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Article

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Management dynamics in the knowledge economy

Provided in Cooperation with:
National University of Political Studies and Public Administration, Bucharest

Reference: Darma, Surya/Darma, Dio Caisar (2020). Food security management for Indonesia : the strategy during the Covid-19 pandemic. In: Management dynamics in the knowledge economy 8 (4), S. 371 - 381. http://www.managementdynamics.ro/index.php/journal/article/download/366/345. doi:10.2478/mdke-2020-0024.

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Food Security Management for Indonesia: The Strategy during the Covid-19 Pandemic

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Abstract: Food security is very important and is also prone to problems when faced with disaster situations, including diseases such as Covid-19 pandemic. The objectivity of this article is to highlight food security in relation to the availability of access to food sources so that it can meet basic or primary needs in Indonesia. An in-depth literature study with an epistemological positivism approach is needed to answer the problems that make the food crisis the main focus. To ensure food security in Indonesia, the government has prepared various strategies in three important agendas (emergency, temporary, and permanent) to monitor the stability of prices for basic necessities so that they do not skyrocket, increase national food production based on smallholder agriculture, and support small farmers. To achieve this, the Indonesian government has reallocated a larger budget to allocate it to seed assistance, labor-intensive programs, stabilization of food stocks and prices, paying attention to food distribution, and transportation. The implications are expected to make a significant contribution to other countries in anticipation of the food security crisis due to the impact of COVID-19.

Keywords: Strategy; food; control; COVID-19; Indonesia.

Introduction

The problems of food security, hunger, and increasing levels of poverty in poor and developing countries are challenges for scientists who have tried and together to catch up, dynamism, diversity, and the impact of global powers (Yaro, 2003).

The world is currently facing SARS-CoV-2 (COVID-19). This pandemic does not only affect the health and education sectors, but also the socio-economic conditions of society. In the agricultural sector, WHO (2020) has warned of a potential global food crisis. Global food supply chains are also under threat amid lockdowns, social restrictions, and travel bans. The policies of each country in preventing the spread of COVID-19 also have implications for food policies and their production capabilities (Ilmi et al., 2020; Darma et al., 2020; Araújo & Calazans, 2020).

This reality shows that food security is as important as public health. If doctors and medical personnel are soldiers in the fight against the spread of this pandemic, so are farmers, extension workers, and other agricultural personnel. An important defense against COVID-19 is food security. In terms of health protocols, the government has prepared a special strategy to prevent the spread of this virus through Large-Scale Social Restrictions (PSBB) in Indonesia. This strategy will only be effective as long as a staple food is available to the population (Darma, Wijama, & Darma, 2020).

The COVID-19 pandemic also disrupted economic activity in all lines of business, including the agricultural sector. One of the impacts that must be anticipated regarding the impact is the availability of food for all people. The Food Security Movement (GKP) which was introduced by the Indonesian government amidst the current threats must be supported by all parties, especially farmers and extension workers as the spearhead and activator of

How to cite
Darma, S., & Darma, D. C. (2020). Food Security Management for Indonesia: The Strategy during the Covid-19 Pandemic. *Management Dynamics in the Knowledge Economy.* 8(4), 371-381, DOI 10.2478/mdke-2020-0024
ISSN: 2392-8042 (online)
www.managementdynamics.ro
https://content.sciendo.com/view/journals/mdke/mdke-overview.xml

the agricultural sector (Ministry of Agriculture of the Republic of Indonesia, 2020). In the first quarter of 2020, it was noted that the world's cereal reserves, including rice, which is the staple food of Indonesians, reached 850 million tons (FAO, 2020). These reserves are determined by the FAO in anticipation of bad weather or natural disasters throughout 2020. However, with the increasingly real impact of the pandemic and the worsening of the agricultural sector at the global level, real action must be taken by several countries to maintain aspects of food security (Rezitis, Ntinou, & Pachis, 2015).

In addition, another effort made by the Indonesian government to ensure food security is to impose a new normal. New normal is a step taken to restore social and economic life. The application of the new normal carried out by the government refers to the indicators issued by WHO (2020) with several adjustments based on urgent needs. Based on the current challenges, we need to describe the strategies the government needs to do in an effort to achieve food security in Indonesia. From this article, it becomes an important part in terms of policies that must be taken by various parties (especially the government) to prevent the food crisis due to the COVID-19 outbreak and harmonize the urgent needs of civil society, so that distribution channels can be accelerated and do not take a long time.

Review of literature

Food security theory

Since the emergence of the World Food Conference in 1974, the concept of 'food security' has evolved and evolved. To date, there are more than two hundred definitions to describe the term (Smith, Pointing, & Maxwell, 1992). An analogy that is very relevant to describe food security as part of a genetic material pool (Maxwell, 1996). In the international development phase in the 1960s to the 1970s, the concept of food security first emerged as the ability to collect and find consistent definitions of food needs (von Braun, Bouis, & Pandya-Lorch, 1992).

A comparative approach to food security management demands an integrated assessment taking into account social systems and ecosystem interactions. With the coverage of interdisciplinary and multiple theory aspects, management of ineffective food security can explain a current prevalence (Buttel, 2000; Harper & Snowden, 2017; Scanlan, 2003).

From the start, there have been significant differences between people's access to food and food supplies, especially for those in poor countries trying to improve access to food. The terminology of revitalizing agricultural technology (especially in developing countries), generally becomes part of the demonstration of the "green revolution" in the context of expanding production and does not necessarily provide access to food for the poor. As a consequence of this productivity, it creates serious environmental problems such as erosion of land, pests, stunted human, and wildlife activities (Anderson & Cook, 1999; Burke & Stephens, 2018).

Supply chain management

In relation to supplying chain management (SCM), Ribot and Peluso (2003) highlighted the 'theory of access' which distinguishes between people's rights and abilities to utilize and access resources. Possibly, they already hold the right to access certain resources, but also do not necessarily have the supporting ability to have the resources productively, so that they do not get maximum benefits as a result of the lack of relational and structural mechanisms such as capital, labor, technology, knowledge, market mechanisms, infrastructure, identity, and social relations (Mutea, Rist, & Jacobi, 2020). Highlighting the ability to profit from resources has involved access mechanisms that go beyond the rules (legal rights) and the implications of these limitations can lead to exceptions (McKay & Colque, 2016). In developing countries (such as Indonesia), several cases often occur when a farmer has the right to use his land or agricultural land, but they do not have access

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to capital and hire labor because of cultural, social, legality (legal), economic, and regulatory factors. which is not written directly, so this is a systematic problem (Roy, Kuncoro, & Darma, 2019).

To achieve a sustainable food system is a complex problem and very much depends on the successful interaction between food policy and components in the management of the food supply chain (Paloviita, 2017). Barling (2007) argues that for a dual system in food management on a national scale, there needs to be a collaboration between the private sector (in this case the company) and the public government so that an effective pattern can be formed. As in practice, the highlight of the SCM model for food security is a factor that has the potential to increase or hinder SCM implementation. Mentzer et al. (2001) and Aji (2020) emphasize the existence of a debate on the relationship because it includes aspects of marketing, commitment, dependability, and trust combined with the organizational vision (especially management support) of SCM.

Especially for SCM in the agricultural sector, Sjah and Zainuri (2020), Zhong and Wang (2017), Aramyan et al. (2006), Qingjuan and Huiqiu (2012), and Ssennoga, Mugurusi, and Oluka (2019) inform that the supply chain for the flow of agricultural commodities can be integrated along with information related to products and capital flows. This becomes important considering the output from agriculture can change (from one form to another) over time and the distance from the production site to the customer through the manufacturing process. Thus, agricultural SCM needs to consider different activities starting from the availability of inputs, the production process (processing plants), and until the final stage, namely, the product is ready for public consumption.

Agricultural sector development

The importance of the agricultural sector in economic development in all countries has long been the subject of debate and noted economist. Johnston and Mellor (1961) have identified a two-way relationship that is important for differentiating the transformation of the agricultural sector in economic development. In almost all countries, agriculture is a sector with a vital proportion, and the changes that result in its decline occur because of the dynamics of economic growth through the agricultural sector as a measure. Yorgason (2008) emphasizes the importance of transformation in the journey of the agricultural sector, which sees the size of the labor force and the capital requirements needed to develop other economic structures, such as the modern industrial sector.

Economic and agricultural growth is important because it is focused on studying agriculture in the context of the aggregate economy. In the context of general equilibrium, Fulginiti (2002) emphasizes the interdependence of agriculture and the economic environment, as it relates to world policies, price effects, resource allocation, technology, and growth. To identify important issues in development in the agricultural sector, generally rich and poor countries use general equilibrium theory as a tool to unify these ideas and it is necessary to carry out econometric testing so that can be known the extent of the implications.

Recently, in the study of neo-Marxian and structuralist currents on agrarian development, it has been explained that the traditional agricultural sector is not stationary or efficient so that the allocation of resources cannot be separated from the input of production and the distribution of wealth. In addition, Rao (1986) and Wijaya, Darma, and Darma (2020a) highlight some forms of surplus agriculture that do not always conform to the efficiency orders. This occurs because of the impact of social relations and production because it can hinder the accumulation of technological changes, macroeconomics, and political constraints as barriers to international trade.

Smith (1995) and Udemezue and Osegbue (2018) added that the main objective of agricultural sector development is social welfare and aggregate material improvement.

However, in the process, there is often uncertainty in the approach which leads to the opposite integration of community welfare and environmental improvement.

Method and measurements

This article was formed with a qualitative approach that refers to the positivism epistemological position so that we can present the objectives of the problems covering the food crisis in Indonesia (Basundoro & Sulaeman, 2020; Kivunja & Kuyini, 2017). Given the novelty of issues that are still relevant today, the article focuses on current data and variables with several strategic steps incorporated in GKN. As an explanation, we need to add things related to supply chain management.

The characteristics of positivism are also confirmed by the use of empirical data in meeting the objectives of a study (Adcroft & Willis, 2008). This article strongly emphasizes support for food security policies and provides suggestions to the Indonesian government (especially related institutions) to prioritize food security as an unconventional strategy to deal with the threat of the COVID-19 pandemic.

This article also draws on an analysis of relevant sources, especially with literature studies. The literature that is in the spotlight, of course, has a close correlation with themes, including official publications from Indonesian government institutions (related ministries). In addition, several references from scientific journals that have discussed food security in several countries are also supported. The objectivity and limitations of the study lie in the extent to which food security in Indonesia during 2020 can be properly controlled so that efforts are needed to simplify the SCM model effectively. Thus, this article only focuses on objectives that have been designed based on the problems outlined earlier.

Case studies become objectivity that refers to current cases to become a global phenomenon that threatens human security, especially when analyzed from a food security perspective (Omer & Hassen, 2020). It cannot be denied that the aspects of the territorial territory, food security, and human security are closely related concepts. If there is a disruption in one of them, the other dimensions will be affected.

Discussions

COVID-19 has adversely affected all industrial sectors, including the food sector. Therefore, readiness is needed with a special strategy so that the supply of staple goods for the community is available when starting a new normal (Alika, 2020). The decline in the farmer exchange rate (NTP) during the pandemic was not the result of inaccurate farmer production. However, the PSBB policy resulted in a slowdown in transportation, distribution, and restrictions on the movement of the community.

The main thing that can be taken is to ensure the availability of fifteen food commodities by building buffer stocks. In addition, governments and entrepreneurs can develop markets, social safety nets for farmers, and maintain price stability (Niles, 2020).

Table 1 informs that from the foodstuffs group, household consumption in Indonesia is very dependent on the fifteen types of food based on the use allocation. Government consumption is exogenous and Indonesian household consumption is endogenous due to several factors (Amalia, Lestari, & Nurjanana, 2020; Wijaya, Zainurossalamia, & Darma, 2020b). In the economic model, population consumption can provide an understanding of the relationship between the level of consumption and per capita income which is interpreted as a vital need during this pandemic.

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Table 1. Food commodity groups

Num.	Foods
1.	Grains
2.	Tubers
3.	Fish
4.	Meat
5.	Eggs and milk
6.	Vegetables
7.	Nuts
8.	Fruits
9.	Oils and fats
10.	Drink ingredients
11.	Seasonings
12.	Other foodstuffs
13.	Prepared food
14.	Alcoholic beverages
15.	Tobacco and betel

Source: BPS-Statistics Indonesia (2008)

So far, Indonesia's food security score is far different from ASEAN countries such as Singapore, Thailand, and Malaysia. In fact, Indonesia's food security is in 5th place and Vietnam in 4th place. The score from the 2018 Global Food Security Index (GSFI) rose 1.6 points to the level of 54.8. Although Indonesia's resilience index has increased slightly compared to 2017.

Figure 1 also informs that Indonesia is in the middle position of the nine countries. As an additional explanation, Singapore still leads with the highest resilience index in ASEAN and at the global level with a score of 85.9. Meanwhile, at the global level, Indonesia is in the 65th position (behind Morocco and Ecuador). Based on the affordability aspect, Indonesia's food security got a score of 55.2 and in the availability aspect, it was 58.2. Then, in terms of quality and safety, Indonesia only scored 34.5, and based on the aspects of resilience and natural resources, the score was 43.9. This proves that with its geographic limitations, Singapore does not have a serious enough problem in terms of food security. As is known, this country has a smaller population than Indonesia and Thailand, so that they can develop extensive agricultural technology and knowledge to overcome the food crisis through government resources and support through large government spending allocations.

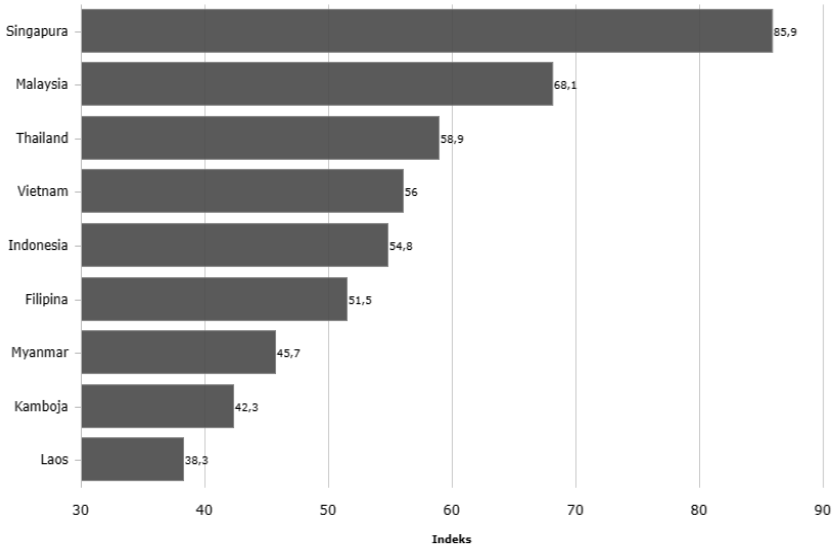

Figure 1. ASEAN food security rankings, 2018
(Databoks, 2018)

There are three main priorities to prepare for the COVID-19 pandemic food security in Indonesia with an emergency agenda, a temporary agenda, and a permanent agenda (Satria, 2020). This is illustrated in Figure 2 which summarizes the GKN policy which requires time relations and considerations.

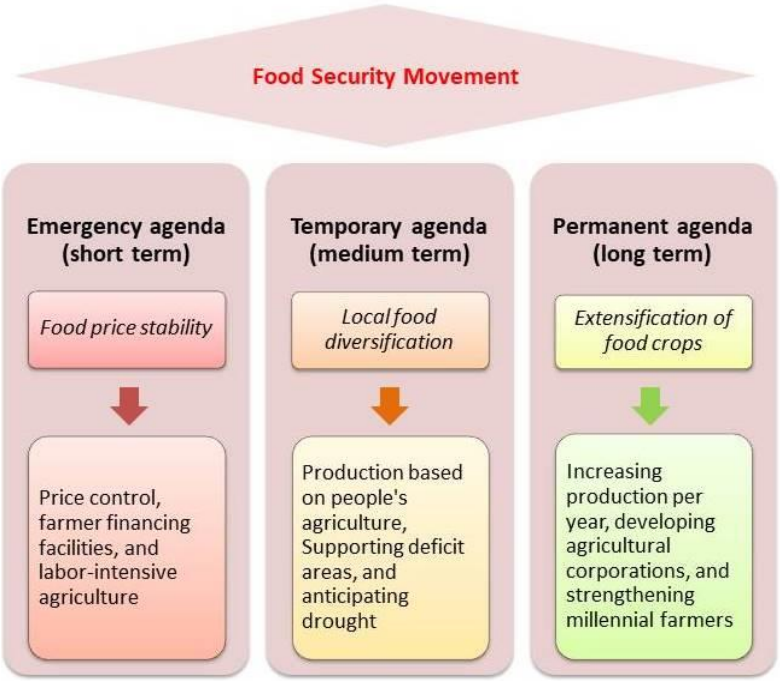

Figure 2. Time schedule for food security management
(Authors' elaboration)

The first strategy, taking into account the stability of food prices with estimates of national strategic food availability for March to August 2020. This requires specific data on rice availability up to 25.6 million tons of the need for 15 million tones, corn as much as 13.7 million tons of demand. 9.1 million tons, available shallots 1.06 million tons from the need for 701,482 tons, and large chilies as much as 657,467 tons from the initial requirement of 551,261 tons. Furthermore, for beef, there are 517,872 tones (290,000 tons of which come from imports) of the need for 476,035 tones, broiler chicken 2 million tons from the need for 1.7 million tones, cooking oil 23.4 million tons from the need for 4.4 million tones and the stock of sugar in the distributor's warehouse as much as 159,000 tons. Although data from the Ministry of Agriculture of the Republic of Indonesia (2020) reveals that the national food stock is experiencing a surplus, this does not mean that Indonesia is free from the threat of a food crisis. This is because the COVID-19 pandemic is uncertain when it will end.

To ensure food security, the Indonesian government has prepared various strategies that include price stability of basic necessities so as not to skyrocket and increase national food production based on smallholder agriculture and siding with small farmers (Workie et al., 2020).

In addition, other efforts have been made by the government by imposing a new normal. New normal is a step that must be taken to restore social and economic life. The implementation of the new normal carried out by the government refers to the WHO indicator with several adjustments based on needs. The agricultural sector is strategic and should get attention because it has a large number of workers, where production has decreased but consumption is high. The challenge is how to meet people's food needs to ensure food security and on the other hand, also contribute to economic recovery.

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The existence of universities is very important in the achievement of agricultural development in Indonesia because universities can provide views, thoughts, and input on policy strategies that will be taken by the government and create innovations that can guarantee food availability in the new normal era of the COVID-19 pandemic. Economic stimulus and food independence are important to survive the COVID-19 pandemic era, the solution in food security is the development of household-scale production and import substitution, so it is necessary to develop innovations that collaborate with millennial farmers in food production to supply food needs in urban areas.

The second strategy is to increase the diversification of local food with agricultural-based production and support small farmers. The budget reallocation becomes the government's capital to boost food productivity and at the same time improve the welfare of farmers. Siding with small farmers must also be shown by optimizing the role of extension workers. This pandemic should not be a barrier to extension workers to continue assisting farmers.

So far, the government has provided digital assistance that can be done anytime and anywhere. In addition, the optimization of all agricultural land in Indonesia requires sectoral movements. Local governments must commit to encouraging sub-optimal land use, such as dry land and swamps, as well as preventing the conversion of agricultural land use. Andri (2020) encourages the use of yards to be carried out through efforts to empower families or larger community groups for the cultivation of yards and processing of the results. Efforts to use land are carried out not only by cultivating various types of food crops and horticulture but also by raising livestock and fish so that they can meet food availability.

Yard land use activities can be carried out by the family as the smallest community group unit. The utilization of yardland can also be carried out by community groups (residents of settlements, schools, and other places). To reduce the potential for food insecurity, people need to be encouraged to independently fulfill their food needs. In this difficult situation, more innovations and breakthroughs are also needed to ensure the distribution of food needs can be evenly distributed to food-insecure areas.

The third strategy, through extensification of food crops. With a sufficient increase in production capacity. Agricultural actors carried out the acceleration of Season-II 2020 rice planting covering an area of 6.1 million ha, development of swamps in Central Kalimantan Province of 164,598 ha, intensification of 85,456 ha of swamps, and extensification of agricultural land reaching 79,142 ha. The support of food diversification based on local wisdom that focuses on one commodity base can strengthen the food logistics system by strengthening the provincial government rice reserves (CBPP). In addition, adding district/city government rice reserves (CBPK) through modern agriculture can drive smart farming, development, and utilization of screen houses to encourage the production of horticultural commodities outside the planting season, develop farmer corporations, and develop food estates to increase food production majors like rice and corn. The expected results from this long-term policy are expected to achieve national production of 7% per year and reduce agricultural loss to 5%.

Conclusions and implications

As a result of COVID-19, the availability of access to food has worsened, accompanied by a rapid rate of transmission and layoffs of employees in several companies. Therefore, the government has the responsibility to prepare specific strategies in facing the challenges of food security, paying attention to the production process and distribution of food.

To overcome this problem, the government, farmers, business actors, and the community need to prepare several strategies. The COVID-19 pandemic cannot yet be ascertained when it will end, so it needs strategic steps to prevent and minimize losses. One of the

efforts to be taken is the movement of planting on abandoned empty land and empowering hydroponic plants. Then, people who have been acting as consumers need to make savings, so that food security remains stable. This cooperation needs to be carried out so that the welfare of the people in Indonesia is achieved, food security remains stable, and neither party feels disadvantaged.

With an emphasis on three steps, it is hoped that the strategy to deal with the food security crisis can be minimized in the short, medium, and long periods through synchronization between policymakers, academics, public administration, and civil society.

Acknowledgments: We are humbled to thank two institutions (Sekolah Tinggi Ilmu Ekonomi Samarinda and Faculty of Agriculture, Mulawarman University) for working together to complete this article. Special thanks go to the leaders of the institution, Dr. Rusdiansyah and Mr. Muhammad Lutfi for his motivation.

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Received: October 03, 2020
Accepted: November 16, 2020