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DISCUSSION PAPER 2/22 | 23 NOVEMBER 2022

Deconstructing Malaysia's Food Import Bill: It is Not the Only Measure of Food Security

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Khazanah Research Institute

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This discussion paper was prepared by Dr Sarena Che Omar and assisted by Dr Teoh Ai Ni from the Khazanah Research Institute (KRI). The author is grateful for the valuable comments from Nik Syafiah Anis internally, and Prof Dr Shaufique Siddique from Universiti Putra Malaysia.

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Deconstructing Malaysia's Food Import Bill: It is Not the Only Measure of Food Security

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Summary

- In 2021, Malaysia imported around RM79bn worth of food items. That is double the amount a decade ago. Not surprisingly, this has caused some public concern regarding the rising import bill.
- A closer study of what constitutes this large import suggests a portion comprising commodities as well as a population growth that is experiencing diet diversification.
- Instead of worrying about a large food import bill, the focus should be towards addressing the multidimensionality of food security.
- Even if we can, theoretically, domestically produce all the cereals, vegetables, milk, and meat needed, if the population chooses to only consume unhealthy food every day in a way that was produced unsafely and unsustainably, it is still a food security issue.
- In summary, a high import bill per se is not a reflection of threatened food security.

1. Introduction

We often hear about how high Malaysia's food import bill is, and therefore, an urgent need to do something to ensure food security.

However, how true is the assumption that a high import bill equates to a threat to food security? To put it differently, does having a low import bill (i.e Malaysia produces and consumes almost entirely domestic food) mean a more food-secure nation? What is the point if we can produce all the key food items domestically if it was done at the expense of the environment, food safety, and costing the taxpayers billions of Ringgit?

To do this, we need to understand four topics explained in this article:

a) Deconstructing Malaysia's 2021 Import of Food Items

b) How Do We Fare Compared to Other Countries

c) Diet: A Changing Trend and the Influence on Malaysia's Import

d) Self-sufficiency Level: Is It the Only Way to Measure Food Security?



Image source: by Stunning Art from Shutterstock

2. International Definitions

According to the World Trade Organization (WTO), the Uruguay Round Agreement on Agriculture defined Agricultural Trade as "… the definition covers not only basic agricultural products such as wheat, milk and live animals but the products derived from them such as bread, butter and meat, as well as all processed agricultural products such as chocolate and sausages. The coverage also includes wines, spirits and tobacco products, fibres such as cotton, wool and silk, and raw animal skins destined for leather production. Fish and fish products are not included, nor are forestry products"[1].

For this article, food import comprises: basic agricultural products, products derived from them, processed products, and fish and fish products are included except for animal skin and fabrics.

The Harmonized System (HS) Commodity Code is a categorisation system introduced by the United Nations Commodity Trade Statistics Database (COMTRADE) to code for every type of goods imported or exported within the global market[2]. The codes included as food in this article are HS 02 to 22 (excluding HS 05, 06 and 14) out of a total of 98 commodities categorised[3].

By using the above HS codes for food, it was discovered that 10 years ago, Malaysia imported around RM35bn worth of food which is about 6.5% of the total amount of goods imported (total RM544bn)[4]. By 2021, Malaysia almost doubled its import bill at RM78bn worth of food items. This is about 8.0% of the total amount of items imported[5].

In comparison, Malaysia exported a total of RM82bn of food items, resulting in a **net export bill of RM23bn** if we include oil palm.

At ~RM79bn food imported: is this an alarming figure? The answer depends on what constitutes imports and how Malaysia fare relative to other comparable countries. For a country located on the fertile equator with a large land area, not producing a single food item and relying fully on imports, is not a wise strategy. This is indeed true. But does this mean that Malaysia should then, on the other end of the scale, produce everything it consumes? Is Malaysia's import bill a reflection of heavy reliance on essential food items to fulfil all of its consumption needs? A closer inspection of the constituents of the national import bill and the nation's self-sufficiency levels suggests such is not exactly the case.

[1] Link to the WTO Uruguay Round Agreement
[2] Link to the UN HS Commodity Code
[3] Refer to the Appendix for the list of categories included as food and excluded
[4] With 2008 exchange rate of 3.50 at the end of Dec 2008
[5] With 2018 exchange rate of 4.13 at the end of Dec 2008

3. Deconstructing Malaysia's 2021 Import of Food Items

Using 2021 as an example year, the import data from the UN COMTRADE Database for food items showed that out of a total of RM78bn food imported, the top three largest food imports were categories belonging to #1 animal and vegetable fats, #2 cereals and #3 cocoa-based products (HS15, HS10 and HS18) at more than RM6bn for each category (See Table 1). Edible meat, dairy, seafood and sugar-related food were ranked only slightly lower (< RM5bn).

The category with the highest import in value is the HS 15 category which consists of animal or vegetable fats and oils, totalling to RM15.11bn. It is debatable if this category should be considered food as it is also a commodity. Often in Malaysia, when calculating the food import bill, this category is excluded. The authors argue that these oils are ultimately used as food items, especially in cooking. Therefore it is deemed reasonable to include this category as a food item. If we exclude this category, then the total import bill is **RM63bn**. This is consistent with the data released by the Department of Statistics Malaysia (DOS) on total agrofood imports in 2021[6].

Within this HS 15 category, there are 22 sub-categories, with the top five involving the different forms of palm oil and coconut oil (Figure 1). This is not surprising given that Malaysia's palm oil companies own large estates in Indonesia. Additionally, Malaysia is not a large producer of coconuts, and we import largely from Indonesia. For example, about 50% of items in the category HS 1513 were sourced from Indonesia and Thailand. Similarly, 90% of items with the HS 1511 code were shown to be imported from Indonesia (Figure 2).

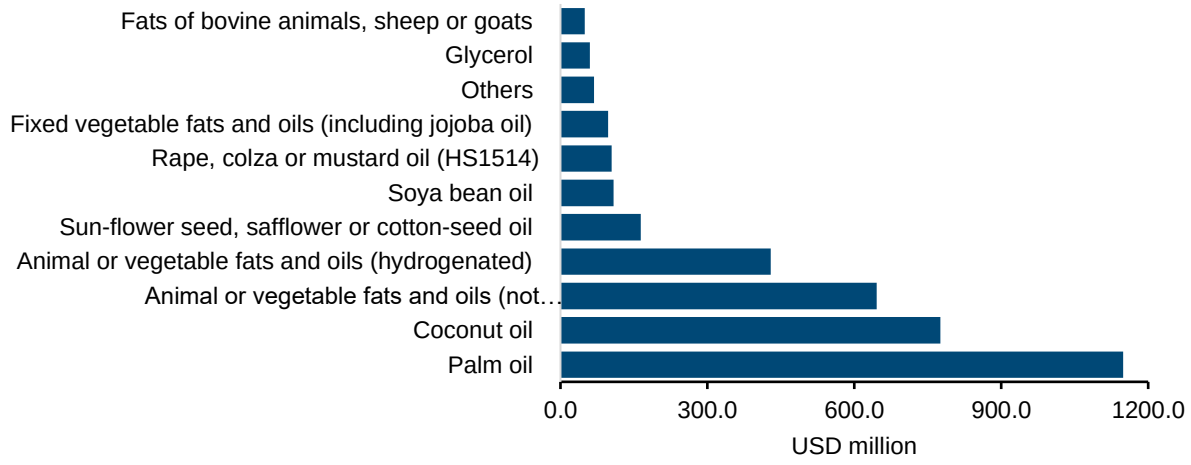
[6] DOS (2022)

Table 1: Malaysia's Food Import (Value) in 2021 Ranked Highest to the Lowest

Commodity Code (HS)	Commodity Description	Trade Value in (US$ billions)	MYR billions[7]
15	Animal or vegetable fats and oils and their cleavage products; prepared animal fats; animal or vegetable waxes	3.65	15.11
10	Cereals	2.15	8.90
18	Cocoa and cocoa preparations	1.51	6.25
21	Miscellaneous edible preparations	1.47	6.09
4	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included	1.15	4.76
3	Fish and crustaceans, molluscs and other aquatic invertebrates	1.11	4.60
17	Sugars and sugar confectionery	1.09	4.51
2	Meat and edible meat offal	1.01	4.18
7	Vegetables and certain roots and tubers; edible	0.99	4.10
8	Fruit and nuts, edible; peel of citrus fruit or melons	0.94	3.89
19	Preparations of cereals, flour, starch or milk; pastrycooks' products	0.90	3.73
9	Coffee, tea, mate and spices	0.69	2.86
12	Oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit, industrial or medicinal plants; straw and fodder	0.69	2.86
22	Beverages, spirits and vinegar	0.51	2.11
11	Products of the milling industry; malt, starches, inulin, wheat gluten	0.50	2.07
20	Preparations of vegetables, fruit, nuts or other parts of plants	0.41	1.70
16	Meat, fish or crustaceans, molluscs or other aquatic invertebrates; preparations thereof	0.17	0.70
13	Lac; gums, resins and other vegetable saps and extracts	0.08	0.33
	SUM TOTAL	**19.03**	**78.78**

Source: United Nations (n.d.)
Note: Refer to the Appendix for a list of the HS Codes included in the food import category.

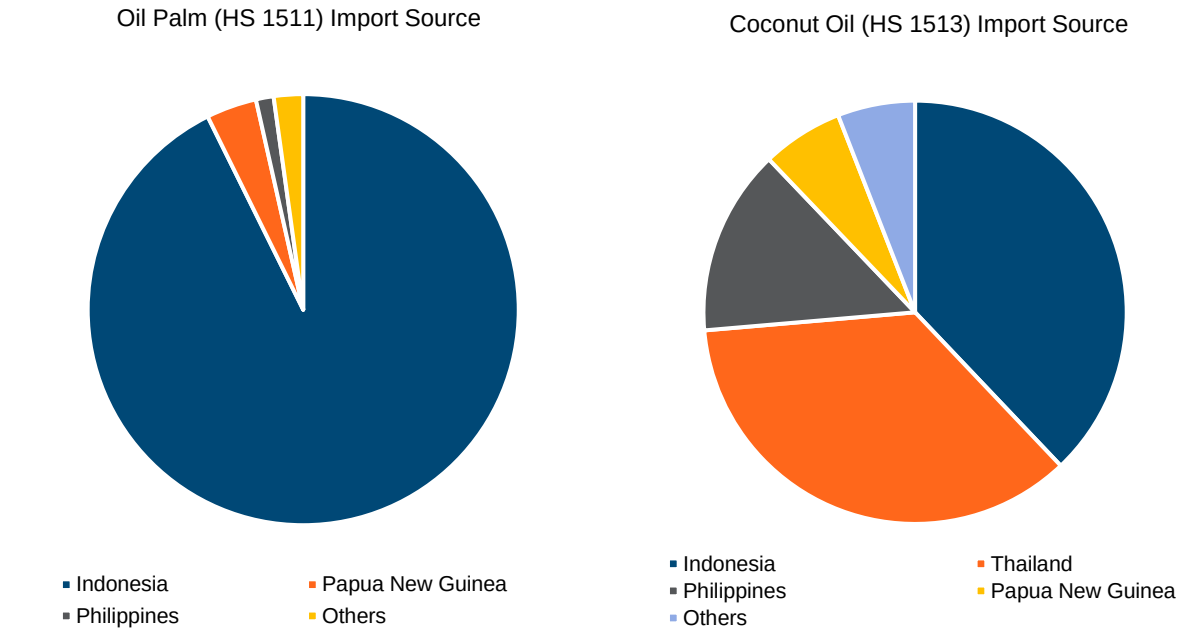
Figure 1: Import of Oils (Top 10 Out of 22 Items under the HS 15 Category), 2021



Source: United Nations (n.d.)
Note: See the Appendix for the list of HS codes used.

[7] Based on the average Malaysia exchange rate against USD of 4.14 in 2021

Figure 2: The Country Source for the Import of Palm Oil (HS 1511) and Coconut Oil (HS 1513), 2021



Source: United Nations (n.d.)

The category with the second-highest import in value is the HS 10 category which comprises the different types of cereals, totalling USD2.1bn (RM8.9bn). Within this category, there are eight sub-categories, with the top three being **maize, wheat, and rice** (Table 2). Maize is mostly imported for livestock feed, while wheat and rice, both imported in similar quantities, are mostly for human consumption. **The proximity in the import value of wheat and rice is not surprising given that the consumption of wheat is increasing at the back of a diet that is diversifying which will be discussed more in the later sections**.

Table 2: Import of Cereals (HS 1001-1008), 2021

Commodity Code	Commodity	Net Weight (Mt)	Trade Value (US$ million)
1005	Maize (corn)	3,555,925	1124.44
1001	Wheat and meslin	1,318,057	427.02
1006	Rice	1,154,186	575.52
1004	Oats	29,141	8.71
1008	Buckwheat, millet and canary seeds; other cereals	15,074	7.99
1003	Barley	3,288	1.92
1007	Grain sorghum	779	0.53
1002	Rye	1	0.01
	TOTAL	**6,076,453**	**2146.15**

Source: United Nations (n.d.)

An interesting observation is seen within the rice import composition. In 2021, Malaysia imported about 1.154 million Mt of rice, valued at 576 million USD. As depicted in Table 3, as much as 98% of this import comprises milled rice (no husk), which is a processed version of rice ready for direct consumer purchase (HS 100630). Looking at this import of milled rice (HS 100630), Malaysia imported from as many as 12 different countries (Figure 3). Malaysia imported the most milled rice from India (38%), followed by Pakistan (22%), Vietnam (21%) and Thailand (12%). As both India and Pakistan are one of the world's biggest exporters of Basmati rice[8], we assume that Malaysia imports most of its Basmati rice from these countries, with jasmine rice and fragrant rice from Vietnam and Thailand. Malaysia also imports from Japan (0.015% or 164 Mt), likely as Japonica rice, as well as from Italy and Spain (0.001% or 8 Mt) likely as risotto.

Table 3: Import of Rice (HS 1006), 2021

HS Code	Type of Rice Imported	Mt	Trade Value (US$ million)
100630	Cereals; rice, semi-milled or wholly milled, whether or not polished or glazed	1,129,442	565.99
100640	Cereals; rice, broken	22,937	8.40
100620	Cereals; husked (brown) rice	1,808	1.13
	TOTAL	**1,154,186**	**576**

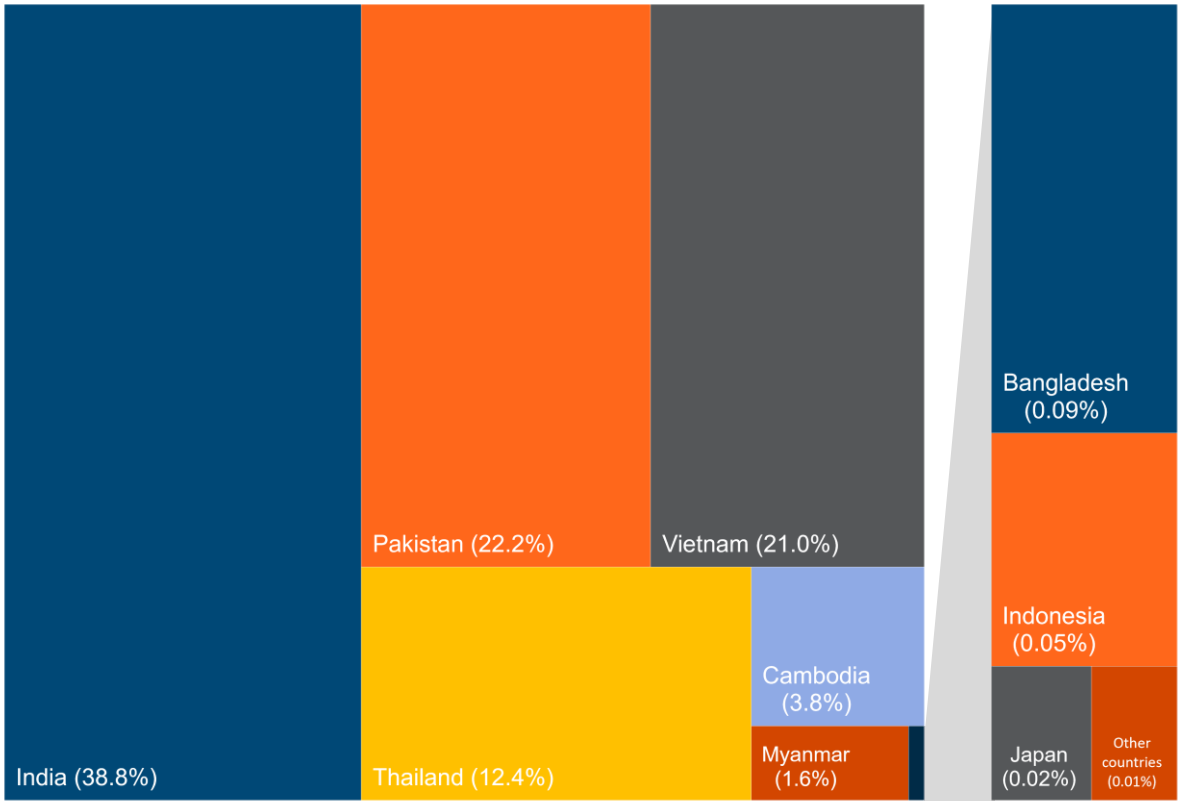
What can be concluded from these data is that Malaysia is not in a situation whereby it is fully relying on imports from one source country to meet its basic need for cheap rice. A large proportion of Malaysians consume cheap rice from domestic production (SSL of 65.0%). Malaysia's rice imports, in addition to cheaper medium grain rice, also comprise speciality rice such as basmati, jasmine, sushi, and risotto rice. On top of import data showing that rice import quantity equals wheat import, this suggests that we are importing based on consumer preference and purchasing power.

A worrying scenario is if Malaysia imports more than 50% of its domestic needs, whereby the import quantity is much higher than wheat import (showing lowered consumer dietary diversification and reliance on one type of food as a carbohydrate source), comprising of cheap rice and comes from one source country. This would certainly put Malaysia in a vulnerable position concerning the supply and access to our staple food, rice. However, as explained in the previous paragraphs, such is not the case.

Of course, this does not mean that domestic rice production is not important. We should still work towards improving our farm productivity and efficiency to be able to sustainably produce more rice of better quality, to meet growing demand as the back of population growth.

[8] Tradologie (2020)

Figure 3: Import Origins of Rice for Malaysia, 2021



Source: United Nations (n.d.)



Image source: Kaiskynet Studio on Shutterstock

The category with the third-highest food import in value is the HS 18 category which consists of the different forms of chocolate-related food items totalling USD1.51bn (RM6.2bn). At first glance, this is unexpected, giving the impression that Malaysians seem to consume more chocolates than other key food items like seafood, dairy and meat. However, further explanation is needed.

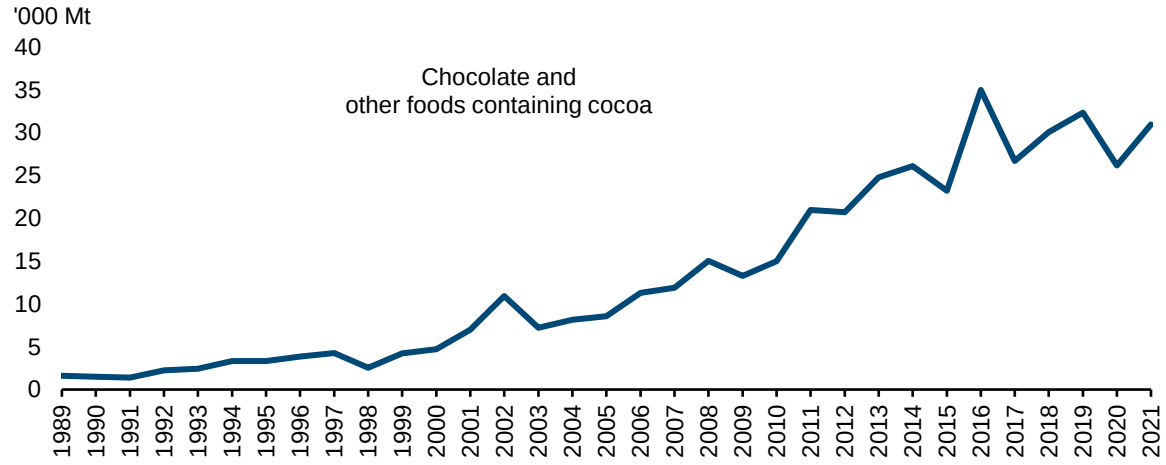
Within this category, there are six sub-categories, with the top import being cocoa beans (Table 4). Imports of raw materials such as cocoa for downstream processing benefit the economy for value addition activities they create. Malaysia is one of the top 10 cocoa grinders in the world[9] whereby most of the downstream product is re-exported, and the cocoa processing and manufacturing industry contributes approximately 0.1% of the national GDP. This explains the large number of cocoa imports, especially for cocoa beans (HS 1801) which comprise 85% of the total cocoa-based imports! What is also interesting, is that since 1989, there has been **an increasing trend in consuming chocolates and food containing cocoa** (HS 1806) which is deemed to be a luxury food item or non-essential (Figure 4).

Table 4: Import of Cocoa and Cocoa Preparations (HS 1801-1806), 2021

Commodity Code	Commodity	Net Weight (Mt)	Value (US$ million)
1801	Cocoa beans; whole or broken, raw or roasted	478,787	1209.37
1803	Cocoa; paste; whether or not defatted	36,808	84.72
1806	Chocolate and other food preparations containing cocoa	30,964	160.67
1805	Cocoa; powder, not containing added sugar or other sweetening matter	10,265	24.31
1804	Cocoa; butter, fat and oil	5,855	28.32
1802	Cocoa; shells, husks, skins and other cocoa waste	1,016	0.48
	TOTAL	**563,694**	**1,507.87**

Source: United Nations (n.d.)

Figure 4: Import of Chocolate and Other Foods Containing Cocoa (HS 1806), 1989-2021



Source: United Nations (n.d.)

[9] Khazanah Research Institute (2018)

4. How Do We Fare Compared to Other Countries with Regard to Food Imports

According to the WTO, as part of the Uruguay Round, there are a total of 31 Net Food-Importing Developing Countries (NFIDCs)[10]. They are Antigua and Barbuda, Barbados, Bolivarian Republic of Venezuela, Botswana, Côte d'Ivoire, Cuba, Dominica, Dominican Republic, Egypt, El Salvador, Gabon, Grenada, Honduras, Jamaica, Jordan, Kenya, Maldives, Mauritius, Mongolia, Morocco, Namibia, Pakistan, Peru, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Senegal, Sri Lanka, Swaziland, Trinidad and Tobago and Tunisia. **Malaysia doesn't fall within the category because based on the definition of food trade described earlier, Malaysia is a net exporter due to its high production of oil palm.**

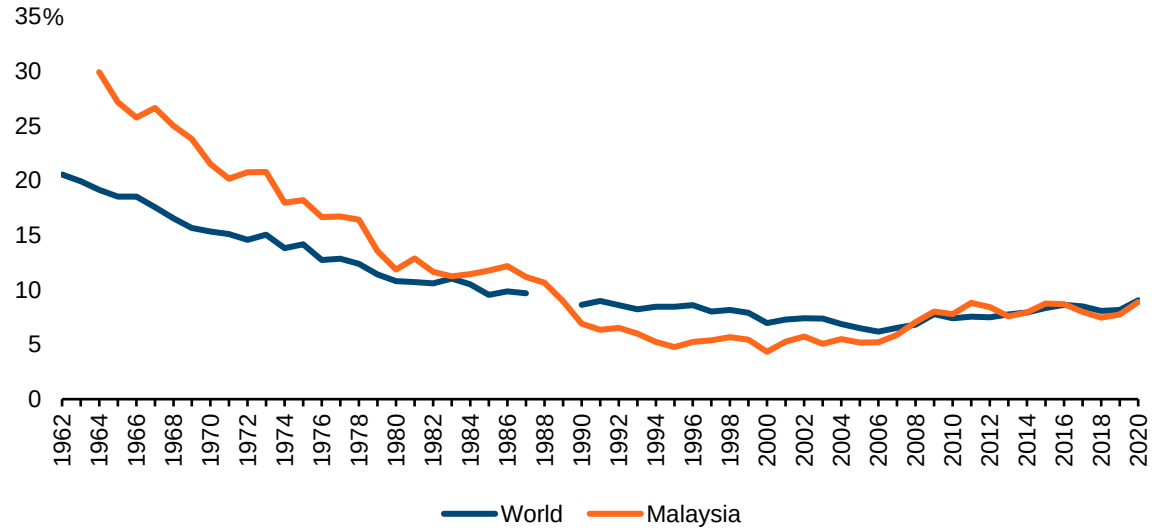
Nonetheless, there are ways to help understand Malaysia's import vulnerability compared to other countries.

The share of food import expenditure to total merchandise imports indicates a country's reliance on food imports compared to its overall import. According to Brooks and Matthews[11], a high or rising share of food import expenditure to total merchandise imports at the back of decreasing foreign exchange earnings suggests increasing difficulty in obtaining these imports or meeting the demand. It is thus a rough estimation of a country's food import vulnerability.

Looking at Malaysia's food import as a percentage of total merchandise import, it has been declining from the 1960s up to the 2000s, with a slight increase, hovering around 7-8% over the last decade, following the world average very closely (Figure 5). On the contrary, our neighbouring countries such as Indonesia and the Philippines, seem to have a higher percentage than the world average and are showing an increasing trend (Figure 6). On the opposite side, Singapore shows a steady decline and is well below the world average. So Malaysia sits in between these two opposites.

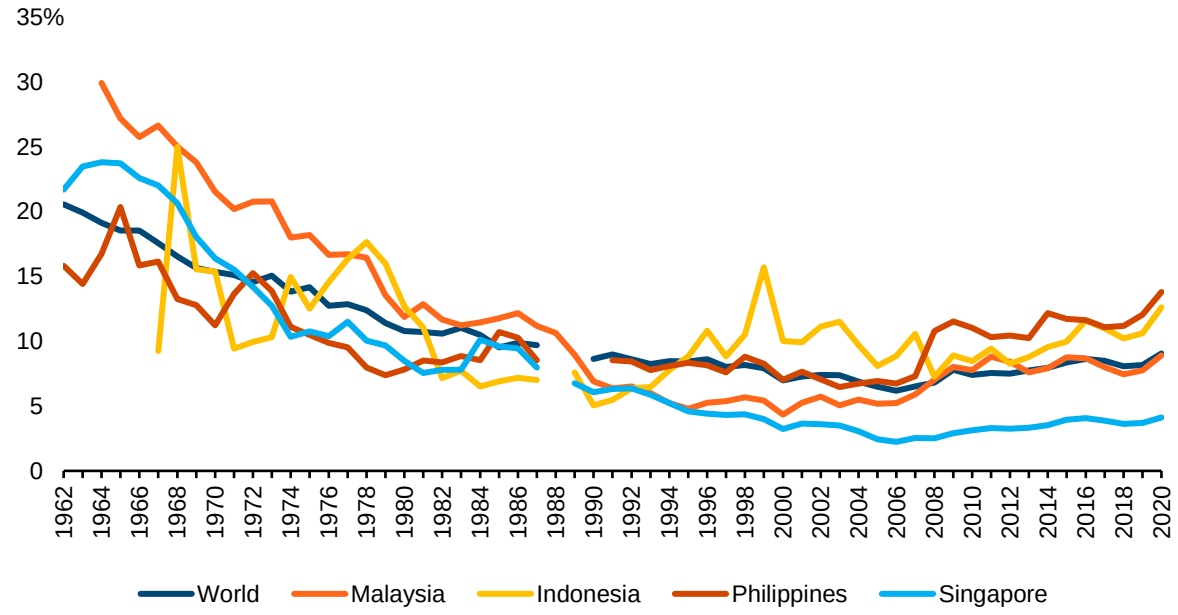
[10] WTO List of NFIDC for the purposes of the Marrakesh Ministerial Decision, revised 21 March 2012 (LINK)
[11] Brooks and Matthews (2015)

Figure 5: Share of Food Import to Total Merchandise Import, 1962-2020



Source: United Nations (n.d.)

Figure 6: Share of Food Import to Total Merchandise Import by Selected ASEAN Countries, 1962-2020



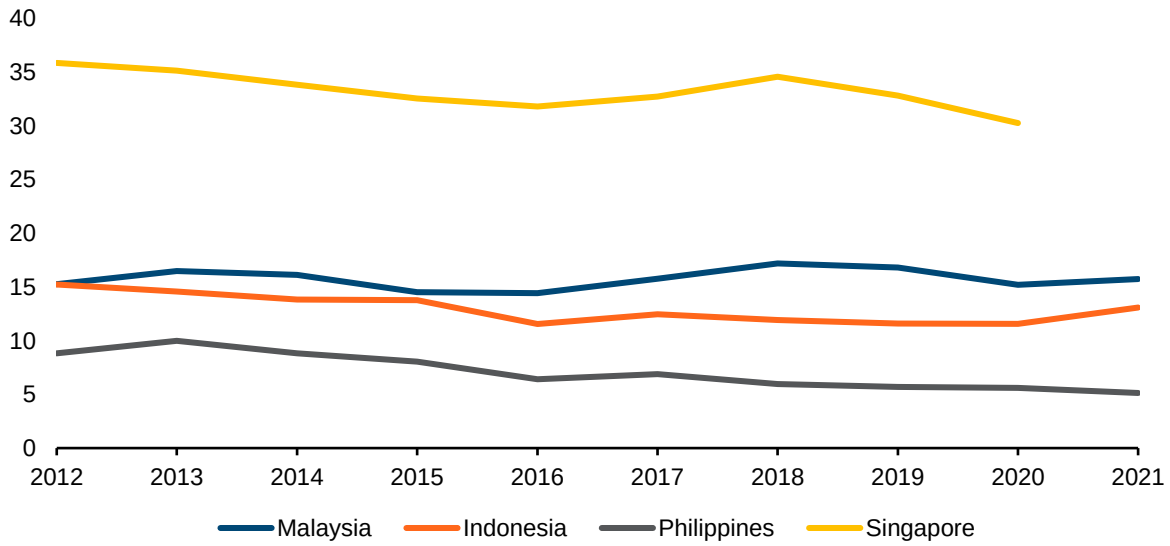
Source: United Nations (n.d.)
Note: Missing data for the year 1988.

The coverage ratio is the second indicator to gauge the capacity of a country's foreign exchange earnings (from merchandise trade, service export and migrants' remittances) to finance import bills[12]. To examine the capacity of exports to finance food imports, the food import coverage ratio was calculated as the total export-food import ratio in this article.

As depicted in Figure 7, Malaysia's coverage ratio of food imports was relatively stable over the past decade at around 14-17. On the other hand, Indonesia initially showed a downward trend but recovered in 2021. Although Singapore has a higher coverage ratio of above 30%, it is showing a gradual downward trend as seen with the Philippines. The decline in export capacity to cover food import purchases can reduce the country's ability to finance its food imports in the longer run.

Along with the observation in Figure 5, the relatively stable Malaysia's share of food import value in total merchandise import and food import coverage ratio over the recent years suggests that our food import bill does not show signs of unsustainability in terms of financing ability. **Although food import has increased as compared to decades ago, Malaysia's total export earnings have similarly risen to meet the cost of food import bills.**

Figure 7: Food Import Coverage Ratio of Total Export to Food Import by Selected ASEAN Countries, 2012-2021



Source: United Nations (n.d.)

[12] Brooks and Matthews (2015)

5. Hedging Against Domestic Shocks

According to a study by Abbott (2012), it was concluded that domestic-level shocks to the production system are, in some countries, more severe and probable than international shocks (at the back of expected periodic global price spikes)[13]. For example, Minot (2011) cited several pieces of evidence showing that Sub-Saharan Africa experiences higher price volatility due to domestic supply shocks than volatility due to international markets[14]. Furthermore, quoted from a Nature publication simulation study "In other words, food trade can hedge countries against the risk of idiosyncratic shocks to agricultural output that may happen, for example, in the wake of adverse weather conditions or natural disasters" Grassia et al (2022)[15]. This paper showed that both Indonesia and Malaysia can handle domestic shocks as well as Europe, North America and the Pacific Region by leveraging on international trade, leaving mainland Southeast Asia and the Philippines to be more vulnerable to domestic shocks with poorer trade advantages.

So what does this mean? **It suggests that ensuring an absolute reliance on domestic production isn't free from vulnerabilities either.** Certain regions, due to mainly environmental factors such as weather and soil type, determine the main type of crop to be cultivated. For example, the Northern states of the Peninsula, primarily Kedah, Perlis and Pulau Pinang, have an optimal environment to grow lowland paddy such as alluvial soil[16].



Image source: Laboo Studio on Shutterstock

Should, for example, severe weather such as a serious flooding incident occur in the Northern states and damage all the paddy fields. Assume that Malaysia relies fully on domestic rice production to meet its demand, with more than 50% of this rice produced in the Northern States. If such is the case, then this one flooding incident could severely impact supply and domestic prices for the whole of Malaysia. As of 2021, 90% of the total rice produced domestically is from the Northern States[17].

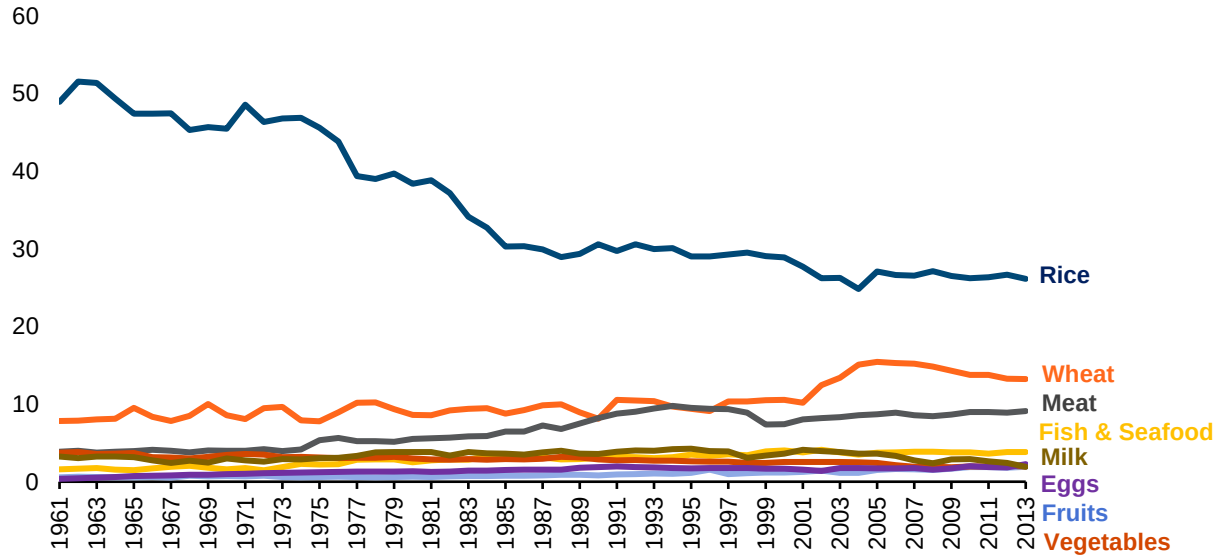
Therefore, having some percentage of import, and importantly, sourcing it from various countries, may be a good strategy to balance between minimising domestic shocks, against global shocks.

[13] Abbott (2012)
[14] Minot (2011)
[15] Grassia et al. (2022)
[16] Ghazali et al. (2016); Alva and Peterson (1979)
[17] MAFI (2022)

6. Diet: A Changing Trend and the Influence on Malaysia's Import

Over the years, consumers in Malaysia have experienced diet diversification, concurrent with the growth of the economy and increasing wealth of the citizens. This effect is even more apparent in the last 10 years as described later in this section. Figure 8, taken from Khazanah Research Institute's 'The Status of the Paddy and Rice Industry in Malaysia" illustrates the growing dietary diversification trend. In 2018, Malaysians still consume rice as a main source of caloric intake, which was 3 times more than wheat. However, the long-term trend over five decades showed a decreasing amount of rice consumed, replaced by an increasing amount of wheat and other main food items, especially meat and seafood.

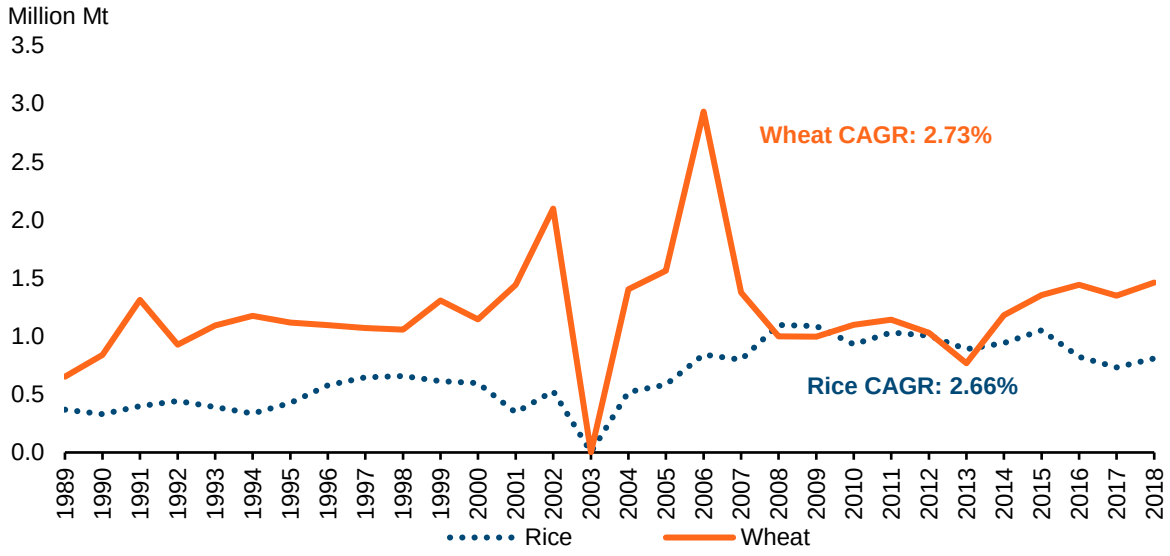
Figure 8: The Percentage Share of Caloric Supply of Total Calories, 1961–2013



Source: FAOSTAT (n.d.), Khazanah Research Institute (2019)

Malaysia is 65% self-sufficient (see Box Article) in rice production and does not cultivate wheat. Therefore, with a wheat Compound Annual Growth Rate (CAGR) of 2.73% at the back of continued diet diversification, we would expect to see a further reduction in the gap between the amount of wheat and rice being imported in the upcoming years (Figure 9).

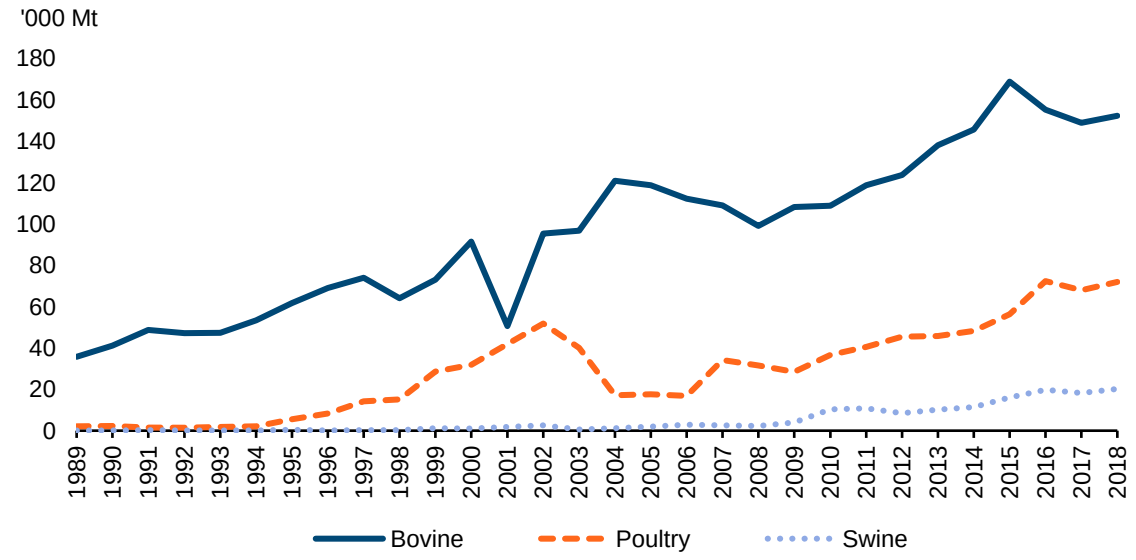
Figure 9: The Import Quantity of Wheat (HS1001) and Rice (HS1006), 1989-2018



Source: United Nations (n.d.)

This pattern in dietary diversification is a result of increasing global trade (physical access) and consumer wealth (economic access). As stated in Bennet's Law that as the incomes of a population rise, consumers eat relatively less calorie-dense starchy staple foods and more nutrient-dense food items such as meats, oils, sweeteners, fruits, and vegetables. This phenomenon can be seen in Malaysia's increasing consumption of meat as part of its daily caloric intake (Figure 8). This is even clearer when the import of meats was investigated by meat types (Figure 10). The increasing demand for luxury food is obvious in the meat category whereby that of bovine meat has continued to increase and dominated the meat import category relative to poultry and swine whereby Malaysia is self-sufficient at 99.9% and 93.4% respectively.

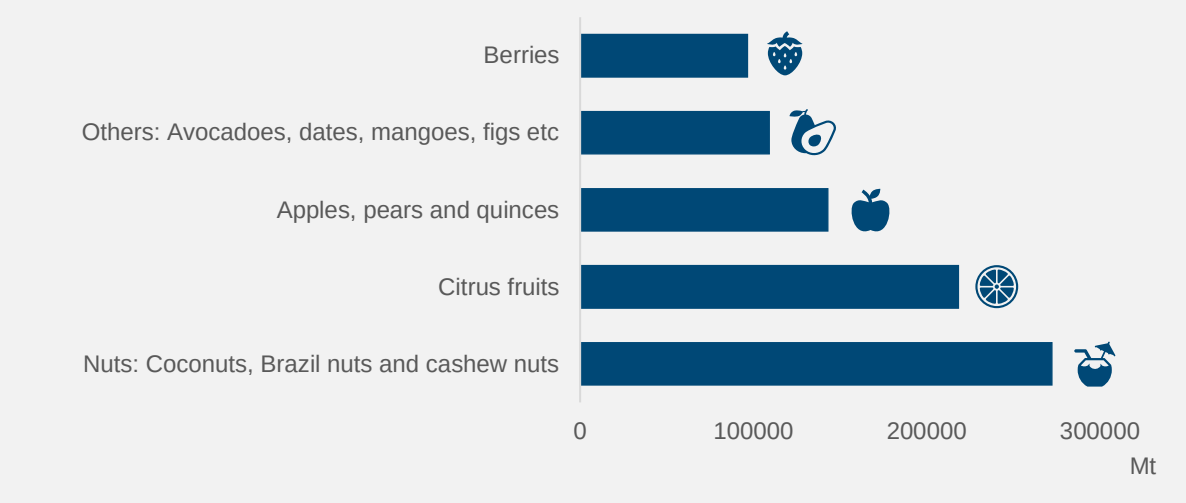
Figure 10: Import Quantity of Bovine (HS 0201 and HS 0202), Poultry (HS 0207) and Swine (HS 0203) as Fresh, Chilled or Frozen, 2018



Source: United Nations (n.d.)

Similarly, we see an increasing import trend for the import of fruits and nuts in recent years. Within this category, **the largest quantity imported is nuts (coconuts), followed by oranges, and apples** (Figure 11).

Figure 11: Sub-category Import Ranking of Fruits and Nuts (HS 08), 2022



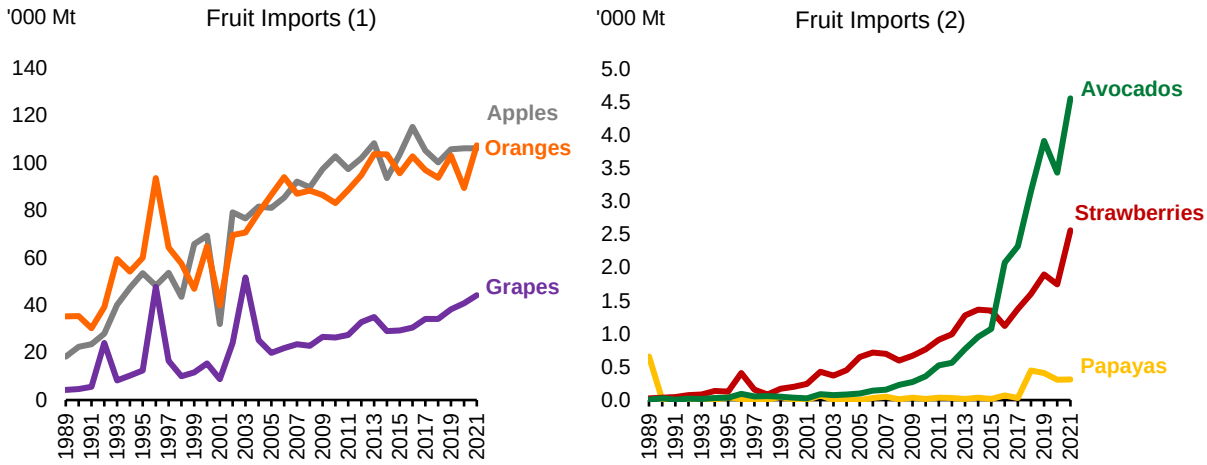
Source: United Nations (n.d.), KRI illustration

What is interesting is that while popular temperate fruit items such as grapes, oranges and apples showed a more gradual increase (Figure 12), implying increasing consumption due to population growth, healthier food choices and improved purchasing power, we begin to see a **steep increase over the last five years, in luxury fruits such as avocadoes and strawberries** compared to tropical fruit imports such as papayas (Figure 12). This is likely due to the proliferation of cafés and restaurants in the Klang Valley serving avocadoes and strawberries in meals and desserts in recent years. Westernisation of food habits, rising socio-economic status, and commercial marketing and advertising that tend to promote these fruits as superfoods also contributed to this phenomenon.



Image source: Beats1 on Shutterstock

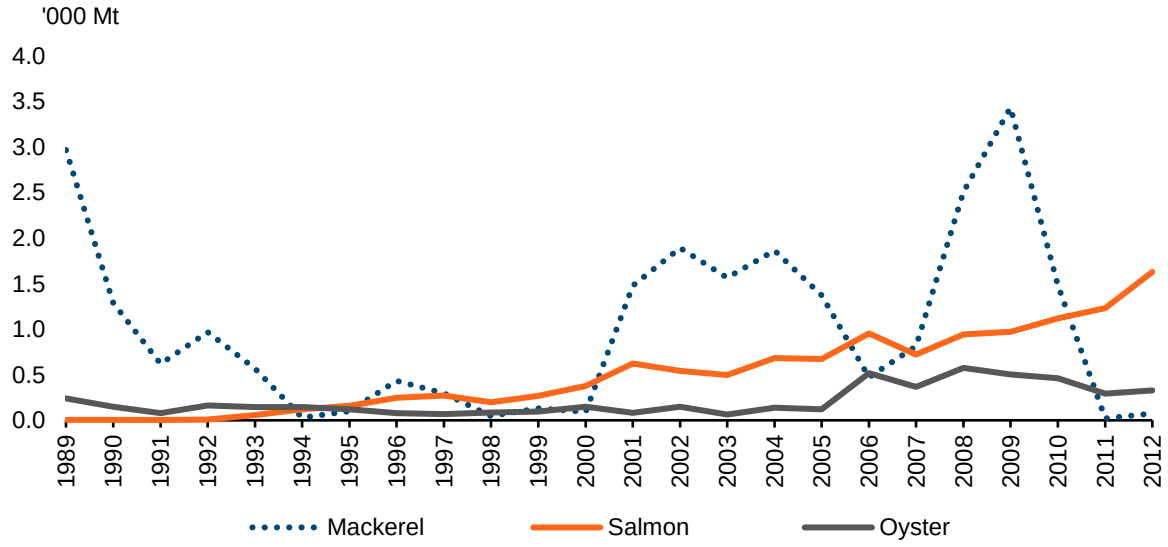
Figure 12: Import Timeline of Popular Fruits, 1989 – 2021



Source: United Nations (n.d.)

The trend of consuming a more diversified and expensive food is again repeated within the seafood category. Here, mackerel fish is considered a staple fish in Malaysian cuisine. Upon scrutinizing its import trend, Mackerel's pattern has fluctuated over the years, depending on local supply (Figure 13). On the other hand, there is an increasing trend in the import of luxury seafood items such as salmon and oysters.

Figure 13: Import Quantity of Mackerel (HS 030264), Salmon (HS 030212), and Oyster (HS 030710), 2018



Source: United Nations (n.d.)

In conclusion to this section, there are several contributing factors to our increasing import bills. Population growth meant that demand has risen, leading to an increase in almost all imported goods. There is a particularly steeper incline for luxury food items which is related to economic development and prosperity. Furthermore, a lot of our import bills are contributed by goods we cannot produce locally such as temperate cereals, fruits, and vegetables, except for rice and coconuts.

Box Article: Self Sufficiency & Food Security

Self-Sufficiency Level (SSL) is defined as "needing no outside help in satisfying one's basic needs, especially concerning the production of food"[18]. The self-sufficiency status of a food item can be measured using the SSL formula:

$$SSL = Production/(Production + Import - Exports) \times 100$$

Source: FAO Statistical Pocket Book

Due to reasons of national security and a country's political interest, to be able to provide staple food for its citizens without relying on other countries is deemed desirable. As such, many countries use SSL as an indicator of food security and the basis for policy design. However, while not contesting its importance, SSL of food alone is not enough to fully achieve food security as SSL is unable to capture the other dimensions of food security discussed in the following section.

Food Security - Due to widespread malnutrition and increasing concerns over the future needs of food, the World Food Summit was convened in Rome in 1996. Here, food security was defined as the condition in which "**people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life"** (Figure 14).

Figure 14: The Multidimensionality of Food Security



Source: Khazanah Research Institute (2019), FAO (2006)

The definition indicates the complexity of food security, which goes beyond domestic food production. By only focusing on SSL, other key factors such as environmental sustainability (long-term supply of limited natural resources), resilience against climate change, supply chain efficiency (minimising food loss), profit equitability across the supply chain and welfare of the producers and consumers (food safety, quality, and nutrition) may be overlooked.

[18] Oxford Dictionaries

7. Self-sufficiency Level: Is It a True Measure of Food Security?

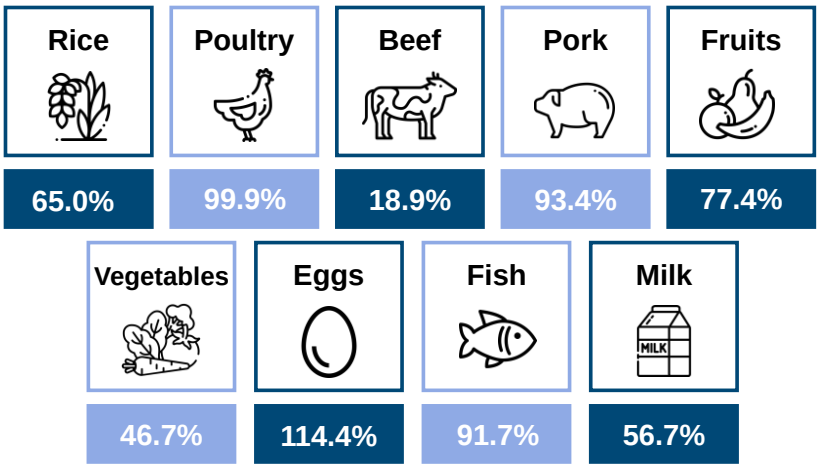
One component of food security is availability. It is important to emphasise that while it is an important component, availability (SSL) alone is not the sole indicator of food security, rather, it is a combinatorial effect of the various dimensions of food security as explained in the box article above.

However, given the perception that we are relying too much on food imports, then the alternative is to expect Malaysia to be able to produce its food. So a comparison to imports is the self-sufficiency level of some key food items. According to the Department of Statistics Malaysia, Figure 15 summarises the nation's SSL status. What we can see here, is that Malaysia is more than 50% self-sufficient in most of its key food items. So, it is not the case that Malaysia is importing all its essential food needs.

Furthermore, if we were to look at the components of Fruits (SSL 77.4%) and Vegetables (SSL 46.7%) (Figure 16), we begin to see that we are almost fully self-sufficient in most local tropical products such as spinach (*bayam*), mustard (*sawi),* rambutan and papaya. Exceptions are chillies and cabbages which we are indeed not self-sufficient in, even though it is possible to grow these crops in Malaysia. The ones we may not be self-sufficient in are temperate items such as strawberries and grapes. These numbers are consistent with the previous section showing that Malaysia's highest imports are temperate fruits such as oranges and grapes, as well as imported vegetables such as shallot, carrot and cauliflower.

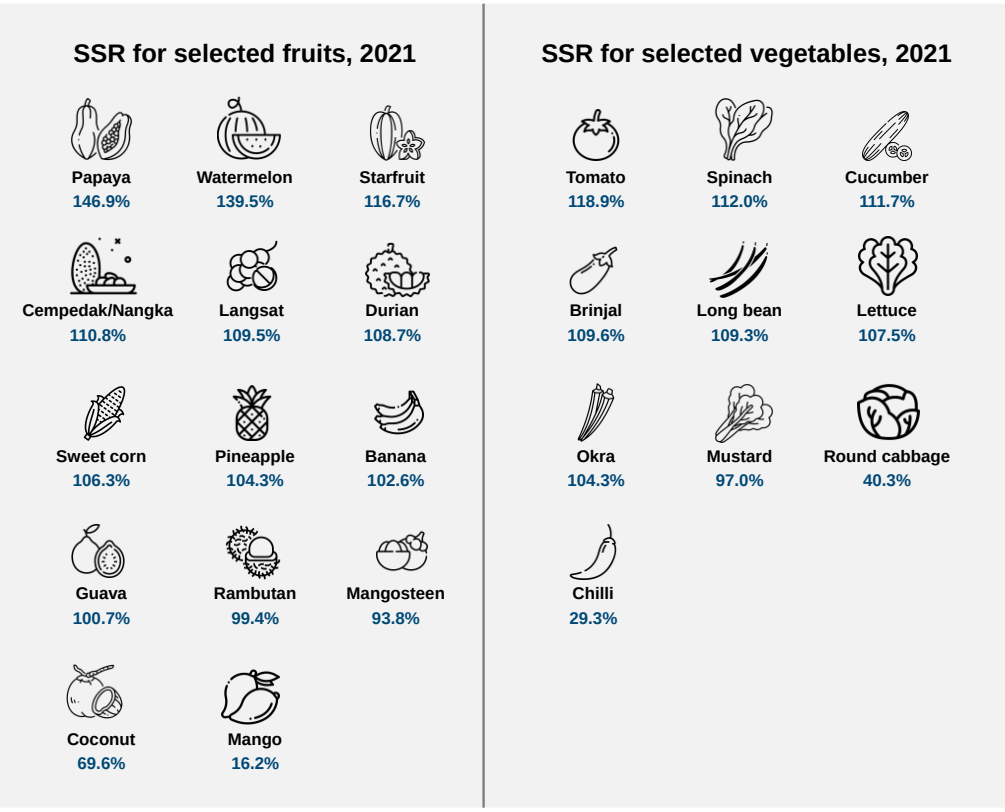
Simply targeting a reduction in food import bills per se with the assumption that we are importing too many essential food items may, therefore, not be the right understanding.

Figure 15: Self-sufficiency Level for Key Food Items, 2021



Source: DOS (2022)

Figure 16: Self-sufficiency Level for Selected Fruits and Vegetables, 2021



Source: DOS (2022)
Note: Not all components comprising the calculation of SSR/SSL for vegetables and fruits, were released. Only a selection of the fruits and vegetable components was released, as above.

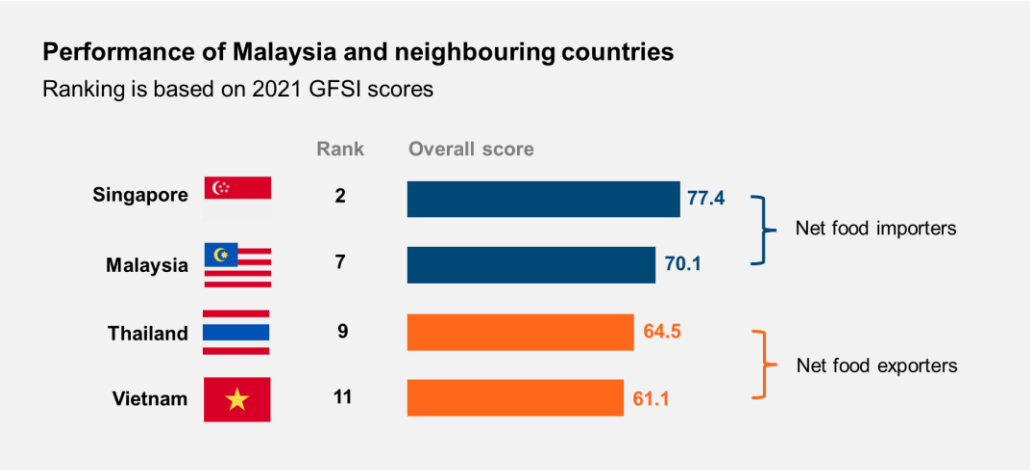
7.1. Net Food Exporter and Food Security

To further support the misconception that producing an excess of food is the only measure of being food secure, country rankings by the Global Food Security Index (GFSI) say otherwise.

The GFSI is a composite index measuring food security in 113 countries based on 58 indicators, separated into five categories, namely: food affordability, availability, quality and safety, and sustainability and adaptation.

As depicted in Figure 17, Malaysia and Singapore, both of which are net food importers, scored better than net food exporters in the Southeast Asia region like Thailand and Vietnam in 2021 GFSI. This is because when food security is measured holistically, involving also economic affordability and access to quality water and food, both Malaysia and Singapore ranked better. This beats the assumption that net food exporters or countries that export more food than they import are typically more food secure compared to those that rely more on food imports. Hence, **domestic food production may be a good contributor, but not the sole determinant of a country's food security level.**

Figure 17: Ranking of Malaysia and Neighbouring Countries by GFSI Score, 2021

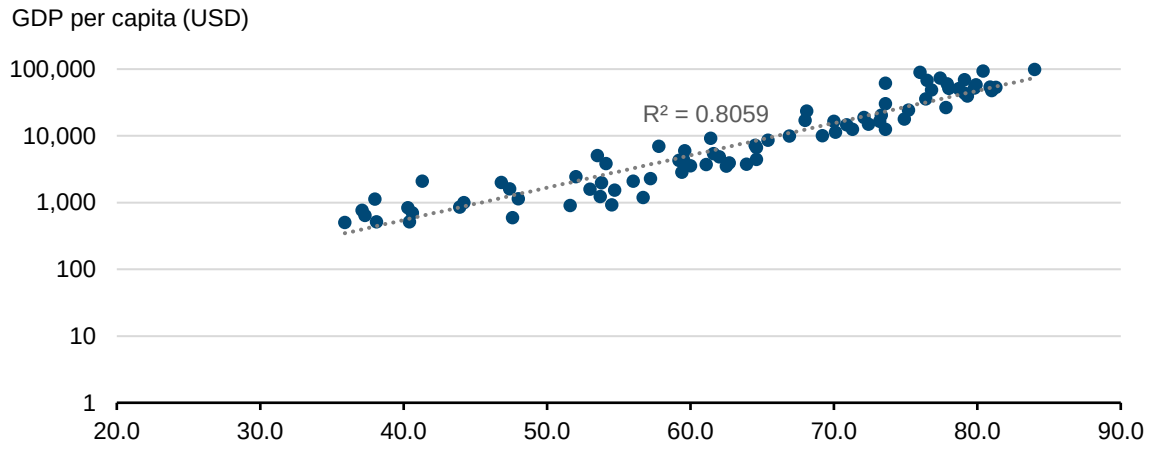


Source: Economist Impact (2022)

To further corroborate that the food import/self-sufficiency of a nation is not the best measure of food security, there is a correlation between the GDP per capita of a country and its food security ranking.

Figure 18 shows a positive trend whereby higher GDP per capita is correlated with higher GFSI scores (correlation coefficient, r=0.95), implying that economic growth and better living standards are one of the conditions contributing to improvements in food security levels. This points to the importance of achieving economic availability and accessibility of food at the individual level, on top of food availability, to improve food security status.

Figure 18: Countries' Log-transformed GDP per Capita in US Dollars by GFSI Scores, 2021



Source: Economist Impact (2022), World Bank (n.d.), with input from Prof. Dr Shaufique Siddique

8. Conclusion

In conclusion, while RM79bn food import may seem like a large amount, a closer inspection revealed that **the largest contributors do not necessarily relate directly to key food items**. Maize is mainly used for feed, while oil palm and cocoa beans from neighbouring countries were imported by local manufacturing companies for downstream exports. In addition, we see an **increasing trend in the import of food items under the luxury category** such as salmon, avocadoes, strawberries, and chocolates. Meaning, there will always be a demand for certain imported goods, especially for speciality items or those that cannot be grown locally.

Furthermore, we know that our key food items such as eggs, milk, poultry, and rice are above 50% in self-sufficiency, meaning our country's local production can meet more than 50% of the national demand for key food items. So, a heavy reliance on imports for key food items is not a correct impression of the nation. This is shown whereby most tropical food items like fruits and vegetables, are mostly 100% self-sufficient or above 60%.

To further emphasise, food security is multi-dimensional. Thus, the ability to locally produce food is just one factor. **It is still important to produce more than 50% of our local food demands**, but other factors such as food preparation hygiene practices, food prices, nutritional quality, and education are **equally** important factors too.

Instead of worrying about a large food import bill and targeting reducing imports per se, the focus should be towards addressing the multidimensionality of food security. Not only should Malaysia be able to produce some of its tropical food products, but the food should also be grown sustainably according to good agricultural practices (**MyGAP**), manufactured according to good manufacturing standards (**GMP**) and prepared according to good hygiene practices (**HACCP**). Consumers should also be educated on consuming a balanced diet that has been appropriately prepared so as not to lose its nutritional contents.

The authors do recognise that an over-reliance on food imports exposes the nation to global food inflation and vulnerability to Ringgit fluctuations. More information on this can be read from KRI's Discussion Paper titled "The Looming Global Food Crisis: An Overview" by Nik Anis Sharifulden (LINK). Meaning, there are concerns and vulnerabilities with an over-reliance on imports, and it should be acknowledged. However, the author of this article is emphasizing that reducing imports alone, cannot solve the nation's overall food security status.

In summary, a high import bill in itself is not a reflection of threatened food security. In addition, as a result of economic growth and prosperity, there will always be a growing demand for products that cannot be produced locally. Importantly, if there is any focus on reducing imports, Malaysia should focus on producing local tropical food items, and do so sustainably and safely. Meaning, other factors of food security such as food affordability, hygiene, utilisation, and nutrition make up a key component that should not be neglected in achieving food security.

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Appendix

APPENDIX: United Nations HS Commodity Code **Included** as Food Import

HS Code	Description
01	**Name**: Live animals **Description**: Live animals
02	**Name**: Meat and edible meat offal **Description**: Meat and edible meat offal
03	**Name**: Fish, crustaceans, molluscs, aquatic invertebrates nes **Description**: Fish & crustacean, molluscs & other aquatic invertebrate
04	**Name**: Dairy products, eggs, honey, edible animal product nes **Description**: Dairy prod; birds' eggs; natural honey; edible prod nes
05	**Name**: Products of animal origin, nes **Description**: Products of animal origin, nes or included
07	**Name**: Edible vegetables and certain roots and tubers **Description**: Edible vegetables and certain roots and tubers.
08	**Name**: Edible fruit, nuts, peel of citrus fruit, melons **Description**: Edible fruit and nuts; peel of citrus fruit or melons.
09	**Name**: Coffee, tea, mate and spices **Description**: Coffee, tea, matï and spices
10	**Name**: Cereals **Description**: Cereals
11	**Name**: Milling products, malt, starches, inulin, wheat gluten **Description**: Prod.mill.indust; malt; starches; inulin; wheat gluten
12	**Name**: Oil seed, oleagic fruits, grain, seed, fruit, etc, nes **Description**: Oil seed, oleagi fruits; miscell grain, seed, fruit etc
13	**Name**: Lac, gums, resins, vegetable saps and extracts nes **Description**: Lac; gums, resins & other vegetable saps & extracts.
14	**Name**: Vegetable plaiting materials, vegetable products nes **Description**: Vegetable plaiting materials; vegetable products nes
15	**Name**: Animal,vegetable fats and oils, cleavage products, etc **Description**: Animal/veg fats & oils & their cleavage products; etc
16	**Name**: Meat, fish and seafood food preparations nes **Description**: Prep of meat, fish or crustaceans, molluscs etc
17	**Name**: Sugars and sugar confectionery **Description**: Sugars and sugar confectionery.
18	**Name**: Cocoa and cocoa preparations **Description**: Cocoa and cocoa preparations.
19	**Name**: Cereal, flour, starch, milk preparations and products **Description**: Prep.of cereal, flour, starch/milk; pastrycooks' prod
20	**Name**: Vegetable, fruit, nut, etc food preparations **Description**: Prep of vegetable, fruit, nuts or other parts of plants
21	**Name**: Miscellaneous edible preparations **Description**: Miscellaneous edible preparations.
22	**Name**: Beverages, spirits and vinegar **Description**: Beverages, spirits and vinegar.

APPENDIX: United Nations HS Commodity Code **Excluded** as Food Import

HS Code	Description
05	Name: Animal originated products; Not elsewhere specified or included Description: Products of animal origin, nes or included Reason for exclusion: not clear if some of these products are used as food
06	Name: Tree and other plants, live; bulbs roots and the like; cut flowers and ornamental foliage Description: Live tree & other plant; bulb, root; cut flowers etc Reason for exclusion: plant material not for consumption
14	Name: Vegetable plaiting material; not specified elsewhere Description: Vegetable plaiting materials; vegetable products nes Reason for exclusion: Not used for food
All other HS categories	Non food/edible items for humans

APPENDIX: United Nations HS Commodity Code used for Table 1

HS Code	Commodity
1511	Palm oil
1513	Coconut oil
1518	Animal or vegetable fats and oils (not hydrogenated)
1516	Animal or vegetable fats and oils (hydrogenated)
1512	Sun-flower seed, safflower or cotton-seed oil
1507	Soya bean oil
1514	Rape, colza or mustard oil
1515	Fixed vegetable fats and oils (including jojoba oil)
1517, 1504, 1509, 1508, 1521, 1510, 1522, 1505, 1501	Others
1520	Glycerol
1520	Fats of bovine animals, sheep or goats