

ENTREPRENEURIAL PROGRAMS AND LIVELIHOOD TRANSFORMATION AMONG FISHERMEN IN MALAYSIA: EVIDENCE FROM THE MALAYSIAN FISHERIES DEVELOPMENT AUTHORITY

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ABSTRACT

Entrepreneurship has become a central strategy for transforming the livelihoods of Malaysia's fishing communities. This study examines how the Malaysian Fisheries Development Authority (MFDA) facilitates entrepreneurship through financial assistance, capacity-building programs, and community-based initiatives. Using a qualitative descriptive approach, the research analyzes secondary data drawn from MFDA reports, consultancy studies, and academic publications between 2018 and 2022. The findings reveal that MFDA's initiatives, particularly the Entrepreneur Development Program (EDP), Change and Upgrade Product (CUP) Grant, High Impact Product (HIP) Grant, and Young Agropreneur Grant (YAG), have successfully diversified fishermen's income sources while enhancing self-reliance and innovation. The integration of the Sustainable Livelihoods Framework (SLF) and Entrepreneurial Development Theory provides insight into how institutional support strengthens fishermen's access to financial, human, and social capital. Despite these achievements, the study identifies challenges related to limited access to credit, slow technology adoption, and the need for more structured monitoring mechanisms. Overall, the findings underscore MFDA's role in bridging policy and practice through inclusive, entrepreneurship-oriented governance. The study concludes that entrepreneurship within Malaysia's fisheries sector contributes not only to income generation but also to sustainable development and social resilience, offering valuable lessons for future policy interventions.

Keywords: entrepreneurship; fisheries; livelihood; governance; Malaysia; MFDA

INTRODUCTION

Entrepreneurship has increasingly been recognized as a strategic tool for improving socioeconomic resilience and reducing poverty within rural and coastal communities. In Malaysia, the fishing industry plays a crucial role in national food security, employment generation, and community welfare (Obi et al., 2025). However, small-scale fishermen often face persistent challenges such as fluctuating income, resource depletion, and dependence on government aid (Adila Sharinni Wahid, 2021; Amirah Haziqah, 2020). The Malaysian government, through the the Malaysian Fisheries Development Authority (MFDA), has introduced a series of initiatives to promote entrepreneurship as a pathway for sustainable livelihood transformation (Malaysian Fisheries Development Authority [MFDA], 2020; Pon & Brahim, 2025).

Over the past decade, the MFDA has undergone a paradigm shift from being primarily a provider of welfare subsidies to becoming an institutional enabler of entrepreneurial growth. This change aligns with Malaysia's national development priorities under the Shared Prosperity Vision 2030 and reflects the broader transformation agenda toward community-based and innovation-driven economies (Azman & Suhaili, 2019; Ibrahim & Rahman, 2019). Through entrepreneurship programs, training modules, and financial assistance such as the Change and Upgrade Product (CUP) and High Impact Product (HIP) schemes, the MFDA has sought to reduce fishermen's dependency on seasonal fishing activities (Abdullah & Syed, 2020; Hatta & Zawawi, 2020).

These efforts have resulted in the emergence of new categories of "fisherpreneurs"—fishermen who are engaged in processing, packaging, and marketing fish-based and agro-based products. Such initiatives include the production of dried fish, fish crackers, anchovies, nuggets, and smoked fish, as well as the expansion into tourism-related enterprises, such as homestays and recreational fishing centers (Ibrahim & Rahman, 2019; Pon & Brahim, 2025). Studies show that entrepreneurship not only helps improve fishermen's income but also enhances social capital, community resilience, and self-reliance (Kamsi et al., 2025; Zulkifli & Noor, 2018).

Despite these achievements, significant gaps remain in policy implementation and long-term sustainability. Many fishermen still face limited access to financial resources, inadequate business management skills, and technological barriers (Ismail & Zakaria, 2018; Mohd & Zain, 2020). Similarly, environmental and market pressures exacerbated by the COVID-19 pandemic—have further intensified the vulnerabilities of the fishing community (Junhairi Alyasa, 2020; Harakah, 2021). Scholars such as Salehe et al. (2024) and Lim and Noor (2021) argue that the transition toward sustainable fisheries entrepreneurship necessitates a more systematic integration of circular economy principles, environmental safeguards, and institutional support mechanisms.

Given these challenges, this study explores the impact of MFDA's entrepreneurial programs in enhancing fishermen's livelihoods in Malaysia. It examines how government policies, institutional mechanisms, and capacity-building initiatives interact to promote inclusive growth and long-term sustainability within fishing communities (Brahim & Pon, 2022; Pon & Brahim, 2025). By synthesizing empirical data and theoretical perspectives, this paper contributes to understanding how entrepreneurial development facilitated through structured government support—can serve as an effective strategy for reducing poverty, empowering local communities, and ensuring the resilience of Malaysia's coastal economy.

LITERATURE REVIEW

Entrepreneurship has long been recognized as a catalyst for livelihood transformation in rural and coastal Malaysia, where fishing remains an essential economic and cultural activity (Ibrahim & Rahman, 2019; Zulkifli & Noor, 2018). Within this context, the Malaysian Fisheries Development Authority (MFDA) has progressively evolved from a welfare-based institution to a strategic enabler of entrepreneurship and innovation (Malaysian Fisheries Development Authority [MFDA], 2020; Pon & Brahim, 2025). Over the last decade, MFDA initiatives have aimed to strengthen income diversification, improve social inclusion, and enhance resilience among fishing communities that traditionally depended on seasonal and volatile marine resources (Abdullah & Syed, 2020; Hatta & Zawawi, 2020).

Theoretical Perspectives

The evolution of entrepreneurship in the fisheries sector can be understood through three interrelated lenses: the Sustainable Livelihoods Framework (SLF), Entrepreneurial Development Theory, and Community-Based Development Theory (Kamsi et al., 2025; Salehe et al., 2024). The SLF emphasizes five forms of capital: human, social, financial, physical, and natural that together sustain livelihoods (Amir Zal W. A., 2016). Fishermen frequently experience depletion of natural capital and lack the financial or human capital necessary to adapt (Amir Zal W. A. et al., 2014). Entrepreneurship programs, by providing training and financial access, enhance these assets and convert dependency into empowerment (Kamsi et al., 2025).

Entrepreneurial Development Theory further explains how institutional mechanisms stimulate opportunity recognition and risk-taking (Azman & Suhaili, 2019; Hatta & Zawawi, 2020). MFDA's financing schemes, such as the Change and Upgrade Product (CUP) and High Impact Product (HIP) grants, illustrate the interaction between internal motivation and external institutional support (Abdullah & Syed, 2020). Recent findings by Salehe et al. (2024) show that sustainable entrepreneurship also relies on institutional trust, access to markets, and innovation ecosystems—key variables that MFDA's tiered programs explicitly target.

Community-Based Development Theory highlights participatory approaches where collective action and local institutions drive economic progress (Ismail & Falah, 2018). Fishermen's associations in Malaysia function as cooperative intermediaries that promote shared learning and resource pooling, consistent with this theoretical lens (Cheong & Ramli, 2018; Pon & Brahim, 2025). Collectively, these frameworks demonstrate that entrepreneurship in fisheries is not merely an income-generation activity but a multidimensional process that integrates social empowerment, institutional capacity, and environmental stewardship.

Institutional and Policy Context

Malaysia's fisheries sector contributes significantly to rural employment yet faces persistent socioeconomic vulnerabilities (Adila Sharinni Wahid, 2021; Rusnan Mustafa, 2017). Since the 1980s, policy instruments such as the Fisheries Act 1985 (Akta 317) have provided a legal basis for governance and resource management in Malaysia (Malaysia, 1985). Within this policy framework, MFDA has designed successive programs—from the Fishermen's Subsistence Assistance (FSA) to the Fish Catch Incentive Program (FCIP)—to balance welfare and productivity objectives (MFDA, 2018, 2019, 2020). Budget allocations exceeding RM 125 million in 2020 underscored the Government's continued commitment to fishermen's development (MFDA, 2020).

According to Obi et al. (2025), Malaysia's fisheries and aquaculture sectors are undergoing a structural transition, where aquaculture and value-added processing are outperforming capture fisheries in terms of growth. This shift justifies MFDA's increasing focus on entrepreneurial transformation and downstream diversification (Brahim & Pon, 2025). Yet scholars caution that financial support must be paired with mentoring, market linkage, and institutional capacity to ensure sustainability (Azman & Suhaili, 2019; Zulkifli & Noor, 2018).

Entrepreneurship Programs and Capacity Building

The MFDA's Entrepreneur Development Program (EDP) classifies entrepreneurs into five levels based on annual sales to tailor assistance (MFDA, 2020). Most participants operate at the micro- and small-enterprise levels, reflecting both inclusivity and the continued need for scaling support (Azman & Suhaili, 2019). Complementary schemes such as the CUP and HIP grants finance product improvement, packaging, and marketing (Abdullah & Syed, 2020; Hatta & Zawawi, 2020). However, the long-term success of these grants depends on rigorous monitoring and follow-up (Azman & Suhaili, 2019; Cheong & Ramli, 2018).

Training remains a vital component of human-capital development. MFDA organizes technical workshops on food processing, digital marketing, and quality assurance (Firdaus & Hassan, 2017; Cheong & Ramli, 2018). Empirical studies confirm that participants in such programs achieve improved product innovation and bookkeeping skills (Firdaus & Hassan, 2017; Firdaus & Hassan, 2017 [dup intentionally collapsed when editing final draft]). These findings align with the propositions of the Sustainable Livelihoods Framework, which suggest that human capital investment underpins livelihood diversification (Kamsi et al., 2025).

Agro-Tourism as a Complementary Livelihood Strategy

Agro tourism has emerged as a diversification tool allowing fishermen's associations to operate chalets, restaurants, and recreational fishing activities (Ibrahim & Rahman, 2019; Pon & Brahim, 2025). MFDA reports from 2016 to 2019 recorded more than RM11 million in annual revenue before pandemic-related declines (MFDA, 2020). Such ventures enhance community cohesion and create alternative employment during off-seasons (Ibrahim & Rahman, 2019; Musa et al., 2025). Gender-inclusive initiatives, particularly those involving the Terengganu Women Fishermen's Group (KUNITA), demonstrate that empowering women in processing and tourism ventures raises household income and social participation (Musa et al., 2025).

Youth Entrepreneurship and Generational Renewal

The Young Agropreneur Grant (YAG) aims to attract young individuals aged 18–40 to fisheries and agro-based enterprises (Uthman & Ibrahim, 2019). Forty participants received assistance totalling RM 637,635 in 2020 (MFDA, 2020). Young entrepreneurs are often more digitally literate and receptive to innovation (Wani & Zulkifli, 2021). Their engagement is critical to the sector's long-term sustainability (Pon & Brahim, 2025). Nonetheless, high attrition rates persist as youth migrate to urban areas, underscoring the need for continuous mentorship and market exposure (Uthman & Ibrahim, 2019).

Challenges in Entrepreneurship Development

Despite notable progress, fishermen-entrepreneurs continue to encounter barriers to accessing credit, adopting technology, and integrating into the market (Zawawi & Razak, 2020; Mohd & Zain, 2020). Many small operators lack collateral or familiarity with formal financing systems (Zawawi & Razak, 2020). Moreover, slow technology uptake and cultural resistance hinder productivity (Ismail & Zakaria, 2018). Strengthening supply chains and meeting quality standards remain essential for competitiveness (Tan & Othman, 2021). Environmental concerns, including waste management from processing industries, necessitate circular-economy approaches (Lim & Noor, 2021; Ahmad, 2022). Without systematic monitoring and mentorship, outcomes risk being driven by short-termism and dependency cycles (Hatta & Zawawi, 2020).

Synthesis and Emerging Insights

The reviewed literature converges on three insights. First, entrepreneurship under MFDA programs effectively diversifies income and enhances resilience when integrated with training and institutional support (Abdullah & Syed, 2020; Kamsi et al., 2025). Second, inclusive participation—especially of women and youth—broadens social benefits (Musa et al., 2025; Wani & Zulkifli, 2021). Third, environmental and financial sustainability require cohesive policy coordination and stronger private-sector linkages (Salehe et al., 2024; Lim & Noor, 2021). Overall, MFDA's multi-faceted model illustrates how government facilitation, community participation, and entrepreneurial empowerment intersect to transform Malaysia's coastal livelihoods (Brahim & Pon, 2022; Pon & Brahim, 2025).

METHODOLOGY

This study employs a qualitative descriptive approach to explore how the Malaysian Fisheries Development Authority (MFDA) facilitates entrepreneurship programs that enhance the socioeconomic well-being of fishermen in Malaysia. The qualitative descriptive method is appropriate when the aim is to interpret institutional processes and social phenomena without experimental manipulation (Cheong & Ramli, 2018; Hatta & Zawawi, 2020). It enables researchers to capture the complex realities of policy implementation, reflecting both the achievements and limitations of government-driven initiatives (Abdullah & Syed, 2020; Azman & Suhaili, 2019).

The research relies primarily on secondary data, drawn from official government documents, MFDA annual reports, consultancy studies, and academic publications. Core materials include the Annual Reports of the MFDA from 2018 to 2020 and the institutional publication *Citra Kejayaan LKIM: Lima Dekad Satu Azam* (MFDA, 2021). In addition, the consultancy report *The Impact of Government Policies and Programs on Fishermen Communities in Malaysia* provides comprehensive insights into program structures, funding, and performance indicators (Brahim & Pon, 2022). Complementary evidence was obtained from empirical studies in peer-reviewed journals (e.g., Kamsi et al., 2025; Salehe et al., 2024; Musa et al., 2025), ensuring a robust combination of policy and academic sources.

Data collection followed a systematic document analysis procedure. Each source was carefully reviewed to extract relevant information about entrepreneurship programs, funding mechanisms, training modules, and agro-tourism initiatives (Pon & Brahim, 2025; Ibrahim & Rahman, 2019). The extracted data were then coded according to thematic categories, such as “financial empowerment,” “human capital development,” “institutional support,” and “community participation.” Quantitative data (e.g., number of participants, grant allocations, and sales levels) were used descriptively, while qualitative information (such as program objectives, challenges, and stakeholder perspectives) was analyzed interpretively (Azman & Suhaili, 2019; Firdaus & Hassan, 2017).

For data analysis, this study employed a thematic and content-based strategy. Thematic analysis was used to identify patterns related to empowerment, sustainability, and innovation (Braun & Clarke, 2019, as cited in Hatta & Zawawi, 2020). Content analysis enabled the interpretation of recurring concepts across multiple documents, highlighting how MFDA framed entrepreneurship as a policy instrument for resilience (Kamsi et al., 2025). These analytical approaches are consistent with studies on rural policy evaluation that seek to uncover underlying governance mechanisms (Ibrahim & Rahman, 2019; Zulkifli & Noor, 2018).

The analysis was guided by theoretical frameworks drawn from the Sustainable Livelihoods Framework (SLF) and Entrepreneurial Development Theory (Kamsi et al., 2025; Salehe et al., 2024). The SLF facilitated interpretation of how MFDA programs strengthen fishermen’s access to human, financial, and social capital, while Entrepreneurial Development Theory provided a lens for examining institutional support mechanisms that foster self-reliance and innovation (Abdullah & Syed, 2020; Hatta & Zawawi, 2020). Together, these frameworks guided both the interpretation of data and the construction of thematic narratives concerning empowerment and sustainability.

To ensure credibility and reliability, all documents were cross-referenced across multiple sources, and data triangulation was employed (Cheong & Ramli, 2018). For instance, figures on entrepreneurship participation were compared between MFDA’s annual reports and related studies such as Pon and Brahim (2025) and Brahim and Pon (2022). Only publicly verifiable data were used, and interpretations were grounded in empirical consistency and transparency. The inclusion of official institutional sources strengthens the internal validity of the study, reducing the potential for bias that can arise from single-source dependency (Zawawi & Razak, 2020).

Ethical integrity was maintained throughout the research process. As this study relies exclusively on publicly available materials and secondary data, no human participants were involved, eliminating the need for ethical clearance. Nevertheless, due recognition was given to all institutional and academic contributors (MFDA, 2020; MFDA, 2021). The presentation of results emphasizes objectivity, fairness, and respect for the participating institutions’ credibility.

Finally, this methodological design enables a comprehensive understanding of MFDA’s entrepreneurship initiatives as instruments of policy-driven livelihood transformation. By integrating institutional documents with empirical scholarship, this study offers a nuanced view of how government-led entrepreneurship can promote financial independence, resilience, and social inclusion among Malaysia’s fishing communities (Pon & Brahim, 2025; Brahim & Pon, 2022).

RESULTS AND DISCUSSION

The analysis of the Malaysian Fisheries Development Authority (MFDA) programs from 2016 to 2020 demonstrates the Government’s continuing commitment to transforming the fishing community from a group dependent on seasonal income and public assistance into an entrepreneurial network capable of generating stable and diversified livelihoods. The discussion below interprets quantitative and qualitative evidence taken from MFDA annual reports and other institutional sources. Each table summarizes the relevant data, followed by an interpretive discussion that links the findings to entrepreneurship and livelihood theories.

Agro-Tourism and Income Diversification

Agro tourism has become one of MFDA’s most visible strategies for livelihood diversification. The initiative enables fishermen and their families to operate chalets, restaurants, sport-fishing facilities, and homestays as complementary sources of income.

Table 1: Total Transactions by Agro-Tourism Project

Year	Lodging (MYR)	Restaurant (MYR)	Sportfishing (MYR)	Homestay (MYR)	Others (MYR)	Total (MYR)
2020	2,880,964.12	4,693,534.11	98,975.00	5,500.00	17,400.00	7,696,373.23
2019	3,030,645.27	7,759,826.18	220,115.00	5,500.00	17,400.00	11,033,486.45
2018	3,219,787.48	7,404,342.21	217,420.00	24,400.00	199,043.51	11,064,993.20
2017	2,978,685.10	8,560,619.19	176,140.42	36,990.00	134,280.37	11,886,715.08
2016	2,993,903.30	7,768,904.12	124,791.52	9,131.80	343,157.75	11,239,888.49

(Source: MFDA Annual Report, 2020)

Based on Table 1, revenue from agro-tourism remained above RM 11 million annually between 2016 and 2019 before falling to RM 7.7 million in 2020 because of COVID-19 travel restrictions. Despite this decline, the persistence of community-based operations illustrates institutional resilience and local adaptability. Under the Sustainable Livelihoods Framework (SLF), agro-tourism enhances financial and social capital by supplying off-season employment while reinforcing collective identity. Fishermen’s households reported that income from chalets and restaurants helped offset fluctuations in fish catch income. This confirms the argument of Ibrahim and Rahman (2019) that tourism-linked initiatives improve household stability by converting natural-resource dependency into service-oriented value.

Participation of Fishermen’s Associations in Agro-Tourism

Fishermen’s Associations (FAs) act as cooperative platforms through which MFDA channels agro-tourism programs.

Table 2: Fishermen's Associations Involved in Agro-Tourism Projects

State	2020				2019				2018			
	Project Category											
	C	MIB	SF	HS	C	MIB	SF	HS	C	MIB	SF	HS

Perlis	1				1				1	1		
Kedah		1	3			1	3			1	1	
Pulau Pinang	4	4	1		4	4	2		4	4	1	
Perak		2		1		2		1		2		1
Selangor	2	2	1		2	2	1		2	2	1	
Negeri Sembilan	1	2			1	2			1	1		
Melaka	1	1			1	2			1	1		
Johor	3	2	1		3	2	1		3	2		1
Pahang	2		1		2		1		2		1	1
Terengganu	3	3	2		3	2	2		3	3	2	1
Kelantan	1	2			1	2			1	2		1
Sarawak	2	3	2		2	2	2		2	3	2	1
Sabah												
TOTAL	20	22	11	1	20	22	11	1	20	23	9	6

(Source: MFDA Annual Report, 2020)

Note: C (Chalet), MIB (Medan Ikan Bakar), SF (Sportfishing), HS (Homestay)

Based on Table 2, participation increased steadily, with most coastal states operating at least two to three projects each year. States such as Terengganu and Sarawak show strong continuity, confirming that community organization is a decisive success factor. According to Community-Based Development Theory, the empowerment of local associations fosters ownership and shared learning, producing collective efficiency and reinforcing fishermen's social capital.

Entrepreneur Development and Growth of Agro-Based Industries

MFDA's Entrepreneur Development Program (EDP) formalizes entrepreneurship by classifying participants into performance levels based on sales turnover. As of 2020, a total of 997 processing entrepreneurs have been registered under the MFDA Entrepreneur Development Program (EDP), covering Levels 1 to 5, as shown in Table 3 below. These entrepreneurs are indirectly eligible to receive various benefits offered by the MFDA to enhance their entrepreneurial capabilities in the fisheries sector, particularly within the agro-based industry. Among the assistance and guidance provided are financing assistance services through government grants. Financing support from the Ministry of Agriculture and Food Security (MAFS) is allocated based on the annual sales value of the entrepreneurs, as detailed in Table 4 below.

Table 3: Number of MFDA Agro-Based Industry Entrepreneurs by Level and State

State	Number of Entrepreneurs					
	Level 1	Level 2	Level 3	Level 4	Level 5	TOTAL
Kelantan	28	27	17	11	4	87
Pahang	21	24	22	3	1	71
Terengganu	38	42	27	16	7	130
Kedah	28	18	12	5	2	65
Perak	15	21	8	4	1	49
Perlis	27	3	2	2	0	34
Pulau Pinang	7	4	7	2	0	20
Johor	14	7	7	10	4	42
Melaka	4	3	5	4	0	16
Negeri Sembilan	4	0	3	0	0	7
Selangor	26	13	17	8	7	71
W.P. Kuala Lumpur	2	1	2	2	3	10
W.P. Labuan	12	2	2	0	0	16
Sabah	43	8	3	1	0	55
Sarawak	199	107	13	5	0	324
TOTAL	468	280	147	73	29	997

(Source: MFDA Annual Report, 2020)

These entrepreneurs are eligible to receive various benefits offered by the MFDA to enhance their entrepreneurial capabilities in the fisheries sector. This support includes assistance and guidance through several grants, which are allocated based on the entrepreneur's annual sales value, as illustrated in Table 4 below.

Table 4: Types of Financing Provided Based on Annual Sales Value

Category	Annual Sales Value (MYR)	Matching Grant
Level 1	≤ MYR50,000	Change Upgrade Product (CUP) Grant
Level 2	> MYR50,000 to ≤ MYR100,000	
Level 3	> MYR100,000 to ≤ MYR300,000	

Level 4	> MYR300,000 to ≤ MYR5,000,000	High Impact Product (HIP) Grant
Level 5	> MYR5,000,000 to ≤ MYR15,000,000	
Level 6	> MYR15,000,000 to ≤ MYR 50,000,000	Finance Institutions

(Source: MFDA Annual Report, 2020)

Change Upgrade Product (CUP) Matching Grant

For 2020, a total of 18 entrepreneurs received funding under the grant, amounting to a total assistance value of RM411,886.00. The funding is provided as allocation assistance in the form of matching grants, with 70 percent sourced from government funding (up to a maximum of RM60,000.00) and 30 percent contributed by the entrepreneurs. This program targets Agro-Based Industry (ABI) entrepreneurs at Levels 1 to 3, who have an annual sales value of less than RM300,000.00. The funding covers various scopes, including:

- (i) Nutritional and Product Lifespan Studies;
- (ii) Packaging and Labeling Design;
- (iii) Increased Production Capacity;
- (iv) Premises Improvement; and
- (v) Acquisition of Business Signage

High Impact Product Matching Grant

For the year 2020, there were no recipients of funding under the High Impact Product (HIP) Matching Grant. However, in 2019, one entrepreneur received a grant of MYR200,000.00. The HIP program provides funding in the form of a matching grant, with 50 percent covered by government funding (up to a maximum of MYR200,000.00) and the remaining 50 percent contributed by the entrepreneur. This program is designed for IAT Entrepreneurs at Levels 4 to 5 who have achieved sales values ranging from MYR300,000.00 to MYR15,000,000.00. The grant supports various scopes, including:

- (i) Nutritional and Product Lifespan Studies;
- (ii) Packaging and Labeling Design;
- (iii) Increased Production Capacity; and
- (iv) Premises Improvement.

Young Agropreneur Grant

In 2020, a total of 40 entrepreneurs received funding through the grant, amounting to MYR637,635.00, as illustrated in Table 5 below. The Youth Agro-Entrepreneurship Grant (YAG) provides 100 percent government funding assistance, delivered in the form of in-kind contributions. This initiative aims to support and encourage youth aged between 18 and 40 years to engage in agro-entrepreneurship across various activities within the agricultural sector value chain. These activities include crop production, livestock and fisheries, as well as agro-based industries such as marketing, provision of support services, agricultural inputs, and agro-tourism.

Table 5: YAG Recipients for the Year 2020

Sector	Number of Recipients	Amount of Financing (MYR)
Agro-Based Industries	17	307,115.00
Fisheries	23	330,520.00
TOTAL	40	637,635.00

(Source: MFDA Annual Report, 2020)

MFDA also offers ongoing guidance and skills training services to equip entrepreneurs in the food and non-food fish-based product processing industry with the tools necessary to navigate increasingly competitive challenges. Throughout 2020, a total of seven series of courses and visits were conducted, involving 109 MFDA-guided entrepreneurs, as illustrated in Table 6 below. Additionally, 10 courses were implemented during the same year, engaging 141 Young Agropreneur participants, as detailed in Table 7 below.

Table 6: MFDA Guidance Courses for Entrepreneurs in 2020

No.	Course	Location	Participant
1.	Business Booster	Online	15
2.	Smoked Fish Processing Workshop	Mukah	30
3.	PPHP Kemaman Fish Ball and Fish Cracker Course	Kemaman	10
4.	Shrimp Cracker Processing Course	Miri	16
5.	Tilapia Fillet Processing Course (or Tilapia Value-Added Products)	Limbang	12
6.	Lekor Cracker Course	Kuala Terengganu	10
7.	Crab Fillet and Stuffed Crab Ball Processing Workshop	Tawau	16
TOTAL OF PARTICIPANT			109

(Source: MFDA Annual Report, 2020)

Note: PPHP (Pusat Pemrosesan Hasil Perikanan)

Table 7: Courses for Young Agropreneur Participants for the Year 2020

No.	State	Course	Participant
1.	Terengganu	Food Quality and Safety Course	15
2.	W.P. Labuan	Aquaponics Course	15
3.	Pulau Pinang	Cage Fish Farming Technique Course	10
4.	Sabah	Food Quality and Safety Course	15
5.	Negeri Sembilan	Retort Technology Course	15
6.	Sarawak	Keropok Lekor Processing Course	10
7.	Pahang	Digital Marketing Course	15
8.	Sarawak	Food Quality and Safety Course	16
9.	Kelantan	Fish Harvest Handling Course	14
10.	Sarawak	Net Repair Course	16
TOTAL OF PARTICIPANT			141

(Source: MFDA Annual Report, 2020)

Challenges Towards Forming a Fishermen Entrepreneur Group

To establish an entrepreneurial group among fishermen, several challenges must be addressed by both the government and the fishermen themselves. These challenges include:

(a) Financial Assistance and Incentives

The MFDA's financial assistance programs offer small- and medium-scale fisheries entrepreneurs access to low-interest loans, grants, and subsidies for acquiring modern fishing equipment, constructing infrastructure, and adopting innovative technologies. These financial resources are exceptionally vital for entrepreneurs who encounter barriers to obtaining traditional financing. However, the long-term sustainability of these ventures is often overlooked in research. While the MFDA's financial support is essential for launching new businesses, the long-term resilience and profitability of these enterprises remain poorly understood (Uthman & Ibrahim, 2019; Zawawi & Razak, 2020).

Financial assistance alone may not be sufficient to ensure business success. The integration of financial capital with other entrepreneurial support mechanisms such as mentorship, business development services, and market access is crucial for fostering long-term sustainability (Zulkifli & Noor, 2018; Abdullah & Syed, 2020). Furthermore, future research should focus on understanding how the financial support provided by MFDA interacts with these other mechanisms to cultivate resilient business models that can withstand external shocks, including market volatility, environmental degradation, and climate change (Azman & Suhaili, 2019).

(b) Technical and Knowledge Transfer

The MFDA's technical and knowledge transfer programs are designed to enhance the capacity of fisheries entrepreneurs to adopt sustainable and innovative practices (Cheong & Ramli, 2018). These programs provide training in fish farming, business management, food safety, and marketing strategies. While they have successfully improved entrepreneurs' technical knowledge, research on the practical application of these skills and their impact on long-term business performance remains limited (Firdaus & Hassan, 2017). Future studies should investigate how the knowledge gained from these programs translates into measurable improvements in business outcomes and sustainability (Hatta & Zawawi, 2020).

Another key area for research is the role of community networks in facilitating knowledge transfer and the adoption of technology. Studies have demonstrated that social capital and community-based approaches can significantly enhance the effectiveness of technology adoption in rural and coastal regions (Ibrahim & Rahman, 2019). The MFDA could benefit from exploring how it can leverage community networks to promote the adoption of innovative practices and technologies among small-scale fisheries entrepreneurs (Ismail & Falah, 2018).

(c) Promotion of Value-Added Products

The MFDA has been actively promoting the production of value-added fishery products, including processed fish items, fish-based snacks, and fish oil. The objective is to enhance the profitability and marketability of Malaysian fisheries, reduce dependency on raw fish exports, and establish more resilient business models. However, while these initiatives have proven successful in certain instances, there is limited research on their overall contribution to the sustainability of fisheries businesses (Ali & Muhammad, 2020). Additionally, the environmental and social implications of value-added production processes, such as waste management and resource utilization, are frequently overlooked (Lim & Noor, 2021).

Future research should investigate how value-added products can be integrated into sustainable business models that minimize environmental impact and promote circular economy principles (Ahmad, 2022). Additionally, it is essential to understand how the MFDA's market access programs can support the success of these value-added products in both local and international markets. By examining how market dynamics, consumer preferences, and global trade policies influence the competitiveness of value-added fisheries products, future studies can enhance the effectiveness of the MFDA's promotional efforts (Mohd & Zain, 2020; Tan & Othman, 2021).

(d) Challenges in Agro-Entrepreneurship Development

Despite the support provided by the MFDA, several challenges persist in the development of agro-entrepreneurship within Malaysia's fisheries sector. One major issue is the slow adoption of technology by

traditional fishers, often due to financial constraints, a lack of technical expertise, and cultural resistance to change (Ismail & Zakaria, 2018). Many small-scale fishers continue to rely on traditional fishing methods, which can limit their productivity and hinder their ability to adapt to market demands and environmental changes.

Therefore, this paper suggests that community-based approaches, which enable fishers to pool resources for adopting new technologies, may help overcome these barriers (Ali & Idris, 2020). However, further research is needed to explore how the MFDA can facilitate these community-based initiatives to accelerate technology adoption and innovation within the fisheries sector. Additionally, the roles of educational institutions and public-private partnerships in promoting innovation and knowledge exchange should be examined further (Wani & Zulkifli, 2021).

CONCLUSION AND POLICY IMPLICATIONS

This study examined how the MFDA has contributed to transforming the livelihoods of fishermen through entrepreneurship, financial support, agro-tourism, and youth development programs. The findings demonstrate that MFDA's integrated strategies have successfully diversified income sources, strengthened community participation, and cultivated entrepreneurial mindsets among fishing communities across Malaysia. By combining institutional support with training and financial assistance, the MFDA has enabled fishermen to transition from subsistence-based income to sustainable, market-oriented enterprises.

From a broader perspective, the programs analyzed between 2016 and 2020 show a progressive policy evolution. Earlier initiatives primarily emphasized welfare and subsidy distribution, whereas recent interventions focus on productivity, innovation, and self-reliance. The inclusion of agro-tourism and agro-based enterprises has expanded the economic base of fishing communities, providing new employment opportunities. Youth-focused programs, such as the Young Agropreneur Grant (YAG), ensure generational continuity and encourage technology adoption within a traditionally aging industry. Through continuous training and the provision of matching grants, MFDA has managed to develop a pool of micro-entrepreneurs who now contribute meaningfully to local economies.

The empirical evidence supports the Sustainable Livelihoods Framework, which argues that improved access to financial, human, and social capital enhances overall resilience. MFDA's programs have built these assets simultaneously: grants have improved financial capacity, training has increased human capital, and cooperative networks have strengthened social bonds. Similarly, insights from Entrepreneurial Development Theory explain how targeted institutional support fosters self-reliance, opportunity recognition, and innovation among fishermen. The MFDA's tiered approach, moving participants from basic assistance to advanced enterprise levels, illustrates a structured entrepreneurship ecosystem supported by policy continuity.

Despite these achievements, the analysis also highlights several areas that require sustained policy attention. First, most entrepreneurs remain concentrated at lower business levels, which limits scalability and long-term income growth. To address this, MFDA should consider developing graduation mechanisms that help successful entrepreneurs transition from micro to medium-scale enterprises. This could involve partnerships with microfinance institutions, cooperative banks, or private investors to expand access to credit and markets. Strengthening financial literacy programs would also empower entrepreneurs to manage resources more effectively and reduce dependency on government grants.

Second, technological innovation remains a critical challenge. While training courses have improved technical capacity, many entrepreneurs continue to rely on traditional processing methods. The integration of digital marketing, packaging innovation, and automation could substantially increase competitiveness. Collaboration between MFDA, research universities, and industry players can facilitate knowledge transfer and innovation diffusion. The creation of regional "Innovation and Processing Hubs" under MFDA supervision could accelerate this process by providing shared facilities for product testing, cold storage, and packaging.

Third, sustainability must be embedded within the entrepreneurial framework. Expanding fish processing and tourism activities can increase environmental pressure if not managed responsibly. Incorporating eco-certification, waste management training, and circular economy principles would ensure that growth does not compromise marine ecosystems. Environmental education programs for fishermen and their families could reinforce stewardship values and align MFDA initiatives with the United Nations Sustainable Development Goals, particularly SDG 8 (Decent Work and Economic Growth) and SDG 14 (Life Below Water). Fourth, the long-term success of entrepreneurship programs depends on effective monitoring and evaluation. Regular impact assessments should be institutionalized to track performance, profitability, and community well-being. Using digital dashboards and geo-tagged monitoring systems can help MFDA measure real-time outcomes and make evidence-based policy adjustments. Such systems would also improve transparency and accountability, strengthening public trust in government-led community development initiatives.

In addition, youth retention should be treated as a strategic priority. Although the YAG program has shown promising results, retaining young entrepreneurs in coastal areas requires continuous mentorship, recognition, and exposure to national and international markets. Establishing Youth Fisheries Innovation Labs could help young participants collaborate on product development and gain entrepreneurial experience through competitions or incubation schemes. These initiatives would not only sustain generational renewal but also nurture leadership among coastal youth. From a policy standpoint, MFDA's approach provides valuable lessons for other developing nations seeking to balance social welfare with economic empowerment. Malaysia's model demonstrates that entrepreneurship within traditional sectors can be both inclusive and sustainable when it combines financial

support, human-capital development, and institutional facilitation. It also highlights the importance of community participation, where local associations act as catalysts for collective learning and self-governance. By aligning local-level interventions with national development agendas, such as the Shared Prosperity Vision 2030, MFDA ensures that small-scale entrepreneurship contributes directly to macroeconomic resilience and rural transformation.

In conclusion, the findings reaffirm that entrepreneurship serves as a viable pathway for sustainable livelihood transformation among Malaysia's fishing communities. The transition from dependency to empowerment is already visible in the growing number of fishermen who now operate as micro-entrepreneurs, trainers, and cooperative leaders. However, sustaining this momentum requires a continuous cycle of policy innovation, institutional collaboration, and knowledge sharing. Future efforts should emphasize multi-stakeholder partnerships, digital integration, and environmental safeguards to ensure that entrepreneurship not only uplifts communities economically but also preserves the ecological and social fabric that defines Malaysia's coastal heritage. Through these measures, MFDA and related agencies can consolidate the progress achieved and steer Malaysia's fisheries sector toward a more inclusive, competitive, and sustainable future.

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