

Exporting for Growth:

The SMEs' Perspective

9 November 2022

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- Malaysia's small and open economy, with her active participation in bilateral and multilateral trade agreements that promote freer trade and encourage more exports, is a win-win for the Malaysian economy and businesses.
- Boosting international trade is crucial to balance the country's growth engines, increase output and investment as well as generate employment. Exporting businesses gain strength and resilience when their products and services gain acceptance abroad.
- Small and medium enterprises (SMEs) are the backbone of Malaysia's overall economic and industrial development: In 2021, SMEs accounted for 97.4% of total business establishments; contributed 37.4% of total GDP; 9.4% of total exports of goods and services; and 47.8% of total employment.
- SMEs are predominantly domestic-market orientation, given their size and nature of principal activities. Given the crowded domestic market, SMEs must make their way out by exporting their businesses. With the utilisation of a digital platform, cross-border trades and competition have been intensified as companies find that they are no longer confined to their local base market. There is a bigger market outside Malaysia.
- There are various challenges hindering SMEs businesses from exploring and making inroads in international markets. These include limited access to finance and resources, advanced technology and management skills, which restrict their growth and competitiveness against large and multinational enterprises. Some companies also lack market savviness, business culture and an understanding of the trade rules in new markets.
- While the Government has implemented various facilitation programs and funds to enable SMEs' exporting, they are often not having the confidence, know-how and market savvy enough to reap the benefits from manoeuvring their way around new markets. While both RCEP and CPTPP offer opportunities for trade and services, they add another layer of competition for domestic SMEs in international markets.
- This report aims to focus on SMEs' contribution to exports. It identifies key issues and constraints faced by SMEs, various development programs, and funds to assist SMEs in their export efforts as well as to explore the products and services that SMEs have the potential to export.
- Given limited publicly available data, our analysis is based on the Associated Chinese Chambers of Commerce and Industry of Malaysia (ACCCIM) Malaysia's Business and Economic Conditions Survey (M-BECS) on "Tapping SMEs' Potential to Go Global" conducted from 26 April 2022 to 30 June 2022.

SWOT Analysis

SWOT analysis is conducted on the following products and services that have garnered the most number of respondents for having growing exports potential.

Halal Products and Services				
Strengths	A global leader in the Islamic economy ecosystem			
Weaknesses	 Slowness in halal certification approvals and renewal Perception issues in JAKIM High challenges and low awareness of halal pharmaceuticals 			
Opportunities	 Government-backed push for food security Demand for convenience products is on the rise Joint ventures in Muslim-majority markets 			
Threats	Surge in raw materials pricesLack of unified standards for halal products worldwide			

Palm-based Bio Products				
Strengths	Ample supply of raw materials for palm-related industriesComparative advantages of palm oil			
Weaknesses	Utilisation of oil palm waste towards a circular economy			
Opportunities	Growing demand for palm-based bio productsAn alternative to fossil fuel - biofuel			
Threats	 Palm oil ban from the European Union Rising awareness of Environmental, Social and Governance (ESG) principles 			

SWOT Analysis (cont.)

Fruits				
Strengths	Favourable soil and climate conditions for tropical fruits			
Weaknesses	 Storage of tropical fruits throughout the supply chains Abundance of fruit wastes Temporary Occupation Lease (TOL) 			
Opportunities	 Growing demand for tropical fruits in Malaysia A diversified variety of authentic fruits in Malaysia 			
Threats	Climate changeEndangered pollinators			

Medical Tourism				
Strengths	High-quality and affordable medical care			
Weaknesses	 Underdeveloped ancillary services Inadequate wellness and health-related travel scope 			
Opportunities	Increasing willingness to spend on healthcare travel			
Threats	 Fierce regional competition Over-relying on a single source Risk of infectious diseases 			

Introduction

- Malaysian small and medium enterprises (SMEs) are a vital component and backbone of the country's overall economic and industrial development. In 2021, SMEs accounted for 97.4% of total business establishments; contributed 37.4% of total GDP; 9.4% of total exports of goods and services; and 47.8% of total employment.
- Malaysian SMEs are predominantly domestic-market orientation given their size and nature of principal activities. Over the years, some SMEs have engaged in international activities by exporting and also integrated with global value chains by directly exporting intermediate goods or services to an individual or firm overseas.
- Malaysia's small domestic market, along with trade liberalisation and participation in trade agreements that encourage more exports, is a win-win for the Malaysian economy and SMEs businesses. Boosting international trade is crucial to balance the country's growth engines. increase output and investment as well as generate employment. Exporting businesses gain strength and resilience when their products and services gain acceptance abroad.
- The Government has rightly championed SMEs' exporting as their business, including setting a target of 45% of the GDP and 25% of exports under the 12th Malaysia Plan (2021-2025). Government's actions to encourage exports are to be applauded -various programs and incentives are being offered to enhance SMEs' capacity and capabilities through continuous product and market development. knowledge and technology acquisition.
- SMEs know that exporting can be beneficial, but do not always feel they have the confidence, the know-how or the support to take the first step. Malaysia's ratification of RCEP and CPTPP adds another potential layer of complexity for businesses to navigate in international markets.
- Despite these efforts, it has been found that some SMEs do not try to export because they believe it will be complicated or risky path.



Source: Department of Statistics, Malaysia (DOSM)



SMEs' Profile in Malaysia

- Small and medium-sized enterprises (SMEs) play a significant role in most economies, particularly developing countries. Globally, SMEs have accounted for about 90% of total business establishments and contributed more than 50% of employment. In emerging economies, formal SMEs contributed up to 40% of national income (GDP) and generated 7 out of 10 formal jobs¹.
- The World Bank estimated that an additional 600 million jobs will be required by 2030 to absorb growing global workforce, making SMEs' development a high priority in the national development agenda.
- In Malaysia, 97.4% of business establishments were SMEs² in 2021. They have contributed 37.4% of GDP and a significant share of services exports. SMEs have generated nearly half of national employment, mostly in the services sector.

¹ World Bank

² See Appendix A for SMEs' definitions.

SMEs' contribution to the economy

97.4% of total number of business establishments in 2021

2017

% of merchandise exports





2018

2019

2020

% of service exports

2021

2016

2015

Source: Department of Statistics Malaysia (DOSM)

By the Numbers: Malaysian SMEs' Establishments

Major sectors and selected sub-sectors*	Total SMEs	SMEs as % of	Total SMEs	SMEs as % of
	(2015)	total#	(2021)	total#
Agriculture	10,218	87.9	23,633	94.0
Crops	6,930	85.5		
Other agriculture products	3,288	90.5		
Mining and quarrying	865	84.3	4,572	95.8
Manufacturing	47,698	97.1	71,612	96.3
Manufacture of food products	7,876	N/A^		
Manufacture of beverages and tobacco products	440	96.1		
Manufacture of rubber and plastics products	2,446	93.1		
Manufacture of petroleum and chemical products	1,842	93.6		
Manufacture of fabricated metal products, except machinery and equipment	5,284	98.3		
Manufacture of non-metallic mineral products and basic metal	3,481	95.9		
Manufacture of wearing apparel	7,491	99.7		
Printing and reproduction of recorded media	3,194	99.4		
Manufacture of furniture	2,487	98.7		
Repair and installation of machinery and equipment	2,857	99.6		
Other manufacturing	10,300	94.7		
Construction	39,158	96.5	98,274	98.4
Residential buildings	7,786	94.9		
Non-residential buildings	7,271	95.0		
Civil engineering	9,145	96.5		
Special trades	14,956	98.2		
Services	809,126	98.9	1,028,403	97.5
Wholesale and retail trade	414,019	98.9	444,531	97.0
Accommodation	4,219	96.0		
Food and beverages	165,059	N/A^		
Transportation and storage	53,705	99.9		
Information and communication	7,673	95.1		
Finance	15,394	N/A^		
Real estate	17,323	99.3	502 072	07.0
Professional, scientific and technical	33,918	98.9	JOJ,072	97.9
Administrative and support service	18,363	99.4		
Education	11,614	99.1		
Health and social work	14,822	99.3		
Arts, entertainment and recreation	6,650	99.2		
Personal services and other private services	46,367	N/A^		
Total	907,065	98.5	1,226,494	97.4

* Subsectors based on number of SME establishments (2015) below 2,000 units are combined under a sub-category.

[#] Share of all the subsectors is divided by unrevised total establishment statistics, due to data unavailability.

^ Not shown due to number of SMEs are higher than 100% of unrevised total establishments.

SMEs' Contribution to the Economy by Sector

SMEs have generally **outperformed national growth** with **an increasing share of GDP over the years**, though they have missed the original target of 41% as outlined in the SME Masterplan 2012-2020 (2019: 38.9%; 2020: 38.1%). Its share of GDP has shrunk in the aftermath of the COVID-19 pandemic crisis.

Real GDP	2015	2019	2021	CAGR (2016-2021) (%)	
	SMEs as % share of overall		Malaysia	SMEs	
Agriculture	50.9	53.0 🔺	55.0 🔺	0.2	1.5 BETTER
Rubber, oil palm, livestock and other agriculture	49.0	51.0	53.1	1.3	2.6
Fishing	77.9	78.8	80.5	-1.4	-0.8
Forestry and logging	29.4	29.2	29.3	-8.5	-8.5
Mining and quarrying	2.0	2.9 🔺	2.9	-1.7	4.7 BETTER
Manufacturing	33.8	34.6 🔺	34.2	4.3	4.5 BETTER
Petroleum, chemical, rubber and plastic products	26.2	27.4	29.0	4.5	6.2
Food, beverages and tobacco	59.5	60.1	64.6	3.1	4.5
Non-metallic mineral products, basic metal & fabricated metal products	50.4	53.3	53.7	1.3	2.4
Other manufacturing	27.3	27.5	25.9	5.2	4.3
Construction	47.0	46.4	49.0 🔺	-1.4	-0.7 BETTER
Services	40.9	42.7 🔺	39.8	3.5	3.0
Wholesale & retail trade, food & beverage and accommodation	75.6	76.6	78.5	3.1	3.8
Finance, insurance, real estate and business services	39.5	42.0	36.4	3.3	1.9
Transportation & storage and information & communication	25.7	25.1	23.0	4.7	2.8
Other services*	21.1	21.7	18.1	1.9	-0.6
Total	37.0	38.9 🔺	37.4	2.8	3.0 BETTER

Source: Department of Statistics Malaysia (DOSM)

In terms of exports, all sectors have been growing steadily until the outbreak of the COVID-19 pandemic. Hence, its share of overall exports of goods and services had declined from 15.1% in 2019 to 9.4% in 2021.



Source: Department of Statistics Malaysia (DOSM)



In the Manufacturing Sector ...

- Despite SMEs forming a majority in most if not all of the manufacturing sub-sectors, their contributions to the economy, particularly export-oriented sectors, are not up to the mark relative to their share of total establishments, especially in high capitalintensive products, such as petroleum and electronic products. Notwithstanding this, SMEs have outperformed in the furniture industry.
- This shows that there are areas of improvement for SMEs to tap into international markets, especially for those non-high capital-intensive industries. There is also a need to explore the potential to further export some domestic market-oriented products, such as food products and pharmaceutical products.

Manufacturing and the major sub-sectors (2015)	Value added by	Overall current GDP (2010–100)	% of SMEs
	(RM mil)	(RM mil)	
Overall Manufacturing	82,077	263,131	31.2
Vegetable and animal oils & fats	14 705	11,627	62.5
Food processing	14,795	12,062	02.5
Beverages	858	5,239	16.4
Tobacco products	214	4,241	5.0
Textiles	719	3 821	17 A
Wearing apparel	1,091	5,021	77.7
Leather and related products	321	438	73.3
Wood products	2,968	6,646	44.7
Paper and paper products	2,240	2,849	78.6
Printing and reproduction of recorded media	2,458	3,117	78.9
Refined petroleum products	1,465	34,151	4.3
Chemicals and chemical products	9,456	30 521	32.0
Pharmaceutical products	586	50,521	02.0
Rubber products	7 188	5,867	<i>4</i> 5 8
Plastics products	7,100	9,812	40.0
Non-metallic mineral products	4,952	10,265	48.2
Basic metals	2,952	6,871	43.0
Fabricated metal products	9,396	14,344	65.5
Machinery and equipment	4,844	8,085	59.9
Electrical equipment	2,745	4,583	59.9
Computers and peripheral equipment		4,481	
Electronic components & boards, communication equipment	3 007	49 242	53
and consumer electronics	0,001	10,212	0.0
Medical, precision & optical instrument, watches and clocks		3,301	
Motor vehicles, trailers and semi-trailers	1,989	26.592	12.4
Other transport	1,314	20,002	
Furniture	2,980	3,086	96.6
Other manufacturing	1,567	1,889	N/A^
Repair and installation of machinery and equipment	1,972	1,000	1 1/ 1

Note: Shaded sub-sector indicates an export-oriented manufacturing sub-sector. ^ Not shown due to the share of SMEs is higher than the overall, probably due to discrepancy in categorisation. Source: Department of Statistics Malaysia (DOSM)

Opportunities for SMEs – Free Trade Agreement (FTA)



Note:

^ Yet to be in force for Regional Comprehensive Economic Partnership (RCEP)

* Yet to be in force for Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)

Source: Ministry of International Trade and Industry (MITI)

- Given a limited size of domestic market, exporting becomes the platform for SMEs to achieve economies of scale and integrate with global value chains through competitiveness strategies.
- The implementation of the RCEP brings with it both greater competition and a wealth of opportunities in goods and services, especially intra-regional trade. In 2021, nearly 60% of Malaysia's total trade of goods was with RCEP members, of which exports accounted for about 56%.
- Malaysia's GDP is estimated to increase by RM16 billion annually, equivalent to 1.1% of nominal GDP over the next ten years¹. Malaysia External Trade Development Corporation (MATRADE) also estimated that Malaysia's exports to RCEP could increase by RM21 billion per year. Overall trade will be further improved with more robust integration in the regional production networks.

- The ratification of CPTPP will add another layer of opportunities, which is estimated to generate a cumulative export of US\$354.7 billion in 2030 or a 2.7% increase from the baseline (if Malaysia does not ratify)². Besides, it will further bring investments of US\$112.3 billion from 2021 to 2030.
- With better market access to an enlarged RCEP and CPTPP market bases, domestic manufacturers and businesses can expand their production and sources of raw materials (suppliers). Consumers are availed of a diversified supply of goods and services offered by members of the trade pact.
- Notably, the participation of SMEs in RCEP and CPTPP would now benefit from these enlarged markets (more than a third of the global population and up to 60% of global trade) via lower trade tariffs. better market access. the standardisation of trade rules and regulations, e-commerce, etc.

^{1 & 2} Ministry of International Trade and Industry (MITI)

A Quick Glance: RCEP and CPTPP



Facts & Figures (2021)



Note: See Appendix B for more information about FTA Source: MITI; World Bank; DOSM

Issues and Constraints Faced by SMEs in Malaysia

- By nature, SMEs are small in size of capital, business operation and number of employees, and hence, restricting their opportunities for growth and expansion to penetrate global markets. They generally have limited access to **finance and resources, advanced technology and management skills**, leading to low productivity, capital efficiency and poor investment in innovative technology adoption.
- SMEs' productivity level remains • low. despite various efforts undertaken to boost productivity. The Twelfth Malaysia Plan (2021-2025) indicated that MSMEs were three times less productive than large resulting widening firms. in а productivity gap during the Eleventh Plan (2016-2020).
- The compounded annual growth rate (CAGR) in the difference in labour productivity between MSMEs and large enterprises is 2.6% from 2015 to 2021, indicating a widening gap over time.



MSMEs' labour productivity, value added per employment

- The Malaysia Digital Economy Blueprint indicated that while 44% of SMEs are using cloud computing, more than 80% are using it merely to store documents, photos and videos. Half of them use some form of data analytics, but 70% refer to spreadsheets. Around one-third of SMEs have deployed Internet of Things (IoT) solutions for only the purpose of building surveillance and fleet tracking.
- With a lack of technology adoption, limited diffusion of technological innovation and high dependency on low-skilled workers, RCEP and CPTPP will pose severe threats and challenges to SMEs in both domestic and international markets, particularly the established partners within these mega FTAs.
- In order to retain competitiveness and tap into the global market, SMEs must strengthen their capacity to seek new markets and expand their exports. They must be well-prepared and stay competitive and innovative to reap benefits from FTAs by moving into a higher value chain, adopting more advanced technologies and penetrating potential niche markets.

Government Policies on Enhancing SMEs' Competitiveness

- As SMEs are an important backbone of the economy, the Government has put in place many development programs, blueprints and initiatives to enhance their capacity and capabilities through continuous product and market development, knowledge and technology acquisition.
- Amongst them, the Shared Prosperity Vision (SPV) 2030, Malaysia Digital Economy Blueprint, Twelfth Malaysia Plan (12MP), and National Entrepreneurship Policy 2030, which each has set its objectives to transform SMEs as a new driver of economic growth through the adoption and prioritisation of technology and digitalisation.
- Therefore, SMEs must be equipped with the resources and knowledge as well as management skills to digitalise their business process and enhance competitiveness to offer high-quality products and services at competitive prices in the international markets.

TWELFTH MALAYSIA PLAN

Theme 1 – Resetting the Economy

Theme 1 focuses on restoring the growth momentum of key economic sectors, and propelling strategic and high-impact industries as well as micro, small and medium enterprises (MSMEs) to realign growth in a sustainable trajectory as well as strengthening Malaysia's position in the global supply chain.

"

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National Entrepreneur and SME Development Council (NESDC)

- Since 2004, the National SME Development Council (NSDC) has been the highest policy-making authority with its strategic functions that embody overall development of SMEs across all sectors in Malaysia. As greater emphasis is now placed on entrepreneurship development, the Council forges ahead with its rebranded name - the National Entrepreneur and SME Development Council (NESDC), announced and endorsed at its inaugural meeting on 8 April 2019.
- The NESDC is chaired by Prime Minister, with members comprising Ministers from 17 Ministries, Chief Secretary of the Government, and Governor of Bank Negara Malaysia.
- The Council has endorsed eight (8) measures to further boost SMEs' growth and development:



Premised on the National Entrepreneurship Framework (NEF), which is parallel with the eight (8) measures for SMEs, the National Entrepreneurship Policy (NEP) has been formulated to bring about a comprehensive, inclusive and holistic entrepreneurship ecosystem for SMEs' development in the country.

National Entrepreneurship Policy 2030

- The National Entrepreneurship Policy 2030 plans to develop an entrepreneurial ecosystem that will enhance national competitiveness in the global economy and create an entrepreneurial culture in Malaysian society. One of the main objectives is to scale up local enterprises and SMEs, supported by 4 strategies and 14 initiatives¹.
- More importantly, this policy attempts to increase SMEs' contribution to GDP from 38.3% in 2018 to 45% in 2025 and 50% in 2030. While external shocks such as the COVID-19 pandemic have hindered the progress of achieving the targets, there are continued efforts to increase SMEs' contribution to the overall economy.

SME Corp. Malaysia Business Strategic Plan (2022 - 2030)

- Themed 'Pioneering Business Transformation', the Business Strategic Plan (2022 2030) was released on 27 Sep 2022, and the corporate strategy is developed in line with and supports the National Entrepreneurship Policy 2030, Shared Prosperity Vision 2030 (SPV 2030) and 12th Malaysia Plan (12MP).
- The plan was formulated to help SME Corp. Malaysia in its efforts to catalyse MSMEs' transformation towards achieving sustainability and a leap in business growth. Guided by a long-term strategy, it is based on a ground plan of coordinated, systematic and collective efforts to create more MSMEs in domestic and global value chains, as well as viable microenterprises.



* Methodology has been revised by taking into account Government servants, employees in the informal sector excluding the agriculture sector, unregistered businesses in the agricultural sector and outsourcing activity in the summation for overall employment (denominator). ^ Based on SERC's recalculated share. Source: DOSM

¹ See Appendix C for more details.

17 SMEs' Profile in Malaysia

Business Condition and Economic Outlook for SMEs 2022-2023¹

- 44% of SMEs are planning to hire 5-25 additional workers as a result of labour shortages. The most demanding categories of workers are semi-skilled and skilled, or technicians (36%), service and sales (18%), and professionals (12%), reflecting the intention to expand the share of skilled workforce and management team.
- **41% of respondents indicated an investment of 1%-5% of staff salaries on human resource development per annum,** higher than a mandatory 1% contribution to the Human Resource Development Corporation (HRD Corp).
- The Government should continue assisting SMEs to strengthen their capacity to face with international competition via the provision of monetary (e.g. soft loans, grants, and tax incentives) and non-monetary resources (e.g. MyMUDAH, INDUSTRY4WRD Readiness Assessment) for business facilitation, technological adoption and human resource development.

¹ Undertaken by Small and Medium Enterprises Association of Malaysia (Samenta)



Selected Assistance Programmes for SMEs

Limited access to finance and resources has been the main constraint faced by SMEs to adopt digitalisation and enhance competitiveness. To facilitate SMEs' growth, the Government has implemented a number of financial assistance and incentives, including human capital development and market access, some of which are for specific purposes.

PROGRAMME NAME	TYPES
Market Development Grant (MDG)	Grant
Industry4WRD Intervention Fund	Grant
Technology Development Fund 2 (TeD 2)	Grant
Technology Development Fund 1 (TeD 1)	Grant
Strategic Research Fund (SRF)	Grant
Bridging Fund (BGF)	Grant
SMEs Go Global Programme	Grant
Programme for Enhancement of Strategic Industry and High Growth Enterprise (PRESTIGE)	Grant
Halal Technology Development Fund (Halal Fund)	Soft Loan
SME Emergency Fund 2.0	Soft Loan
Soft Loan Scheme for Services Sector	Soft Loan
Soft Loan Scheme for Automation and Modernisation	Soft Loan
Soft Loan Scheme for Small and Medium Enterprises	Soft Loan
Soft Loan Scheme for Digital and Technology	Soft Loan
Sustainable and Green Biz Financing	Soft Loan
Services Biz Financing	Soft Loan
SME Revitalisation Financing	Soft Loan
JBIC Fund for Small and Medium Industries	Soft Loan
Market Development Biz Financing	Soft Loan

Note: The list is not exhaustive. Please refer to Appendix D for more information.

SWOT Analysis

Tapping SMEs' Potential to Go Global

CHARDKAI

2022

Halal Products and Services Palm-based Bio Products Fruits Medical Tourism

Potential Products and Services for Global Trade

- As a leading exporter of many natural resources, Malaysia has the capacity to export valuable resource-based products and services as well as higher-end products, such as electrical and electronic (E&E) products, chemicals, petroleum products, and palm oil.
- Exports require consistent technological breakout and innovation to remain competitive against other potential competitors, especially in Southeast Asia. The export expansion of potential products and services can benefit domestic economy and businesses. This, in turn, would fuel economic growth and investment with the advantage of responding quickly to market's demand and changes.
- For the purpose of this section, we have asked business respondents about what products and services domestic SMEs have high potential to go into the global markets. The ACCCIM's Malaysia's Business and Economic Survey (M-BECS) (1H 2022 & 2H 2022F) was conducted from 26 April to 30 June 2022.
- Among the products and services identified in M-BECS, which have high exports
 potential with an expansion of capacity are halal products and services, palmbased bio products, fruits and medical tourism. This paper will conduct a SWOT
 analysis on these products and services.

	Products	Services		
	Halal products (55.0%)	Medical tourism (49.0%)		
	Palm-based bio products (52.3%)	Halal consultancy services (42.5%)		
	Fruits (46.8%)	Food and restaurant franchising (38.1%)		
	Frozen food (36.1%)	Education (33.3%)		
	Wood-based products (35.4%)	Software design (32.1%)		
	Snack product (30.6%)	Data processing activities (27.6%)		
	Aquaculture (30.3%)	Engineering services (23.9%)		
-Bik	Herb product (27.5%)	Smartphone gaming apps (23.0%)		

Selected products and services that SMEs have the potential to go into the global market

% of respondents

SABRET

SABRE

USE PED SIGNAL

SABRETT



Introduction

- Halal is an indispensable term giving Muslim permissible to any action according to Islamic rules and conception.
- Halal products are generally perceived as food items, but indeed, it also covers non-food items such as pharmaceuticals and cosmetics, which are certified by related agencies, e.g. Department of Islamic Development Malaysia (JAKIM) in Malaysia.
- In Malaysia, halal certification is essential to assure consumers that the products are manufactured following the Shariah law throughout the production process and supply chains. Globally, Malaysia's halal standard is one of the most recognised highquality standards, hygienic, trustable and safe for consumption.

Global outlook of Islamic halal economy¹:

- Based on 2021 estimation, 1.9 billion Muslims worldwide spent an equivalent of US\$2 trillion on food, pharmaceuticals, cosmetics and other sectors. This spending marked an increase of 8.9% growth from 2020.
- As all sectors (except travel) have nearly or already returned to pre-pandemic spending levels by end-2021, Muslim spending is estimated to grow further by 9.1% in 2022 amid continued uncertainties surrounding economic and business environment.
- Specifically, spending on halal food, pharmaceuticals and cosmetics has increased to US\$1.44 trillion in 2021, and is expected to grow by another 7.0% in 2022 and subsequently reach US\$1.89 trillion in 2025, registering a 4-year CAGR of 7.1%.

¹ State of Global Islamic Economy 2021

Halal Industry Master Plan 2030 (HIMP 2030)

- The focus of HIMP 2030 is primarily to promote the growth, advancement and internationalisation of the local halal industry.
- The Plan aims for the halal industry to account for about 11% of GDP by 2030 (2018: 7.4%) and RM70 billion in exports (2018: RM40 billion).
- The HIMP 2030 has formulated 42 initiatives, five of which were identified as Super Catalytic-large-scale transformative initiatives benefiting industry players at all levels, which aimed at shifting the trajectory of the halal industry's growth, and significantly advancing a broad cross-section of the industry.



SMEs are the targeted beneficiary for all five Super Catalytic Initiatives.



Strengths

A global leader in the Islamic economy ecosystem

Weaknesses

- Slowness in halal certification approvals and renewal
- Perception issues in JAKIM
- High challenges and low awareness of halal pharmaceuticals

Opportunities

- · Government-backed push for food security
- Demand for convenience products is on the rise
- Joint ventures in Muslim-majority markets

Threats

- Surge in raw materials prices
- Lack of unified standards for halal products worldwide

Strengths

A global leader in the Islamic economy ecosystem

- As a benchmark leader in the halal industry, Malaysia is in a competitive position of strength supported by a relatively comprehensive policy framework, government's support and good infrastructure for developing halal products and services.
- It is remarkable that Malaysia is one of the major sources of reference for over 150 countries in various areas within the halal industry, development and governance.
- Prior to the COVID-19, Malaysia's halal exports of foods, ingredients, pharmaceuticals, cosmetics, etc., recorded RM40.6 billion in 2019, making up 4.1% of total exports. While external demand moderated to RM30.5 billion in 2020 (3.1% of total exports) and RM36.3 billion in 2021 (2.9%), global demand has made a comeback to grow by 60.6% YoY to RM39.4 billion in the first eight months of 2022 (3.9%).
- In terms of investment attraction, Malaysia has attracted a cumulative investment of RM16.1 billion in Malaysia's halal parks in 2011-2020, of which 59% were foreign direct investments (FDI). A total of 295 businesses are operating throughout the 21 halal parks across Malaysia.



¹ DOSM

² Malaysian Investment Development Authority (MIDA)

State of Global Islamic Economy Report 2021:

- Malaysia has retained the top spot in terms of Islamic economy for the 9th consecutive year, leading in four (4) indicators, i.e. Islamic finance, halal food, travel, as well as media and recreation.
- Nevertheless, Singapore topped its ranking in halal pharmaceuticals and cosmetics in 2021 due to solid growth in related products' exports. Singapore also scored favourably in the awareness sub-indicator, with many educational courses and events carried out across the sectors. Will Singapore pose a threat or complementary to Malaysia's halal footprint?



Source: State of Global Islamic Report 2021

Weaknesses

Slowness in halal certification approvals and renewal

Due to the lack of manpower and high backlog of applications, some industry players have claimed that the time taken for approvals or renewal is much longer-than-expected. The audit process is not on time, even delayed until the existing terms have expired for renewal cases.

Perception issues in JAKIM

Maintaining a good reputation for an entity requires conscientious efforts, and it takes years to establish good market credentials. However, it can be tarnished instantly if it is not handled well. While Malaysia has been positioning herself as a global leader in the halal economy, there remain some perception issues in JAKIM, leading to public suspicion and confusion about its credibility.

Public voices on JAKIM

- Lack of manpower not only delays the halal-certification process but also results in poor monitoring and enforcement, opening a backdoor for businesses operating with fake or unqualified halal certification.
- Owing to a complexity of food supply chains, halal meat adulteration can take place in many forms, for example, **the substitution of non-halal ingredients and mislabeling of products from the country of origin**.
- Some players are confused with the guidelines, and at times they were forced to pay extra for an external consultant to address the concerns raised by the authority before and during the certification audit.
- JAKIM said that many Bumiputera entrepreneurs have yet to apply for halal certification. There are misconceptions that the application for halal certificate could be expensive and time-consuming. This has resulted in low awareness and hence, reduced interest in applying for halal certification¹.

JAKIM's weaknesses jeopardising halal certification integrity

Letter to the Editor – February 9, 2022 8:00 AM

...there appears to be little of this system visible on the JAKIM website, especially the application where consumers can check the current halal status of any product in the Malaysian market.

Source: Free Malaysia Today (FMT)

Note: Please refer to Appendix E for a flow chart on the application of halal certification.



Emphasise a bottom-up approach through a transparent and reliable system to address the underlying issues and complexities in the supply chains:

- The Government should consistently address the underlying issues not solely by the entity itself but also by relying on public – a bottom-up approach via a transparent system. Due to the nature of complexity in the market and supply chains, it can be extremely challenging to identify potential frauds in the system.
- 2. Public can lodge a complaint about suspicious products, followed by a quick and transparent investigation supported by reliable information.
- 3. However, this will depend on public awareness of halal products fraud. One study has identified that **consumers' knowledge and awareness of halal food frauds influence their perception**¹.
- 4. Increasing consumers' knowledge and awareness via information sharing in the form of the halal campaign on social media or other relevant platforms to disseminate information about halal food frauds can likely reduce the possibility of consuming fraudulent products and help the authorities identify potential issues.

¹ Procedia – Social and Behavioural Science (2014)

Weaknesses

High challenges and low awareness of halal pharmaceuticals

 Halal food is a part of the Muslim life worldwide, and many of them can name some of its rules – for example, prohibitions on pork- and alcohol-based products. By contrast, halal requirements for pharmaceutical preparations can be confusing and ambiguous due to a complex nature of its ingredients and processes.

Definition of halal pharmaceuticals (MS 2424:2012):

- Ingredient is safe and free from ethanol, blood, pork, parts of carnivorous and omnivorous animals, and human parts.
- Maximum hygiene and minimum contamination with any potentially toxic and najs (ritually unclean) ingredients are applied.
- Process of cultivation, manufacturing, preparation, packaging, storage and distribution must be ensured that to be clean, pure and in compliance with Sharia.
- Every element of halal production is physically separated from non-halal production.
- Any potential cross-contamination between halal and non-halal ingredients and products is avoided.

Note: Three types of najs are mukhaffafah (light), mutawassitah (medium), and mughallazah (severe), including dogs, pigs, objects discharged from the orifices, etc.

Source: The Economist

Weaknesses

High challenges and low awareness of halal pharmaceuticals (cont.)

- In a global health pandemic emergency, the COVID-19 pandemic has underlined the shortcomings and inequalities in healthcare provision across the regions. While some have developed effective vaccines to enforce herd immunity, awareness about halal pharmaceuticals or vaccines remains low among a majority of the Muslim community and healthcare professionals, limiting the potential for scalability¹. This has dampened the ability to gain economies of scale while the conventional medicine remains dominant in the pharmaceuticals markets.
- Perhaps the low awareness about halal pharmaceuticals is not solely dependent on the complex nature of the procedures. Islamic law allows for consumption of non-halal products in life-threatening situations.
- As many medications are arguably meant to prevent the occurrence of life-threatening situations, the halal question remains a lack of relevance when it comes to medicines or pharmaceuticals.

Food for thought: The story of a pig in medicine...

- Pig (as a non-halal source) is extremely valuable for medical research, with more than just a potential source for organ donations. For over 30 years, it has been applied in several medical fields, including dermatology, cardiology and more.
- Pigs have a number of anatomic and physiologic similarities to humans in different systems, of which their organ systems are 80 to 90% similar to the corresponding systems in humans².
- Due to the similarities and valuable ingredients for medicine, scientists have long used pigs in clinical trials and medical experiments, as well as in various medical applications. These include insulin, surfactant, porcine vaccine and many others.
- To ensure halal-certified pharmaceuticals, the proscription of pigs would continue to pose a considerable challenge and limitation to the industry by finding alternative ingredient sources to achieve a similar effective rate in medicine.

¹ State of Global Islamic Economy 2021

² Fox News

Enhance the relationship between public and private sectors in Research and Development (R&D)

- In advanced economies, private firms undertake the bulk of Research and Development (R&D). Private sector's share of total R&D spending ranges from 60.9% in Singapore to 72.2% in the United States¹. In 2020, Malaysia's private sector only accounted for 43.9% of total R&D expenditure.
- Innovation in the private sector depends crucially on government's funding of basic science and research labs as well as scientific talents trained in universities supported by public funds. The direction of technological change is not determined from outside the social and economic system; instead, it is shaped by incentives, values and the distribution of power.
- 3. **Private sector often under-investing in technologies that have significant long-run investment returns.** For example, pharmaceutical companies seek returns in high-priced medicines for rare diseases in advanced economies, instead of vaccines for tropical diseases affecting millions of people in developing countries.
- 4. The Government plays an essential role in the fundamentals and direction of R&D. This requires the Government to be a leader in market by providing financial assistance to private sector via Public-Private Partnerships.

¹ National Science Foundation; Department of Statistics Singapore



Opportunities

Government-backed push for food security

• Food security remains a headline concern across major food-importing countries.

Did you know?

Based on the information between April and September 2022, **food price inflation** (measured as YoY change in food components of a country's CPI) **revealed high inflation worldwide, particularly in almost all low-and middle-income countries**, with many experiencing double-digit inflation. More than 80% of countries reported high food inflation across various income levels.

	% Shares
Low-income countries:	88.9%
Lower-middle-income countries:	91.1%
Upper-middle-income countries:	96.0%
High-income countries:	85.7%

Source: World Bank

- As of 17 October 2022, Agricultural Price Index is one percentage point higher than two weeks ago. Average wheat, maise, and rice prices in October 2022 are 18%, 27%, and 10% higher, respectively, than in October 2021¹.
- As food inflation and food insecurity are on the rise, governments worldwide have begun to implement relevant policies to cope with long-standing uncertainties due to global shortages and endless geopolitical conflicts. This will offer domestic businesses, including SMEs, opportunities to develop halal and non-halal agriculture and farming.
- The Malaysian government-backed push for food security will open up more resources to potential businesses in the food-related industry. In the 2022 budget, the Government continued to drive modernisation in the agriculture sector through various food security projects. It also allocated RM1.7 billion in subsidies and incentives for the agriculture and fisheries industry.
- With more sources of food production and supply, manufacturers can take advantage of the halal certification to access 1.9 billion Muslim markets. This will potentially bring benefits to exports as well as strengthen food security in Malaysia.

¹ World Bank.

Opportunities

Demand for convenience products is on the rise

 The hectic pace of working environment amid the availability of convenience products has changed consumers' food consumption behaviour. Convenience products, such as sales of ready-to-eat food, showed an upward trajectory and are expected to continue dominating the food trend. Every player across the food industry value chains will have to change if they want to remain relevant.

Inevitable evidence of rising demand for convenience products

- Following the impact of the lockdown due to the COVID-19 pandemic, demand for convenience products has risen substantially. The US National Retail Federation's latest Consumer View report 2020 revealed that 83% of respondents perceived convenience as one of the important factors for them compared to 5 years ago. Notably, 97% had backed out of a purchase because it was inconvenient.
- This report also found that consumers prioritise convenience for certain types of products, including groceries and personal care products. And they are willing to pay extra for the convenience, especially when it comes to groceries.
- 62% of millennials in the US had purchased prepared delivery food, carry-out, delivery or fast food within the last seven days before the survey was conducted¹. The sales of ready meals and other convenient products in Germany are also expected to grow by 13% from 2010 to 2023, with a total value of EUR5.3 billion.
- This phenomenon also happened in the halal segment. In the UK, one premium halal food producer has experienced a 30% increase in pre-cooked meats and protein snacks. Malaysian companies have also increased their merger and acquisition activities in ready meals, forecasting higher sales of ready-to-eat products.

Top 3 most demanded products in the ready-to-eat category retailers:



Drivers of convenience products movement to gain further traction:

- Busy lifestyle and higher income
- Decreasing household size
- Urbanisation
- Ageing population

Source: Deloitte


Opportunities

Joint ventures in the Muslim-majority markets

- Amid low awareness of halal pharmaceuticals, many lower-income Muslim-majority countries are still incapable of developing their halal pharmaceuticals, which have the potential market size and consumer demand. Advanced and matured companies can take advantage of entering into joint ventures to gain market access and opportunities.
- While many countries, such as Malaysia, South Korea and Indonesia, have substantially invested in halal pharmaceuticals, the industry mostly remains regionally focused on Southeast and East Asia¹. However, there is a trend of shifting towards a mindset of a "halal for everything" mentality among the Middle East consumers, increasing demand for halal products and services.
- For example, Malaysia's Duopharma participated in a joint venture with Bangladesh pharma players to develop halal-certified medicines. Besides, other halal preventative healthcare and supplements have also grown in demand as people seek to bolster their immune systems during and post the pandemic.

To address the underlying challenges of weak demand and complexities facing suppliers, Government and manufacturers can take several vital steps:

- 1. On the demand side, **labelling is essential to raise awareness of the differences** (standards of preparation and processes) between halal and non-halal products, by helping people to make an informed decision.
- 2. Public healthcare bodies and major drug buyers should consider halal elements when purchasing to help spur demand for halal pharmaceuticals. Their market power will drive up demand.
- 3. On the supply side, a complex environment for halal pharmaceuticals created by a proliferation of standard-setting and certification bodies will restrict the industry's growth. Hence, the regulators need to address a lack of mutual recognition between different bodies to reduce ambiguity in treatment.

¹ The Economist.

Threats

Surge in raw materials prices

 High inflation and rising cost of inputs are primary concerns for both consumers and businesses. With persistent supply disruptions and unforeseen climate events worldwide, the impact of supply shortages is projected to be significant on production, including halal industry, which has fewer alternatives to particular ingredients or sources.

Did you know?

- The disruption was mainly contributed by the Russia-Ukraine war, with a major shock to the commodity market, altering global patterns of trade, production, and consumption. The increase in energy prices over the past two years has been the largest since the 1973 oil crisis. Price increases in food commodities – of which Russia and Ukraine are large producers – and fertilisers, which rely on natural gas as an input, have been the largest since 2008.
- The World Bank estimated that commodity prices have remained well above most recent five-year averages due to the prolonged war-related disruption of trade and production. This will significantly affect global market and halal industry.



Threats

Lack of unified standards for halal products worldwide

- While Malaysia has developed globally recognised certification in the halal industry, the lack of unified standards restricts the industry's potential throughout the supply chains across the world.
- Many Muslim-majority countries tend to follow their own halal standards, which are not necessarily compatible with other countries. In the same way, many halal certification bodies only issue halal certificates based on their own criteria, which may not match with another issuer. This will affect not only imports but also exports of halal goods and services from Malaysia.
- One of the pertinent issues faced by the Malaysian exporters is **the halal certification requirement in Indonesia**, as Indonesia recognises its own certification instead of a well-accepted certification in Malaysia.
- For instance, JAKIM requires businesses to import raw materials from other halalcertified companies, which local entities accepted. However, the lack of standardisation and integrity, particularly foreign halal certification, can raise concerns among local Muslims as the inputs and raw materials may come from various regions and countries based on different requirements.
- Manufacturers struggle to export and gain scalability without a more universally accepted halal pharmaceuticals and cosmetics standard. Businesses must comply with the local requirement, which will incur huge opportunity costs for entering a market.

Without an integrated and standard system of handling halal issues across nations, businesses will not be motivated to produce and export halal products to gain broader market access. Government bodies act as critical facilitators in the halal industry by improving the quality of halal certification.



Conclusion

- The Islamic economy is prospective with an access to 1.9 billion Muslims worldwide spending an equivalent of US\$2 trillion on food, pharmaceuticals, cosmetics and other sectors. Spending on halal food, pharmaceuticals and cosmetics is expected to grow by 7.0% in 2022 and reach US\$1.89 trillion in 2025, registering a 4-year CAGR of 7.1% in 2021-2025.
- As a benchmark leader in the halal industry, Malaysia is in a competitive position of strength to enlarge her presence in the halal market, supported by a relatively comprehensive policy framework, government's support and good infrastructure for developing halal products and services. Exports of halal food, ingredients, pharmaceuticals, cosmetics, etc., recorded RM39.4 billion in the first eight months of 2022, making up 3.9% of total exports.
- While global inflation significantly hurts the poor and major food-importing countries, the government-backed push for food security will open up more resources to potential businesses in the food-related industry, taking advantage of halal certification to access 1.9 billion Muslim markets, especially in low-income nations. However, this opportunity might be disrupted by higher prices of raw materials, supply disruptions and unforeseen events such as climate change.
- The hectic pace of working environment has changed consumer spending behaviour towards the preference of convenience products. Many studies indicated that consumers inevitably had displayed increasing demand and willingness to pay more for convenience products. For example, one halal food producer has experienced a 30% increase in pre-cooked meat and protein snacks in the UK. Such a phenomenon is occurring in most parts of the world.
- Amid low awareness of halal pharmaceuticals due to their complex nature and Islamic rules, many lower-income Muslim-majority countries are still incapable of developing their halal pharmaceuticals. Malaysia is one of the countries that has invested substantially in halal pharmaceuticals, whereas the industries mostly focus on Southeast and East Asia. This opens up opportunities for businesses to take advantage of entering a joint venture to gain market access and reap benefits.
- While Malaysia has positioned herself as a global leader in the halal economy, the lack
 of integrity and unified standards remained an issue in JAKIM, leading to public
 suspicion and confusion about its credibility. For example, businesses struggle to
 export and gain scalability without a more universally accepted standard.

Introduction

- Oil palm trees are native to West Africa but were later planted in tropical regions in Southeast Asia and Latin America in the late 19th century. Currently, Indonesia and Malaysia are the largest and second-largest producers in the world, respectively. Oil extracted from palm fruits was traditionally used for cooking but is now being used in a wide range of applications.
- It has unique biographical characteristics and with full of semi-solid fat and fatsoluble minor components, as well as vitamin E and other chemical compositions. In terms of food, palm oil has been an alternative to animal fats such as butter in baked products, while it has also been applied for non-food products, such as soap and cosmetics, or feedstocks for biodiesel.



• As the most widely consumed vegetable oil worldwide, palm oil can be found in many packaged products sold in supermarkets. However, the planting of oil palm trees takes about **30 months to bear fruits**, which are **productive over the next 20 to 30 years until the harvest yield declines.**

Source: SERC compiled from various studies.

Overview of palm oil industry:







Strengths

- Ample supply of raw materials for palm-related industries
- Comparative advantages of palm oil

Weaknesses

S

Utilisation of oil palm waste towards a circular economy

Opportunities

- · Growing demand for palm-based bio products
- An alternative to fossil fuel biofuel

Threats

- Palm oil ban from the European Union
- Rising awareness of Environmental, Social and Governance (ESG) principles.

Strengths

Ample supply of raw materials for the palm-related industries

- As the second largest producer and exporter of palm oil, Malaysia has a long history of palm oil cultivation, starting with a large-scale cultivation in the 1960s under the government's diversification programs.
- Malaysia has very high climate suitability, and 88% of lands are biographically suitable for oil palm cultivation¹. In tandem with solid global demand, this has contributed to a gradual increase in total oil palm plantations at an average growth of 1.4% per year in 2012 – 2021, covering around 5.7 million hectares in 2021.



Total Oil Palm Planted Area (Million hectares)

Oil palm trees are full of treasure

- Oil palm trees consist of 10% oil and 90% biomass, of which oil palm fronds, empty fruit bunches and oil palm trunks account for 70%, 10% and 5% of total biomass, respectively². Hench, oil palm plantations are expected to produce significant biomass available for more development in innovative and addedvalue products, such as animal feeds and bio-energy.
- Another important chemical compound derived from natural oil such as palm oil and • palm kernel oil – oleochemical – is used to manufacture products such as foods and speciality fats, cleaning and personal care products, as well as biofuels.
- Supported by a stable and adequate supply of raw materials, palm-based related industries can be sustained and beneficial for commercial expansion. As a relatively sustainable resource, oil palm can be fully utilised and developed into more valueadded products.

Strengths

Comparative advantages of palm oil

 Cooking oil, as an essential source of fat intake, is crucial for food processing industries. Palm oils are the cheapest alternative to other vegetable oils and contain good oxidative stability and high smoking points.

Price of vegetable oils



Application of palm oil in the food industry

- With raising awareness about the health effects of various fats, the unhealthiest fat -trans fat is now banned by most people. It not only increases low-density lipoprotein (LDL), but also reduces "good" cholesterol. Most trans fats are artificially created through hydrogenation and used in many processed baked goods, snacks, and frying foods.
- Food manufacturers and restaurants have to look for alternatives. Palm oil is one of them that has less saturated fat than butter and contains no trans fat. According to Harvard nutrition experts, palm oil is clearly better than high-trans fat shortenings and probably a better choice than butter¹.
- Palm oil is also better than other vegetable oils as oxidised oils can produce harmful compounds and toxic by-products, which tend to turn rancid more quickly under low smoking points. In other words, palm oils are an excellent source for frying food as they have a neutral flavour and are healthier at constant high temperatures.

¹ Harvard Medical School

Strengths

Comparative advantages of palm oil (cont.)

Most importantly, oil palm tree is an effective crop for cooking oil as it only requires 1/10
of the land, 1/7 of fertiliser, 1/14 of pesticide, and 1/6 of the energy to produce the
equivalent quantity of oil compared to soybean¹.



Area of land needed to meet global vegetable oil demand, World, 2019

Note: This metric represents the amount of land that would need to be devoted to grow a given crop if it was to meet global vegetable oil demand alone.

Source: Our World in Data; UN Food and Agricultural Organisation (FAO)

- Other than cooking oils, the uniqueness of oil palm enables food and non-food industries to apply its refined products into production as chemical compounds or elements. For example, the application of palm oil oleochemicals refined from palm oil or palm kernel oil includes lubricants, grease, cosmetics, home and personal care, and pharmaceuticals.
- To sum up, an increasing demand for palm oil has a positive spillover effect on its refined products or derivatives with comparative advantages of production, prices and applications for the industries. It is an efficient crop compared to other vegetable oils and is relatively environmentally friendly, as long as the industries are certified by a reputable agency and classified as sustainable.

¹ European Parliament

Weaknesses

Utilisation of oil palm waste towards a circular economy

 Sustainability remains a concern to the public regarding low biomass utilisation and destruction of the ecosystem in palm-related industries. Only 10% of oil palm trees are used for oil extraction, whereas other parts are biomass. Around 43% of oil palm fruit was mill residues in the form of empty fruit bunches, shells and fibre¹.



 Increasing demand for palm oil in vegetable oils encourages countries to continue producing a large fraction of oil palm plantations. Consequently, enormous production will consist of a considerable amount of lignocellulosic materials that have the potential to pollute the environment in large quantities.



Circular economy in the palm-based industry:

- Circular economy is underpinned by a transition to renewable energy and materials, keeping materials, products, and services in circulation for as long as possible, in tandem with the concept of Environment, Social and Governance (ESG).
- Businesses should create supply chains that recover or recycle resources used to create their products. In the context of oil palm trees, a maximisation of oil palm waste utilisation can improve their environmental footprint, trim operational waste and improve ESG score, which attracts more buyers and investors.
- To continuously achieve sustainability in a circular economy, palm-based industries are required to utilise all oil palm wastes from upstream to downstream production. The technological, economic, energy balance, and environmental considerations must be balanced to meet the best solution for the utilisation.



Opportunities

Growing demand for palm-based products

 Growing population and environmental awareness have exerted global demand for food and non-food products, leading to a higher demand for palm-based products due to their applications and comparative advantages.

Vegetable oil production, World

million tonnes



 Palm oil production has increased rapidly over the past 50 years. The story of palm oil is less about it as a commodity, but more about the story of rising demand for vegetable oils. As a very productive crop, global palm oil production had outperformed other vegetable oils at an average growth rate of 10.2% per annum in 2011 – 2019.

RM billion Palm kernel cake 16 14 Other palm oil-based 12 products 10 Palm oil-based 8 oleochemical 6 4 Palm kernel oil 2 Palm oil Jul Jul Jul Jul Jan Jan Jan Jan 2019 2020 2021 2022

Exports of Palm Oil and Palm Oil-Based Products

Source: DOSM

 As the second largest player in terms of production and exports, Malaysia accounted for 25.8% and 34.3% of global production and exports in 2020, respectively. Malaysia also experienced a gradual increase in exports of palm-based products at an average growth rate of 1.8% per month (Jan 2019 – Aug 2022).

Opportunities

An alternative to fossil fuel - biofuel

- The application of biofuel has the potential to generate several benefits compared to fossil fuels as exhaustible resources, such as a lower yield of lifecycle GHG emissions, addressing exhaustible resource depletion, and reduced dependence on unstable foreign suppliers.
- However, biofuel feedstocks should come from a variety of crops that would otherwise be consumed by humans directly or indirectly as animal feeds without additional efforts on the supply, including palm oil waste. Hence, their production and use could be sustained indefinitely in theory through the utilisation of current wastes.
- There is also growing global momentum for using biofuels in tandem with net zero emissions by 2050. Global demand for biofuels is expected to expand at an average of 4% annually from 2021 to 2026 to reach 186 million litres by 2026, an increase of 41 billion litres from 2020⁷. Both Brazil and the United States remained the largest market for biofuels.
- In many countries, governments have made significant efforts to promote biofuel production. For example, the US announced plans in 2021 to provide tax credits to producers, and India has initiated the National Policy on Biofuels 2028 to support the transition towards cleaner energy.

Other sides of the story on biofuels:

- The sustainability of biofuels is based on the utilisation of current wastes in our environment. With growing demand for biofuels over the next few years, diverting the crops (as inputs) to biofuels may lead to more agricultural land, increasing polluting inputs, higher food prices and deforestation.
- Greenhouse Gas (GHG) Emissions may be increased due to the changes in land use patterns through terrestrial carbon stocks related to the atmosphere, similar to fossil fuels inevitably contributing negative environmental consequences.
- Notably, biofuels also tend to require substantial subsidies and other market interventions to compete economically with fossil fuels, creating long-term deadweight losses in the economy.

¹ International Energy Agency (IEA)

Opportunities

An alternative to fossil fuel – biofuel (cont.)

- Malaysia is committed to biofuel mandates under the National Biofuel Policy rolled out in 2006 to leverage the potential of the biomass industry in line with the aspiration towards achieving GHG emissions reduction target of 45% of Gross Domestic Product by 2030.
- Under the 12th Malaysia Plan, the Government intends to accelerate the development of high-value-added products and services in biomass industry as the key agenda. This can address approximately 80 million dry tonnes of biomass produced annually from oil plantations, of which Sabah, Sarawak, Johor, Pahang and Perak accounted for 85% of the palm biomass¹.
- Indonesia is another player in the biomass industry that has aggressively produced biodiesel from crops, primarily palm oil, and the government's policy stipulates that all diesel fuel must contain a mix of at least 30% biodiesel rise to 50% by 2025. The Government also insisted that the use of biodiesel continue to be developed until B100, although it still faces problems regarding incentives and prices, as most businesses value B40, which is enough.
- The success of biofuel development in Indonesia comes from high dependency on imported fossil fuels and huge oil palm plantations, which provide comparative advantages of biofuels over others.
- In Malaysia, the lack of a comprehensive master plan to guide biomass development has led to uncoordinated implementation of initiatives to promote the industry. The absence of an effective business model throughout the value chain, information and availability of technologies has resulted in low investments. At the same time, plantations and mills also lack logistics support for collecting biomass feedstock from scattered locations for centralised processing.
- Government's policies are the principal driver of expansion, but other factors such as overall transport fuel demand, costs and specific policy design influence where growth occurs and which fuel demand grows quickest. A strong commitment and political will on the green is essential to industrial development, especially in the palmbased industry.

¹ Twelfth Malaysia Plan, 2021-2025

Threats

Palm oil ban from the European Union

- While oil palm trees are effective in oil extraction production compared to other vegetable oils, a rapid development of the industries has exerted pressure on land use, leading to deforestation as one of the main concerns in the European Union (EU).
- Although oil palms can be planted on degraded land or land previously used for other crops, scientific studies cited by the European Commission in 2019 showed that 45% of the land area used by new plantations is on formerly forested land, a higher share than for other oilseed crops such as soybean (8%)¹.
- Vast monoculture oil palm plantations have used large areas of tropical forests and other ecosystems with high conservation values. This has deteriorated critical habitats for many endangered species, including orang utan and Sumatran tigers. Oil palm trees also have a lower capacity to absorb carbon dioxide from the atmosphere, leading to a higher risk of climate change.

More stories on the impact of deforestation:

- Soil organic carbon plays a role in helping cut greenhouse gas concentrations and improving soil quality for the plantation. Oil palm plantations on carbon-rich peaty soil, which is necessary for their growth, will cause them to decompose and release significant quantities of carbon dioxide into the atmosphere over many years.
- Peat drainage in Southeast Asia is estimated to cause an equivalent of 2% of global fossil fuel CO2 emissions. Activities related to oil palm plantations, such as fires on dried-out peat, will release thick clouds of choking smoke in the atmosphere².
- Indonesia was the world's biggest greenhouse gas emitter as forest fires have destroyed an area almost the size of Belgium, costing at least US\$16 billion and up to 100,000 premature deaths².
- Governments worldwide commitment towards net zero emissions; discussion on palm oil and its consumption; and the impact of EU consumption of commodities on deforestation are ongoing threats to the development of palm-based products.
- According to the Malaysian Palm Oil Board (MPOB), recent declines in palm oil exports were due to weaker demand from major importing countries, such as China and the European Union (EU). Exports of Malaysian palm oil to the EU have decreased by 15.4% YoY to 1.64 million tonnes in 2021, partly due to the replacement of higher imports of soybean from Brazil.

¹ European Commission.

² European Parliament.

Threats

Rising awareness of Environmental, Social and Governance (ESG) principles

- The concept of ESG is gaining more attention from investors these few years when they seek companies that are responsible stewardship of the environment, are good corporate citizens, and are led by accountable management.
- In particular, the role of environmental principles is significant as growing global awareness of environmental issues and policies, such as climate change and deforestation.
- Environmental concerns raised by the EU on deforestation in the oil palm industry is certainly affecting businesses' ESG score, leading to a lot of opportunity for potential investments. To cope with these issues, certified palm production is essential to gain investors' confidence and reduce ecological footprints.
- A Life Cycle Assessment (LCA) study showed that certified sustainable palm oil has a 35% lower global warming impact and a 20% lower biodiversity impact from land use than non-certified under the Roundtable on Sustainable Palm Oil (RSPO)¹.
- Under the domestic system of evaluation on the sustainability of palm oil, Malaysian Sustainable Palm Oil (MSPO) has certified about 94.4% of oil palm planted areas since the inception of the certification scheme².

Why is ESG more important now than ever?

- **To governments:** Governments play a role in intersecting with the protection of people, society and the environment. ESG can also affect the government's credit rating and ability to secure financing and borrowing costs.
- **To businesses:** ESG influences business and investment attraction. A robust ESG program can open up access to a large pool of capital, increase productivity and profits, build a stronger corporate brand and promote sustainable long-term growth benefiting stakeholders.
- **To consumers:** Customers are getting more attentive to environmental issues, climate change and extreme weather events, social unrest and economic pressures on society and the environment. More so, consumers have access to more information, attentive products review and a brand reputation for making better-informed purchasing decisions, making businesses' ESG practices more crucial.

Note: For more information about ESG, please refer to another report produced by SERC - ESG: More Important Now Than Ever for Your Business!

¹ Roundtable on Sustainable Palm Oil.

² Malaysian Palm Oil Board.

Conclusion

- Malaysia has a long history of oil palm plantations, starting with a large-scale cultivation in the 1960s. Given very high climate suitability, oil palm plantations have gradually increased at an average growth of 1.4% per year (2012-2021), covering around 5.7 million hectares (72.9% of total planted areas) in 2021.
- Oil extracted from oil palm trees has comparative advantages compared to other vegetable oils. It only requires fewer lands and inputs to produce an equivalent quantity of oils at lower prices. Palm oil has been widely applied in food products due to its uniqueness of high smoking points and good oxidative stability.
- Growing demand for palm oil has a positive spillover on its by-products. As the second largest exporter and producer, Malaysia has ample supplies for palm-related industries with enormous potential for biomass and its chemical compounds.
- Malaysia has experienced a gradual increase in exports of palm-based products at an average growth of 1.8% per month (Jan 2019 – Aug 2022), comprising palm kernel cake, palm oil-based oleochemicals, palm kernel oil, palm oil and others.
- Increasing demand for biofuels also created another opportunity for the palm-based industry as the feedstocks are mostly coming from crops that are directly consumed by humans or indirectly used for animal feedstocks.
- In tandem with net zero emissions by 2050, global demand for biofuels is expected to expand at an average of 4% annually from 2021 to reach 186 million litres by 2026.
- However, the palm-based industry is only sustainable with a full utilisation of its biomass. Oil palm trees consist of 90% of oil palm waste, including oil palm fronds (70%), empty fruit bunches (10%) and oil palm trunks (5%).
- As increasing demand for palm oil encourages the development of plantations, this will generate a considerable amount of oil palm waste, and substantial lignocellulosic materials will have the potential to pollute the environment. This requires businesses to establish a tailored supply chain to process those wastes moving towards a circular economy for sustainable development.
- The EU's concerns about deforestation and environmental sustainability pose a threat to the palm-based industry. They have intention to substitute palm-oil components for others; impose a high level of restriction on the standards of production, which includes an inspection of labour issues or the process of plantation.
- Awareness of Environmental, Social and Governance (ESG) principles play an important role in ensuring businesses' environmental sustainability, especially the environmental principles for palm-related industry, requiring certification to ensure their activities are sustainably conducted.



Introduction

- Malaysia being a tropical country, has a plethora of fruit species. Tropical weather generates favourable conditions for fruits crop with high temperatures and humidity. Malaysia has produced one of the premium and unique fruit, durian in the world, as well as other tropical fruits, demanded in other countries, such as China, Singapore, Australia and the USA.
- Nonetheless, Malaysia's fruits crop only accounted for 192,000 hectares or 2.4% of total planted areas in 2020.
- Notably, a majority of fruit farms are SMEs, and they are equipped only with the Industrial Revolution's technology level 2.0-3.0 (compared to IR4.0 in some vegetable farms). In addition to lagging behind technology, the lack of new forces of entrepreneurs and labour shortages, as well as the scarcity of plantation land, are among the key issues faced by the fruits industry.

The story of fruits in the human diet:

- Fruits offer an excellent source of essential vitamins and minerals, especially antioxidants, which can prevent or slow damage to cells caused by free radicals. A diet rich in fruits can lower blood pressure, reduce the risk of heart disease and stroke, prevent some types of cancer, and positively affect blood sugar, which can help keep appetite in check.
- With the growing ageing population and awareness of a healthy lifestyle, fruits are increasingly an important ingredient in the human diet to improve overall wellness. According to the healthy eating plate, humans should include colours and varieties of vegetables and fruits in their meals, which comprise one-half of the meal plate, followed by ¼ of whole grains and ¼ of protein per meal¹.



Source: Harvard University

• The daily amount of fruits consumption depends on various conditions. At least 1½ cups of fruits are recommended daily for an average healthy adult, with different colours and varieties². The World Health Organisation suggests eating **at least 400 grams or five portions of fruits and vegetables daily** to ensure an adequate nutrition intake.

¹ Harvard University

² U.S. Department of Agriculture



Strengths

Favourable soil and climate conditions for tropical fruits

Weaknesses

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- Storage of tropical fruits throughout the supply chains
- Abundance of fruit wastes
- Temporary Occupation Licence (TOL)

Opportunities

- Growing demand for tropical fruits in Malaysia
- A diversified variety of authentic fruits in Malaysia

Threats

- Climate change
- Endangered pollinators

Strengths

Favourable soil and climate conditions for tropical fruits

- Malaysia's hot and humid conditions with lesser fluctuations of diurnal temperature generate a suitable environment for the farming of tropical fruits. Nature also offers a variety of fruit species across East and West Malaysia, from the most common (e.g. mangosteen, banana) to the rarest fruits (e.g. mata kucing).
- Malaysia has had a triumphant story of cultivating imported tropical fruits, namely dragon fruit. It was first imported from Vietnam and soon introduced to Malaysia after many trials and errors, keeping a good pace to lead its niche market due to high local demand.
- All these achievements are supported by the country's geographical advantages. Malaysia is located between the Strait of Malacca and the South China Sea, with historical and advanced harbours connected worldwide. This favourable geographic location bodes well for exports of tropical fruits primarily as their characteristics of perishability, which mostly only last less than a month for storage.
- More importantly, Malaysia experiences fewer major natural disasters and erratic climate events as it is situated on a stable craton, which is free from earthquakes, volcanic activities and tropical cyclones. Tropical rainforest also helps to stabilise local climate and ecosystems, significantly reducing the risk of environmental events.
- With these advantages, some fruits like durian and mangosteen soon became one of the benchmarks in Malaysia as major fruit exporters in Southeast Asia. Malaysia has the uniqueness of natural resources and the potential to favour the growth of other tropical fruits, like dragon fruits.



Weaknesses

Storage of tropical fruits throughout the supply chains

- Tropical fruits' texture has made them sensitive to temperatures below 20°C and requires humid environmental conditions. They are often damaged by low temperatures above freezing, leading to discolouration of peel and others.
- Tropical fruits are perishable products as they continue their living processes after harvesting. They have high respiration rates and soften rapidly, leading to fruit senescence or deterioration, and hence, are more challenging to store. This is probably due partly to the fact that most tropical fruits will suffer from chilling injury when stored below 10°C.
- The symptoms of chilling injury of tropical fruits include surface lesions, discolouration of peel, vascular strands and seeds, failure of ripening and increased susceptibility to decay. The development of chilling injury symptoms is usually aggravated after removing from the chilling to a higher temperature.
- In general, the range of safe storage temperatures varies between 10°C and 20°C. High humidity retards wilting and maintains the product in better condition.
- Some tropical fruits will be damaged when stored with other climacteric fruits as low concentrations of ethylene will stimulate the ripening of tropical climacteric fruits, which are negligible at low temperatures. However, the optimum temperatures for tropical fruits are far above the low temperatures at which they can produce ethylene, causing adverse effects.
- The current practice uses refrigeration at above 10°C for storing fresh tropical fruits, but they should be shipped in less than two weeks.

Source: SERC compiled from various studies.

The story of chilling injury

The lack of data and information poses challenges for the storage of tropical fruits, requiring substantial investment and breakthroughs in R&D so as to offer more business opportunities for exporting fruits to other countries.

Pineapple



Banana

Mango



Durian



Weaknesses

Abundance of fruit wastes

- Compared to temperate fruits, tropical fruits typically have a substantial amount of rind or skin and seeds, which are disposed as waste in landfill. Nevertheless, these fruit wastes contain a high moisture content and are rich in biodegradable organic ingredients, resulting in the waft of an unbearable stench during decomposition.
- The long-term disposal of these wastes not only resulted in greenhouse gas emissions during decomposition but also facilitated a breeding ground for bacteria, pests and mice, leading to the spread of plague.
- Recent research is encouraging to explore the application of fruit wastes, which intends to achieve a sustainable environment and expand the economic value. Two popular fruits for exports, namely durian and jackfruit, have advantages in food and medical applications.
- For instance, **jackfruit seeds** are rich in digestible starch, protein and minerals, which **can be processed into oil and flour for food application**. Some studies even suggested **that jackfruit seed flour may be a promising intervention to improve glycaemic control as a replacement for rice or wheat flour.**
- Singapore's Nanyang Technological University (NTU) used durian husk to create anti-bacterial bandages that prevent the wound from drying up, which is extremely useful for eczema. The technology only uses an inexpensive process to extract cellulose from the durian's thick, of which durian husk consists of 60.45% of cellulose.

Successful stories...



Source: SERC compiled from various studies.



Explore the niche market supported by investment in R&D and awareness building in Malaysia:

- 1. The potential of fruit waste is huge and a niche market, with numerous benefits and applications for human wellness and also the environment. With the growing global population, food waste is expected to increase. The Government and businesses can use this opportunity to explore the niche market with these abundant resources.
- In the European Union alone, fresh fruits and vegetables contributed to almost 50% of food waste generated by households in 2018. Unavoidable waste was estimated to be between 18 and 24.2kg per person, or between 23% and 28% of the total household food waste¹.
- 3. To support the idea, **investment in R&D is essential for businesses and supported by the Government and universities to access colossal potential.** The coordination between the public and private sectors will benefit the progress of development, like in Singapore.
- 4. Information sharing about the issues (food waste) and potential benefits can raise awareness about environmental issues and demand for the products, which will pave the way for future success.

¹ Quantifying household waste of fresh fruit and vegetables in the EU (2018), Waste Management

Weaknesses

Temporary Occupation Licence (TOL)

- TOL is a common pain point for farmers and growers in the agro-based sector. Based on the National Land Code (NLC) 1965, TOL cannot last more than a year, but it can be renewed several times. The state's land office has the final decision on whether to renew a TOL.
- A short period of repeated TOL renewals does not guarantee farmers' ownership and commitment. Instead, it creates uncertainty that restricts farmers' ability to obtain bank loans, hire workers as well as implement any new innovative programmes and initiatives aimed at increasing their agriculture productivity.
- Farmers and investors are unlikely to make substantial capital investments and longterm strategic planning, given the security of ownership and renewal uncertainty.
- In 2020, only about 5.5% of physical agricultural land (close to 450,000 hectares) is for agro-food such as vegetables, fruits and other cash crops compared to 5.9 million hectares for oil palm trees; and 1.1 million hectares for rubber trees. Of which, fruits crop merely accounted for 2.4% (or 192,000 hectares).

Land is a treasure for farmers with long-term investment and plantation in agriculture:

- 1. The standardisation and streamlining of the National and State Land Code are essential to boost agriculture and food production. Especially the yearly renewable or short-term renewable of TOL is not practical as the uncertainty of land-use tenure would pose a hurdle to investors and farmers making agriculture-related infrastructure development.
- 2. For commercial viability, a 60-year (without government's support on input and output subsidies) period lease is a minimum period commensurate with heavy capital investment in irrigation, mechanisation infrastructure development and others.
- 3. The Federal Government, in collaboration with the State Government, should open up more land for agricultural production, including the reuse of vacant lands. On a systematic approach, an additional 500,000 to 1 million hectares of land can be used for planting crops, livestock farming, aquaculture and biotech in five years.
- 4. More importantly, **the availability of land should be large-scale without wasteland** for retaining the best quality of fruit production and economies of scale. Otherwise, it is difficult to compete with other countries, such as Thailand, which can produce fruit at a much lower price.

Source: SERC compiled from various studies.

Opportunities

Growing demand for tropical fruits in Malaysia

- According to DOSM, fruit (HS code 08 including nuts) exports had expanded by an average growth of 17.3% per annum from RM702 million in 2016 to RM1.6 billion in 2021, of which 61.0% were fruits and nuts that uncooked or cooked by steaming or boiling in water, or frozen (other than berries) and not specified in detail.
- Amongst the major tropical fruits, durians, watermelon, coconuts (including desiccated coconuts), bananas, pineapples, papayas, guavas, mangoes, and mangosteens have a combined total of RM379.2 million in 2021 or 24.3% of total fruit exports.
- Top four exported fruits in terms of weight in 2020 were watermelon, banana, papaya and durian. Top four exported fruits in terms of highest growth rate in 2020 were mango, durian, sweet corn and jackfruit.

Tonnes	Watermelon	Banana	Papaya	Durian	Mango	Sweet Corn	Jackfruit
2017	63,046	27,186	25,457	13,998	2,752	6,768	5,631
2018	64,226	24,206	18,015	23,367	3,546	6,755	6,001
2019	60,611	23,950	19,020	24,981	2,881	6,919	6,193
2020	45,324	28,059	22,487	24,099	4,076	6,883	5,650
2021	43,068	32,085	19,787	42,766	6,656	8,188	7,260
CAGR (2015 – 2021)	-6.0%	6.4%	-2.9%	18.3%	16.9%	12.3%	8.9%

Exports of Selected Fruits

Source: DOSM

Top four exported fruits (2021)

	In terms of weight	In	terms o
	Watermelon	@	Durian
0	Durian		Mango
	Banana		Sweet
	Papaya		Jackfri

erms of growth rate

Mango

Sweet Corn

Jackfruit

Fruits 64

Opportunities

Growing demand for tropical fruits in Malaysia (cont.)

- Fruits and vegetable consumption are recommended at a minimum of 400g per day. However, people only consumed about two-thirds (267g per person per day) on average of the minimum, albeit the world's production reached 390 per person per day in 2017, and this includes non-edible portions, and loss and waste, which can be as high as 50% losses during storage and on the farm in some regions¹.
- Dried fruits as a gift box are popular among the elders in China, and were ranked in the top 4 products with growing demand². Due to a relatively cheap cost of production and labour as well as the economies of scale, Malaysia is losing its competitiveness against other countries in Southeast Asia.
- Malaysia's durian industry has achieved notable success with less than 5% global market share (compared to 80%-90% in Thailand). This opens up new markets for businesses to aim exporting premium dried fruits that promote a healthy diet and sustainable development.
- Importantly, there is a massive gap between the supply and demand in exports. Although Malaysia has opened up and increased the fruits trade with China, the supply is far below demand in the market. There are also potential markets in Japan and South Korea, which showed increasing demand for tropical fruits.
- The industry players have recommended that **Malaysia can focus on exports of four high-potential fruits, namely papaya, banana, pineapple and coconut,** due to increasing demand amid slower production in Malaysia.

¹ European Parliament

² CBNData

Opportunities

A diversified variety of authentic fruits in Malaysia

- When discussing tropical fruits in Malaysia, durian always comes up with its creamy texture and potent smell. Still, there are plenty of fruit varieties that have unique appearances and nutrition awaiting for discovery.
- East Malaysia, also known as Sabah, Sarawak and Labuan, owns a bigger land mass than West Malaysia, with enormous natural resources and an environment that favours the growth of wild plants and fruits. And yet, those fruits have not been widely discovered and commercialised globally.
- Those exotic fruits are also full of micro-nutrition that benefits human health compared to common tropical fruits found in supermarkets. For example, Debai fruit is very nutritious with high energy, protein, fat, minerals such as potassium and phosphorus, and vitamin E.



Fruits in West Malaysia

Opportunities

A diversified variety of authentic fruits in Malaysia (cont.)

- Besides tropical fruits originating in Malaysia, many species have the potential for commercialisation and cultivation using advanced scientific methodology and technologies. For example, acai berries have been called a superfood with many health benefits as native to Paraguay, Brazil and Argentina. The optimum growth conditions are in tropical or temperate climates with high humidity, similar to the weather condition in Malaysia, but again, yet to be discovered.
- Other discovered fruits and yet to be popular in Malaysia include Abiu fruit and avocado. With increasing awareness of personal wellness, avocado has become an essential source of healthy for daily consumption. It is expected to become the second-most traded tropical fruit in the world by 2030, with increasing demand in Europe¹. The avocado was planted only within 117.7 hectares in Sabah in 2020.

Avocado trade:

- Exports and imports of avocados showed an upward trend over the past few years, influenced by increasing awareness of individual wellness on healthy diet consumption.
- In 2017, a significant amount of avocado exports and imports has scaled up overall growth, recording substantial growth rates of 129% and 229%, respectively, in 2016 2019.

	-		• • • •	
	Exports	YoY	Imports	YoY
2015	21,762		453,608	
2016	26,696	23%	468,058	3%
2017	288,960	982%	30,304,547	6,375%
2018	295,790	2%	45,062,665	49%
2019	597,450	102%	53,341,323	18%
CAGR (2016-2019)	129%	-	229%	-

Exports and Imports of Avocado in Malaysia (RM)

Source: DOSM

¹ The Netherlands Ministry of Foreign Affairs

Threats

Climate change

- Global warming has impacted many aspects of life on earth, resulting in more fluctuations of temperature, rainfall, and the occurrence of frequent droughts, floods and storms.
- Mean temperature range for optimum growth of most tropical fruits is around 24°C to 30°C. Some fruits like mango and litchi can tolerate more than 45°C for a short period, albeit long exposure to high temperatures will also affect their growth.
- Fruits crop has a more extended period of flowering and therefore remains exposed to climate variability. The temperature will lead to changes in hormones needed for the growth and development of trees, as well as playing an essential role in flower bud differentiation.
- Changes in rainfall distribution affect year-to-year variations in flowering productivity and quality of tropical fruits. One study revealed that the flowering period of two tropical fruits, namely mangosteen and langsat, had been significantly delayed compared with the regular pattern in the past.
- Increased temperature is likely to have a more prominent effect on reproductive biology for fruits crop. Early maturity, growth acceleration, altered flowering, infection of pets and diseases, increased irrigation requirement, and higher physiological disorders are likely to impact tropical fruits.

Adaption strategy to mitigate the effects of climate change on tropical fruits

- 1. Climate change is a global issue that depends on the coordination between countries to reduce greenhouse gas emissions. This involves every stakeholder in the economy working towards achieving net zero emissions, taking time and effort to be successful.
- At this stage, mixing adaption and mitigation are nevertheless the best strategy for businesses to maintain tropical fruits development with the impact of climate change.
 Soil organic carbon plays a role in the strategy, which contributes to nutrient retention and turnover, soil structure, moisture retention and availability, degradation of pollutants, and carbon sequestration.
- 3. The enrichment of soil organic carbon provides resilience to tropical fruits production system against climate change through the minimisation of tillage, erosion and chemical use, incorporation of organic inputs and use of perennials.

Threats

Endangered pollinators

- Pollination is a vital process for flowering plants to produce seeds and fruit crops, creating offspring for the next generation. Animals play a significant role in pollination, with approximately 87.5% of global flowering plants.
- Insects like bees are generally etched in the media attention as pollinators of flowers.
 Still, vertebrates like bats (mainly refer to as flying foxes) and birds contribute the same, especially in the durian tree, also known as the King of Fruits.

THE STRAITS TIMES

Dwindling flying fox numbers in Malaysia threaten durian industry



Most studies showed consistent results that insect pollination yielded a lower fruit set than bat pollination. For example, pitaya fruits pollinated by other animals (birds and insects) are lighter and have less sugar content, as well as an overall decrease in quality compared to bat pollination.

Source: SERC compiled from various studies.

Threats

Endangered pollinators (cont.)

- Environmental factors, such as temperature, relative humidity, sunlight intensity and ecosystem, can affect pollination processes. Bees and bats are crucial pollinators for most tropical fruits, with a severe declining trend in recent years, threatened by deforestation and hunting due to an unfounded belief.
- In the case of honey bees, human activities, including land development, electromagnetic pollution, and the use of neonicotinoid pesticides, are making it harder to reproduce, to the peril of the species. Of all animals, bees are the most dominant pollinators of wild and crop plants, as they visit over 90% of the world's top 107 crops¹.
- Lesser amount of pollinators will affect the quantity and quality of production in the fruits industry with significant spillover effects. Globally, 87 out of 115 food crops depend on animal pollination, equivalent to 35% of global food production¹. The economic contribution of bees themselves accounted for more than US\$15 billion in 2012.

Green development is a must for sustainable development and food security

- 1. The contribution of animal pollination is strongly associated with fruits production and human food security. To balance economic yield and ecosystem, businesses should revise the current development with more upcoming information on the environment.
- 2. The Government plays a vital role in education led by academic research to discover more unknown facts and technology as well as enhance the awareness of green development by giving a comparison between short-term and long-term value.
- 3. Structural planning on land development is essential to reserve animal habitats to avoid spillover effects; for example, increased risk of infectious diseases and deteriorating ecosystems bring a significance of negative externalities.

¹ Medical News Today

² The White House

Conclusion

- As a tropical country, Malaysia has favourable soil and climate conditions for tropical fruits production and exports. With a variety of tropical fruits in Malaysia, there is massive potential for SMEs to expand their production or commercialise rare fruits in East Malaysia. For instance, avocado is a tropical fruit not native to Malaysia, but it can be grown after trials to fulfil both local and global demand.
- Rising awareness of health wellness has increased the consumption of vegetables and fruits as supplementary nutrition to dietary. The current consumption of only 267 grams per day in 2017 was markedly below the recommended minimum consumption of 400 grams per day, resulting in a considerable gap between global demand and supply. There is a lot of demand space in existing external markets, e.g. China, whose demand has outpaced our exports.
- However, several constraints and threats restricted the development of fruits industry in Malaysia. Tropical fruits' texture has made them sensitive to temperatures below 10°C. It poses a significant challenge to storage during logistics and limits the shipping distance for exports.
- The abundance of fruit wastes also impacted the environment and violated the principles of Environmental, Social, and Governance (ESG). They have enormous nutrition and applications that can be transformed into valuable products; for instance, the elements inside a durian's husk can be extracted and transformed into a medical bandage.
- One of the most important constraints is the unavailability of land, and the limited use of agricultural land in terms of leasing periods and sizes. Fruits production requires time and large-scale production to achieve economies of scale and compete with other exporters. A minimum 60-year land lease will be economically viable for agricultural investment so that businesses would commit to putting more resources, as well as investing in technology and automation.
- Climate change and endangered pollinators are two global constraints faced by the agriculture sector in every country. As fruit crops have an extended period of flowering, rendering them to stay exposed to climate and pollination variability.
- Most importantly, Research and Development (R&D) plays a significant role in fruits production, especially in seed quality and adaptability, storage technology, transformation of fruit wastes, as well as automation. However, most of the fruits industry players are SMEs with a lack of capital and resources. The Government needs to support them via financial support and infrastructural improvement, as well as the expertise of public universities to access colossal potential.
Introduction

- Tourism is an important source of revenue (foreign exchange) for Malaysia, contributing an average share of 6.0% per annum of national GDP in 2015-2019. Specifically for medical tourism, Malaysia has been awarded the best destination and affordability over the years.
- As a regional hub for excellent healthcare, Malaysia is gaining a reputation and attraction for providing medical facilities and services, backed by awarded and certified medical professionals. According to the Malaysia Healthcare Travel Council (MHTC), healthcare travel industry had enjoyed double-digit average growth of 16.3% pa in 2015-2019.
- Notably, all public and private sector stakeholders within the Healthcare Travel ecosystem play critical roles in providing a cohesive end-to-end experience across the patient's journey, including travel agents, ferry operators, wellness providers, tourist attractions and hotel providers, of which SMEs will act as linkages across the chain¹.
- To promote and enhance Malaysia's position as a healthcare tourism destination, the Government has allocated an average of RM26 million per annum to MHTC in 2018-2022². In Budget 2022, it also extended income tax exemption for exports of private healthcare services as well as improved oncology, cardiology and fertility treatment for medical tourism.



Note: Number in parenthesis indicates % of health traveller revenue. Health Tourist: Tourists seeking healthcare treatment in Malaysia. Foreign Patient: Resident Non-Malaysian including Expatriates, Foreign Workers, Foreign Student, etc. Healthcare Traveller: Combination of Health Tourists and Foreign Patients

Source: Malaysia Healthcare Travel Council

¹ See Appendix F for more information.

² Various Budget Speech



Strengths

High-quality and affordable medical care

Weaknesses

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- Underdeveloped ancillary services
- Inadequate wellness and health-related travel scope



Opportunities

• Increasing willingness to spend on healthcare travel

Threats

- Fierce regional competition
- Over-relying on a single source
- Risk of infectious diseases



Strengths

High-quality and affordable medical care

- Healthcare travel in Malaysia is a high-growth industry with impeccable quality and affordability. According to the Annual Global Retirement Index 2022, Malaysia has a score of 90 out of 100, rated as one of the top healthcare systems for retirement among 25 countries.
- Against a backdrop of world-class hospitals and medical centres across Asia and beyond, Malaysia has carved a niche in cardiology and fertility treatment, with more than 33 advanced heart treatment centres in the country.
- Notably, National Heart Institute remains a leader in cardiovascular disease diagnosis and treatment in Asia as well as a national referral centre for providing world-class care for heart diseases. For international heart patients, National Health Institute established its International Patient Centre (IPC) to assist medical treatment travellers from departure to arrival.

Leading International Medical Centres and Clinics

Patients Beyond Borders

Patients Beyond Borders

- Gleneagles Kuala Lumpur
- Imperial Dental Specialist Centre
- International Specialist Eye Centre Malaysia
- Ramsay Sime Darby Subang Jaya Medical Centre
- Ramsay Sime Darby Ara Damansara Medical Centre
- Institut Jantung Negara
- Dentalpro Dental Specialist Centre



International Medical Travel Journal

- Best quality initiatives: Thomson Hospital Kota Damansara
- International fertility clinic of the year: Sunway Fertility Centre
- International eye clinic of the year: Sunway Eye Centre
- International hospital of the year: Prince Court Medical Centre

Strengths

High-quality and affordable medical care (cont.)

- As a global halal hub, Malaysia provides quality halal healthcare to medical travellers from Islamic countries. All hospitals are equipped only with halal menus and prayer facilities in this predominantly Muslim-friendly country.
- The availability of porcine-free medical, such as sutures and vaccines, and well-trained professionals offer the best medical treatment experiences to Muslim travellers, attracting about 65% of total health tourists revenue, particularly from Indonesians, seeking professional health treatment in 2019¹.
- The offering of competitive prices associated with high-quality healthcare allows travellers to receive medical treatment for a fraction of total medical costs. Based on a calculation from Patients Beyond Borders, average savings on medical treatment was up to 60%-80%, which is far cheaper than the treatment received in the US.

				paratri t		- -		
	US	Costa Rica	India	Malaysia	Singapore	South Korea	Taiwan	Thailand
Average Savings		45-65%	65-90%	60-80%	25-40%	25-45%	40-65%	50-75%
Coronary artery bypass graft - CABG	\$92,000	\$31,500	\$9,800	\$20,800	\$54,500	\$29,000	\$27,000	\$33,000
Valve replacement with bypass	\$87,000	\$28,000	\$11,900	\$15,000	\$46,000	\$38,000	\$22,000	\$19,000
Total hip replacement	\$31,000	\$15,300	\$9,400	\$12,500	\$21,400	\$21,600	\$14,000	\$16,500
Total knee replacement	\$28,000	\$14,200	\$7,200	\$7,800	\$19,200	\$16,250	\$13,400	\$13,200
Laminectomy	\$65,000	NA	\$9,500	\$14,250	\$27,800	\$24,200	\$18,000	\$16,000
IVF cycle, excluding medication	\$12,500	NA	\$3,300	\$4,200	\$9,450	\$7,500	\$4,600	\$4,000
Gastric bypass	\$23,000	\$10,500	\$6,800	\$9,250	\$14,800	\$14,500	\$12,700	\$12,600
4-implant porcelain bridge	\$21,500	\$9,350	\$3,300	\$7,700	\$11,800	\$9,900	\$8,700	\$9,300
Implant-supported dentures (upper and lower)	\$11,500	\$4,250	\$2,800	\$3,750	\$7,000	\$5,650	\$4,350	\$3,700
Full facelift	\$11,500	\$4,900	\$2,800	\$3,300	\$7,850	\$5,900	\$5,250	\$3,700
Rhinoplasty	\$4,800	\$2,600	\$1,400	\$2,800	\$3,500	\$3,800	\$3,200	\$1,600

Major procedures: Comparative costs (US\$)

Note: The exchange rate depends on the year. This serves only to provide an estimation of cost savings. US costs vary across locations, materials and equipment used, and individual patients' requirements, whereas international estimates include all treatment-related costs but exclude travel and accommodation. All figures are averages and reflect a more common incidence of cost.

Source: Patients Beyond Borders

¹ Malaysia Healthcare Travel Council (MHTC)

Weaknesses

Underdeveloped ancillary services

- Healthcare travel ecosystem relies not only on healthcare providers but also provides services from airport to the destination and beyond. These involve a solid connection across the services of transit, teleconsultation, booking, immigration, insurance, accommodation, translation and medical relations.
- Malaysia has been identified with underdeveloped ancillary services, including a lack of translators and personalised packages¹. It will scale down the potential market from other countries as translators play an essential role in supporting medical travellers as a medium of communication. Personalised packages are also essential for medical travellers because they have varying medical conditions and intentions.

Voice in the interview

- Our interviews with selected respondents indicated that the development of medical tourism offers business prospects as the COVID-19 has raised healthcare awareness. In this regard, better coordination across the Ministries and agencies is crucial to support medical tourism, for example, among the tourism sector and healthcare providers.
- The extension of a medical visa can be overwhelming and time-consuming, requiring patients to leave and resubmit their applications after staying 30 days. Simplifying the procedures of extending medical visa could attract more demand in choosing Malaysia as the preferred destination through a comprehensive system to keep track of the patient's travel history and provide local assistance.
- The Government should promote medical tourism via medical exhibitions and provide financial assistance and knowledge sharing to support SMEs connecting the industry from outbound tourism to healthcare providers.
- The tourism sector can **design a short-term tour package for patients** while waiting for the health screen test result.

7 Medical Tourism

¹ Malaysia Healthcare Travel Council (MHTC)

Weaknesses

Inadequate wellness and health-related travel scope

- Healthcare is an improvement of equitable and affordable medical care and treatment among the population through prevention, treatment, and amelioration. High-quality healthcare can help to prevent diseases and improve the quality of life.
- Nevertheless, Malaysia's healthcare system often focuses on curative services rather than preventive treatment. With the general public placing less emphasis on health prevention, their desire to live longer has caused them to choose and request to fix their health problems with medical drugs or procedures.
- Preventive healthcare aims to prevent medical conditions or detect them before becoming serious, for example, common practices like flu shots, vaccination, and certain health screening. It is preferable to curative care as it is the first step towards health prevention to improve and maintain healthy by ensuring people do not fall ill in the first place.
- It is also more sustainable in terms of commercial perspective and public healthcare than curative care, requiring regular medical screening and check-ups with patients. This is vital in an ageing society and medical tourism, benefiting the people and economy, and raising national happiness.

Emphasis on preventive healthcare with solid support and collaboration between public and private sectors:

- 1. A flawed healthcare system will have long-term consequences on public health and the economy as a growing ageing society requires more medical support and assistance from the community. More emphasis on preventive healthcare can raise public awareness of health wellness to prevent illness in the first place.
- 2. Solid collaboration between public and private sectors is a must for public healthcare and medical tourism so as to deliver the best medical services to travellers. It also offers opportunities to SMEs participating in the healthcare ecosystem, which will help to increase national income and employment.
- 3. Preventive healthcare should be prioritised in public healthcare and medical tourism as it promotes long-term benefits to society as well as national income. As the three pillars of sustainable development economics, environment and society, this practice will attract not only more opportunities but also supports the country's development of healthcare sustainability and investment.

Opportunities

Increasing willingness to spend on healthcare travel

 Public wellness awareness is gaining more attention as they seek affordable and quality treatment for various diseases. This is expected to increase as the global community shifts towards an ageing population. The Healthcare Travel Ecosystem initiatives (2021-2025) have identified the potential and also intend to develop a standard healthcare journey for aged care in Malaysia.



Opportunities

Increasing willingness to spend on healthcare travel (cont.)

- A survey revealed that **79% of respondents perceived the increasing importance of wellness, and roughly 42% considered it as a top priority**¹. Indeed, the market has had a substantial increase in the prioritisation of wellness, with an estimated **more than US\$1.5 trillion and annual growth of 5%-10%.**
- MHTC also reported that medical tourism had contributed RM1.7 billion in hospital receipts alone, with spill-over effects on other industries, an estimated RM7 billion in 2019. Medical tourism is expected to grow, with projected annual revenue of RM2 billion in 2025.
- Demand for fertility treatment also showed an upward trend with a 300% increase between 2011 and 2016², thanks to the standard quality of fertility institutions, some of which even have a high pregnancy rate through the transfer of a single good-grade euploid blastocyst. The success rate in inducing pregnancies through embryo transfers for women above 41 with pre-implantation genetic testing (PGT) is about 68%.
- With Malaysia's advantageous position in the global halal hub, businesses can access 1.9 billion Muslim markets worldwide to provide certified halal healthcare along with potential halal pharmaceuticals. In fact, Malaysia has also expanded its network of targeted countries from Southeast Asia to other regions, including Qatar and Azerbaijan³.



¹ McKinsey & Company ^{2&3} Malaysia Healthcare Travel Council (MHTC)

Threats

Fierce regional competition

- Malaysia is not alone in enjoying the benefits of growing demand for medical tourism.
 Singapore, Thailand and South Korea are fierce regional competitors with advanced technology and unique marketing positions in the industry, gaining substantial market shares.
- Vietnam is one of the new entrants in the healthcare travel industry, and has been aggressively working on her strategies. As more competitors enter the industry, businesses will offer competitive pricing for high-quality services with more value-added medical treatment and services.
- In recognition of the best medical destination, medical services accreditation is one determining factor that decides the professional levels in healthcare. Joint Commission International (JCI) is the most sought entity for hospital accreditation used by every country.
- While Malaysia houses 210 private hospitals, excluding dental clinics, and health and wellness centres, there are only 17 JCI-accredited hospitals compared to others (listed below).

	Joint Commission International	Australian Council for Healthcare Standards International
Malaysia	17	4
Thailand	59	-
Singapore	5	33
Vietnam	5	2
India	40	3

Medical services accreditation

Source: Joint Commission International; Australian Council for Healthcare Standards International

Threats

Over-reliance on a single source

- Although Malaysia has been actively building public-private partnerships to promote the Malaysia Health Travel Brand in most ASEAN countries, it is still highly dependent on one country - Indonesia, which poses a threat to the industry by reducing bargaining power in the business.
- The Indonesian Government has lamented their people to seek medical treatment • locally as the outflows of money from local to abroad for health services reached Rp110 trillion. A newly built hospital can fulfil domestic demand by equipped with 277 beds, surgery facilities and modern-standard ICU facilities.
- ٠ It was reported that the Islamic Development Bank (ISDB) had approved US\$262 million in financing for a health project in Indonesia to improve the availability, accessibility, quality and delivery of health services.
- Besides the Indonesian market, fears and concerns about the COVID-19 and other infectious diseases can restrict the willingness to travel across the region to seek medical treatment. While increasing demand for fertility treatment in China, the zero-COVID approach could be indeterminacy in their decision.
- Diversifying market portfolios through expanding networking with other countries equipped with relatively poor medical systems can sustain the local healthcare industry in Malaysia. It is noteworthy to emphasise the importance of preventive healthcare, which could also provide a sustainable revenue stream to businesses offering personalised medical care packages and explore a new market segment for medical tourism.

Home > National

President Jokowi Laments People Seeking Medical Treatment Abroad

Editor Translator Ricky Mohammad Nugraha Laila Afifa

10 August 2022 20:24 WIB

Threats

The risk of infectious disease

• Recent decades have shown the repeated emergence and spreading of infectious diseases from wild or domestic animals to humans. This was contributed by high human development with a massive concentration and density of people and domesticated animals.

How do infectious diseases affect humans?

- For a novel pathogen to become a threat to human society, **contact between humans** and animal reservoirs must occur; the pathogen must have or evolve the capacity for human-to-human transmission; it must enable an expansion of the geographical range beyond the zone of spillover.
- Notably, contact between humans and wildlife animals has increased over time as human populations move into previously unoccupied regions. The expansion of population and development are driving factors for these interactions and the resulting habitat destruction, along with behaviours that increase the potential for spillover, such as the consumption of wild meat.
- For example, Nipah virus had caused a severe disease outbreak in Malaysia in 1999, primarily among pig farmers, which was hypothesised that the spread of the virus from bats to pigs was driven by three factors related to global change¹: pig farms expanding into the bat habitat; intensification of pig farming, leading to the high density of hosts; and international trade, leading to the spread of the infection among other pigs population in Malaysia and Singapore.

¹ World Health Organization



Threats

The risk of infectious disease (cont.)

- Global connectivity enhances travelling time in less than a day and can easily spread germs among humans. While there is no clear relationship between climate change and infectious disease, the temperature has made conditions favourable for spreading some infectious diseases, including Lyme disease¹.
- Similarly, evidence suggests that the population of the black flying fox in Australia, a key reservoir of the Hendra virus, has moved 100km southward in the past 100 years owing to climate change. This shifting range likely caused the Hendra virus to spill-over on the southern horse population, and these horses subsequently infected humans².
- As a medical traveller often carries a specific disease to seek treatment in other countries, healthcare travel may open a door for infectious diseases to transmit quickly to the local community without a comprehensive healthcare system.

¹ Harvard University ² Nature Reviews Microbiology (2021)



Conclusion

- Malaysia has been growing its reputation and attraction for providing medical facilities and services as a regional hub for providing excellent healthcare services, backed by awarded and certified medical professionals. Malaysia was rated as one of the top healthcare systems for retirement, with advanced heart treatment centres and affordable medical care.
- The average savings on medical treatment was up to 60% 80% compared to those received in the US.
- Public wellness awareness is gaining more attentions as they seek affordable and quality treatment for infectious diseases. Medical tourism had contributed RM1.7 billion in hospital receipts alone, with spill-over effects on other industries, an estimated RM7 billion in 2019.
- Amid increasing demand for medical tourism, Malaysia has been identified with underdeveloped ancillary services, including the lack of translators and personalised packages. Hence, better coordination between the public and private sectors is essential to support the industry and SMEs.
- Malaysia has often focused on curative services rather than preventive treatment, which could have long-term consequences on public healthcare and medical tourism. Preventive healthcare is more sustainable in terms of commercial perspective and public healthcare, as it requires regular medical screening and changes in diet and habits to maintain a healthy lifestyle.
- Malaysia isn't alone in enjoying an increasing demand for medical healthcare. Other countries, such as Thailand, are gaining more attentions as they have more medical accreditation and offer more competitive prices.
- Malaysia is also losing share in her traditional market Indonesia. The Indonesian Government aims to improve the healthcare system to prevent the outflows of money to medical tourism abroad.
- Human development and climate change increased the risk of infectious diseases to human community through globalisation. Hence, it requires a comprehensive healthcare system to prevent the spread of diseases in advance.
- Healthcare reform is essential to support public health and healthcare industry. It
 requires consistent and effective collaboration between both public and private sectors
 and also the participation of SMEs to serve as a linkage between services to improve
 the quality of medical tourism.

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Appendix A: SMEs' Definition

Summary of guidelines for SMEs definition

e	Size of enterprise	Criteria	Manufacturing sector	Services and other sectors
	*	Sales turnover	Above RM50 million OR	Above RM20 million OR
Lar	ge enterprise	Number of full-time employees	Above 200	Above 75
SME	Medium	Sales turnover	RM15 million to RM50 million <u>OR</u>	RM3 million to RM20 million <u>OR</u>
	enterprise	Number of full-time employees	75 to 200	30 to 75
	Small	Sales turnover	RM300,000 to less than RM15 million <u>OR</u>	RM300,000 to less than RM3 million <u>OR</u>
H	enterprise	Number of full-time employees	5 to less than 75	5 to less than 30
10-4		Sales turnover	Below RM300,000 <u>OR</u>	Below RM300,000 <u>OR</u>
	Micro enterprise	Number of full-time employees	Less than 5	Less than 5

Note: A business will be deemed as an SME if it meets either one of the two specified qualifying criteria, namely sales turnover or full-time employees, whichever is lower basis, as endorsed by the National SME Development Council (NSDC) and published by SME Corporation Malaysia in 2013.

Appendix B: Free Trade Agreement

Bilateral FTAs between Malaysia and other countries

Bilateral FTAs

	FTA	Entry into Force (EIF)
1.	Malaysia-Japan Economic Partnership Agreement (MJEPA)	Jul 2006
2.	Malaysia-Pakistan Closer Economic Partnership Agreement (MPCEPA)	Jan 2008
3.	Malaysia-New Zealand Free Trade Agreement (MNZFTA)	Aug 2010
4.	Malaysia-India Comprehensive Economic Cooperation Agreement (MICECA)	Jul 2011
5.	Malaysia-Chile Free Trade Agreement (MCFTA)	Feb 2012
6.	Malaysia-Australia Free Trade Agreement (MAFTA)	Jan 2013
7.	Malaysia-Turkey Free Trade Agreement (MTFTA)	Aug 2015

Regional FTAs

	FTA	Entry into Force (EIF)
1.	ASEAN Free Trade Area (AFTA)	1993
2.	ASEAN-China Free Trade Agreement (ACFTA)	Jul 2003
3.	ASEAN-Korea Free Trade Agreement (AKFTA)	Jul 2006
4.	ASEAN-Japan Comprehensive Economic Partnership (AJCEP)	Feb 2009
5.	ASEAN-Australia-New Zealand Free Trade Agreement (AANZFTA)	Jan 2010
6.	ASEAN-India Free Trade Agreement (AIFTA)	Jan 2010
7.	ASEAN-Hong Kong Free Trade Agreement (AHKFTA)	Oct 2019
8.	Regional Comprehensive Economic Partnership (RCEP)	Mar 2022
9.	Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)	Est. Nov 2022

Source: Ministry of International Trade and Industry (MITI)

Appendix C: National Entrepreneurship Policy 2030

Strategic Thrust 5:

Strengthening Entrepreneurial Capabilities and Performance of Micro, Small and Medium Enterprises (MSMEs)

Str of (VI	ategy E1: Strengthen the implementation the Vendors' Development Programme DP)	Strategy E2: Enhance entrepreneurship skills and capabilities of MSMEs
 1. 2. 3. 	 Increase participation of new anchors from GLCs, MNCs, PLCs, vendor champions and private companies. Create multiple-tiered vendors among Bumiputera. Expand key potential areas from high-growth industry sectors such as aerospace, automotive, rail, renewable energy, medical devices, biotechnology and halal industry. 	 Provide training and development programs related to Industry 4.0, strategic management, certification, marketing and branding, packaging, product development and e-commerce. Provide targeted support and facilitation for MSMEs to venture into new and high- potential sectors. Enhance capacity-building programmes that emphasise on competitive mindset and internationalisation strategy. Provide financial literacy programmes, particularly for micro and small enterprises.
Str for MS	ategy E3: Provision of targeted support market access especially for Bumiputera MEs	Strategy E4: Strengthening supply chain management

Appendix D: Assistance for SMEs

ACCESS TO BNM'S FUND FOR SMEs

PROGRAMME NAME	TYPES	PAYMENT DETAILS	SOURCE
Targeted Relief & Recovery Facility	Soft Loan	Maximum Amount: RM500,000 Interest Rate: Up to 3.5% p.a. Financing Tenure: up to 7 years	https://www.bn m.gov.my/docu ments/20124/60 25157/trrf_broc en.pdf
High Tech and Green Facility (HTG)	Soft Loan	Maximum Amount: RM10,000,000 Interest Rate: 3.5% - 5% p.a. Financing Tenure: up to 10 years	https://www.bn m.gov.my/docu ments/20124/60 25157/htg_broc en.pdf
SME Automation and Digitalisation Facility (ADF)	Soft Loan	Maximum Amount: RM3,000,000 Interest Rate: up to 4% p.a. Financing Tenure: up to 10 years	https://www.bn m.gov.my/docu ments/20124/60 25157/adf_broc en.pdf
Agrofood Facility (AF)	Soft Loan	Maximum Amount: RM5,000,000 Interest Rate: up to 3.75% p.a. Financing Tenure: up to 8 years	https://www.bn m.gov.my/docu ments/20124/60 25157/af_broc_e n.pdf
Business Recapitalisation Facility (BRF)	Soft Loan	Maximum Amount: RM5,000,000 Interest Rate: 3.5% - 5.0% p.a. Financing Tenure: up to 10 years	https://www.bn m.gov.my/docu ments/20124/60 25157/brf_broc_ en.pdf
Low Carbon Transition Facility (LCTF)	Soft Loan	Maximum Amount: RM10,000,000 Interest Rate: up to 5.0% p.a. Financing Tenure: up to 10 years	https://www.bn m.gov.my/docu ments/20124/60 25157/lctf_broc_ en.pdf
Micro Enterprises Facility (MEF)	Soft Loan	Maximum Amount: RM50,000 Interest Rate: determined by participating financial institutions Financing Tenure: up to 5 years	https://www.bn m.gov.my/docu ments/20124/60 25157/mef_broc en.pdf
All Economic Sectors (AES) Facility	Soft Loan	Maximum Amount: RM5,000,000 per company Interest Rate: up to 7.0% p.a. Financing Tenure: up to 5 years	https://www.bn m.gov.my/docu ments/20124/60 25157/aes_broc _en.pdf
PENJANA Tourism Financing (PTF)	Soft Loan	Maximum Amount: RM500,000 per company Interest Rate: up to 3.5% p.a. Financing Tenure: up to 7 years	https://www.bn m.gov.my/docu ments/20124/60 25157/ptf_broc_ en.pdf

ACCESS TO OTHER FINANCING

PROGRAMME NAME	TYPES	PAYMENT DETAILS	SOURCE
Market Development Grant (MDG)	Grant	Form: Reimbursable grant Maximum Amount: RM300,000 (lifetime limit)	https://www.matrad e.gov.my/en/export -to-the-world/trade- facilitation- page/market- development-grant
Industry4WRD Intervention Fund	Grant	Form: Matching grant (70:30) * Maximum Amount: RM500,000 * 70% borne by Government; 30% borne by Company; maximum of 30% will be provided in advance (upfront).	https://www.mida.g ov.my/forms-and- guidelines/industry- 4-0-industry4wrd- incentives/industry4 wrd-intervention- fund/
Technology Development Fund 2 (TeD 2)	Grant	Form: Matching grant Maximum Amount: RM3,000,000 Duration: 36 months	https://mastic.mosti .gov.my/index.php/ sti/incentives/techn ology-development- fund-2-ted-2
Technology Development Fund 1 (TeD 1)	Grant	Form: Matching grant Maximum Amount: RM1,000,000 Duration: 24 months	https://edana.mosti. gov.my/edana/front end/web/guidelines /TeD1_Guidelines _ENG_JUNE2021. pdf
Strategic Research Fund (SRF)	Grant	Form: Matching grant Maximum Amount: RM15,000,000 Duration: 36 months	https://mastic.mosti .gov.my/index.php/ ms/sti/incentives/str ategic-research- fund-srf
Bridging Fund (BGF)	Grant	Form: Matching grant Maximum Amount: RM4,000,000 Duration: 36 months	https://edana.mosti. gov.my/edana/front end/web/guidelines /BGF_Guidelines_ ENG_JUNE2021.p df
SMEs Go Global Programme	Grant	Form: Reimbursable grant Maximum Amount: RM200,000	https://www.smecor p.gov.my/index.php /en/programmes1/2 015-12-21-10-06- 32/smes-go-global- programme

PROGRAMME NAME	TYPES	PAYMENT DETAILS	SOURCE
Programme for Enhancement of Strategic Industry and High Growth Enterprise (PRESTIGE)	Grant	Form: Matching grant Maximum Amount: RM500,000	https://www.smecor p.gov.my/index.php /en/programmes1/2 015-12-21-09-53- 14/prestige
Halal Technology Development Fund (Halal Fund)	Soft Loan	Maximum Amount: RM4,000,000 Duration: 2 years of implementation + 4 years for repayment	https://www.mtdc.c om.my/strategic- investments/htdf/
SME Emergency Fund 2.0	Soft Loan	Maximum Amount: RM100,000 Interest Rate: 0% Financing Tenure: up to 5 years including 12 months moratorium	https://www.smecor p.gov.my/index.php /en/initiatives/2022- 01-05-08-04- 05/2020-05-07-03- 39-52
Soft Loan Scheme for Services Sector	Soft Loan	Maximum Amount: RM5,000,000 Interest Rate: 4% p.a. Financing Tenure: up to 5 years (depending on the purpose)	https://www.growyo urbusiness.com.my /business-financing
Soft Loan Scheme for Automation and Modernisation	Soft Loan	Maximum Amount: RM20,000,000 for each application Interest Rate: 4% p.a . Financing Tenure: up to 25 years (depending on the purpose)	https://www.growyo urbusiness.com.my /financing/automati on-modernisation
Soft Loan Scheme for Small and Medium Enterprises	Soft Loan	Maximum Amount: RM5,000,000 Interest Rate: 4% p.a. Financing Tenure: up to 25 years (depending on the purpose)	https://www.growyo urbusiness.com.my /business-financing
Soft Loan Scheme for Digital and Technology	Soft Loan	Maximum Amount: RM1,000,000 Interest Rate: as low as 4% p.a. Financing Tenure: up to 5 years	https://www.growyo urbusiness.com.my /business-financing
Sustainable and Green Biz Financing	Soft Loan	Maximum Amount: RM10,000,000 Interest Rate: 2% p.a. Financing Tenure: up to 25 years	https://www.growyo urbusiness.com.my /business-financing
Services Biz Financing	Soft Loan	Maximum Amount: RM5,000,000 Interest Rate: 4% p.a. Financing Tenure: up to 20 years	https://www.growyo urbusiness.com.my /business-financing
SME Revitalisation Financing	Soft Loan	Maximum Amount: RM250,000 Interest Rate: 3% p.a. Financing Tenure: up to 7 years	https://www.growyo urbusiness.com.my /business-financing

PROGRAMME NAME	TYPES	PAYMENT DETAILS	SOURCE
JBIC Fund for Small and Medium Industries	Soft Loan	Maximum Amount: RM5,000,000 Interest Rate: 6.5% p.a. Financing Tenure: up to 15 years	https://www.growyo urbusiness.com.my /business-financing
Market Development Biz Financing	Soft Loan	Maximum Amount: RM1,000,000 Interest Rate: 4% p.a. Financing Tenure: up to 5 years	https://www.growyo urbusiness.com.my /business-financing
Jumpstart Financing	Soft Loan	Maximum Amount: RM500,000 Interest Rate: 2% p.a. Financing Tenure: up to 6 years	https://www.growyo urbusiness.com.my /business-financing
Business Accelerator Programme 3.0 (BAP 3.0)	Soft Loan	Maximum Amount: RM1,000,000 Interest Rate: 4% p.a. Financing Tenure: up to 10 years (depending on the purpose)	https://www.smeba nk.com.my/en/finan cing/programmes/b usiness- accelerator- program- bap?highlight=WyJi YXAiXQ==
Digital Financing Initiative	Soft Loan	Maximum Amount: RM500,000 Interest Rate: 2% p.a. Financing Tenure: up to 36 months	https://www.smecor p.gov.my/index.php /en/programmes1/2 015-12-21-09-39- 08/digital-financing- initiative
PEMULIH Government Guarantee Scheme (PGGS)	Soft Loan	Maximum Amount: RM20,000,000 per company Interest Rate: up to BLR/BFR + 2% Financing Tenure: up to 10 years	https://www.sjpp.co m.my/schemes/pgg <u>s</u>
Working Capital Guarantee Scheme (WCGS)	Soft Loan	Maximum Amount: RM10,000,000 per company Interest Rate: determined by participating financial institutions Financing Tenure: determined by participating financial institutions	https://www.sjpp.co m.my/schemes/wcg <u>s</u>
Working Capital Guarantee Scheme - Start Up (WCGS-SU)	Soft Loan	Maximum Amount: RM500,000 per company Interest Rate: determined by participating financial institutions Financing Tenure: determined by participating financial institutions	https://www.sjpp.co m.my/schemes/wcg s-su

PROGRAMME NAME	TYPES	PAYMENT DETAILS	SOURCE
Working Capital Guarantee Scheme - Women (WCGS - Women)	Soft Loan	Maximum Amount: RM1,000,000 per company Interest Rate: determined by participating financial institutions Financing Tenure: determined by participating financial institutions	https://www.sjpp.co m.my/schemes/wcg <u>s-w</u>
Working Capital Guarantee Scheme - Export (WCGS-X)	Soft Loan	Maximum Amount: RM10,000,000 per company Interest Rate: determined by participating financial institutions Financing Tenure: determined by participating financial institutions	https://www.sjpp.co m.my/schemes/wcg s-x
Automation & Digital Guarantee Scheme (ADGS)	Soft Loan	Maximum Amount: RM10,000,000 per company Interest Rate: determined by participating financial institutions Financing Tenure: determined by participating financial institutions	https://www.sjpp.co m.my/schemes/adg <u>s</u>

HUMAN CAPITAL DEVELOPMENT

PROGRAMME NAME	PROGRAMME OBJECTIVE/ACTIVITY	SOURCE
eUsahawan	Encourage SMEs to have an online presence.	https://www.eusaha wan.net/
Export Training Programme	 Equip SMEs with the necessary knowledge and skills to enhance their export capability. 	https://www.matrade .gov.my/en/export- to-the-world/online- services/online- applications/matrad e-s-exporters- training- programmes
Reach-Out, Awareness and Development (ROAD)	 Raise awareness of IPT / ILKA students and unemployed graduates on the entrepreneurial and employability ecosystem as well as increase the marketability potential. 	http://protege.gov.m y/www/index.php?id =7&page_id=87
Desa Lestari (DL)	 Enhance the community's abilities in planning and implementing projects in the villages; and Develop economic activities by creating job opportunities and wealth creation for the community via a cooperative platform. 	https://www.rurallink .gov.my/desa- lestari-2/
Latihan Halal	 Halal knowledge and entrepreneurship training, including Halal Industry Fundamentals, Halal Assurance Management System, Halal Internal Auditing, Halal Executive Programme and other entrepreneurship courses based on SME requirements. 	https://hdcglobal.co m/ms/latihan-halal/

MARKET ACCESS

PROGRAMME NAME	PROGRAMME OBJECTIVE/ACTIVITY	SOURCE
eTRADE Programme 2.0	 Assist SMEs to participate in an international leading e-marketplace via eTRADE. 	https://www.mat rade.gov.my/en/a bout- matrade/media/n ews- clippings/138- malaysian- exporters/etrade- programme/2943 -about-etrade
SOKONGAN PENGUKUHAN KEUSAHAWANAN LUAR BANDAR (SPKLB)	 Provide options for entrepreneurs to obtain financial assistance to grow the enterprise; Provide a platform for entrepreneurs to obtain training related to enterprises and products; Assist entrepreneurs through the implementation of relevant programs to promote their products and services; Encourage entrepreneurs to develop products and services to expand the market. 	https://www.rura llink.gov.my/prog ram-sokongan- pengukuhan- keusahawanan- luar-bandar- spklb/
PROSPER Premise	 Purchase retail premises at strategic locations; and Increase Bumiputera ownership in commercial property. 	https://www.pun b.com.my/en/pro sper- hartanah/premis- perniagaan- untuk-disewa
Micro Connector Programme (ConnectME)	 Provide simplified early-stage assistance for microenterprises to set up and run a business as well as to train the inclusive group including youth, women, B40 and other communities to gain new skillsets for income generation through entrepreneurship. 	https://www.sme corp.gov.my/inde x.php/en/progra mmes1/2015-12- 21-09-53- 14/micro- connector- programme

PROGRAMME NAME	PROGRAMME OBJECTIVE/ACTIVITY	SOURCE
E-Kraf Bazar	 Promote and market local craft products through online platforms. 	https://www.kraftang an.gov.my/perkhidm atan-atas-talian/e- krafbazar
Craft Industry Development Programme	 Increase the value and quality through the development of viable and competitive entrepreneurs and highly skilled human capital. 	https://www.kraftang an.gov.my/korporat/ program- pembangunan- industri-kraf
Glocal Linkages SME Programme	 Facilitate MSMEs' access to markets in the new norm, with the aim to connect worldwide business through networking and business matching virtually. 	https://www.smecor p.gov.my/index.php/ en/programmes1/20 15-12-21-10-06- 32/market-access- and-supply-chain

INFRASTRUCTURE

PROGRAMME NAME	PROGRAMME OBJECTIVE/ACTIVITY	SOURCE
Program Tunas Niaga (PROTUNE)	 Create and increase awareness about business among school students based on theory and practicals as real businesses. 	https://www- pknsbizpoint- com.translate.goog/p rogram/program- pembudayaan/progra m-tunas- niaga? x_tr_sl=ms&_ x_tr_tl=en&_x_tr_hl= en- US&_x_tr_pto=wapp
Pembangunan Usahawan Desa	 Build or upgrade additional buildings in Rural Entrepreneurs Centre (Pusat Keusahawanan Desa - PKD) / Tamuniaga / Community Learning Centres (CLC) and provide necessary equipments for entrepreneurs to operate and start or expand businesses. 	https://www.ketenga h.gov.my/pembangu nan-usahawan/

(Last access on 23 September 2022, please)

More information:

- i-Incentive: https://www.mida.gov.my/forms-and-guidelines/i-incentives/
- SMEInfo: https://www.smeinfo.com.my/msme-development-programmes/development-programmes/

Appendix E: Halal Certification Flow Chart



(Last access on 11 November 2022, please refer to JAKIM's website for latest information) Source: Department of Islamic Development Malaysia (JAKIM)

Appendix F: Medical Tourism Ecosystem

Selected stakeholders in the healthcare travel ecosystem



Source: Malaysia Healthcare Travel Council (MHTC)

Socio-Economic Research Centre (SERC) 社会经济研究中心

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