welfare of farmers, moreover, it contributes to more equitable economic growth, even under crisis conditions such as the Covid-19 pandemic (Husman & Sakti, 2021).

The application of Islamic finance in the agromaritime sector has several different aspects compared to conventional finance, especially in terms of contracts and financing structures. One of the main differences is the use of profit-sharing-based contracts, such as *mudharabah*, *murabahah* and *musharakah*, which are fairer and more transparent compared to the interest system used in conventional finance (Shahid et al., 2015). These contracts allow for a proportionate sharing of risks and benefits between investors and business actors (Octrina & Jamilah, 2024) which in turn can increase trust and cooperation between the two parties. In addition, sharia financing structures are often more flexible and inclusive, making them more accessible to small and medium-sized enterprises in the agromaritime sector that often require significant financial support. Although the sector is heavily subsidized by the government, Islamic finance offers added value in the form of fairness, transparency, and sustainability principles that can improve business efficiency and sustainability. Therefore, people can choose Islamic finance as an alternative that is not only in accordance with sharia principles, but also offers a fairer and more sustainable financial solution (Diana, 2024).

Aside from providing financial support, the presence of a skilled and productive workforce is very important to the economy (Zhilyakov et al., 2021). A competent workforce in the agromaritime sector can boost efficiency and innovation, which in turn can stimulate economic growth (Gusev & Koshkina, 2022; van Lottum & van Zanden, 2011; Widyastutik, 2016). Workers in this area require enough training and education to develop their abilities and skills, allowing them to contribute more to the agromaritime sector's productivity and competitiveness. Another equally important factor is added value, which may be achieved by improving product quality, innovating production procedures, and implementing more efficient processing. Enhancing added value not only benefits producers but also has a favorable influence on the economy as a whole, enhancing national income and community welfare (Viederytė, 2012; Sansika et al., 2023).

Based on the challenges and literature review provided, this study seeks to examine the impact of Islamic finance, labor, and added value in the agromaritime sector on economic growth in Indonesia, Malaysia, and Brunei Darussalam. This study will also examine cross-country and cross-time data to determine the short-term and long-term correlations between these variables. This research is unique in that it takes an integrative approach, combining three crucial elements—Islamic finance, labor quality, and improving added value—in a single cross-country analysis. Although there are many studies that look at each of these factors separately, there is a lack of research that connects the three and assesses their overall impact on the agromaritime industry in the context of economic expansion in Southeast Asia. Furthermore, earlier research has tended to focus on national level analysis rather than in-depth comparisons of nations with similar economic and cultural traits. As a result, this study aims to fill this vacuum by conducting a more extensive analysis, which will provide fresh insights and more effective policy suggestions for the growth of the agromaritime industry in Indonesia, Malaysia, and Brunei Darussalam.

## LITERATURE REVIEW

This study investigates the impact of Islamic finance, labor, and added value in the agromaritime industry on economic development. The primary focus is on how these three variables influence the dynamics of economic growth in the agromaritime sector, which encompasses agriculture and fishing. In general, financial development is particularly crucial in stimulating the agricultural industry (Mualley & Moh'd, 2022) and marine (Nham & Ha, 2023). Specifically in this study, Islamic finance plays a vital role in facilitating economic growth by adhering to justice and balance in order to promote prosperity (Iskandar et al., 2023). In addition, Islamic finance prohibits the practice of "loan shark" - lending a certain amount of money with additional interest charged to the borrower (Kamal et al., 2022).

Various studies show that Islamic finance can increase financial inclusion (Suseno & Fitriyani, 2019; Zulkhibri, 2016; Mirakhor & Iqbal, 2012; Naceur et al., 2017). It has considerable potential to stimulate investment in productive sectors that contribute to food security (Kalimullina & Orlov, 2020) and this includes the agromaritime sector. An interest-free Islamic banking system can stimulate economic growth by enabling investment and trade (Khan & Mirakhor, 1987).

Apart from that, sharia-based microfinance has a positive impact on increasing people's income in the agromaritime sector. Then, labor is one of the key factors in increasing the productivity and efficiency of the agromaritime sector (Obaidullah, 2008). As a result, improving workforce skills and education can boost productivity, leading to an increase in the sector's added value (Becker, 1964). A dynamic and flexible labor market in the agromaritime sector can help create jobs and reduce unemployment (ILO, 2015).

Added value measures a sector's contribution to GDP. Increasing added value in the agromaritime sector can directly contribute to economic growth. Value chain development in the agromaritime sector can boost efficiency and production, consequently stimulating economic growth (Kaplinsky & Morris, 2000). Adoption of new technology and innovation in production processes can increase the added value of agromaritime products (Stacks et al., 2009). As a result, integrating Islamic finance, workforce development, and increasing added value can lead to significant synergy in the agromaritime sector's economic growth. As a result, a complete approach that combines sharia financing, worker development, and increased added value is advocated for achieving long-term and inclusive economic growth (Asutay, 2012).

Case studies from countries implementing Islamic finance in the agromaritime sector show positive results. For example, Malaysia's experience in integrating Islamic finance with the agromaritime sector shows significant increases in added value and economic growth (Shafiai & Moi, 2015). This literature review shows that Islamic finance, labor, and added value in the agromaritime sector have an important role in driving economic growth. The combination of these three factors can create synergies that support sustainable economic development. Further research is needed to explore the mechanisms for effective integration and implementation of these three factors.

## METHOD

This study examines the impact of Islamic finance, labor, and added value in the agromaritime industry on economic growth in Indonesia, Malaysia, and Brunei Darussalam from Q1 2019 to Q4 2023. This study uses secondary data from Prudential and Structural Islamic Financial Indicators PSIFIs (ifsb.org) for sharia compliant financing in the Agromaritime Sector (SCFAS) in local currency and World Development Indicators (WDI) (databank.worldbank.org) for agriculture, forestry, and fishing variables, added value in percentage units per GDP (AgroMarV), the employment in agriculture (AgrWork) variable in percentage

units of the total workforce, and the Gross Domestic Product Per capita (GDPP) variable in US units. The econometric equation for the multiple linear regression model employing panel data, which has been replaced for the variables in this study, is generally as follows:

$$\text{LnGDPP}_{it} = \alpha + \beta_1 \text{LnSCFAS}_{it} + \beta_2 \text{AgrWork} + \beta_3 \text{AgroMarV}_{it} + e_{it} \quad (1)$$

Where GDPP is the dependent variable that has been transformed into natural logarithm form, SCFAS is the independent variable that has been transformed into natural logarithm form, and AgrWork and AgroMarV are independent variables in percentage units. The value  $\alpha$  is a constant,  $\beta$  is a coefficient,  $e$  is an error term,  $i$  is a cross section, and  $t$  is a time series. This research will also analyze the short-term and long-term relationships between these variables.

Therefore, the data analysis model in this study uses a panel data autoregressive distributed lag (ARDL) model with a pool mean group (PMG) estimation approach (Pesaran et al., 1999). Panel data The ARDL model is a method for analyzing short-term and long-term correlations between variables in panel data, which consists of multiple entities (such as countries or firms) observed across time. The panel data ARDL model allows researchers to explore the dynamic relationship between independent and dependent variables by considering heterogeneity between entities and temporal dynamics. Previously, the ARDL model had to have a combination of dependent and independent variable criteria that were stationary at the level and some were at the first difference (Pesaran, 1997).

Testing the stationarity of variables in this study uses several tests, namely Augmented Dickey Fuller (ADF) and Fisher Chi-square (Dickey & Fuller, 1979), Pierre Perron (PP) - Fisher Chi-square (Phillips & Perron, 1988) Im, Pesaran and Shin W-stat (Im et al., 2003). Then, Kao cointegration testing in the panel data ARDL model must be carried out to determine whether there is a balanced long-term relationship among the variables in the model (Kao, 1999). In its general form, the panel data ARDL model can be expressed as the following equation 2:

$$Y_{it} = \sum_{j=1}^p \lambda_{ij} Y_{i,t-j} + \sum_{j=0}^q \delta_{ij} X_{i,t-j} + \mu_i + \varepsilon_{it} \quad (2)$$

where:

- $Y$  is the dependent variable
- $X$  is the independent variable
- $\lambda, \delta$  is the autoregressive lag coefficient
- $\mu$  is a fixed effect
- $\varepsilon$  is error term
- $i$  is crosssection
- $t$  is time

Equation 2 can also be written as in Equation 3 with variable substitution in this study. This transformation allows the model to express the underlying relationships more explicitly and facilitates subsequent empirical estimation.

$$\Delta \text{LnGDPP}_{it} = \alpha_i + \sum_{j=1}^{p-1} \lambda_{ij} \text{LnGDPP}_{i,t-j} + \sum_{j=0}^q \delta_{1ij} \text{LnSCFAS}_{i,t-j} + \sum_{j=0}^r \delta_{2ij} \text{AgrWork}_{i,t-j} + \sum_{j=0}^s \delta_{3ij} \text{AgroMarV}_{i,t-j} + \gamma_{1i} \text{LnGDPP}_{i,t-j} + \gamma_{2i} \text{LnSCFAS}_{i,t-j} + \gamma_{3i} \text{AgrWork}_{i,t-j} + \gamma_{4i} \text{AgroMarV}_{i,t-j} + \varepsilon_{it} \quad (3)$$

Then, this study is predicated on the assumption that all variables are heterogeneous and that the ECT (Error Correction Term) estimation is appropriate for establishing long-term cointegration between the development of the independent and dependent variables. Thus, the ECM (Error Correction Model) is used

to draw conclusions about short-term dynamic interactions. The generic version of the ECM equation, which has been substituted for the variables in this study, is shown in Equation 4:

$$\Delta \text{LnGDPP}_{it} = \alpha_i + \sum_{j=1}^{p-1} \lambda_{ij} \text{LnGDPP}_{i,t-j} + \sum_{j=0}^{q-1} \delta_{1ij} \text{LnSCFAS}_{i,t-j} + \sum_{j=0}^{r-1} \delta_{2ij} \text{AgrWork}_{i,t-j} + \sum_{j=0}^{s-1} \delta_{3ij} \text{AgroMarV}_{i,t-j} + \mu_i \text{ECT}_{i,t-j} + \varepsilon_{it} \quad (4)$$

ECT examines the long-term relationship between the independent and dependent variables. Additionally, the parameter  $\mu_i$  reflects the rate of adjustment to the equilibrium level. This equation gives short-run dynamics which correspond to the long-run given by the cointegration equation (Menegaki, 2019).

## RESULTS AND DISCUSSION

Table 1 describes the descriptive statistics among the variables in this study, providing a clear picture of the fundamental characteristics of each variable in the sample. The mean and median describe the center of the distribution, whereas the maximum and minimum reflect the data's range. The standard deviation measures data fluctuation, whereas skewness and kurtosis reveal the distribution's structure. The Jarque-Bera test and its probability assist in determining the normality of the data distribution.

Table 1 Descriptive statistics of the variables results (Gross Domestic Product per Capita, Structural Islamic Financial Indicators for Sharia Compliant Financing in the Agromaritime Sector, the Employment in Agriculture, and Added Value in Percentage Units per GDP)

	LnGDPP	Ln SCFAS	AgrWork	AgroMarV
Mean	8.3655	6.9524	13.6407	12.9667
Median	8.3527	9.4591	10.2392	12.8550
Maximum	8.4765	10.0354	30.4861	13.7000
Minimum	8.2676	1.4110	0.3957	12.4000
Std. Dev.	0.0864	3.7846	11.6817	0.4217
Skewness	0.2056	-0.7035	0.4124	0.5043
Kurtosis	1.4422	1.5151	1.5040	2.2064
Jarque-Bera	7.7871	12.5535	8.7557	4.9412
Probability	0.0204	0.0019	0.0126	0.0845
Sum	602.3137	500.5739	982.1303	933.6000
Sum Sq. Dev.	0.5295	1016.9590	9688.7500	12.6232

Source: Research finding by authors, 2024 (processed data).

Table 1 shows that the variable percentage of agricultural workers, or AgrWork in this study, has the highest average value of 13.64%. Meanwhile, the percentage added value variable in the agromaritime sector, or in this research, abbreviated as AgroMarV, has the greatest median value, at 12.86%. Furthermore, the minimum and maximum values given for the AgrWork variable are 30.49% and 0.39%, respectively, indicating that the AgrWork variable has the biggest standard deviation (11.68) among the other variables. This means that the Agrwork variable has a dataset with values that are most dispersed from the mean. According to the Jarque-Bera probability value, none of the variables in this study are regularly distributed. At the 5% or 10% significance level, the data is regularly distributed, as evidenced by the value of each likelihood of failing to reject the null hypothesis. However, when employing the ARDL model on panel data, the normality test is not necessarily required to continue the data analysis process.

Table 2 summarizes the findings of stationarity tests for all variables in this investigation using the Augmented Dickey Fuller (ADF) Fisher Chi-square, Pierre Perron (PP) Fisher Chi-square, and Im, Pesaran,

and Shin W-stat techniques. The LnGDPP variable does not exhibit a stationary value at the level (I(0)) since all techniques have probability values greater than 0.05. However, for the first difference (I(1)), all approaches produce probabilities less than 0.05, indicating that the data is stationary. This also applies to the variables LnSCFAS and AgrMarV, where none of the methods show that these variables are stationary at the level level (I(0)) but stationary at the first difference (I(1)), despite the fact that the AgrMarv variable has only one method, ADF on the intercept and trend, that does not show stationary values. This is distinct from the AgrWork variable; the only variable in this study that is stationary at level (I(0)) for all methods, as seen by the values of all methods, has a probability value less than 0.05. This study's combination of stationarity between the dependent and independent variables at the level level, as well as numerous others at the first difference, matched the ARDL model criteria.

Table 2 Unit root test results in the research of The Role of Islamic Finance, Workers, and Added Value in the Agromaritime Sector on Economic Growth: A Study of Indonesia, Malaysia, and Brunei Darussalam

Variables	Methods	Level I(0)		First Difference I(1)	
		Intercept Prob.	Intercept and Trend Prob.	Intercept Prob.	Intercept and Trend Prob.
LnGDPP	Im, Pesaran and Shin W-stat	0.8954	0.5815	0.0004***	0.0186**
	ADF - Fisher Chi-square	0.9652	0.7112	0.0010***	0.0309**
	PP - Fisher Chi-square	0.9667	0.6625	0.0000***	0.0000***
LnSCFAS	Im, Pesaran and Shin W-stat	0.3309	0.0817*	0.0001***	0.0016***
	ADF - Fisher Chi-square	0.1033	0.1147	0.0005***	0.0042***
	PP - Fisher Chi-square	0.1551	0.2009	0.0000***	0.0000***
AgroWork	Im, Pesaran and Shin W-stat	0.0078***	0.0301**	0.0271**	0.4257
	ADF - Fisher Chi-square	0.0102**	0.0460**	0.0414**	0.5330
	PP - Fisher Chi-square	0.0021***	0.0383**	0.0161**	0.3333
AgrMarV	Im, Pesaran and Shin W-stat	0.2661	0.7195	0.0034*	0.0731*
	ADF - Fisher Chi-square	0.3821	0.8436	0.0066*	0.1028
	PP - Fisher Chi-square	0.3714	0.8462	0.0000*	0.0002***

Note : Asterisks, \*, \*\*, \*\*\* symbolizes statistical significance at the 10%, 5%, and 1% levels.

Source: Research finding by Authors, 2024 (processed data).

Kao cointegration testing was also performed on the panel data ARDL model in this study, as shown in Table 3, to determine whether the model's variables have a balanced long-term relationship. The presence of cointegration further confirms that the variables move together over time, thereby validating the model's capacity to capture stable long-run equilibrium dynamics.

Table 3 Kao residual cointegration test results in the research of The Role of Islamic Finance, Workers, and Added Value in the Agromaritime Sector on Economic Growth: A Study of Indonesia, Malaysia, and Brunei Darussalam

	t-Statistic	Prob.
ADF	-1.79505	0.0363**
Residual variance	0.000467	
HAC variance	0.000465	

Note : Asterisks, \*, \*\*, \*\*\* symbolizes statistical significance at the 10%, 5%, and 1% levels.

Source: Research finding by authors, 2024 (processed data).

According to the findings of the Kao cointegration test in Table 3, the ADF t-statistic value is -1.79, and the probability value is 0.036. The panel data ARDL model's variables show cointegration. This indicates that these variables have a strong long-term relationship. Thus, this study can proceed with additional analysis, as the panel data ARDL model used demonstrates the long-term relationship between the variables in this study. The findings of the panel data ARDL model analysis with PMG estimation are presented in Table 4.

Table 4 ARDL long-run and short-run PMG estimation panel results in the research of The Role of Islamic Finance, Workers, and Added Value in the Agromaritime Sector on Economic Growth: A Study of Indonesia, Malaysia, and Brunei Darussalam

Dependent Variable: LnGDPP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
<b>Long Run Effect</b>				
LnSCFAS	0.301246	0.001095	275.1242	0.0000***
AgrWork	-0.487278	0.000671	-726.3247	0.0000***
AgroMarV	0.194999	0.00019	1027.151	0.0000***
<b>Short Run Effect</b>				
ECT	-0.273379	0.148343	-1.842878	0.0819*
$\Delta$ LnSCFAS	-0.118496	0.088145	-1.34433	0.1955
$\Delta$ LnSCFAS(-1)	-0.135615	0.222568	-0.609318	0.5499
$\Delta$ LnSCFAS(-2)	-0.004766	0.090226	-0.052828	0.9585
$\Delta$ LnSCFAS(-3)	0.029122	0.019485	1.494614	0.1523
$\Delta$ agrWork	0.019989	0.040871	0.489081	0.6307
$\Delta$ AgrWork(-1)	0.019005	0.088727	0.214196	0.8328
$\Delta$ AgrWork(-2)	-0.000537	0.066409	-0.008094	0.9936
$\Delta$ AgrWork(-3)	-0.018095	0.043587	-0.415149	0.6829
$\Delta$ agroMarV	-0.076938	0.008381	-9.180419	0.0000***
$\Delta$ AgroMarV(-1)	-0.086616	0.009687	-8.941217	0.0000***
$\Delta$ AgroMarV(-2)	-0.09618	0.002748	-35.00313	0.0000***
$\Delta$ AgroMarV(-3)	-0.096043	0.002943	-32.63265	0.0000***
Cons.	2.617051	1.115748	2.345557	0.0307**

Note : Asterisks, \*, \*\*, \*\*\* symbolizes statistical significance at the 10%, 5%, and 1% levels.

Source: Research finding by authors, 2024 (processed data).

According to Table 4, the ARDL panel data test results combined with PMG estimates explain the long-term and short-term effects of the LnSCFAS, AgrWork, and AgroMar variables on the LnGDP per capita variable in Indonesia, Malaysia, and Brunei Darussalam. Long-term interpretation shows that the LnSCFAS variable has a positive coefficient (0.30) and is significant ( $p < 0.05$ ), indicating that increasing sharia compliant financing for the agromaritime sector by 1% has a 30% positive impact on the community's average

income. Several prior research concluded that sharia financing had an impact on the Indonesian economy (Masrizal & Trianto, 2022; Anwar, 2024), Malaysia (Abd. Majid & Kassim, 2015; Derradj et al., 2024) and Brunei Darussalam (Yusuf et al., 2019; Kon, 2024).

Other findings suggest that finance in the agricultural sector will have an impact on the development of both the agricultural industry and the country's economy (Mualley & Moh'd, 2022; Alamri et al., 2024). These findings suggest that policies encouraging increased financing in accordance with sharia principles for the agromaritime industry can be an effective tool for poverty reduction (Yahuza, 2018) while improving community welfare. This financing can be used to support a broad spectrum of activities in the agromaritime sector, including technology development, infrastructure upgrades, and working capital assistance for farmers and fishermen. Thus, increased funding can boost sector production and efficiency, resulting in higher per capita income.

The AgrWork variable has a negative coefficient (-0.487) and is significant ( $p < 0.05$ ), indicating that 1% increase in the number of agricultural workers has a substantial negative influence on the average community income variable of 48.7%. This finding is consistent with prior studies, which demonstrated a decrease in the number of agricultural workers as a result of wage issues and other economic problems that had a negative impact on the economy (Rahman et al., 2024). The negative relationship between an increase in the number of agricultural workers and per capita income in this analysis indicates that the agricultural sector has relatively low productivity when compared to other sectors, so an increase in the number of workers is not always directly proportional to an increase in output or income. As a result, efforts must be made to boost agricultural production, such as through skill training and the incorporation of new technologies into agricultural products, in order for this sector make a greater contribution per capita income (Gusev & Koshkina, 2022).

The AgroMarV variable has a positive coefficient (0.195) and is significant ( $p < 0.05$ ), showing that increasing the added value of the agromaritime sector by 1% has a significant positive impact on the average community income variable of 19.5%. These results are consistent with the findings of previous studies in numerous countries (Uddin et al., 2022; Traore et al., 2022) and suggested that value-added processing in this sector within the country should be encouraged instead of exporting raw materials to overseas markets (Kyaw, 2017). These findings suggest that the agromaritime sector's added value reflects efficiency and productivity in the production and distribution of agromaritime products. The increase in added value demonstrates that the agromaritime sector may generate more output at a reduced cost or through product innovation. This has a beneficial impact on per capita income since an increase in added value typically leads to a rise in revenue for sector actors and broader economic growth. Policies that promote innovation, technological investment, and capacity development in the agromaritime sector would be extremely advantageous.

Interpretation in the short-term explains the negative coefficient on the ECT value (-0.273) and is significant at the 10% level ( $0.0819 < 0.1$ ), fulfilling the assumption that there is an adjustment mechanism towards a long-term balance between sharia compliant financing for the agromaritime sector, the number of workers in the agricultural sector, the added value in the agromaritime sector, and the per capita income of the people in Indonesia, Malaysia, and Brunei Darussalam. Statistically, it was noted that any deviations were corrected with a speed of adjustment of 27.3% between these variables.

Furthermore, in the short-term, the LnSFACS variable does not show any significant influence at lags 0, 1, 2, and 3 on LnGDP per capita. This means that sharia compliant financing for the agricultural sector has not had an impact on increasing people's per capita income. These findings are also supported by earlier research, which indicates that Islamic finance has barely short-term impact on the economy and will have a greater long-term benefit (Supriani et al., 2021; Gani & Bahari, 2021). This could be due to a variety of

factors, including early adoption, poor penetration of Islamic finance in vital sectors of the economy, or the fact that Islamic financial instruments take longer to have a large economic impact.

Likewise, the AgrWork variable also does not show any significant influence at lags 0, 1, 2, and 3 on LnGDP per capita. This suggests that expanding the number of workers in the agromaritime sector has not resulted in higher per capita incomes. This could also imply that, despite the enormous number of workers in the agricultural industry, output per worker (productivity) remains low, hence it has little impact on per capita income. Unlike the AgroMarV variable, all lags (0, 1, 2, and 3) for this variable exhibit significant negative coefficients, showing that changes in the added value of the agromaritime sector in prior periods have had a significant negative impact on people's per capita income. This negative influence might be attributed to inefficiencies or issues in the agromaritime industry, which impede economic growth. The agromaritime sector has obstacles such as less advanced technology, inadequate infrastructure, and unsupportive policies. This can result in higher production costs, lower quality, or a lack of market access, lowering per capita income. Negative consequences may also imply an unequal distribution of income or the presence of other, more dominating industries that contribute more to the economy.

In addition, a comparison of short-term effects comparing Indonesia, Malaysia, and Brunei Darussalam is explained in Table 5 below. This comparison provides a clearer understanding of how differing economic structures and policy responses shape the immediate impact of green growth drivers across these three countries.

Table 5 Comparison of ARDL short-run PMG estimation panel results for Indonesia, Malaysia, and Brunei Darussalam

Variable	Country					
	Indonesia		Malaysia		Brunei Darussalam	
	Coefficient	Prob.*	Coefficient	Prob.*	Coefficient	Prob.*
ECT	-0.16	0.00***	-0.57	0.00***	-0.10	0.00***
$\Delta$ LnSCFAS	0.00	0.01***	-0.29	0.00***	-0.06	0.00***
$\Delta$ agrWork	0.01	0.00***	-0.04	0.00***	0.10	0.00***
$\Delta$ AgroMarV	-0.09	0.00***	-0.07	0.00***	-0.07	0.00***
Cons.	2.72	0.00***	4.49	0.00***	0.63	0.00***

Note : Asterisks, \*, \*\*, \*\*\* symbolizes statistical significance at the 10%, 5%, and 1% levels.

Source: Research finding by authors, 2024 (processed data).

Based on the coefficient and probability values of ECT in Indonesia, Malaysia, and Brunei Darussalam, this study's assumption that there is an adjustment mechanism for a long-term balance between the dependent and independent variables has been met. Malaysia has the fastest rate of adjustment toward long-term balance, around 56.79%, outpacing Indonesia and Brunei Darussalam. Furthermore, the impact of sharia compliant finance on the agromaritime industry in Indonesia, Malaysia, and Brunei Darussalam is all significantly negative for the average community income variable. For the variable of agricultural laborers, Indonesia and Brunei Darussalam have a positive effect on the variable of people's average income, whereas Malaysia has the opposite effect. The agromaritime added value variable in Indonesia, Malaysia, and Brunei Darussalam also has a considerable negative impact on the average community income variable.

Overall, each country has substantial coefficients and probability for the variables examined, with various values and impacts. These findings demonstrate how each factor influences the dependent variable differently in each country in the short-term. These findings have important implications for policymakers in Indonesia, Malaysia, and Brunei Darussalam as they drive their economic strategies and policies. An

emphasis on enhancing efficiency and productivity, particularly in the agromaritime sector, as well as analyzing and adjusting sharia finance, can help increase community welfare and promote longer-term economic progress.

## CONCLUSION

In addition to the strategic issue of food security, the three Southeast Asian countries with the highest proportion of Muslims, Indonesia, Malaysia, and Brunei Darussalam, have the potential for sharia finance to boost the agromaritime industry and strengthen their economies. This study examines the impact of Islamic financing, labor, and added value in the agromaritime sector on economic growth in Indonesia, Malaysia, and Brunei Darussalam from the first quarter of 2018 to the fourth quarter of 2023, using the ARDL panel data analysis model and PMG estimations.

The study's findings reveal, first, that in the long run, the sharia financing variable for the agromaritime industry has a positive and considerable impact on per capita income. However, in terms of sharia financing for the agromaritime sector, it does not have a significant effect on per capita income. Second, in the long-term, the variable number of workers in the agricultural sector has a negative and significant influence on per capita income. However, in the short-term, the number of workers in the agricultural sector does not have a significant effect on per capita income. Third, in the long-term, the added value variable of the agromaritime sector has a positive and significant influence on per capita income. On the other hand, in the short-term, the added value of the agromaritime sector has a negative and significant influence on per capita income.

The implications of the findings in this study indicate that Islamic finance has a significant positive influence on the agromaritime sector, with the impact felt by users at the micro level, such as farmers and fishermen. Islamic finance has been shown to improve their quality of life through fairer and ethical financing schemes, which in turn improves their ability to pay debts compared to conventional finance. This indicates that Islamic finance not only contributes to the economic development of the agromaritime sector, but also provides more sustainable and empowering solutions for the people involved in this sector.

Policy recommendations that can be taken by the government and financial institutions are to expand access to Islamic financial services in rural and coastal areas. Islamic finance education programs also need to be improved to increase public understanding of its benefits. In addition, the development of Islamic financial products tailored to the specific needs of farmers and fishermen, such as seasonal and crop- or catch-based financing, must be prioritized. These measures are expected to improve the economic and social welfare of farmers and fishermen, supporting the sustainable and inclusive growth of the agromaritime sector.

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