

Climate Change, Food Insecurity, and National Defense in Archipelago Country: An Interlinked Challenges for Indonesia

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Abstract

For archipelago countries that consist of thousands of islands like Indonesia, climate change is an imminent threat to the nation. The characteristic of an archipelagic country is adding different challenges to the context of food sufficiency for its people. Meanwhile, the Indonesian defense and security system, the Universal people's defense and security system which is also known as "Sishankamrata", mandated the concept of the unity of both military and non-military actors. Those conditions may lead to the overlap jurisdiction that affected the policies later. This study aimed to enhance and broaden the perspective for the use of the "security" term for climate change and food security in national defense. This study was done by collecting and summarizing relevant discourses and works in Indonesia that are within the scope of climate security to explain the interlinked aspect between food security as the main goal, climate change as the imminent threat, and national defense as the affected aspect. The results show that the interlinked between climate change, food insecurities, and national defense are majorly related to supply and food availability. As an archipelagic country like Indonesia which depends on agriculture and have rice supremacy over the region, these conditions could lead to food scarcity in some areas and increasing dependence on food from other islands. Climate change could worsen these conditions by affect agriculture production between islands.

Keywords— Climate Change, Food Insecurities, Food Sovereignty, National Defense, Archipelago

Introduction

Climate change is widely recognized as a serious threat to the function of the ecosystem and human life. Especially for archipelago countries that consist of thousands of islands like Indonesia. The country is expected to experience many environmental impacts from climate change, with primary threats in the form of sea-level rise, and changes in the weather patterns across the Indonesian archipelago that caused floods and droughts. Sea level rise threatens to drown the small islands, erase baseline territorial islands that establish Indonesia's Exclusive Economic Zone (EEZ), exacerbate catastrophic disasters such as flooding in their large urban cities, and inundate

critical coastal zone that is necessary for the domestic crop production. Changes in weather patterns especially the rainfall that has been affected by the rise of temperature globally, will likely disturb or displace the onset of planting seasons, and contribute floods, flash floods, and landslides, that increase the damage during the rainy seasons and severe drought during dry seasons. These changes have been widely known to be problematic as they place the lives and the livelihoods of millions of Indonesian citizens at risk. The consistent unmitigated threat to lives and livelihood could contribute to political instability (in this case national security) and further threats to national defense. Despite the overwhelming challenges that have

to be faced, the Government of Indonesia (GoI) has rush out, commissioning advanced studies to mitigate the forecasted impacts and risks of climate change, and creating whole of plans also policies to reduce the risks and strive for domestic food sovereignty and security that superimposed as food self-sufficiency.

While food security is known as one of the GoI goals, it has been known that the food security is one of the world's most important issues and therefore it is mandated as a second objective of the Sustainable Development Goals (SDGs), which is to establish a world free from hunger or "zero hunger" and to double agricultural productivity by 2030 (Setiadi et al., 2020). On the other hand, food security is, in fact, a more complex matter beyond the conventional fulfillment of food availability through supply and demand. In the context of climate change, food security is related to and affected by multidisciplinary with many variations of issues, that come domestically and internationally which involve multiple perspectives. The perspectives involved are not only from the climate change aspect (Gregory et al., 2005; IPPC, 2014) but also from the perspective of poverty and justice (Alkon et al., 2013; FAO, 2012), technical and engineering aspect, and lately governance and national defense or in this case the military aspect.

Although the food security has been known for the "security" term consistently in many kinds of research related to climate change, the term relationship between both of them is not yet clearly defined. However, as the understanding of the climate change problem has increased, Kameyama and Ono (2020), has taken noted that there is a vast increase in the use of the combination terms such as "climate security", "climate change and security", and "climate-related security" by experts and practitioners worldwide. Meanwhile, as Kameyama and Ono (2020) explained in the Japan case, the author found that debate or term use by GoI is almost non-existent. Meanwhile, GoI has a distinct concept for "security" that should be clearly defined in conjunction with the term "defense".

Defining the concept of national security and national defense cannot be limited by the understanding of tool-oriented only. There are opinions about these two concepts which still evolve and are debatable. GoI used the term security and defense in the Universal people's defense and security system which is also known as "Sishankamrata" (Indonesia Defense Ministry RI, 2012). This system includes both military and non-military actors as a unity. By function, national security and state-defense are cannot distinctively differentiated. However, since the 1998 reformation, the Sishankamrata was elaborated in the form of an implemented function for an organization. Security is a domain ruled by the national police while the defense is ruled by the military (Siagian et al., 2021). Based on the existing laws and regulations, national security is perceived as creating a sense of security for the community while the national defense is interpreted as an effort to protect the state from other states' military aggression or attacks. National security is also associated with internal security and maintaining community order or *kamtibmas*, while the national defense is associated with war (Larosa, 2019). These two concepts are the most broadly known within the Indonesian community, but unfortunately, this is the false one.

The perspective surrounding the term security and defense is still emerging. But, most of the opinion is directed at the term security rather than defense. In fact, the term 'security' in Indonesia has more than one perception: 1) Security with the capital 'S' which is directed to broader national security and 2) security with the lowercase 's' which means the internal or domestic security ruled by Indonesia National Police (Sulistyo et al., 2009). On the other hand, the majority agree that the meaning of defense is relatively consistent: associated with the military or Indonesia National Force (TNI). These opinions that separate the phrase defense and security firmly followed by an understanding of the role of the TNI only for defense (in dealing with external threats) are clearly unacceptable (Siagian et al., 2021). It

obscures the concept of the Universal people's defense and security system (Sishankamrata).

Those conditions may lead to the overlap jurisdiction that affected the policies later. To anticipate that, this study aimed to enhance and broaden the perspective for the use of the "security" term for climate change and food security in national defense. Following the conceptualization of the term "security" by Kameyama & Ono (2020) that the overarching concept encompassing danger and risk is useful for analyzing "securitization" discourses in this paper, we aligned the term with the "defense" purpose that has the essential feature of danger and risk that may invoke a certain degree of threat. Whereas danger implies a short-term and imminent threat, risk denotes an uncertain threat (Diez et al., 2016). One of the questions relevant to the securitization of climate change is whether or not the concept of "climate security" can promote appropriate policies promptly to address the issues climate change proponents of Indonesian's securitization logic suggest, especially for the food security concept. The logic of securitization holds that security is the move that takes "politics beyond the established rules of the game and frames the issue either as a special kind of politics or as above politics" (Buzan et al., 1998:23). Securitization permits the breaking of established rules and the use of extraordinary measures if necessary (Buzan et al., 1998:25) that aligned to the military "defense" term. Given this definition of securitization, there are conflicting normative assessments about linking climate change, food security, and national defense. Proponents of securitization argue that it can prioritize and accelerate climate change policies, especially for the food security in archipelago country like Indonesia. Critics argue that it can lead to the militarization of climate policy and tilt toward adaptation measures to secure military means and prepare contingent action plans to cope with "climate refugees", thereby neglecting climate mitigation policies and human security aspects (Adger, 2010; Diez et al., 2016; Floyd & Matthew, 2013). In addition, critics say that the use of the

term climate security may even obfuscate the important nuances of some climate-related risks for facing imminent threats.

Therefore, this study aims to answer these questions by collecting and summarizing relevant discourses and works in Indonesia that are within the scope of climate security to explain the interlinked aspect between food security as the main goal, climate change as the imminent threat, and national defense as the affected aspect. The study consisted of two steps. First, we briefly summarized the relationship between climate change and food security discourse in Indonesia and developed a scheme to clarify different perspectives using the term. Although many articles have reviewed the diverse approaches and interpretations related to the concept of food security in Indonesia, none has examined how each approach could result in sending different messages for the interpretation as to what should be done to mitigate food insecurity and its effect on archipelago country national defense. Thus, this exercise was necessary to investigate whether these notions have been linked by other terms in the Indonesian context. Second, we reviewed discourse in Indonesia that was related to the idea of climate security, placed the discourse within the context of the categorization developed in the first step, and analyzed how climate change and food security related to national defense discourse in Indonesia is conducted without using the term "climate security". Our intention was not to scrutinize bureaucratic politics among Indonesian government agencies. Rather, our analysis focused exclusively on how Indonesian government agencies perceived and dealt with the food security related to national defense under the term climate security because they play central roles in the implementation of climate change policies (Kameyama & Ono, 2021)

2. Relevant Discourses and Works

2.1 Climate-Related Risk to National Defense & Security in Indonesia's Archipelago

National security has traditionally been concerned with the armed forces of other countries and other similar concerns to a nation-state, which may be considered a "defensive" phrase. However, with "climate security," the issue has been broadened to include a wide range of climate change effects. Long-term occurrences such as sea-level rise, which may alter the layout of sovereign borders and exclusive economic zones (EEZs), or even the melting of the Arctic ice sheet, which may alter navigation routes, military supplies, and logistics for military and other ships, are examples. Short-term extreme weather patterns, such as floods and storms, can also cause damage to military facilities. To avert such losses, individuals who employ this strategy stress the need of military and national security initiatives.

Differences in socio-political-historical conditions affect the existing concept of security. In the international context, the term security is most widely used and is known as a concept of military conflict between countries. According to Arnold Wolfers, "security, in an objective sense, measures the absence of threats to acquired values, in a subjective sense, the absence of fear that such values will be attacked" (Wolfers, 1962). The concept of security, which was previously associated with the military, is increasingly developing into various fields such as economics, politics, culture, and the environment. Pros and cons have emerged regarding the juxtaposition of the various non-military sectors with the term security. Debates are still particularly intense, especially in the environmental and security sectors (Kameyama & Ono, 2021).

In Indonesia, National security and national defense are clearly two distinct concepts used by Indonesia's government. Both of them are rooted in the national purpose as a notion in the

preamble of the 1945 Constitution of the Republic of Indonesia 4th Alinea which says: *"to protect all Indonesian people and all Indonesian blood and promote prosperity generally, educate the nation 's life and participate in carrying out world order that based on freedom, eternal peace, and social justice"* The interpretation of this Alinea means, that in order to achieve the national purpose, it is required a sense of secure environment and condition that guarantees all of the processes to achieve that goal. The state has the obligation to protect the national sovereignty and its people no matter what happens. The basis before all the national programs of interest is to make sure everything is in order and save enough to do the work (Nakir, 2015). This is the purpose of national security and national defense in Indonesia.

However, since the 1998 reformation, the Sishankamrata was elaborated in the form of an implemented function for an organization. Security is a domain ruled by the national police while the defense is ruled by the military (Siagian et al., 2021). Based on the existing laws and regulations, national security is perceived as creating a sense of security for the community while the national defense is interpreted as an effort to protect the state from other states' military aggression or attacks. National security is also associated with internal security and maintaining community order or kamtibmas, while the national defense is associated with war (Larosa, 2019). These two concepts are the most broadly known within the Indonesian community, but unfortunately the expected interpretation by the law. As mentioned in the introduction, The perspective surrounding the term "security" and "defense" is still emerging. But, most of the opinion is directed at the term "security" rather than "defense".

The main principle of national security is to create safe conditions, specifically for the object related to the state and nation only. Thus, this concept brings along the meaning of the term 'existing threats' which is still debatable.

The center of this perspective is the nation-state which is generated by national interest, and therefore this concept has a strong connection with both the external environment and the state itself (Walt, 1991). In consequence, national security has a wider scope of problems: economic, social, cultural, political, and even defense and security.

The perception above is adopted by the Indonesian government as an integral concept of Security with the capital “S”. It has the same dimensional characteristic as the perspective of national security mentioned by Nakir, (2015). National security covers various aspects of state life pillars: ideology, politics, economic, social, cultural, defense and security. Moreover, national security can be seen as an evolving object which produces the other concepts: national defense, public security, and human security. The principal is to provide security, so the state can do the work to achieve its national purposes. This is also related to the term national defense which is described as the efforts to protect the state from outside (international) threats. Based on this perspective, national security is pictured as the

broader spectrum which has several smaller concepts inside it. Meanwhile, national defense is placed inside this spectrum of national security.

Larosa (2019), gives the best concept to picture national security in Indonesia. It includes all of the nation-state aspects, both internally and externally. Figure. 1 shows a model framework for redefining Indonesia’s national security considering various important factors specifically related to the goals and objectives of the national security policy itself, the global and regional interest, and the physical environment. The place where the three of them influence one another. As seen in Figure 1, Indonesia as a part of the international community is surrounded by various potential threats and risks. The systems combine three layers of nation-building: individual system, state system, and the international system as Buzan mentioned in his analysis on national security. Each of them is interconnected, has a different function, and affects one another. We see this model as the best representation yet relatively simple to understand the concept of integral national security.



Figure 1. Indonesia's National Security Perspective (source: Larosa, 2019).

As an impact of global emerging problems, many scientists categorize various security dimensions, such as human security, military security, social security, energy security, food

security, transnational crime, etc. All of these issues still accommodated in the bigger theme of national security. According to the Institute of Defense and Strategic Policy Studies (IDSPS), National Security is the embodiment

of the comprehensive security concept which manages security as a multidimensional framework that requires the state to prepare various security actors to manage it.

On the other hand, the concept of national defense has similarities in term of dimensional and actor. Both national security and national defense, are connected with internal and external aspects of the state. Regulations and law in Indonesia perceived the essence of national defense as an effort to defend the nation which has characteristics: universal in nature, implemented based on the balance of rights and obligations, acted by their citizen, and involving all-natural resources in territories. All of these characteristics are prepared and managed by the government by using the principle of integration, continuous, and direction in order to achieve state sovereignty, territorial integrity, and safety for all nations.

The clear distinction between the concept of national defense in Indonesia with the other country is that Indonesia uses the concept of universality. Universality implies involving the whole community and all national resources, facilities, and national infrastructure as well as the entire territory of the country as a unified object. The regulation mentioned, the civilian citizen is placed as an actor contributing to the defense activity while the regulation is still managed by the government. In this context, the national defense system has two-component, namely: main components which are played by the Indonesian National Force (TNI), and support components which are played by Indonesian civilian citizens (Presidential Regulation of the Republic of Indonesia Number 8 of 2021 concerning General Policy of National Defense for 2020-2024, 2020)

The task division between the main components and the support components clearly shows the dimensions of national defense that are not limited to mere militaristic issues. The national defense also includes the same social, political, cultural, and physical dimensions as the concept of national security. Both of them also use the

framework of internal, regional, and international which is connected as a system. The emphasis is on the “threat” aspect. In national security, “threats” are seen as one of the factors that build the main picture in the form of achieving a sense of security in the state. Meanwhile, in the concept of national defense, threats are seen as the main generators that inspire strategic steps to protect state sovereignty. The Indonesian national defense stressed the “threats” factor which is not fully stressed in the national security concept. Besides, national security is pictured as the bigger issue rather than handling the threats only. This is the difference between the two of them, although they cannot be separated according to the concept of Sishankamrata. While national defense and security have been defined, from a national security perspective, climate change could be assumed to be a threat to national security and military operations. Indonesia’s Defence White Paper (2015) have more specifically interested in considering the implications to Indonesia’s national security, including how its military operations could be affected by climate change, how much instability could be anticipated through the displacement of people over its region, and how much damage could be incurred by Indonesia military.

2.2 Climate Change and Indonesia’s Food Insecurity

In Indonesia, it has long been recognized that climatic extremes pose a growing danger to food security and community safety, with increasingly negative consequences for national and municipal government economic resources. Combine with this climatic characteristic, archipelagic form of this country adds several challenges related food availability. To begin with, they have a limited resource pool. Second, they are frequently located far from big marketplaces. Third, they are highly reliant on unpredictable export and import markets. Fourth, their modest size restricts their economic diversification possibilities. Finally, the total output ammount of each island's exports is insufficient to profit from economies of scale. According to the Food and

Agricultural Organization (2017), 50 percent of the country's islands import 80 percent or more of their food needs.(Guillaumont, 2010). This vulnerability stems from the fact that, due to their economic openness, island economies are impacted by variables outside their control. These countries' food security is mostly reliant on imports.

Food price increases have a global influence on the economics of many net food-importing islands (Ng & Aksoy, 2008). Exogenous and endogenous drivers are those that explain price levels and variations in the agricultural commodities market. Weather shocks, natural catastrophe repercussions, pricing dynamics in energy and petroleum markets, and exchange and interest rate dynamics are examples of exogenous drivers. Political interventions affecting global consumption and production, domestic price insulations, and commodities futures market speculation are all endogenous sources of price volatility. These global food price determinants can interact in intricate ways, each impacting prices to varying degrees (Santeramo & Barbieri, 2017).

Food import expenses are rising, while agricultural exports are declining, resulting in a reduction in food-importing capability. The consequence of high food import expenses puts pressure to tiny island countries' national budgets for more foreign money to purchase imports and develop social security programs. (Brizmohun, 2019) Several island countries, notably Indonesia, have shifted from net exporters to net importers of agricultural products during the previous few decades. Food security, or more accurately, food availability, is rapidly becoming a consequence of capacity to pay for food imports in Indonesia. This, in turn, is a function of national revenue at the aggregate level; hence, measuring the impact of climate change on food security entails analyzing the ability to pay for food imports. Due to the rising frequency and intensity of extreme climatic events, climate change is predicted to be a growing driver of high food prices and volatility. The consequences of climate change scenarios on the food and

agricultural industry as a whole are quite complicated (Barnett, 2020).

Numerous studies on the influence of climate change on global food production reveal a diminishing trend under various climate change scenarios. Climate change, as previously said, has the potential to alter food supplies and undermine food security. Reduced output will theoretically result in higher food costs. Price increases may have an influence on food access, affordability, and use. Food scarcity is not a significant obstacle to households eating a healthful staple-adjusted diet. However, the cost of food (affordability) is a significant hurdle for Indonesian people. Knowledge of which foods are important sources of nutrients, as well as a desire for less nutritious, more costly, and/or more convenient meals and drinks, may be further hurdles to following this diet (World Food Programme, 2017) .

On average, food accounts for 55.3% of household spending (The World Bank, 2020) and households in the lower expenditure group spend a significant amount on food (58.29%) compared to those in the upper expenditure group (41.42%) (Statistics Indonesia, 2021). Price volatility matters a lot for Indonesian food security, as consumers can shift their behavior to respond to the price increase. When faced with a price increase, consumer reduces the consumption of nutritious food or even the overall quantity of their food. A study on the impact of high food prices on food assistance beneficiaries found that they prioritized rice over eggs when facing price increases and will prefer to increase their instant noodle consumption (Ilman, 2020).

3. Discussions

3.1 The Interlinked between Climate Change, Food Insecurity, and National Defense

The availability of the rich potential in human and natural resources of Indonesia, represents both initial capital and prospective provision to promote national growth in all disciplines. The core of national development is the progress of

the Indonesian people and society as a whole, including agricultural development in an endeavor to achieve national food security. Limitations on food security based on Law No. 18 of 2012 define food as the most essential fundamental human necessity, and its fulfillment is part of every Indonesian person's rights. Food must always be accessible in adequate numbers, be safe, of good quality, nutritious, and diverse, and not clash with the religion, beliefs, or culture of the society. Food security is an essential part of agricultural growth in Indonesia. The key reason of this matter resides at the huge number of populations which absolutely requires an appropriate food supply. Meanwhile, rice as a foremost and supreme food and agriculture commodity in Indonesia, indirectly shaping the country's food and economic status. Food security is frequently mistaken with rice self-sufficiency in Indonesian history. The dependency of low-income households on rice is rising since they will typically spend their cash to acquire their fundamental requirements first: food.

The polar opposite of food security is food insecurity. It refers to the state of food insecurity faced by certain areas, groups, or families in order to meet physiological demand standards for growth and public health. Around the 1980s, the concept of food security became well recognized, replacing the concept of food policy, which was conceived in the early 1970s during a global food crisis. Over time, the notion of food security has grown and altered. Food security has developed significantly throughout time, and there is a wealth of research on possible family food security indicators. There are around 200 definitions and 450 food security indicators resulted from the International Food Policy Research Institute study (Hoddinott, 1999). The following definition of food security in Law No. 18 of 2012 is a refinement and "enrichment of coverage" from Law No. 7 of 1996, which covers "individual" and "according to religious convictions," as well as the nation's "culture." Food security, according to the FAO definition,

is a condition in which everyone, at all times, both physically and economically, has access to adequate, safe, and nutritious food to satisfy daily nutritional needs. -day, based on his preferences., and nutrition, and do not conflict with the religion, beliefs, or culture of the community, allowing them to live long, healthy, active, and productive lives. In order to achieve food sovereignty, this new legislation highlights the need of self-sufficiency (Indonesian Farmers Union, 2013)

The idea of food security is used in Indonesia as the ultimate objective of governmental food management. According to the 1996 Food Law, the ultimate aim of food security is food sufficiency up to the family level. However, the government will place a stronger focus on the idea that "the most important problem is that people's food needs be satisfied," rather than where the food comes from, using this concept of food security. Food security can be enhanced, and people can get food more easily. Food self-sufficiency, on the other hand, is exceedingly low, as most food consumed by people is still imported. This chasm supports the notion that food security alone is insufficient. To avoid relying on imports, the state must be able to develop food security based on the strength and distinctiveness of local resources (Hariyadi, 2012).

Food sovereignty is described as the right of the state and country to independently determine food policies that ensure the right to food for the people, as well as the right of the community to decide on a food system that is compatible with the potential of local resources. Food independence, on the other hand, refers to a state's or nation's ability to produce a range of foods from inside the country, assuring the fulfillment of sufficient food demands at the individual level via the dignified use of natural, human, social, economic, and local wisdom resources. Meanwhile, food insecurity is the situation of a neighborhood, community, or household that lacks physical (availability) and economic access to food (purchasing power).

Furthermore, the negative effects of climate change include extreme weather occurrences, which can be viewed as dangers to humans, particularly those concerned with food insecurity and national defense. This method referred as the "comprehensive security approach," which is based on human security but also examines the interplay of multiple security aspects, such as energy security and food security. This technique classified negative outcomes such as malnutrition, unhygienic conditions, and temporary relocation of individuals. This viewpoint had been extensively documented to those living in impoverished nations in the majority of circumstances (Mobjörk et al., 2016). However, it has grown increasingly visible to citizens in industrialized nations in recent years as more extreme weather events have begun to afflict local regions in such countries.

With growing concern over global food price spikes in 2009 and 2011, as well as headlines of drought and declining crop production in 2012, many states and agricultural corporations have begun to think seriously about food supply security and reinvesting in agricultural production alongside processing and distribution. Climate change-related food insecurity has added a new impetus and urgency to the long-running discussion of environmental security, and this necessitates consideration of three specific themes: urban vulnerabilities, unanticipated social and political consequences of adaptation and mitigation efforts, and geoengineering possibilities. In certain ways, this viewpoint urges people to prepare for the worst-case scenario and to create resilience to the effects of climate change (Dalby, 2013). However, the term resilience mentioned above is different from the perspective of defense which based on "friend-enemy" logic which usually followed by the risk come from political polarities (Corry, 2014). If weather patterns are anticipated to be disturbed as climate change advances, establishing a diversity of production sources is a prudent approach for governments as well as corporations involved in food

production and transportation. Adaptation to climate change so becomes, in part, a matter of adopting precautionary steps in the present to ensure future food supply (Dalby, 2013).

Meanwhile, the link between climate change and food shortages has produced an even more intriguing outcome for observers: inter-group conflict. According to this viewpoint, the conflict that happened was caused by climate change. Despite the usage of the phrase "climate change," the major focus is on inter-group conflict. Water scarcity and migration, according to Homer-Dixon (1994; 1999) and Myers (1995; 2002), have been related to an increase in violent conflicts. While such a conflictive evolution is undoubtedly possible, the quasi-automatic relationship between climate change and conflict undervalues human potential to deal with resource shortages collaboratively or to adapt to changing environmental conditions (Diez et al., 2016). Despite the fact that the link may not be straight and easy, the influence of climate change may cause conflict amongst individuals that would not have occurred otherwise. This perspective is more acceptable when it is related to national defense by majority.

The interconnections between climate change, food insecurity, and national defense are mostly connected to the quantity and availability of food, as shown in Figure 1. In the case of archipelagic countries like Indonesia, which rely on agriculture and has rice dominance in the region, these conditions might result in food scarcity in some parts, forcing them to rely on imports from another island. Climate change, which may disrupt the supply chain and agricultural output, exacerbates this situation.

3.2 The Challenges to Be Faced by Indonesia

Following the conditions, GoI has been mandated by Law No. 8/2012 on the Food, has been developed a concept that includes the food sovereignty, however, their perspective tends to use the macro view that biased to the condition over the 5 Great Islands (Java, Sumatera,

Borneo, Celebes, and Papua) and rather missed for the small islands like Mollucas, Nusa Tenggara, and other isolated islands. Later, with their perspectives, it resulted in top-down approach to food policies that conflicted with each other and could not have a greater impact on Indonesia's Citizens. Further, successive Indonesian governments have differed on many issues, but one aspiration they have all shared has been an unwavering desire for and policy focus on achieving national self-sufficiency in food, and most especially in rice. This persistent state ideology mirrors an almost universal and deeply taken-for-granted element of shared national culture in Indonesia. While this attitude may reflect a nationalist aversion to any hint of dependence on foreign largesse, the basic policy approach in fact predates the formation of an independent Indonesian state (Davidson, 2018) and seems to have been aimed consistently toward maintaining political legitimacy and power. For the Dutch colonial regime too, interference with the rice trade was a time-honored feature of colonial economic policy. Its basic aim was a stable, preferably low, price level. Low prices (but not too low) ensured low wage levels, and therefore high returns to western investments, but they also kept basic foodstuffs within the reach of the lower classes, thus preventing famines, migration and revolts (Boomgaard, 2003).

Later, in the heady days of the new republic, the first President, Sukarno said famously that 'food security is a matter of life and death' and that the road to food security was through national self-sufficiency in essential crops and commodities (Mears, 1984). Later still, as programs of agricultural development were initiated, many of them included specific reference to self-sufficiency as their primary purpose (Rieffel 1969: 110; Roekasah and Penny 1967: 60). This basic ideological foundation remains present, always implicit and often explicit, in public discourse and state policy and practice today (e.g. Kementerian Pertanian 2020). Also from the colonial period onwards, there has been a counter-discourse questioning this ideology of self-sufficiency on

grounds of economic rationality and efficiency (Rieffel 1969: 132). Since the 1990s, a chorus of (mostly international) expertise has questioned this orthodoxy and called for Indonesia to liberalize its rice markets and move towards a more globalized, market-based approach to food security (Hamilton-Hart 2019; McCullough and Timmer 2008; OECD 2015) citing the high social and economic costs of inefficiencies created by government interventions. This counter-discourse also exists within Indonesia, but only as a minority voice (e.g. Nuryanti et al. 2017). The hegemonic ideology of self-sufficiency is thus routinely contradicted by government pronouncements promoting market-oriented development. Vice-President Yusuf Kalla, for example, has promoted ... financial inclusion ... through value chain innovation, to improve productivity and welfare in the agriculture sector. ... to improve productivity on all fronts, but the main point here is technology. ... also ... how to expand their businesses. Financing is required (Jakarta Post 2016).

Likewise, we find that documents in which assumptions of self-sufficiency (*swasembada*) are deeply embedded not uncommonly also include passages extolling the virtues of new cash crops, market-based development, and export orientation. And at the level of policy implementation on the ground, projects for improving local livelihoods by replacing subsistence production of food crops with high-value crops for export, run concurrently with programmes to revive backyard and neighborhood gardening. This apparent contradiction, tension, or at least duality of beliefs and assumptions, lies at the heart of Indonesian policy and practice on food and agriculture yet it is rarely recognised, let alone addressed. While these two aims are in themselves well known and need not necessarily be incompatible, the fact that the contradictions between them are ignored or denied, seems to be an obstacle to achieving the aims of either approach, let alone a constructive engagement or compromise between them. The obvious and widely criticised weaknesses of the

current Indonesian food system (Davidson 2018; Dawe 2004 Hamilton-Hart 2019; McCullough and Timmer 2008; OECD 2015), suggest there may be value in a more nuanced understanding of the cultural grounding of this contradiction.

4. Concluding Remark: The Climate-Food Security Information Based Policies for National Defense

As explained in the previous chapter, climate change, food insecurity, and national defense are interrelated. However, to achieve this defense a general approach, like that of a continental country, cannot be used for Indonesia, which is an archipelago. The concept of a bottom-up approach introduced as a food-independent island is one of the concepts that is most suitable for Indonesian conditions (Fadillah et al., 2021). By analyzing the strengths and at the same time building defenses against climate change and food insecurities uniquely from each island, integration into universal defense will become a necessity. The development of the food self-sufficient island concept must also refer to the 5 pillars of the food system governance: security, sovereignty, safety, shareability, and independence/autonomy. With these 5 pillars fulfilled for each island, all aspects related to food can be broken down into problems that are easy to handle and not complex as seen from a macro perspective.

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