

## 8. INDEPENDENT MARKET RESEARCH REPORT

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Protégé  
ASSOCIATES

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15 SEP 2023

The Board of Directors  
EPB Group Berhad  
PMT 1186, Jalan Perindustrian Bukit Minyak 18,  
Penang Science Park,  
14100 Simpang Ampat,  
Pulau Pinang.

Dear Sirs/Madams,

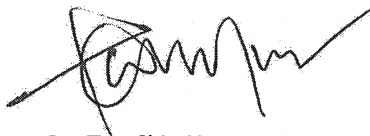
### Independent Market Research Report on the Food and Beverage ("F&B") Processing Machinery Industry in Malaysia ("IMR Report")

Protégé Associates Sdn Bhd ("**Protégé Associates**") has prepared this IMR Report for inclusion into the prospectus of EPB Group Berhad ("**EPB**" or the "**Company**") in relation to its listing on the ACE Market of Bursa Malaysia Securities Berhad.

We have been engaged to provide an independent market research of the abovementioned industry in which EPB and its subsidiaries ("**EPB Group**" or the "**Group**") operate in. The market research process undertaken involved secondary research as well as detailed primary research when required, which involves interviews with the relevant stakeholders of the industry to discuss the state of the industry. Quantitative market information could be sourced from such interviews and therefore, the information is subject to fluctuations due to changes in business, industry and economic conditions.

We have prepared this IMR Report in an independent and objective manner and have taken adequate care to ensure the accuracy and completeness of the report. We believe that this IMR Report presents a balanced view of the industry within the boundaries and limitations of secondary statistics, primary research and continued industry movements. Our research has been conducted to present an overall view of the industry and may not necessarily reflect the performance of individual companies in this industry. Protégé Associates is not responsible for the decisions and/or actions of the readers of this report. This report should also not be considered as a recommendation to buy or not to buy the shares of any company or companies as mentioned in this report.

Thank you.  
Yours sincerely,



Dr. Tan Chin How  
Director

### **About Protégé Associates Sdn Bhd**

*Protégé Associates is an independent market research and business consulting company. Our market research reports provide an in-depth industry and business assessment for companies raising capital and funding in the financial markets; covering their respective market dynamics such as market size, key competitive landscape, demand and supply conditions, government regulations, industry trends and the outlook of the industry.*

### **Profile of signing partner, Dr. Tan Chin How**

*Dr. Tan Chin How is a Director of Protégé Associates. He has 20 years of experience in consulting and market research for various industries, including among others manufacturing, construction, information and digital technology, renewable energy, oil and gas, and aquaculture. He holds a Doctor of Business Administration from HELP University, Malaysia, a Master of Business Administration from Charles Sturt University, Australia, and a Bachelor of Science in Computing from University of Portsmouth, United Kingdom.*

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The research for this IMR Report was completed in September 2023.

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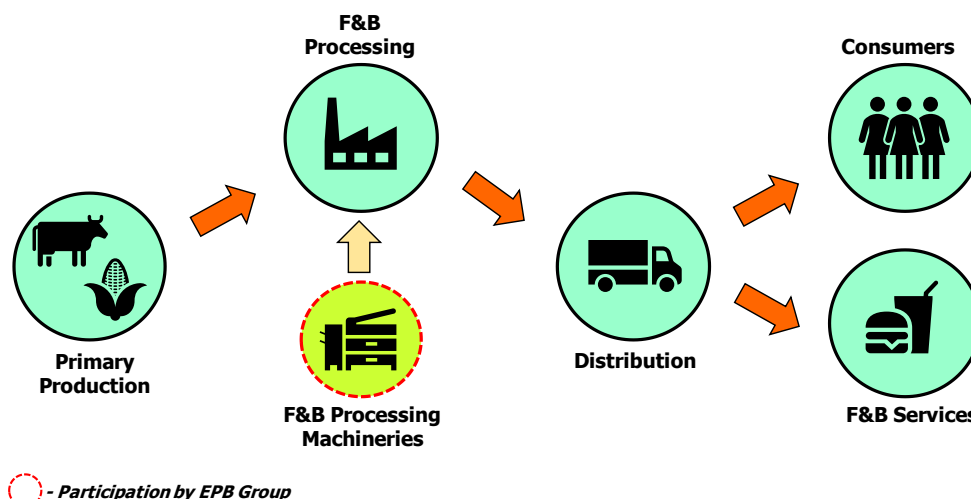
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**1.0 Overview of the F&B Industry in Malaysia**

The F&B industry value chain and EPB Group’s participation is as illustrated in Figure 1 below:

**Figure 1: F&B Industry Value Chain**



Source: Protégé Associates

The F&B industry in Malaysia can be segmented into the F&B services industry and the F&B processing industry (also known as the F&B manufacturing industry). The F&B services industry mainly revolves around the provision of food services to consumers, whether in the form of dine-in services, self-services, takeout services or delivery services. In other words, it is the business of preparing, transporting and serving food or meals at restaurants or food stores. Meanwhile, the F&B processing industry in Malaysia involves the transformation of F&B raw materials into edible products.

The local F&B industry emerged from 2022 on a strong footing. In 2022, the real gross domestic product (“GDP”) contribution from F&B services activities increased by 21.4% to RM35.02 billion (2021: RM28.84 billion) while those of food processing and beverage manufacturing activities increased by 8.9% to RM27.13 billion (2021: RM24.91 billion). The local F&B industry was boosted by a double-digit growth performance in the F&B services subsector in tandem with the removal of more lockdown measures and higher economic activities as Malaysia entered the ‘Transition to Endemic’ phase on 1 April 2022. The expansion in the local F&B industry was also attributed to sustained growth registered in the food processing and beverage manufacturing subsectors.

**2.0 Overview of the F&B Processing Machinery Industry**

**F&B Processing**

F&B processing activities in Malaysia have remained vibrant with stringent standard operating procedures becoming a norm post COVID-19 pandemic for local F&B processors. At the same time, the advancement in processing technology has widened the usage of local raw materials, and has expanded the range of food products manufactured in the country. This is seen by the increasing value of processed food products in Malaysia. Malaysia’s sales value of F&B products increased 12.8% from RM280.98 billion in 2021 to RM316.81 billion in 2022.

F&B processing involves both the preparation of fresh foods for markets as well as the production of prepared food products. As such, F&B processors consist of a diverse range of companies processing products at various stages, including meat slaughtering and processing; fruit and vegetable preserving; grain and oilseed milling; seafood product preparation, sugar and confectionery, bakery, dairy and other food products manufacturing. In general, food processing can be classified into three types, namely primary, secondary and tertiary food processing.

**Primary food processing** involves the conversion of agricultural products, such as raw wheat kernels or livestock, into products that can be eventually eaten. This category includes processes such as drying, milling grain, shelling nuts and butchering animals for milk. It also includes deboning and cutting meat, freezing and smoking fish and meat, extracting and filtering oil, canning food, preserving food as well as homogenising and pasteurising milk.

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**Secondary food processing** is the process of creating food from ingredients that are ready to use. Some examples of secondary food processing are baking of bread, where milled flour and pasteurised milk are used, as well as the making of sausages or other meat products, which involves the grinding of meat that has already undergone primary processing.

**Tertiary food processing** is the commercial production of high value-added F&B products, such as bakery products, ready-to-eat or heat-and-serve foods, as well as health drinks.

In addition, F&B processing also involves the **packaging of F&B products**. Processed F&B products need to be packaged in order to store, transport and market the final end products to consumers. In general, F&B packaging plays four main roles namely product protection, product safety, product freshness and brand identity.

The main role of **product protection** is to maintain the safety of food during transportation, handling and distribution. In addition, food packaging can also help retain food nutrition, and provide rapid and reliable distribution of the food along the value chain and reduce post-harvest losses.

F&B packaging also helps to ensure **product safety** and aims to eliminate or reduce food recalls and hazards, as well as facilitate traceability. Product contamination can occur at any one point in time in the supply chain. In addition, to protect consumers, certain information must be included on the F&B packaging, including the list of ingredients as well as the manufacturing and expiry dates.

F&B packaging can help to increase **product freshness** and maintain the appearance, taste, quality and shelf life of the F&B products. The advancement in packaging technology has led to F&B processors being able to extend a product's shelf life and have a better control over product freshness.

Lastly, F&B packaging can be used to drive the **brand identity** of a product. Packaging has become an essential part of product marketing and allows a manufacturer to communicate product information with consumers. A good package design can serve to attract the attention of consumers. The size, shape, colour and materials used in a packaging can influence consumer experience, and ultimately help build brand awareness.

### **F&B Processing Machinery**

F&B processing machinery refers to the machinery that is used to handle, prepare, cook, store and package F&B products. While F&B processing machineries are primarily aimed towards the transformation (such as increasing the ease of consumption and digestibility), or preservation (such as extending the shelf life) of F&B products, they are also used to perform other preliminary or auxiliary functions such as handling, preparation and packaging.

The F&B processing production cycle can be divided into several stages; each characterised by a specific function, in which several operations are performed. For example, in the preparation stage, the primary function is to prepare raw materials for further processing, whereby some of the operations performed include washing and separating. The common functions and operations of F&B processing machineries are detailed in Figure 2.

**Figure 2: Common Functions and Operations of F&B Processing Machineries**

Functions and Operations	Description
<b>Preparation</b>	<b>Involves initial preparatory operations focused on preparing raw food materials for subsequent processes.</b>
- Cleaning	Removing foreign matter and contaminants (such as soil, oil, skins and chemicals) from the surface of raw food materials via wet or dry-cleaning processes.
- Sorting and grading	Assessing and classifying raw food materials based on several measurable physical characteristics (size, shape, weight and colour) to determine overall quality or grade.
- Peeling or skinning	Removing inedible or undesirable materials to increase the overall quality and/or appearance of the raw food product.
<b>Mechanical processing</b>	<b>Involves processing operations (without the application of heat or chemicals) to reduce, enlarge, homogenise or change the physical form of raw food materials.</b>
- Size reduction	Reduces the average size of solid food material through mechanical processes such as compression, shearing or impact force.
- Size enlargement	Increases the average size of solid food material through mechanical processes such as extrusion, agglomeration or forming.
- Homogenisation	Reduced the average size and increases the consistency of semi-solid and liquid food material.

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Functions and Operations	Description
- Mixing or blending	Combines two or more components into one another to achieve and maintain a uniform mixture.
<b>Heat processing</b>	<b>Depending on whether the application is aimed at heating or cooling the food material, heat transfer machinery is used to direct heat towards or away from the material.</b>
- Baking or roasting	The use of heated air heated by convection, conduction and radiation to heat and produce physical and chemical changes to food materials, such as texture or flavour. Is also used in the preservation of food materials via the removal of microorganism and reducing amount of moisture on food surface.
- Blanching	The use of heated water or steam to reduce the number of microorganisms and inactivate undesirable enzymes which may cause spoilage to food materials.
- Dehydration	The use of heat to remove moisture from food materials with the intention of producing a solid food product with sufficiently low water content.
- Evaporation	The removal of moisture from food materials via boiling to increase the concentration of solid contents.
- Pasteurisation	Heating of food materials under medium temperatures (70-100 degree celsius ("°C")) to inactivate most enzymes and microorganisms which can cause spoilage to food materials.
- Frying	The use of heated fat or oil to apply heat directly to food materials with the intention to reduce moisture content and form a surface crust.
- Sterilisation	Heating of food materials under high temperatures (above 100°C) to inactivate most enzymes and microorganisms which can cause spoilage to food materials.
<b>Preservation</b>	<b>The preservation stage in F&amp;B processing ultimately aims to prevent or inhibit the spoilage and increase the shelf life of food materials and products.</b>
- Chemical	The use of natural (such as salt, vinegar and smoke) and non-natural (such as sorbic acid, sulphur dioxide and benzoic acid) chemical substances to prevent or inhibit spoilage.
- Heat processing	Preserving food materials via the transfer of heat.
- Irradiation	The use of ionizing radiation to remove microorganisms and inactivates enzymes that can cause spoilage to food materials.
- Refrigeration or freezing	Reduces the temperature of food materials to suppress the biochemical and microbiological processes of microorganisms and enzymes that can cause spoilage to food materials.
- Water reduction	Reduces the amount of water content in food materials to inhibit microbiological and enzymatic processes which can cause spoilage to food materials.

Source: Protégé Associates

At the last stage, the food materials are packaged via the packaging operations to produce the final food product and complete the food processing production cycle. F&B packaging machineries are primarily used for labelling, sealing and/or palletising. These machineries are used across the bakery, beverage, meat and fisheries processing and other F&B industries. Industry players operating in this industry are constantly developing new products using advanced technologies to enhance user experience. Figure 5 details the common types of F&B packaging machineries and their description.

**Figure 3: Common F&B packaging machineries and their description**

Type	Description
Bottling	Fills the right amount of product into a bottle or container
Cartoning	Forms and erects a carton
Case Packing	Build cases and prepare them for filling
Filling and dosing	Measures and fills a predetermined value of the food products into desired packaging
Form fill and seal	Form, fill and seal a package
Labeling, decorating and coding	Apply labels, decorations and bar codes onto finished products
Lidding	Forms and applies lids to product filled trays
Palletising	Stacks cases, bundles of goods or products, etc. onto a pallet
Wrapping and Bundling	Shrink wrapping and bundle packing

Source: Protégé Associates

**8. INDEPENDENT MARKET RESEARCH REPORT (cont'd)****3.0 Performance of the F&B Processing Machinery Industry in Malaysia**

The historical performance and growth forecast of the F&B processing machinery industry in Malaysia is based on a combination of resources, including data from the Department of Statistics Malaysia ("DOSM"), the Malaysian Investment Development Authority and Bank Negara Malaysia. Data is also gathered from further secondary and primary research works conducted such as searches on private F&B processing machinery manufacturers and traders with the Companies Commission of Malaysia ("CCM") to gather more disclosure on their business performance. Primary research works are conducted with stakeholders in the local industry such as industry players, suppliers, and customers to gather their insights on the industry. All the findings are collated, analysed and/or computed to ascertain the outlook of the F&B processing machinery industry in Malaysia.

The size of the local F&B processing machinery industry was valued at RM1.68 billion in 2022, which was an increase of 12.8% from the previous year. Growth in the industry is supported by factors including labour shortage issues spurring adoption of industrial automation, a wide range of F&B products requiring processing as well as growing consumer preference for convenient processed food products. In particular, the sales value of F&B products in Malaysia increased from RM280.98 billion in 2021 to RM316.81 billion in 2022. While the sales value of F&B products reached RM139.40 billion in the first half of 2023, which was lower than RM146.59 billion in the previous corresponding period, it is still higher than the RM125.97 billion recorded in the first six months of 2021. At the same time, sales value of plastic articles for the packaging of goods increased from RM48.46 billion in 2021 to RM50.40 billion in 2022. This figure stood at RM10.24 billion in the first half of 2023 (1H 2022: RM10.10 billion). The resilient performance of the local F&B manufacturing industry is expected to bode well for the local F&B processing machinery industry, including for flexible packaging materials which are used across a wide range of F&B products. The size of the industry is expected to register slower single-digit growth in 2023 and 2024. The slower growth in 2023 can be attributed to expected lower demand for F&B products stemming from slower growth in global economic activities coupled with high inflationary environment weakening purchasing power and affecting consumer sentiments. This is expected to lead to a scaling down of expansion plans by F&B companies which in turn, will reduce demand for F&B processing machineries. Nonetheless, the growth in the Malaysian economy is expected to gather pace from 2024 onwards, with world trade likely to improve in tandem with stronger trade activities – providing the impetus for the gradual pick-up in the pace of growth in the local F&B processing machinery industry. The industry is forecast to expand at a compound annual growth rate ("CAGR") of 9.7% from RM1.80 billion in 2023 and reach RM2.66 billion in 2027. Growth in the industry is expected to be driven by favourable demand conditions which include labour shortage spurring the adoption of more industrial automation, a wide range of F&B products requiring processing, the preference for convenient processed food products, positive policy support from the Malaysian Government to develop the local food-related industries and a steady population growth.

**Figure 4: Historical Market Size and Growth Forecast for the F&B Processing Machinery Industry in Malaysia, 2020-2027**

Year	Market Size (RM billion)	Growth Rate (%)
2020	1.32	-
2021	1.49	12.9
2022	1.68	12.8
2023 <sup>f</sup>	1.80	7.5
2024 <sup>f</sup>	1.97	9.5
2025 <sup>f</sup>	2.17	10.0
2026 <sup>f</sup>	2.40	10.5
2027 <sup>f</sup>	2.66	11.0

CAGR (2023-2027) (base year of 2022): 9.7%

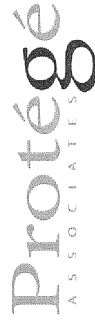
Note: <sup>f</sup> denotes forecast

Source: Protégé Associates

**4.0 Competitive Landscape**

The participants of the F&B processing machinery industry in Malaysia comprise both F&B processing machinery manufacturers and traders. Local F&B processing machinery manufacturers are companies that manufacture and/or distribute F&B processing machinery or related components. They generally produce their own in-house branded products and sell them to both local and overseas end-users directly or through distributors. In 2023, Protégé Associates estimates there are more than 180 manufacturers of F&B processing machineries in Malaysia based on the latest available economic census published by DOSM. Some of the local manufacturers for F&B processing machinery in Malaysia include EPB, Highpack Machinery Sdn Bhd, Hup Sheng Machinery & Industry Sdn Bhd and Lian Huat Machinery Sdn Bhd.

**8. INDEPENDENT MARKET RESEARCH REPORT (cont'd)**



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As for traders, there are companies that are involved in the trading of F&B processing machineries including importing these machineries and selling them in Malaysia. They generally distribute products from more than one manufacturer and also often distribute a variety of F&B processing machinery instead of only focusing on a single type of machinery. In addition, these traders may also distribute other types of machinery other than those related to F&B processing. Traders typically play a role in connecting manufacturers with end-users, providing maintenance and support services, as well as facilitating sales of equipment. Some of the local traders for F&B processing machinery in Malaysia include GEA Westfalia Separator (Malaysia) Sdn Bhd, Kimah Industrial Supplies (M) Sdn Bhd, MHL Machinery Sdn Bhd and Thermo Cooling Engineering Sdn Bhd.

Within the F&B processing machinery industry in Malaysia, the barriers to entry are considered relatively low for single-purpose or standard machinery. However, they are higher for industry players intending to provide one-stop solutions on a turnkey basis. Potential entrants need to possess stronger financial resources, technical know-how, and make investment into plants, machinery, and human resources. In addition, continuous capital outlay may also be necessary for the adoption of newer technologies or innovations at the production facilities.

**4.1 Competitor Analysis**

EPB Group is a one-stop provider of food processing and packaging machinery solutions. It is primarily involved in the design, customisation, fabrication, integration and automation of production lines for food manufacturing and processing companies, based on our customers' needs. For the purpose of this report, Protégé Associates has selected the following industry players for comparison with EPB Group based on the following criteria:

- A company registered in Malaysia and is involved in the manufacturing and/or trading of F&B processing machineries; and
- Recorded an annual turnover of less than RM100 million based on latest publicly available financial information.

It needs to be highlighted that the list of industry players is not exhaustive, and only serves as a reference for readers.

**Figure 5: Comparison between EPB and Selected Industry Players**

Company Name	Principal Activities	Latest Available Financial Year	Revenue (RM)	Gross Profit (RM)	Profit After Tax (RM)	Gross Profit Margin* (%)	Profit After Tax Margin** (%)
EPB^	The company is principally involved in the provision of food processing and packaging machinery solutions, trading of cellulose casings, and manufacturing and trading of flexible packaging materials.	31-12-2022	89,114,000	30,459,000	12,282,000	34.2	13.8
Highpack Machinery Sdn Bhd^	The company is principally involved in the manufacturing and trading of machineries.	31-12-2022	8,408,789	2,657,834	856,441	31.6	10.2
Hup Sheng Machinery & Industry Sdn Bhd^	The company is principally involved in the manufacturing and servicing of plant and machinery in food industry.	31-08-2022	7,440,602	2,266,758	394,828	30.5	5.3
Lian Huat Machinery Sdn Bhd^	The company is principally involved as a manufacturer, importer and dealer in all kinds of machinery including bakery machinery.	30-06-2022	10,329,837	686,518	144,323	6.6	1.4
FL Refrigeration & Engineering	The company is principally involved in the wholesale of fridge machinery and supermarket accessories.	31-12-2022	12,937,605	1,921,024	1,258	14.8	< 0.1

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Company Name	Principal Activities	Latest Available Financial Year	Revenue (RM)	Gross Profit (RM)	Profit After Tax (RM)	Gross Profit Margin* (%)	Profit After Tax Margin** (%)
Enterprise (M) Sdn Bhd							
GEA Westfalla Separator (Malaysia) Sdn Bhd#	The company is principally involved in sales and servicing of GEA machines and spare parts.	31-12-2022	64,918,016	18,638,158	3,299,683	28.7	5.1
Kimah Industrial Supplies (M) Sdn Bhd	The company is principally involved as a dealer of all kinds of machineries.	30-06-2022	10,206,421	3,895,555	927,324	38.2	9.1
Mayekawa (M) Sdn Bhd	The company is principally involved in the business of dealing with refrigeration equipment and components, construction of cold room and related services.	31-12-2022	28,207,056	6,632,005	1,583,169	23.5	5.6
MHL Machinery Sdn Bhd	The company is principally involved in the trading and servicing of machineries.	31-12-2022	13,391,127	3,544,207	-54,878	26.5	-0.4
NRS Process Systems Sdn Bhd	The company is principally engaged as a fabricator of refrigeration systems, sales of spare parts, providing services for installation and maintenance of refrigeration systems.	31-12-2022	26,496,361	7,315,047	2,469,869	27.6	9.3
Thermo Cooling Engineering Sdn Bhd	The company is principally involved as dealers of air conditioners, refrigerators and cold rooms.	31-05-2023	8,067,804	5,940	-2,767,819	0.1	-34.3
United Refrigeration System (M) Sdn Bhd	The company is principally involved in the trading of refrigeration parts.	31-12-2022	72,840,352	n/a	5,638,980	n/a	7.7

**Notes:**

1. The above figures only provide an indication and is not considered directly comparable due to the following reasons:
  - a. Not all companies have the same financial year end; and
  - b. Not all companies carry out activities that are completely the same with one another or in the same geographical area.



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2. Financial information of comparable market players and EPB Group such as revenue, gross profit and profit/loss after tax was based on information from the CCM and EPB Group while the financial ratios in the table were computed by Protégé Associates.  
\* Gross Profit Margin = Gross Profit / Revenue  
\*\* Profit after Tax Margin = Profit after Tax / Revenue
3. ^ Local manufacturers who are able to provide one stop food processing and packaging machinery solutions.
4. # GEA Westfalia Separator (Malaysia) Sdn Bhd is a wholly-owned subsidiary of GEA Westfalia Separator (SEA) Pte. Ltd., a company incorporated in Singapore. The penultimate and ultimate holding companies are GEA Westfalia Separator GmbH and GEA Group AG respectively, both incorporated in Germany. GEA Group AG is currently listed on the Frankfurt Stock Exchange in Germany.
5. n/a denotes that information is not available from CCM

Sources: CCM, EPB Group and Protégé Associates

**4.2 EPBG's Market Share Analysis**

For the FYE 31 December 2022, EPB Group generated revenue of RM72.57 million from its food processing and packaging machinery solutions business segment, which was equivalent to 4.3% share of the RM1.68 billion market size of the Malaysian F&B processing machinery industry in 2022.

**5.0 Demand and Supply Conditions****Figure 6: Demand and Supply Conditions Affecting the F&B Processing Machinery Industry in Malaysia, 2023-2027**

Impact	Conditions	Short-Term	Medium-Term	Long-Term
		2023-2024	2025-2026	2027
<b>Demand</b>				
+	Labour Shortage Spurs Adoption of More Industrial Automation	High	High	High
+	A Wide Range of F&B Products Requiring Processing	High	High	High
+	Preference for Convenient Processed Food Products	Medium	Medium	Medium
+	Positive Policy Support from the Malaysian Government to Develop the Local Food-Related Industries	Medium	Medium	Medium
+	Steady Population Growth	Medium	Medium	Medium
-	High Inflationary Pressure Weakening Purchasing Power and Affecting Consumer Sentiment	High	Medium	Medium
<b>Supply</b>				
+	Technological Advancement	Medium	Medium	Medium

Source: Protégé Associates

**Labour Shortage Spurs Adoption of More Industrial Automation**

As with most manufacturing industries, the Malaysian F&B processing industry is labour intensive. With the country facing labour shortages due to poor participation from Malaysians, the F&B processing industry is heavily reliant on foreign workers for its manufacturing activities. It does not help that policies on foreign workers have been constantly under close scrutiny and are vulnerable to frequent changes particularly on levy rates and number of foreign workers allowed to work in Malaysia.

To combat this issue, the Malaysian Government has been encouraging industry players to increase the level of automation in their operations. This includes the use of F&B processing machineries which can be incorporated into a manufacturer's integrated operations, or in the case of smaller operations, can serve to increase productivity through the use of machinery instead of manual labour. Technological advances have also seen robotics increasingly being incorporated into F&B processing machineries to further reduce

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the need for manual labour. This development bodes well for the development of the local F&B processing machinery industry.

### **A Wide Range of F&B Products Requiring Processing**

The F&B products segment in Malaysia is innovative in meeting the demand of its customers by developing various types of products to cater for consumers of varying age and income categories. Manufacturers of F&B products tend to produce a variety of products in different forms and packaging to be able to target a larger pool of consumers from varying age and income brackets.

Consumers generally are more inclined to choose products in accordance to their affordability and convenience. For examples, some consumers may choose meat that has been cut into convenient sizes while others may choose other processed meat products such as nuggets or sausages. A consumer with a busy lifestyle may prefer ready-to-eat food products while another may opt to buy fresher ingredient to cook. In addition, a consumer may choose biscuits with a larger serving packaging while another consumer may opt to choose for individual serving packaging that is more convenient to consume away from home. At the same time, a same brand of cheese may come in single slice packaging to cater for adults as well as in stick or small cube-form to cater for kids.

Manufacturers are also constantly adapting their products to include new flavours and other ingredients, as driven by the latest local and international trends. The ability of the local F&B processing machinery industry to meet and cope with the ever-changing demands of its consumers has supported industry growth.

### **Preference for Convenient Processed Food Products**

Rapid urbanisation in Malaysia has led to a change in the population's lifestyle; more women have joined the workforce and people are working longer hours. With lesser time to prepare for a meal, convenience has become an important consideration when choosing the type of products to consume. This has led to increased consumption of conveniently processed food products such as ready-to-eat meals and packed food products, or food products that have been processed into forms that are easier to cook or prepare.

There is an increasing amount of food products in Malaysia that are packaged in forms that are convenient for their consumers to consume or prepare. These include re-sealable, single-serve and lightweight packages that suit the modern 'grab-and-go' lifestyle, as well as "instant" food products that generally only require very simple steps to cook, such as instant cake or cookie mixtures or other instant dishes, whereby the consumers only need to add water or other liquid substance to bake or cook. The increase in demand for these types of food products is expected to lead to higher needs for various types of food processing as well as packaging leading to higher demand for F&B processing machinery.

### **Positive Policy Support from the Malaysian Government to Develop the Local Food-Related Industries**

In the past, the local food processing industry was earmarked for further development under the Third Industrial Master Plan with focus on major areas such as the supply of raw materials, incentives for the food processing companies, training and skills development, market development and financial assistance. Food-related industries have continued to receive positive policy support from the Malaysian Government. The recent National Agrofood Policy 2.0 (the successor of the National Agrofood Policy 1.0) (2021-2030) rolled out by the Ministry of Agriculture and Food Industries has highlighted the strategies to transform the local agrifood sector into a sustainable, competitive and high-technology sector, and to boost economic growth to improve the wellbeing of the population. This development is expected to bode well for the growth of the local F&B processing industry which is a key stakeholder in the local-food-related industries.

### **Steady Population Growth**

The Malaysian population is expected to continue growing at a steady pace. According to DOSM, the total population of Malaysia was 33.0 million in 2022. This figure is projected to grow steadily to reach 41.5 million in 2040. As the size of population increases, the potential pool of demand for F&B products also increases accordingly. In other words, the uptake in F&B products is positively correlated to population growth. Hence, the steady population growth in Malaysia is expected to spur the continued demand for F&B products moving forward. This is also expected to bode well for the local F&B processing machinery industry.

### **High Inflationary Pressure Weakening Purchasing Power and Affecting Consumer Sentiment**

The headline inflation in Malaysia continued to grow in 2022. The consumer price index (CPI) (2010 = 100) increased by 3.3% from 123.1 in 2021 to 127.2 in 2022 due to pressures on certain fresh food prices as a result of rising non-energy commodity prices and improved demand following the easing of lockdown measures. The headline inflation in the country is expected to continue trending up leading to higher

**8. INDEPENDENT MARKET RESEARCH REPORT (cont'd)**

product prices including the prices of F&B products. This is mainly attributed to elevated global energy and commodity prices, the disruptions in the global supply chain and the weakness of the ringgit against the US dollar. Besides that, consumers are grappling with rising borrowing costs amidst the various hikes in the overnight policy rate by Bank Negara Malaysia. These developments can weaken purchasing power and affect consumer sentiments leading to dampened demand for F&B products, which in turn, reduce the demand for F&B processing machineries.

**Technological Advancement**

To cater for the growing demand for processed F&B products, there has been a need for manufacturers to increase production capability and capacity. Integrated systems are utilised in manufacturing facilities where the production processes are fully or partially automated with minimal requirement of manual labour. The availability of modern technology allows for the development of machinery that can drive production productivity and efficiency and promote better consistency in the quality of products produced. For example, the adoption of robotics technology is increasing, and it facilitates higher production volume, improves food safety and is less labour-intensive, thereby enhancing competitiveness. Manufacturers that have invested in newer technologies stand to benefit from cost savings generated and faster product-to-market lead time.

With the introduction of more advanced technology, most of the manufacturing processes for the production of F&B products can now be carried out using machinery and equipment rather than manual labour. The introduction of these machinery and equipment has allowed for the economies of scale for manufacturers of F&B products. In recent years, the usage of robotics in the F&B processing industry has also been on the rise. Technological advances, such as image recognition and gripper technology, have enabled robots to be increasingly capable of handling both delicate and diverse products. These robots can comply with strict food safety requirements, and function in challenging work environments (such as heat, moisture and cold). The robots used in the F&B processing industry can be generally segmented into generic robots that perform heavy standard tasks such as sorting boxes or storing pallets, and specialised robots that perform more complex and specific tasks such as carcass opener in the meat industry, lettuce and fruit corers in vegetable and fruit processing, as well as packing robots for biscuits and confectionery.

Integrated systems are not confined to the production process alone but can be extended to the packaging of the products as well. With the introduction of conveyor belts, collators and automated packers, the processing process has also been greatly improved. Food processing technology is required to comply with many requirements including protection against contamination and low pollution emission. As manufacturers often have a wide range of products, a more sophisticated processing system may be required to ensure correct product processing as well as to provide flexibility to cater for frequent product changes.

**6.0 Substitute Products**

The use of some types of F&B machineries can be substituted with the use of manual labour. Nonetheless, the use of F&B machineries can offer partial or full automation processing that minimises the risk of human error, drive operational efficiency and productivity, allow for scaling up of production and undertake processes that are risky or cannot be performed by manual labour. As such, F&B processing machineries are expected to continue undertaking a vital role in the processing of F&B products.

**7.0 Relevant Laws and Regulations**

Notable laws and regulations that are relevant to the F&B processing industry in Malaysia include but are not limited to the Factories and Machineries Act 1967, the Local Government Act 1976, the Environmental Quality Act 1974, the Occupational Safety and Health Act 1994, the Street, Drainage and Building Act 1974 as well as the Employees' Minimum Standards of Housing, Accommodation and Amenities Act 1990.

**8.0 Prospects and Outlook of the F&B Processing Machinery Industry in Malaysia**

The outlook of the local F&B processing machinery industry during the forecast period from 2023 to 2027 is positive. Factors boosting growth within the local F&B processing machinery industry are likely to come from the labour shortage issues in the country that have spurred the adoption of more industrial automation, leading to higher demand for processing machineries, a wide range of F&B products requiring processing and consumer preference for convenient processed food products. The support from the Malaysian Government to develop the local food-related industries is also expected to help support demand for F&B processing machineries. Furthermore, a growing population will likely drive higher consumption of food and thus, supporting the increasing need for more F&B processing machineries. Nonetheless, high inflationary pressure is expected to weaken purchasing power and affect consumer sentiment. On the supply side, the Malaysian F&B processing machinery industry is expected to benefit

**8. INDEPENDENT MARKET RESEARCH REPORT (cont'd)**

from the advancement in technology in the country whereby the production processes are fully or partially automated with minimal requirement of manual labour.

The Malaysian F&B processing machinery industry is expected to grow from RM1.80 billion in 2023 to RM2.66 billion in 2027, registering a CAGR of 9.7%.

### **9.0 Prospects of the F&B Processing Machinery in Indonesia**

The Indonesian economy expanded by 5.3% in 2022 (2021: 3.7%) on the back of revived spending following the lifting of pandemic restrictions and a surge in exports in tandem with a global commodity boom. The expansion was broad-based across all industries with the transportation and storage as well as the accommodation and food service activities industries registering a double-digit growth. Indonesia's economy is projected to grow by 5.0% and 5.1% in 2023 and 2024 respectively.

With a population of 275.8 million people in mid-2022, Indonesia has been actively developing its F&B sector to fulfil domestic demand. The primary sector, which produces raw materials for the F&B industry by agriculture, plantation and fisheries as well as the manufacturing of F&B products are notable contributors to the Indonesian economy. In particular, growth in the Indonesian F&B processing industry is supported by increasing consumer purchasing power, changing demands towards modern packaged food products, influence of western food and the emergence of large global companies in the country.

At the same time, other trends driving the F&B processing industry stem from rising health consciousness increasing demand for healthy packaged food products, including snacks, noodles and baked goods, as well as higher demand for quick preparation meals and frozen foods that cater to busy urban lifestyles. Some of the major F&B processing segments in the country include dairy, baby food, baked goods and noodles. Expanding consumer preferences for milk, yoghurt and cheese have also increased the market size of dairy-based packaged goods. Other processed food such as baked goods and noodles, confectionery and condiments have also led to increased demand for wheat, nuts, dried fruits and ground or powdered spices. The continued development of the Indonesian F&B processing industry is expected to bode well for the expansion of the F&B processing machinery industry, which serves as a crucial enabling industry to the F&B sector.

Locally produced processing machinery are mostly of older and less sophisticated technology and local suppliers face challenges in meeting the demand from local F&B manufacturers, especially from large and established players. As such, the majority of machinery for processing F&B has to be imported.

### **10.0 Prospects of the F&B Processing Machinery in the Philippines**

The economy of the Philippines grew stronger in 2022 after registering an annual growth of 7.6% (2021: 5.7%). The economic growth in the country was driven by pandemic risk management and the easing of mobility restrictions leading to higher economic activities and more jobs created despite external headwinds. The wholesale and retail trade, repair of motor vehicles and motorcycles, manufacturing and construction were sectors that contributed the most to the growth. The Philippines' economy is projected to grow by 6.0% and 5.8% in 2023 and 2024 respectively. As of 1 May 2020, the total population of the Philippines was 109.0 million people.

The F&B processing industry in the Philippines is one of the main drivers of the country's manufacturing sector and has continued to expand over the years. As such, the industry has been identified by the Philippines government as a priority sector for attracting foreign investment under special economic zones. The Philippines' F&B processing industry is composed of several major segments, including fruits and vegetables, fish and marine products, meat and poultry products, flour and bakery products, beverages, confectioneries, dairy products, food condiments and seasonings, food supplements, bottled water, snack foods and fats and oils.

A large percentage of the local F&B processing industry's output is consumed domestically. Some of the factors supporting demand for processed food in the country include population growth, rising middle income earners, increasing number of dual-income families, higher disposable income, a young highly urbanised population with increasingly sophisticated tastes, easier access to supermarkets, as well as higher awareness of food quality and safety.

The F&B processors located in the country are mostly micro, small and medium enterprises, of which many are owned by single proprietor. However, there also exist large integrated corporations that dominate the Philippines' market and can compete on equal footing with foreign players. The continued development of the F&B processing industry in the Philippines is expected to bode well for the expansion of the F&B processing machinery industry in the country.