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Evelopment of Digital Economy Strategy and Implementation Approach for Inclusive Growth of Agro-Food Industry

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Abstract
Although the agricultural model exists in academic research, there is no such framework that focuses on agro-food strategy in digital economy phenomena considered in Malaysia's agro-food ecosystem scenario. Hence, there is a need to explore our own digital economy phenomena and come out with a new strategy's conceptual framework. On the other hand, if agro-entrepreneurs do not understand effective marketing strategies, they may face difficulties in marketing agricultural products well. One source of detailed information based on experience firsthand is an agro-food marketing entrepreneurial expert. These individuals have tacit knowledge of the experiences and difficulties associated with the means of marketing agricultural products. his knowledge then needs to be disseminated among agricultural entrepreneurs so that they know the strategies that are appropriate to the current economic situation. The main objective of this research is to examine the phenomena of Malaysia's agro-food ecosystem. Therefore the examine phenomena of Malaysia's agro-food which aim to propose and construct attributes of the phenomena for Malaysia's agro-food ecosystem and come out with a digital economy strategy and approach framework that describes the phenomena of Malaysia's agro-food ecosystem. Underpinned by a qualitative approach, an in-depth interview on the agro-food environment is undertaken. This qualitative approach will use grounded theory as a research approach for this study. The output of this study is the framework blueprint as a direction to develop the agro-food sector to become more dynamic, progressive, and sustainable. It addresses the digital economy strategy and approach by every industry under the agro-food sector and sets strategies and action plans. The expected results of this research are a new digital economy strategy and approach framework for Malaysia's Agro-food ecosystem in order to come out with a digital economy strategy and approach framework with the main focus on improving the efficiency of the agro-food ecosystem in Malaysia.

Keywords: digital economy, agro-food, framework, model, agricultural, fishing.

1. Introduction

Agrofood small and medium-size firms encounter a competitive environment like the rest of the economic actors in a global economy. These firms have an important task to create employment and a clear impact on rural development. They have neither strong techno structures nor an easy understanding of how to become more competitive. Agro-industries are those industries whose raw materials come from agricultural production. The size of these enterprises varies widely from home-based activities to small-scale cottage industries to large-scale factories. Agro-industries cover a wide range of technical levels, employ many thousands of people worldwide, and make use of both simple and sophisticated processes.

With the exponential growth of the world population, according to the UN Food and Agriculture Organization [1], the world will need to produce 70% more food in 2050, shrinking agricultural lands,

and depletion of finite natural resources, the need to enhance farm yield has become critical. Limited availability of natural resources such as fresh water and arable land along with slowing yield trends in several staple crops have further aggravated the problem. Another impending concern over the farming industry is the shifting structure of the agricultural workforce. Moreover, agricultural labor in most countries has declined. As a result of the declining agricultural workforce, the adoption of internet connectivity solutions in farming practices has been triggered, to reduce the need for manual labor.

All entrepreneurial experts in the field of food commodities have extensive experience, especially in how to market agro-food products. What is very important is the knowledge of how a good strategy can be implemented, especially in the field of marketing agro-food products. In other words, the currents of economic reform may bring tests or opportunities. However, existing knowledge only equips them with generic information on theory only. This is not enough to support today's agro-food entrepreneurs to market their products. They will usually take time to learn from the try and error process without having an effective strategy guide.

On the other hand, if agro-entrepreneurs do not understand effective marketing strategies, they may face difficulties in marketing agro-food products well. One source of detailed information is based on firsthand experience as an agro-food marketing entrepreneurial expert. These individuals have tacit knowledge of the experiences and difficulties associated with the means of marketing agro-food products. This tacit knowledge should be extracted using appropriate systematic methods as suggested by Wan Yusof et al. [2]. This knowledge then needs to be disseminated among agro-food entrepreneurs so that they know the strategies that are appropriate to the current economic situation.

2. Literature Review

Digital economies around the world are centered on agriculture but as countries become more urbanized it puts tremendous pressure on rural farming communities. Eventually, enough people will simply not be around to track farmlands around the clock as they move on to higher interest and better-paid jobs. But farming is still necessary to feed trillions of people worldwide [3].

Albisu [4] this study determined some of the most important factors affecting agro-food industries' competitiveness which are defined: raw materials and their determinants, external business environment, internal firms' conditions, and product performance. The co-operation and relationships among firms are also taken into consideration. J. Wilkinson and R. Rocha [5] highlighted the developmental impact of the agro-processing sector on the economy. The study finds that the Agro-processing industry plays a fundamental role in employment creation and income generation, particularly the food and beverages processing sector remains important at all levels of economic development.

Another study by FAO [6], argued that agriculture in connection with industry needs to be recognized by senior-level policymakers and industry leaders as a competitive, value-adding business sector that has a positive development impact and contributes to economic growth. Rather than focusing on agricultural productivity only, policymakers must consider the competitiveness of the entire agro-value chain.

Malaysian's Agricultural sector is strategically important as a provider of food and raw materials for the agro and resource-based industrial development. In 2015, this sector contributed more than RM89.5 billion (US22.658billion) to the Gross Domestic Product (GDP), or about 8.1% of the total GDP. Oil palm was the major contributor to the GDP (43.1%), followed by other agriculture (19.5%), livestock (11.6%), fishing (11.5%), forestry, and logging (7.2%), and rubber (7.1%). In the same year, the export and import of agricultural products stood atRM115.884 billion (US$29.338 billion) and RM84.673 billion (US$ 21.436.2 billion) respectively with the balance of trade at RM31.172 billion (US$ 7.892 billion). The number of people involved in agriculture in 2015 was around 1.8 million, while foreign laborers were around 0.6 million people. A report by the Statistics Department also showed that 76% of people involved in this sector were males [1], [7], [8]

Agriculture in Malaysia is divided into two sectors namely industrial crops and agro-food. About 86% of agricultural land is used for the production of industrial commodities such as oil palm, rubber, and cocoa. While the balance of 14% is used for cultivating agro-food commodities such as paddy, fruits, vegetables, and coconuts.

On the other hand, competition for land between agro-food and industrial crops. Currently, more than 80% of agricultural land is allocated to commodity crops. At the same time, the agro-food sector also competes in using arable land with housing, manufacturing, and services industries. For example, until 2015 more than 3% of agricultural land was converted into housing, industrial, and business facilities.

Considering production, sustainability is useful not only to boost it and satisfy demand, but also to reduce those losses caused by any mistake in the manufacturing, storage, transport, and distribution processes of the goods. Because of this, poor countries frequently suffer a lack of food. It is necessary to ameliorate their conditions of production and harvest, as well as restore food production by means of basic technologies like the microwave treatment system. Therefore, about 1/3 of food produced for humans gets lost or wasted, that is to say, 1.3 billion tons per year [9].

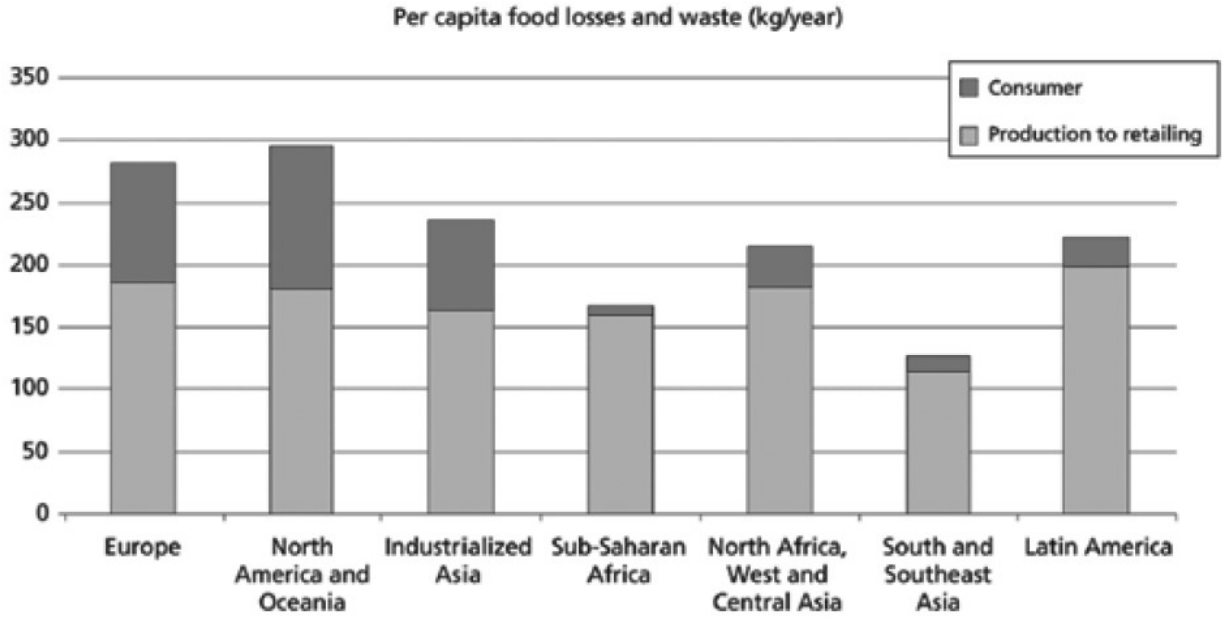

Figure 1: Per capita food losses and waste, at consumption and pre-consumptions stages, in different regions [10]

3. Research Objectives

This research will conduct to study the agro-food strategy in digital economy phenomena considered in Malaysia's agro-food ecosystem scenario. The main objectives of this study were: 1) to examine the phenomena of Malaysia's agro-food ecosystem 2) to propose and construct attributes of the phenomena of Malaysia's agro-food ecosystem 3) to come out with a digital economy strategy and an approach framework that describes the phenomena of Malaysia's agro-food ecosystem.

4. Research Methodology

4.1 This research is about the development of Malaysia's agro-food ecosystem which focuses on the digital economy strategy and approach for the National Agrofood Policy. Qualitative research using a phenomena approach is proposed since the project is exploratory in nature. The research is in-depth in nature where semi-structured interview techniques will use.

4.2 In this study, the qualitative method is conducted with the objectives to examine the phenomena under study, proposing and constructing attributes of the phenomena as well as coming out with a conceptual ecosystem framework that describes the phenomena of Malaysia's agro-food ecosystem. The researcher believes that a qualitative method approach is appropriate to be used in this study in order to accomplish conceptual framework discovery through this research project.

4.3 Framework discovery will achieve by using qualitative data to sharpen our conceptual ideas about the

phenomena under exploration. Qualitative methods using the in-depth interview technique, allow the researcher to record, take field notes, transcript the interview conversation, and analyze the data using appropriate qualitative data analysis software to understand people in their own interpretation, whereby more in-depth and detail emerge through direct quotation and careful description.

- Stage 1

Preliminary study. This initial study will be reviewing documents related to the National Agrofood Policy as a guidance document for the implementation of programs and projects for the development of the agricultural sector in Malaysia. This stage uses a qualitative method such as document review.

- Stage 2

Comparative study. The study of the National Agrofood Policy (NAP4) in 2010 as a replacement to the National Agricultural Policy (NAP3) blueprint sets a direction to transform the agricultural sector to become more dynamic, progressive and sustainable that can suit customization of appropriate strategy and approach into component-component of a conceptual framework. Customization aspects are recognition, assessment, and prediction functions will be taken into consideration in exploring this phenomenon. This stage is also applying qualitative method research techniques such as interviews, observation, and document review.

- Stage 3

Framework development. It consists of digital economy strategy and approach components construction through thematic analysis which is appropriate for Malaysian's agro-food ecosystem.

- Stage 4

Framework testing. This stage will apply the focus group technique through Malaysian's agro-food expertise to validate the framework.

- Stage 5

Final output. Once all comments in stage 4 are taken into consideration, then a final output of the digital economy strategy and approach's framework for the Malaysian Agrofood ecosystem will be released.

- Stage 6

Final Report. This stage will focus on writing, documentation the report, and send for proofing. All the proofing comments will amend accordingly.

5. Expected Results

Identically, here is the expected results of this study; the framework blueprint as a direction to develop the agro-food sector to become more dynamic, progressive, and sustainable. It addresses the digital economy strategy and approach by every industry under the agro-food sector and sets strategies and action plans. In addition, a new digital economy strategy and approach framework for Malaysia's Agro-food ecosystem in order to come out with a digital economy strategy and approach framework with the main focus on improving the efficiency of the agro-food ecosystem in Malaysia.

6. Conclusion

In conclusion, the aim of the study was to explore our own digital economy phenomena and come out with a new strategy's conceptual framework. This strategy will extract entrepreneurial experts from their firsthand experience in agro-food marketing. This knowledge then needs to be disseminated among agro-food entrepreneurs so that they know the strategies that are appropriate to the current economic situation. The expected results of this research are a new digital economy strategy and approach framework for Malaysia's Agro-food ecosystem in order to come out with a digital economy strategy and approach framework with the main focus on improving the efficiency of the agro-food ecosystem in Malaysia.

7. References

[1] Ministry of Agriculture and Agro-based Industry, "National Agrofood Policy 2011-2020," 2011.
[2] W. S. E. Y. Wan Yusof, O. Zakaria, and Z. Zainol, "Establishing of Knowledge-Based Framework for Situational Awareness Using Nonaka's And Endsley's Models," 2016.
[3] D. J. , & S. J. (Eds.) Mattingly, "Economies beyond agriculture in the classical world," *Routledge*, 2002.
[4] L. M. , M. L. I. L. I. A. N. A. , & L. A. B. D. E. R. R. A. O. U. F. Albisu, "Agrofood industries competitiveness according to the products sold in the market," *MEDIT-BOLOGNA-*, vol. 11(2), no. 2–7, 2000.
[5] J. , & R. R. Wilkinson, "The agro-processing sector: Empirical overview, recent trends and development impacts," *In Global Agro-Industries Forum*. 2008.
[6] U. N. Food and Agriculture Organisation (FAO), "The Importance of Agro-Industry for Socioeconomic Development and Poverty Reduction," *Discussion Paper for UN Commission on Sustainable Development,16th Session, New York*. 2008.
[7] M. Ministry of Finance, "Economic Report 2015/2016," 2016.
[8] Department of Statistics Malaysia, "Economic Census 2013-2016," 2016.
[9] causes and prevention Global food losses and food waste – Extent, "Food and Agriculture Organization ." Rome, 2011.
[10] G. Bertoni, "World food production," 2015.