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Food Reserve and Sustainable Development in Malaysia from Islamic Perspectives

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Abstract

Food is one of the essential factors for human being. Hence, this factor has become one of the key elements in Sustainable Development Goals (SDG). The SDG targets to end hunger, achieves food security and improves nutrition, and promotes sustainable agriculture. To achieve these targets, a solid food security is called for. However, this depends on the food availability, accessibility, and the way it has been utilized. Hence it is important for the food reserve in a country to achieve a certain level. A satisfying level of food reserve enables the stability for food prices in the market and to avoid price manipulation. This will then lead to not only a good level of food security, as the society feels safe and confident with the steady supply and availability of food but it also contributes to a stable economic and social conditions for the country. These conditions will result in a sustainable development of the nation at least for the commoners. Therefore, this paper will discuss the food reserve and sustainable development in Malaysia. The discussion is conducted based on the Islamic perspectives by using secondary data. Result shows that Islam emphasizes the spiritual elements of natural and economic resources of the food reserve. In order to achieve sustainability in the national food security, Malaysia, by its government, has incorporated the food security elements in the country's policies planning and implementations.

Keywords: Food Reserve, Food Security, Malaysia, Sustainable Development, Islam.

Introduction

Food reserve encompasses sufficient food supply and food production for the citizens of a country. Crucial situations like natural disasters, the drastically increased food price and the change of the climate have led to the pressing demand for robust food reserve. The dramatic increase of world's rice price in 2008 (Ministry of Agriculture and Agro-based Industry, 2011) and natural disasters in the East Coast and part of the West Coast have previously shown the importance of having a strong food reserve.

However, the focus of the development of the service and manufacturing sectors that respectively contribute 53.5 percent and 23.0 percent of the Malaysian gross national income (Department of Statistics Malaysia (DOSM), 2016) indicates that a more concerted effort is needed to materialise the intention. Even the exploitation of the land and water resources in materialising the aim is feared to bring about a greater detriment to the country and the society. Green development is proposed as a method in addressing the side effect of this process. Due to this, this paper work intends to look closely into the green development and food reserve implemented in Malaysia. This observation is carried out based on the Islamic perspective to get this particular stance regarding this issue. The discussion begins by identifying policies related to national food reserve and followed by extracting green development element found in the policy formulated. At the end of the discussion, the Islamic perspective towards the outcome is put forth with the support of Quranic verses in regard of the issues discussed.

Policies and Program related to the Malaysian Food Reserve

The national policy is a requirement to support the national economy, social and politics. To realise the country's demand and the requirement, the national policy is formed for the specifically short and long terms to strengthen the national food security. Based on the purpose of the working paper, the concentration towards the policy related to the specific effort to prepare the food supply has been carried out. Table 1 shows the policies related to the food reserve from the year 2011 until 2016.

TABLE 1: POLICY RELATED TO NATIONAL FOOD RESERVE

POLICY	CONTENT
National Agro-food Policy (2011-2020) Source: Ministry of Agriculture and Agro-based Industry (2011)	<p>Main Initiative:</p> <ul style="list-style-type: none"> → Increase food production through the use of land optimally, intensive sustainable farming and large scale paddy plantation in the paddy fields. → The determination of food commodity based on the national resources and production capacity. → Food production areas in the corridor development areas with the cooperation of state government. → Integrated agriculture practice will be encouraged, with the aid of the replantation. → Cooperation with the commodity industry will be enhanced to expand the activity of food production in lands that are not planted with commodity plants or crops. For example, the National Food Reserve by the Federal Land Development Authority (FELDA) will further be activated such as the production of bananas, chillies, meat cows (<i>lembu pedaging</i>) and tilapias. → Explore into the production of high-value agricultural commodity products → Some of the commodities include paddy, aquaculture,

	<p>herbs and spices, fruits, organic vegetables, weeds, feedlot cows and dairy products.</p> <p>→Paddy production in paddy fields will be enhanced through the irrigation infrastructure and sufficient irrigation, the use of quality, high-return paddy seeds, accurate agricultural technology practice and more effective agronomy management.</p> <p>-Develop effective and sustainable catch for fishery industry</p> <p>-Strengthen the fish-catching industry</p> <p>-Rearrange the shore fishery industry</p> <p>-Livestock</p> <p>→Increase the effectiveness of the ruminant livestock industry</p> <p>→Strengthen the effectiveness of disease control and expand save slaughtering and processing</p> <p>→Develop the industry of other livestock such as turkey, rabbit and deer</p> <p>→Balance local supplies and import</p> <p>Vegetable, fruits and coconut industry</p> <p>→Increase the productivity and the expansion of the vegetable production areas</p> <p>→Improve the post-harvesting approach and marketing logistics facilities</p> <p>→Strengthen the organic vegetable market</p> <p>→Increase the fruit production commercially especially export fruits</p> <p>→Enhance the replantation and area rehabilitation also improve the coconut areas integration program.</p>
<p>11th Malaysia Plan (2016-2020) Source: Economic Planning Unit, Prime Minister Office (2015)</p>	<p>The field of Focus C: Modernising the Agricultural Sector</p> <p>→Increase the productivity and the income of the farmers, fishermen and small-scale farmers through the broader use of the ICT and agricultural technology, the maintaining and the use of agricultural land in an optimal way and the activation of R&D&C in the field of priority</p> <p>→Increase the training and the development of young agropreneurs through the cooperation between agencies and private agencies to modernise the agricultural techniques and inculcate more novice companies.</p> <p>→To strengthen the institutional support and the service of expansion and encourage the service of consultation</p>

from the industry and the academia.

→To empower the capability of the cooperation and agricultural associations along the supply chain by integrating vertically the supply chain for selected crops, increase the management skills and look for the resources for promotion and export.

→Improve the market and logistics access by strengthening logistics support and increase the access to the domestic and international markets.

→Broaden the access of agricultural funding through the restructuring of the loan repayment mechanism and increase the sustainability of the funding mechanism for the replantation program

→Intensify the incentive program based on the performance and certification by encouraging farmers to obtain farm certification and giving priority to farms that obtain the certificates for incentive and support.

Sabah Development Corridor

→800 local participants have been trained to become technology entrepreneurs in the agricultural-based industry through the exposure and transfer of knowledge in processing agriculture food and natural resource-based specific products

Renewable Energy Corridor in Sarawak

→*Unit Peneraju Agenda Bumiputera* (TERAJU) has allocated RM100 million to develop entrepreneurs, including RM1.5 million for the processing of fish food and surimi. *Dana Mudahcara* totalling RM16.1 million has been allocated to four local companies to prepare the support service to PETRONAS and Bintulu Fort.

→The building and space that are not used in town will be benefited as the city-agricultural area through the modern techniques like fertigation, hydroponic and vertical agriculture. This initiative will be led by the cooperative movements in the majority of locations inhabited by household B40. The town agricultural activity will supply food for the use of the local community.

Increase the endurance of the agricultural sector

→Research and development especially about the agricultural practice that considers the intensified climate

	<p>change and good agricultural practice will be expanded to 500 fruits and vegetables, 160 farms and 65 new aquaculture farms.</p> <p>→ In the agrofood subsector, the establishment of Food Production Permanent City or <i>Taman Kekal Pengeluaran Makanan</i> (TKPM) involving an area spanning 6,105 hectares has benefited 453 farmers</p>
<p>Budget for 2016 Source: Ministry of Finance Malaysia (2016)</p>	<p>Modernizing the Agricultural Sector</p> <p>→ The total number of allocation is RM 5.3 billion</p> <p>→ Specific to the high-impact programs such as fruits and vegetables plantation programs also the matching grant and research of herb products and fishery in the cage;</p> <p>→ 90 million ringgit is allocated for the Young Agropreneur Development Program in the form of in-kind grant, Entrepreneur Funding Fund, rebranding of MARDI, Veterinarian Office, Agriculture Office, Fishery Office, and implementation of the Multiplier Farm Project for the farming of cows and domestic fowl.</p> <p>→ The incentive scope is also broadened to the deer, mushrooms, coconut, sea weed, bees and <i>kelulut</i> also crops for livestock like tapioca and sweet potatoes.</p> <p>→ 70 million ringgit as the subsidy of fertilizer of dry paddy is prepared to increase the food supply and income of dry paddy planters, covering an area spanning 64 thousand hectares in Sarawak and 11 thousand hectares in Sabah</p>

Table 1 shows three main national policies formulated and being implemented today until the year 2020. The planning and execution of this policy is part of the Malaysian effort in the framework of achieving developed nation and high income status as the coming years approach. This is as stated in the Government Transformation Program in the last phase carried out from the year 2015 to 2020 that will lead Malaysia to the said aim (Performance Management & Delivery Unit (PEMANDU, 2011).

Through the three policies, it is proof enough of Malaysia's initiative in heading towards the status of developed country. An observation shows that there is a specific emphasis on the enhanced agricultural activity encompassing livestock, fruits, vegetables and several commodities. The proof is that in 2016 for example, an amount of RM 5.3 billion was allocated to materialise the intention to modernize the agricultural sector. The allocation and expenditure towards this sector are determined by the self-sufficiency level (SSL) (Arshad, Alias, Noh & Tasrif,

2011:84). This self-sufficiency level in Malaysia refers to the rice production that is the staple food for the people in Malaysia. The study by Arshad, Jani and Yusof (2010) suggests that Malaysia today has achieved successful self-sustenance level especially rice, although we are still unable to become rice exporters like Indonesia and Vietnam. Table 2 shows clearly the rice production for selected ASEAN countries in 2015.

TABLE 2: PADDY PRODUCTION OF ASEAN COUNTRIES IN 2015

NO.	COUNTRY	PADDY PRODUCTION ('000 METRIC TONNE)
1.	Indonesia	74,991.8
2.	Vietnam	45,215.7
3.	Thailand	31,616.9
4.	Myanmar	28,127.2
5.	Phillipines	18,296.7
6.	Cambodia	9,324.4
7.	Laos	4,048.2
8.	Malaysia	2,674.4
9.	Brunei	3.1

Cited from: *ASEAN Food Security System (AFSIS)*, Malaysian Statistics Department (2016)

Paddy production experiences threat because of the factors of trade globalisation and liberalisation that open the space for competition with a cheaper international paddy market (Mikail, Abdullah, Ramli, Sood, 2013). To overcome this situation, the main initiative in the Agro-food Policy to increase food production through optimal land use, sustainable intensive farming and grand-scale paddy plantation at the paddy fields (Ministry of Agriculture and Agro-based Industry, 2011) has been formulated. The use of national resources and land development is allowed by Allah SWT (Islam, 2004). This provides evidence of the steps taken by Malaysia in intensifying food production at par with the effort to preserve the environment.

Food Reserve Related Policies and Sustainable Development

Food security is an important aspect in achieving the stage of developed country sustainably. Through the Sustainable Development Goal (SDG) put forth by the United Nations in 2016, the stress towards the aspect of food security can be seen through the second aim of SDG which is to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture. These goals encompassed eight targets to be achieved by 2030 namely:

- i. To end hunger and ensure access by all people, in particular the poor and people in vulnerable situations including infants, to safe, nutritious and sufficient food all year round
- ii. To end all forms of malnutrition, including achieving the internationally agreed targets at stunting and wasting in children under five years of age by 2025, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons
- iii. To double the agricultural productivity and the incomes of small-scale food producers, particularly women, indigenous peoples, family farmers, pastoralists and fishers,

- including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets, and opportunities for value addition and non-farm employment
- iv. To ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen the capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and that progressively improve land and soil quality
 - v. To maintain genetic diversity of seeds by 2020, cultivated plants, farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at national, regional and international levels, and ensure access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge as internationally agreed
 - vi. To increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development, and plant and livestock gene banks to enhance agricultural productive capacity in developing countries, in particular in least developed countries
 - vii. To correct and prevent trade restrictions and distortions in world agricultural markets including the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round
 - viii. To adopt measures to ensure the proper functioning of food commodity markets and their derivatives, and facilitate timely access to market information, including food reserves, in order to help limit extreme food price volatility

The target shows that the importance of food security at the domestic level before the international market influences food security through export and trade. Despite this, data from the Department of Statistics Malaysia, shows that the Malaysian food import value in 2015 only reached up to RM 6,904 million (Department of Statistics Malaysia, 2015:125). The dependency of Malaysia towards food import is endorsed by the Ministry of Agriculture and Agro-based Industry (MOA). To address this issue, the initiative to reduce the dependency of Malaysia towards the food product import at the same time to achieve high self-sustenance can enable the food security level in the nation to stand at a safe level.

The policy related to the national food security that has been discussed, displays an integration and the relationship between policies, significant with the green development because it has a strategy that is similar to achieve green growth. The RMK-11 emphasised the green growth by using a more efficient, clean and competitive resource (Economic Planning Unit, Prime Minister Office, 2015). With this agenda, there is a beacon of hope to ensure strong food, water and energy security at the same time mitigate the risks to the environment. The same goes with the 2016 budget that serves as the continuation of the RMK-11 that enables the green growth agenda to be achieved.

By stressing both elements of the environment and economy in integration in the policy, it enables the balance between natural resource and human is preserved. The integration between

the environment and human, shows that the role of human as the Caliph of Allah SWT and the peacekeeper of the earth can be executed. This happens when human uses the natural resources to obtain food and economic even by preserving the limit of the use of the natural resource in the job scope as the Caliph of Allah SWT. The value of justice, the balance between nature and the tasks as Caliph have become the mainstay in the Islamic green development (Matin, 2010:86). This integration is stressed to avert the threat of Allah SWT to human as dictated in the surah al-A'raaf verse 96. Based on the interpretation of Qutb (2001:210), Allah SWT explains the threat of the people who deviate from Allah SWT and His servants. In turn, for people who have faith in Allah SWT and His messengers, they will be rewarded (Al-Maraghiy, 2001:2318). In brief, the grant of reward and sustenance particularly food can be obtained under the condition that humans have faith in Allah SWT as He dictates:

And if only the people of the cities had believed and feared Allah, We would have opened upon them blessings from the heaven and the earth; but they denied [the messengers], so We seized them for what they were earning.

(al-A'raaf, 7:96)

The insertion of technology plays a role in increasing food production and strengthening the country's food supply. Following this, the RMK-11 strategy to increase food production especially paddy with the use of quality paddy seeds and the correct agricultural technology practice has been formulated. This strategy is consistent with Malaysia to make agriculture the main contributor to the national economy and to the sufficient food storage.

The Malaysian agricultural sector has undergone the inclusion of technology since RMK-9 focused on the modern technology application, the use of biotechnology, and large scale commercial agriculture. Other than that, the use of technology, especially the agricultural genetic modification has more actively been done since the 1990-an (Mozumdar, Islam & Saha, 2012). In effect, the use of the fertilizer technology has increased the nutrient towards the paddy crops intensively twice a year so much that the outcome is profitable and of high quality (Nordin, Noor & Saad, 2014). The emphasis on the use of green technology is also actively implemented by Malaysia in various sectors. This is done in ensuring that the water and energy resources can be managed efficiently and at the same time to ensure that human needs are fulfilled.

The role as the Caliph of Allah to preserve the nature and not destroying it becomes the responsibility and order to human beings (Yusof, Rosman, Mahmood, Sarip & Noh, 2013). Based on the observation, the productivity of agricultural land in Malaysia that is among the third best in 2013 among the member countries of the Organisation of Islamic Cooperation (OIC) with the rate US\$ 18,000 per hectare has successfully been obtained (*The Statistical, Economic and Social Research and Training Centre for Islamic Countries*, SESRIC, 2016). This is because the allocation of agricultural land in Malaysia in 2013 has achieved 912, 419 hectares compared to the year 2015 is reduced to 896, 04 hectares (Ministry of Agriculture and Agro-based Industry, 2015). The management and development of land for agriculture need to be prioritised because the land has given a great benefit for the sustainability of food production so that the food reserve is preserved.

The livestock industry is not exempted to be focused upon because based on the Agro-food Policy (2011-2020), this industry has the potential to be developed to ensure food supplies and also to mitigate the rate of dependency towards imported meat. Specifically, the stress on this sector can be seen through the livestock industry between the year 2010 and 2015 in Table 3.

TABLE 3: LIVESTOCK OUTCOME IN 2010 AND 2015 ('000 METRIC TONNE)

LIVESTOCK YIELD	2010	2015
Beef	47	50
Mutton	2	4
Pork	234	216
Chicken	1296	1614
Eggs	590	776
Milk (millions of liter)	67	76

Source: Ministry of Agriculture and Agro-based Industry, 2015

The Malaysian trade activity specifically the agricultural sector from the year 2012 to 2015 is shown in Table 4 shows the import and export activities. In several food commodities like the meat, dairy products, cereal, fruits, coffee, cocoa, tea and spices experience an increase in the import of these foods. The change of the pattern in the food intake that is more to the meat, dairy products, sugar, fat and oil has plagued most of the developed countries and becomes widespread to developing countries approaching the year 2050 (FAO, 2011b). Nonetheless, from the positive side, the Malaysian economy is seen to have been increasing in most of the food commodities being traded, with the exception of fish, crustaceans and molluscs commodities. This positive development continues to take place with an increase of 7.1 percent in the section of KDNK in the first half of 2017 subsequent from the use of the modern technology and strong demand in the food processing industry (Ministry of Finance, Malaysia, 2017).

TABLE 4: THE TRADE ACTIVITY OF THE MALAYSIAN AGRICULTURAL SECTOR, YEAR 2014-2015

COMMODITY	YEAR 2014 (RM MILLION)		YEAR 2015 (RM MILLION)	
	EXPORT	IMPORT	EXPORT	IMPORT
Live animals (food)	676	321	705	362
Meat and meat products	435	2,939	569	3,426
Dairy products and birds' eggs	1,811	3,959	1,913	3,522
Fish, crustaceans, molluscs and others	2,765	3,590	2,615	3,576
Cereal and cereal products	2,415	4,071	2,982	4,700
Vegetables	827	3,175	1,097	4,481
Fruits	793	2,321	964	3,177
Sugar, Sugar products and honey	859	3,768	935	3,369
Coffee, cocoa, tea, spices and spice products.	6,749	6,311	7,404	6,462
Production and product of other foods	6,596	4,632	6,679	5,232

(Resource by: Department of Statistics Malaysia, 2015)

The diversity of these food resources is the grant and reward, rewarded by Allah SWT. The crops and livestock prepared by Allah SWT can benefit human as they serve as food. As dictated by Allah SWT

The example of [this] worldly life is but like rain which We have sent down from the sky that the plants of the earth absorb - [those] from which men and livestock eat - until, when the earth has taken on its adornment and is beautified and its people suppose that they have capability over it, there comes to it Our command by night or by day, and We make it as a harvest, as if it had not flourished yesterday. Thus do We explain in detail the signs for a people who give thought.
(Yunus, 10:24)

Conclusion

The outcome of the observation towards the planned and implemented policies by Malaysia which is the national Agro-food policy, RMK-11 and budget 2016 sees the strong government's effort in increasing food storage. This is evident through the role of the country to increase food production by expanding the land use for main agricultural yield, namely paddy, technological inclusion and the commodity diversity such as the livestock industry. All these efforts are consistent with the green development values according to the Islamic perspectives based on their role as the Caliph of Allah SWT to preserve the environment and benefit from the universe the best we can. With this role implemented, Malaysia is able to sustain and increase the food supply at the same time strengthening the national food security.

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