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Indonesia Government's Strategy for Food Security: During the COVID-19 Period

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Abstract

The food crisis haunts Indonesia as a result of the current pandemic. Many attempts were made by various parties to anticipate it. The community began to make savings and grow local food, the movement of local farmers to buy food crops also intensified. This paper presents anticipation of the impact of COVID-19 to maintain the availability, food accessibility, and affordability (stability) of food prices through policies from the Indonesian government. Based on the research and development (R&D) concept, we are trying to describe the strategies adopted by the Indonesian government during the COVID-19 period, especially in terms of management in terms of food availability. A literature study is very important and is closely related to several previous studies from various years. In anticipation of the impact of COVID-19 on the availability and stability of food prices in Indonesia, the government must ensure that facilities and assistance on all food lines, from production to consumption, run as they should. Coordination between Ministries and State Institutions (K / L) is the key to success in implementing this food policy strategy. Trends in food commodity trade restrictions and logistical disruptions have been predicted beforehand. Therefore, the government needs to optimize the potential of domestic food production and improve the national food logistics system.

Keywords: logistics availability, accessibility, distribution, production, price stability, COVID-19, Indonesia.

1. Introduction

Since the end of December 2020 until now, the world has been horrified by the Coronavirus (COVID-19). This global pandemic outbreak is the largest non-natural resource disaster after the Ebola Ebola Virus Disease (EVD) in 2014-2016. As it is known, the African Continent is the first epicentre of the virus, while the first epicentre of Covid-19 is Wuhan Province, China. In comparison to various countries, confirmed cases of EVD were 28,616 people with a death rate of around 11,310 people, while Covid-19 had an impact on 1,602,899 people (confirmed) and killed around 7,218 as of April 10, 2020. In Southeast Asia coverage, WHO (2020) has released that 66,133 Coronavirus cases with a fatality rate of nearly 2,078 people (May 15, 2020). If ranked according to the ASEAN countries, Singapore seems to be the highest region to be responsible for 26,891 cases and total deaths, Indonesia is the most dominant among others, totalling 1,076 people. Specifically in Indonesia, many regions decided to implement the Large-Scale Social Restrictions (PSBB) measures to reduce the rate of transmission of the virus. PSBB is a limitation of certain activities of residents in an area suspected of being infected with the coronavirus to prevent the possibility of more widely spread. If the regulation is implemented, then several activities involving the public are limited, for

example, offices or institutions are closed, restrictions on religious activities, and restrictions on public transportation.

Food is the guarantor of life, while the environment is a guarantor of sustainable development. Saving food security and guaranteeing environmental sustainability (ecological) are two things that must be brought together. In the condition of the COVID-19 pandemic, the challenge is getting heavier in presenting both at the same time (Hirawan & Verselita, 2020).

The 2007-2008 food price crisis has dramatically increased food insecurity and is very far away. Thus, at that time it was considered a failure of the world food system for the long term and triggered the building of the international community in connection with issues of agriculture and food security. From the international meeting in 2008, it was intended to coordinate and discuss national and international responses to the crisis regarding a new system for food security. Social protection has increased rapidly on various development policy agendas, specifically the protection of food security. The environment is considered to be the main media in producing food resources. These limitations occur both in quantity and quality. Conversely, human needs for food are increasing along with population growth and lifestyle. Food security needs to be developed and adapt dynamic relationships with the environment (such as from the neighbourhood). Both of these relationships include the practice of taking turns harvesting plants and wildlife species of local animals as "state" or "traditional" food (Gerlach & Loring, 2013; Kuhnlein & Receveur, 1996; Kuhnlein et al., 2006; Council of Canadian Academies; 2014; West et al., 2010; Rahmanian et al., 2012; von Braun, 2009; Golay, 2010; Gitz & Meybeck, 2011; Agrawala, 1998).

If food prices are not affordable, it will affect the imbalance between the supply and demand sides, so that the inflation rate is no longer controlled. This must be prepared by the Indonesian government. Consumer behaviour in the market for goods and services can not be predicted (at any time) can change according to technological developments very quickly. Therefore, the basic (primary) needs of consumers for rice, corn, tubers, and others need to be considered (Darma et al., 2019; Darma et al., 2020).

Food security is a topic that has recently been widely discussed by many parties as a consequence of the increasingly widespread impact of the spread of COVID-19. After grappling with people's health and purchasing power issues, the food supply has become another central issue that needs to be addressed as soon as possible. Food must be a concern because this matter is the most basic needs, besides clothing and shelter. To what extent did the government anticipate the impact of COVID-19 on food security in Indonesia? This paper seeks to answer the question of how the government should anticipate the impact of COVID-19 to maintain food availability, food accessibility, affordability (stability), and several strategies implemented through Indonesian government policies, ranging from production to consumption, from upstream to downstream.

2. Eco-efficiency and ecology

The food crisis haunts Indonesia as a result of the current pandemic. Many attempts were made by various parties to anticipate it. The community began to make savings and grow local food, the movement of local farmers to buy food crops also intensified. The government also plans to open new paddy fields with extensification on 900 thousand hectares of peatlands in Indonesia (Central Kalimantan Province). However, the discourse is reaping a polemic in the public sphere.

Peatland conversion is considered ecologically counterproductive. It is feared that the peatland extension will damage the ecosystem. Food is indeed an urgent need and priority at the moment, but the fate of environmental sustainability must certainly be considered. Food and the environment, they should not be hitting each other. Both are like two sides of a coin that are needed for humans. Both of them must support each other and together ensure the survival of living things, including humans.

Macro policy in the form of agricultural development must be balanced with micro support in the form of population behaviour related to food. The results of a 2012 Ministry of Environment (KLH) study showed that the Environmental Care Behavior Index (IPPL) was still around 0.57 (from absolute 1). This indicates that our society is only half-acting behave environmentally in carrying out daily life.

Caring or environmentally friendly must continue to be pursued including food consumption. It is very important to encourage human behaviour and lifestyle so that it is efficient and environmentally friendly (in terms of food). The key importance is to make efficient use and minimize waste due to usage. Efficient means that it is appropriate to use. The accuracy is related to the amount and function. The amount is appropriate to the required amount and functionally appropriate to the required benefits. Efficiency also needs to be boosted in environmental aspects or known as eco-efficiency (Darma et al., 2020a).

The need for food intake every day has a dose. Food choices can be observed in terms of calorie requirements. In addition to not excessive, food consumption also needs to consider the type of food. In the chemical era like now, food choices that are natural in addition to good in terms of medical are also environmentally friendly. Compare with processed foods that require fuel and produce waste.

Remote areas, such as villages, are considered important in this connection because they are producing regions (homogeneous). The village's natural resources have so far been abundant and available for production and distribution to the cities area. It should be noted, that as long as the village has an optimal budget (financial capacity), it will be easy to manage resources from the agriculture and fisheries sector (Aslan, 2019).

3. Community behavior and civilization

Housewives also need to be introduced to eco-efficiency practices in food processing at home. A simple example is saving electricity or fuel when cooking. Since childhood, it is also important to be educated, so that you eat in moderation and not produce edible food (Akter et al., 2020).

In Indonesian culture, rice also has a spiritual value. If food is then leftover and wasted, God trusts and the custodian will be angry. Therefore, for Indonesians to waste rice is a big taboo. Efforts to change consumer behaviour and patterns must start at the individual level.

It's time for a green lifestyle that is environmentally friendly behaviour that is cultivated and made a new trend. Green lifestyle in addition to environmental vision is also full of social and health values. Let's start with ourselves, start small, and start right now (Kolovos et al., 2020).

The agricultural sector is important to implement an ecologically friendly system. One of the concepts in agriculture is the concept of integrated farming or Integrated Farming System (IFS). Integration also needs to be increased to zero waste, so that the added value generated is higher or the concept of integrated farming with a zero-waste system.

Agricultural businesses need to adapt to climate change. Shifting the points of prey is important to note. Information and data related to weather agencies are important to follow. The government is responsible for supplying information equally (Pulighe & Lupia, 2020).

Compliance now and the threat of damage in the future is certainly not wise and only becomes the next time bomb threat. Indonesia as a land of agarics must be saved from emergencies towards food self-sufficiency. Modernization of agricultural systems that are environmentally friendly and easily accessible to farmers eventually becomes a necessity (Darma et al., 2020b; Roy et al., 2019).

4. Changes in the food supply chain

Amid a COVID-19 pandemic, all aspects of life tend to lead to new normal situations. The government's appeal to the community to do work from home (working for home) and keep physical distance (social/physical distancing) as well as the policies of several local governments that implement partially quarantine the area and limit activities in the crowd, has made a new change in the situation in almost all aspects of life, including changes in food supply chain patterns. The system or pattern of work in the food sector indeed seems to change very significantly in this COVID-19 pandemic, from the production process to consumption, from upstream to downstream.

From a production or upstream perspective, farmers and food producers are beginning to feel changes in the supply of inputs and must also adjust production protocols to ensure food quality and safety during the COVID-19 pandemic, especially in contaminated areas (Estrada & Yap, 2013; Carletto et al., 2013).

Food mobilization will also experience some adjustments where there will be a change in the supply chain towards more modern markets and online-based markets. Meanwhile, in terms of consumption, due to the adoption of PSBB in several regions, transaction patterns have also begun to change as indicated by the increasing number of transactions using digital or online platforms. This condition ultimately requires the adjustment of policy strategies related to food on all lines (production to consumption and upstream to downstream) so that food security in Indonesia remains guaranteed.

5. Improvement of production and consumption facilities

The role of producers, especially farmers, in the food supply chain is very important. In the COVID-19 pandemic, there was an adjustment that tended to be massive. Almost all countries in the world are trying to meet their own domestic food needs because international trade routes have been disrupted since the outbreak of COVID-19 began to spread. Domestic production is the main focus for every country today, including Indonesia. Production facilities, such as agricultural machinery and equipment, fertilizer and seed subsidies, and other production support facilities, need to be a priority for increasing domestic production.

This is urgent to be realized, considering that 93% of the majority of farmers in Indonesia are smallholder farmers. Facilities and assistance are needed so that they are helped to improve their production performance (FAO, 2018). In the current pandemic situation, in addition to the facilities or assistance mentioned above, a production protocol is also needed that can guarantee the quality and food safety that is free of COVID-19.

Therefore, there needs to be supervision that can be carried out by the Ministry of Agriculture of the Republic of Indonesia and the Agriculture Service of 34 Provinces to ensure that facilities and assistance can be channelled properly accompanied by the

dissemination of safe production protocols and free from the dangers of COVID-19 distribution.

From the supply side, important domestic food commodities, such as rice and corn, are likely to be sufficient for the next 3-4 months (see Table 1). Meanwhile, food commodities that have relied on imports so far, such as garlic and beef/buffalo, appear to need serious attention because the estimated stock until May 2020 seems inadequate.

Table 1: Estimated stock and food requirements, March - May 2020 (tons)

Commodity	Estimated Stock (March-May 2020)	Estimated Needs (March-May 2020)	Estimated Stock (End of May 2020)
Rice	15.9 million	7.6 million	8.3 million
Corn	10.3 million	6 million	4.3 million
Spanish onion	588 thousand	347 thousand	241 thousand
Garlic	86 thousand	151 thousand	-65 thousand
Big Chili	311 thousand	278 thousand	33 thousand
Cayenne pepper	327 thousand	258 thousand	69 thousand
Beef / Buffalo	183 thousand	202 thousand	-19 thousand
Broiler Chicken Meat	1.1 million tons	881 thousand	219 thousand
Sugar	987 thousand	708 thousand	279 thousand

Source: Ministry of Agriculture of the Republic of Indonesia and Ministry of Trade of the Republic of Indonesia (2020)

This condition must be a serious concern of the government, especially since the two commodities are very high in demand ahead of the Idul Fitri holiday. If it needs import faucets, it is better to be facilitated immediately by the Ministry of Trade, in coordination with the Ministry of Agriculture and the Republic of Indonesia's National Logistics Agency, before the countries exporting food commodities carry out trade restrictions for their own domestic needs (Darma et al., 2019).

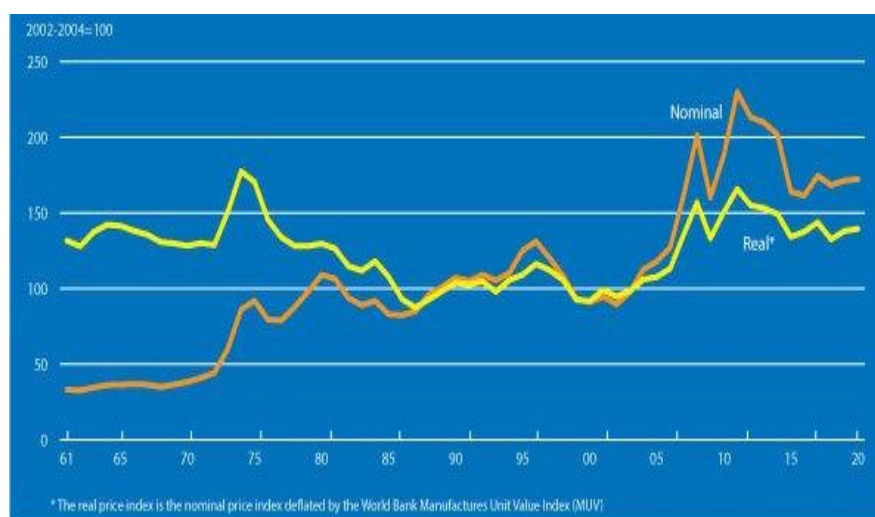


Fig. 1: FAO food price index in nominal and real terms, 1961-2020

Source: FAO (2020)

The main reason for importing now (if needed) is because world food prices have tended to stagnate in recent years (Figure 1). Moreover, several food commodity prices,

such as meat, dairy, cereals, oils, and sugar, have generally declined in the last 3 months (Figure 2).

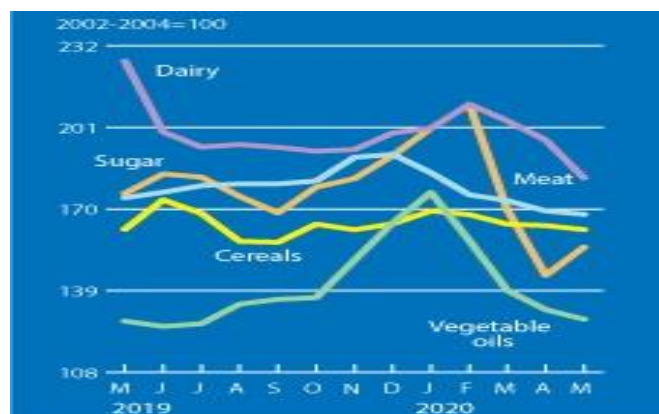


Fig. 2: FAO food commodity price index, 2019-2020

Source: FAO (2020)

Meanwhile, in terms of consumption, to maintain people's purchasing power amid the COVID-19 pandemic, the government has also provided a fiscal stimulus of 405.1 trillion IDR, of which 110 trillion IDR will be allocated in the form of social safety nets, including the addition of program beneficiaries Family of Hope (PKH), basic food cards Non-Cash Food Assistance (BPNT), pre-employment cards, discounts on electricity tariffs (for 450 and 900 VA customers), meeting basic needs and market operations, and adjusting the education budget. This can at least reduce the burden borne by the community, especially low-income people or people who are vulnerable to being affected by the spread of COVID-19 socially and economically.

However, the recipients of assistance or facilities mentioned above must be ensured to be truly on target so that the objectives of the fiscal stimulus allocation are met. In the distribution of aid and facilities for the consumption sector involving many people in the public sphere, especially market operations and food distribution, it is also mandatory to comply with the protocol, which is self-discipline in maintaining safe distance from one another. Besides, what is even more important is how coordination between relevant Ministries and State Institutions (K / L) is in ensuring that all food policy strategies in all lines can run effectively and follow the protocols implemented to reduce the wider spread of COVID-19 .

6. Food price availability and stability during COVID-19

Globally, world food prices indeed appear to be within reasonable limits, at least until March 2020. Based on data compiled from the FAO (2020), world food prices in nominal and real terms, indeed an upward trend has begun from October 2019 to January 2020, then began decreased slightly in the following months (February and March 2020) as what is presented in Figure 3. However, if examined more specifically, based on FAO Rice Price Index data, commodities Major food items, such as rice, have begun to increase by 3% in the last 3 months (January-March 2020).

In Indonesia, if we look at monthly inflation data, namely month on month (mom) and volatile food inflation which is dominated by foodstuffs as explained by Figure 4 also show a similar trend. Even so, the government needs to remain aware of the possibility of rising food prices, especially ahead of the Idul Fitri in May 2020. Data from the National Strategic Food Price Information Center (PIHPS) alone has shown an average increase in rice prices by 0.8% during the January-March 2020 period. Therefore, as an anticipatory

measure for rising food prices in Indonesia, the government needs to implement a policy strategy food in all lines, as previously explained, simultaneously.



Fig. 3: FAO food price index, 2017-2020

Source: FAO (2020)

In April 2020 there was an inflation of 0.08% (mom). This inflation was lower than the previous year which was 0.44% and the previous month 0.1%. If seen from its share, there are two groups of goods that experienced deflation. First, the transportation group that experienced deflation of up to 0.42%. Second, the information, communication and financial services group was 0.34%. Meanwhile, the group that contributed the highest to inflation was personal care and other services 0.07%; housing, water, electricity and household fuels 0.09%; and food and beverage providers 0.02%.

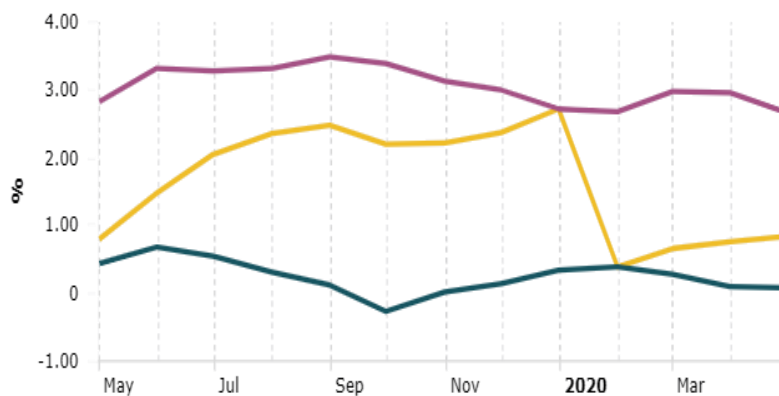


Fig. 4: Indonesia Inflation Rate, April 2019 – April 2020 (mom)

Source: BPS-Statistics of Indonesia (2020)

The decline in inflation also occurred in annual inflation, which was 2.67% from the previous year which was 2.83%. The calendar year inflation grew 0.84%, higher than the previous month of 0.76% and 0.8% the previous year.

The availability and stability of food prices are very important, especially before the month of Ramadan and Eid Mubarak. Even though the harvest is expected to occur in May 2020, the government needs to be more careful in ensuring smooth distribution throughout Indonesia. The government itself has tried to guarantee the availability, stability and uptake of staple food, by ensuring food stock.

7. Optimization of food distribution and logistics protocols

Distribution or logistical channels have become very vital because some commodities have become very important during the COVID-19 pandemic, such as health equipment and food. The disaster logistics protocol, of course, is the initial reference for logistics distribution, but another thing with the COVID-19 pandemic which is counted as a non-natural disaster.

The logistics distribution channel has a very strategic role amid this virus pandemic, especially in terms of handling outbreaks and meeting domestic consumption needs, especially those related to food. The entry of food commodities through land, sea and air is a point that needs to be a concern before the distribution of these commodities is spread throughout Indonesia.

Logistics distribution is closely related to the mobilization of relevant logistical service providers starting from the process of shipping and storing goods, as well as from the starting point to the endpoint along the supply chain, including producers, distributors, retailers, to consumers. The business distribution chain which is interrelated with social interaction is one of the things that the mitigation plan must consider. In quarantine areas that limit social interaction or social movements, logistical distribution needs to be given an exception.

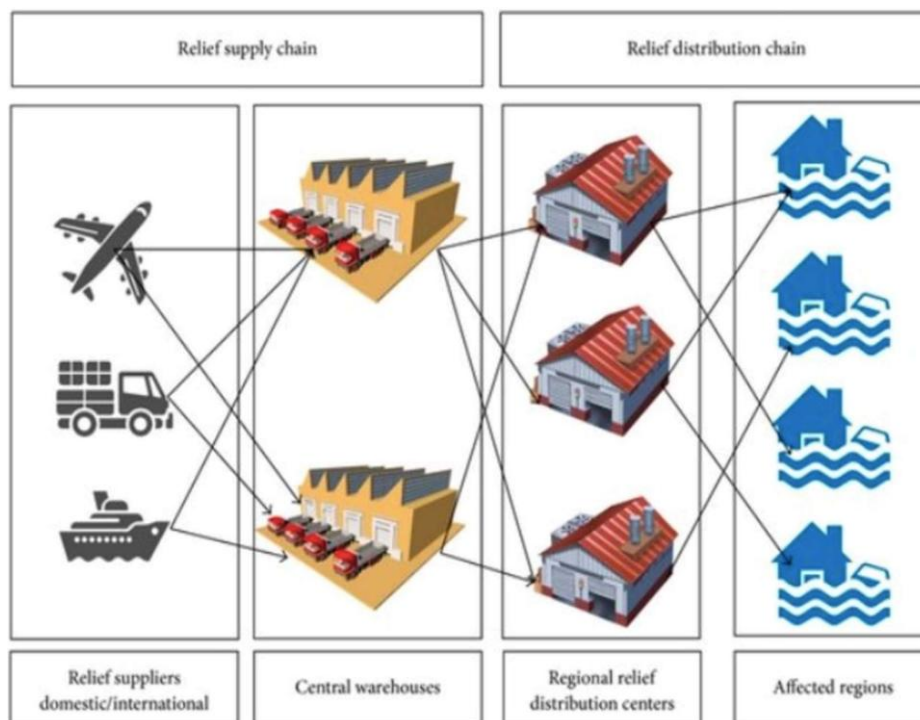


Fig. 5: COVID-19 Indonesia logistic emergency protocol framework

Source: Hirawan & Verselita (2020)

Primary commodities, such as food, which are the main commodities at this time must naturally obtain special treatment or different procedures as usual. This special treatment must go through different logistics or distribution protocols compared to other commodities because its durability and sterilization must be maintained until the destination.

One of the procedures that must be carried out in logistics distribution is sterilization using disinfectants for commodities, logistics workers, and logistics equipment and

equipment. When the commodity has arrived at the terminal, goods must also undergo a disinfectant or sterilization process before being distributed by the courier operator to retail or consumers. Standard personal protective equipment (PPE), such as masks, gloves, sterile uniforms, and hand sanitizers, must also be used not only for medical personnel but also for logistics workers.

The readiness of personnel and fleets required for distribution becomes important where distribution personnel must go through health screening (health screening). Meanwhile, the fleet must also go through sterilization on the interior and exterior using disinfectants. Terminals for logistical goods must also use disinfectants and daily control is carried out to prevent the virus from settling on personnel and the fleet. Besides, it is also necessary to pass the inspection certification, daily, especially if indeed a regional quarantine is in place and the distribution process must continue.

Taking into account Indonesia's geographical conditions, population distribution, and increasingly inelastic demand for food in the COVID-19 pandemic, it becomes important if the logistics sector can be optimized and the logistics protocol can be carried out properly because this sector is one of the key sectors that can maintain availability and food price stability in Indonesia.

Therefore, the government needs to encourage and facilitate this logistics sector so that it runs optimally, especially in terms of providing infrastructure and other special facilities. Incentives for the logistics sector in the food supply chain need to be a priority, so food distribution is guaranteed and food price availability and stability are maintained. If there is no incentive at all and there is no clear logistical protocol, it is not impossible also that food distribution does not support resolution of the effects of COVID-19, but instead becomes a way for the virus to spread from one point to another.

8. Conclusions

This condition is a warning that concrete steps must be taken immediately to strengthen the carrying capacity of the environment in the aspect of food during COVID-19 takes place. Also, if several food commodities need to be imported to meet domestic food needs, imports need to be carried out by providing import facilities, before the rise of food trade restrictions in several food commodity supply countries. However, if imports are not needed, optimization of the domestic food supply chain must be a top priority so that there is no disruption to food security in Indonesia.

The extent of productive agricultural land needs to be maintained and protected from swift conversion efforts. Urgent incentive and disincentive mechanisms are realized. Farmers should have lightened their burden, for example by eliminating land tax, fertilizer subsidies, and others. Meanwhile, the converters need to be controlled by asserting sustainable agricultural land policies or maximizing licensing and tax levies.

Agricultural productivity needs to be increased, so that it can become a lucrative sector. Commodity development needs to be varied. The upstream-downstream agriculture sector must also be presented with farmers as the main actors. Farmer entrepreneurship is important to grow and supported by policies such as capital assistance, technical guidance, product distribution, and others.

Farmers' behavior needs to be directed to create agriculture with minimal pollution. Organic farming policies can be developed. Farmers must also be protected from the economic game of large fertilizer companies.

Diversification of food and culture utilizing local food products needs to be encouraged again. This is to reduce dependence on rice production, while environmental carrying

capacity is not necessarily suitable for rice commodities. Besides, diversification can also improve soil quality and reduce pests and diseases.

Author contributions

Surya Darma conceived the idea and collected data, Syaharuddin analyzed the data, Tommy Pusriadi wrote the paper, and Dio Caisar Darma was tasked with submitting, revising the manuscript, and communicating with the journal editorial team.

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