

# LEAD

**JOURNAL**

## **Food and Land Policies Amid the Agricultural Land Conversion in Indonesia**

by Al Khanif & Fenny Tria Yunita

**Vol 20/1  
2024**



## **Food and Land Policies Amid the Agricultural Land Conversion in Indonesia**

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### **ABSTRACT**

This article examines the shifting of land and food legal policies in Indonesia. It also discusses legal and political contexts, including historical and current contexts of policies on land and how such policies influenced Indonesian political spectrum. Firstly, it discusses the chaotic land ownership during the Sukarno Old Order era (1945-1966), followed by food politics under the Suharto New Order (1966-1998) and how the regime used rice as a political commodity. To give a more comprehensive analysis, the article then discusses the massive land conversion after Suharto era and how it affected expansion of agricultural land in the outer regions of Indonesia. The article also covers the extent to which the central government has developed legal policies to sustain their agricultural products in Indonesian national development plans. This article concludes that the national strategic project has become one of the main challenges in protecting agricultural land. The government must ensure that the land conversion should be aligned with the needs and priorities of farmers and rural communities to maintain sustainable development of the agriculture sector in Indonesia.

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## INTRODUCTION

Indonesia has tried to boost its economy by implementing a national strategic program (PSN) which mainly focuses on infrastructure construction, business efficiency, and land procurement. Along with the increase of population, economic development, and PSN, land conversion in the agricultural sector will potentially increase significantly as well. The trend of land conversion is predicted to still increase tremendously because the economic development in Indonesia is also accompanied by rapid urbanisation, industries, and infrastructure development. If the trend of agricultural land conversion is not taken seriously by the government, Indonesia will face a consequential degeneration of food production which will also affect the Indonesian food self-sufficiency that has been the unwavering long-term policy goal in the country.

Since the introduction of rice as the staple food in Indonesia in the late 1970s, the government policy to establish food self-sufficiency is based entirely on rice and other staple foods such as cassava, flour, and sago were left behind. Since then, the concept of food self-sufficiency seems to be articulated as self-sufficiency in domestic rice. Food self-sufficiency should be understood by the Indonesian government as to what the extent Indonesia can produce a variety of food and can satisfy its food needs from its own domestic production, while at the same time does not close its border from food trading through both imports and exports.<sup>1</sup> Food self-sufficiency is different than food security, even though the two are closely related because food self-sufficiency focuses more on the capacity of domestic production, while food security is mainly concerned with food availability. Based on this difference, food security is mainly related to the Indonesia's capacity to provide food with less consideration for the origin of the food. A country is food secure if food is accessible, available, nutritious, and stable. What makes a difference between the two concepts is that food security

can be achieved not only from producing food, but also importing food.<sup>2</sup>

The Indonesian government has started to introduce a food self-sufficiency policy since 1969 and in 1984, Indonesia became self-sufficient in rice.<sup>3</sup> However, over the past decade, crop production in Indonesia has failed to meet the entire domestic demand, so importing food to provide a greater food supply has become a continual issue in the country. Some people politicised the food import policy, often depicted as the decline of the economy and Indonesian food self-sufficiency. Unfortunately, the opening of new large-scale rice paddies in Borneo, Sumatera, Papua, and other outer islands in the last decade has been destructive to the environment and has had adverse economic impacts.<sup>4</sup> For example, the mega project Merauke Integrated Food and Energy Estate (MIFEE), which has officially launched in 2010 on a land area of 1.5 million hectares, has failed to strengthen food production in Indonesia.<sup>5</sup> This program, in fact, has led to the environmental crises occurring due to companies' involvement in changing the function of the forest, land grabbing, and violations of the rights of the Marind Indigenous People.

Land conversion may not only threaten the capacity of the country to produce staple food but also indigenous communities and wildlife whose lives are centred around the natural environment. The Indonesian policy to establish agricultural sustainability principally deals with adequate policy to intensify agricultural sectors and yet does not pay attention to the protection of customary rights of the communities that have

<sup>1</sup> See the definition of food self-sufficiency at FAO, 'Food Self-Sufficiency and International Trade: A False Dichotomy?' (Food and Agriculture Organization of the United Nations 2015-2016) 2.

<sup>2</sup> Jennifer Clapp, 'Food Self-Sufficiency: Making Sense of it, and When it Makes Sense' (2017) 66 *Food Policy* 88, 89.

<sup>3</sup> Muhrizal Sarwani, 'Swasembada Beras Dari Masa Ke Masa' *Kompas* (3 February 2023) <<https://money.kompas.com/read/2023/02/03/112247726/swasembada-beras-dari-masa-ke-masa>>.

<sup>4</sup> Hans Nicholas Jong, 'Indonesia's Plantation Program on Collision Course with Wildlife, Indigenous Groups' *Mongabay Environmental News* (6 January 2021) <<https://news.mongabay.com/2021/01/indonesia-food-estate-program-wildlife-indigenous-groups/>>.

<sup>5</sup> Takeshi Ito, Noer Fauzi Rachman and Laksmi A Savitri, 'Power to Make Land Dispossession Acceptable: A Policy Discourse Analysis of the Merauke Integrated Food and Energy Estate (MIFEE), Papua, Indonesia' (2014) 41(1) *The Journal of Peasant Studies* 29.

long relied on forests for their livelihood.<sup>6</sup> In 2022, Central Bureau of Statistics (BPS) for example recorded that national rice production increased, while at the same time, the area of rice farming in 19 provinces in Indonesia also significantly decreased.<sup>7</sup> Based on this contrasting reality, this paper examines two crucial questions. The first is whether Indonesia's current food policy has achieved food self-sufficiency, while the second is to discuss what kind of policy can be implemented to halt land conversion in the middle of rapid economic development in the country.

To analyse the issue, this article focuses on comparative legal and political policies, including historical perspectives to provide an overview of land ownership and food production from the colonial era up until recent times. Additionally, the article also analyses legal and political strategies and policies that have been implemented by central and regional governments, as well as how these policies encounter socio-legal realities in Indonesia. In exploring this complex reality, this article focuses specifically on interactions and processes in a socio-legal context, about the government of Indonesia's commitment to boosting crop production in its agricultural sectors. This will also examine perspectives from the government about the urgency to protect agricultural lands.

## INDONESIAN POLICY ON FOOD PRODUCTION

Achieving food self-sufficiency for Indonesia is a multifaceted challenge because it requires comprehensive approaches to strike a balance between supplying food production and preserving the environment, including agricultural lands. One of the main reasons to tackle food self-sufficiency in Indonesia is because agriculture has played, and will continue to play, an important role in the country. This is not only due

to the significant number of the labour force and abundant land, but also because of the potential national income for the country.<sup>8</sup> Since the independence of 1945 until now, the government of Indonesia has always put agriculture as one of the national priority programmes. However, many of the legal policies stumbled and failed to facilitate social changes in rural areas or in the national economy. Seven decades ago, the first Indonesian president, Sukarno, introduced several policies to establish food self-sufficiency during his two-decade office term. Yet, Indonesia during that time encountered political turbulence, insurgencies, and conflict over land ownership, which resulted in scarcity of food in some regions.<sup>9</sup>

The food policy centred on self-sufficiency was then bolstered by Suharto, who, for some years, transformed Indonesian agriculture to become the backbone for the country due to its capability in increasing domestic food production and poverty reduction.<sup>10</sup> The enactment of government policy for food self-sufficiency by the Suharto regime in the early 1980s succeeded in making Indonesia a food self-sufficient country in 1984 and helped countries in Africa in dealing with critical hunger in the region.<sup>11</sup> The peak of this achievement was in 1985, when the Food Agricultural Organisation (FAO) recognised Indonesia for its success and giving a medal to Indonesia with the title 'from rice importer to self-sufficiency'.<sup>12</sup> Even though the rise of Indonesian agriculture was premature, as Indonesian food self-sufficiency only lasted a decade, rice has become economic and political commodity and has become popular and associated with prosperity.

<sup>6</sup> Jong (n 4).

<sup>7</sup> Badan Pusat Statistik/ Central Bureau of Statistics (BPS), 'Rice Harvested Area, Production, and Productivity by Province 2020-2022' (BPS 2022) <<https://www.bps.go.id/id/statistics-table/2/MTQ50CMY/luas-panen--produksi--dan-produktivitas-padi-menurut-provinsi.html>>.

<sup>8</sup> Stanley Levy, 'Agriculture and Economic Development in Indonesia' (1957) 11 *Economic Botany* 3, 4.

<sup>9</sup> Pierre Van der Eng, 'All Lies? Famines in Sukarno's Indonesia, 1950s-1960s' Unpublished Paper' [2012] Crawford School of Public Policy <<https://pdfcoffee.com/20120916-famine-in-indonesia-1950s-60s-pdf-free.html>>.

<sup>10</sup> Marcelle Thomas and David Orden, 'Agricultural Policies in Indonesia: Producer Support Estimates 1985-2003' [2004] International Food Policy Research Institute 4.

<sup>11</sup> Iswara N Raditya, 'Swasembada Beras Ala Soeharto: Rapuh Dan Cuma Fatamorgana' (*tirto.id*, 25 September 2018) <<https://tirto.id/swasembada-beras-ala-soeharto-rapuh-dan-cuma-fatamorgana-c2eV>>.

<sup>12</sup> *ibid*

Since then, Suharto and his successors focused on food self-sufficiency by introducing rice as the ultimate staple food in the country. The focus on rice has two implications. The first implication is the potential threat to sustainability of environment due to the expansion of rice cultivation, deforestation, and environmental degradation. The second implication is that introducing rice as the only staple food also means the loss of food diversity. For example, people in Papua, Moluccas, Kalimantan, and Southeast Nusa have used sago, wheat, corn, cassava, and bananas as staple foods for years. After the collapse of the Suharto New Order regime in 1998, the government had to provide the fluffy white grain to the public or else they might have risked a rebellion or a riot, being critiqued with degrading the pride of Indonesia as an agricultural country.<sup>13</sup>

In fact, Indonesia had long ago imported soybeans from the US and recently became the world's top importer of wheat and sugar, but there are not many Indonesians who care about this policy.<sup>14</sup> The case became different when the government imported rice, as people saw this policy as more harmful than the controversy of neo-liberalism in the Indonesian economy. Food policy has always gained significant attention in Indonesian legal and political policies. Food policy is often linked to the success of Suharto in 1984, which forced his successors to prioritise food self-sufficiency as their strategic national policy to safeguard food security and rule the country peacefully.<sup>15</sup>

## DUTCH POLICY ON LAND USE AND CULTIVATION (BEFORE 1945)

Agricultural reform in Indonesia has been active since long ago and was initiated in the colonial era when the Dutch enacted several regulations and adopted policies, specifically after the end of the Cultivation System (*cultuurstelsel*) between the 1830-1870.<sup>16</sup> The *cultuurstelsel*, proposed by Johannes van den Bosch, was a regulation that required each village to set aside a portion of its land (20 percent) to be planted with export commodities, especially coffee, sugar and cane. Villagers who did not own land had to work 75 days a year (20 percent) on government-owned plantations as a tax.<sup>17</sup>

As part of their strategy to maximise agricultural products, such as coffee, sugar cane and indigo, the Dutch introduced several regulations that authorised management of all unclaimed land, as well as responses toward forest destruction.<sup>18</sup> Clifford Geertz argues that the forest destruction in Java is partly a result of swidden agriculture or shifting cultivation, which transformed natural forests into harvestable forests.<sup>19</sup> During that time, most farmers in Java could practice swidden agriculture, which is an agricultural technique that commonly uses axes to cultivate the land, due to the low density of population on the island.

<sup>13</sup> Cameron W Barr, 'Indonesia's 'Well-Managed' Food Disaster' [1998] *Christian Science Monitor* <<https://www.csmonitor.com/1998/0403/040398.intl.intl.1.html>>.

<sup>14</sup> The heated debate on import policy usually becomes public discourse during the election campaign.

<sup>15</sup> Jennifer Clapp, 'Food Self-Sufficiency: Making Sense of it, and When it Makes Sense' (2017) 66 *Food Policy* 88.

<sup>16</sup> Himayatul Ittihadiyah, 'BAGELEN PASCA PERANG JAWA (1830-1950): Dinamika Sosial Politik Dan Ekonomi Di Bekas Wilayah Negaragung Kasultanan Mataram Islam (Vorstenlanden)' (2014) 13 *Thaqafiyat: Jurnal Bahasa, Peradaban dan Informasi Islam* 255.

<sup>17</sup> Insan Fahmi Siregar, 'The Controversy of the Cultivation System in Indonesia' (2023) 33(1) *Paramita: Historical Studies Journal* 65.

<sup>18</sup> Ambarwati D Rahayu, 'Towards a District Policy for Sustainable Agriculture' [2005] *LEISA-LEUSDEN* 21, 28.

<sup>19</sup> Clifford Geertz, *Agricultural Involution: The Processes of Ecological Change in Indonesia* (UC Press 1969).

The Dutch then enacted the Agrarian Acts in 1870, which marked an important phase of land control by the Dutch colonial government because this law declared that all land not under constant cultivation would henceforth become the free domain of the state.<sup>20</sup> These laws were part of the Dutch expansion to rule Indonesia, which would ultimately authorise the Dutch to cultivate most of the productive land in Java, which then brought trade benefits to Holland during the Dutch rule of Indonesia, particularly from the 1830s to the 1880s.

The Dutch had also developed irrigation systems, mainly in Java, to support paddy cultivation, and introduced derivative farming products that, at that time, was suited to the global market and strengthened national food demand in Indonesia. During the colonisation era, the Dutch adopted policies that aimed to support their export plan. Since then, Indonesia has exported some agricultural products overseas during the colonisation era because the Dutch ushered the Cultivation System policy, which required Javanese people to grow and make agricultural products for export markets, thrusting Java into the world market in the 1930s.<sup>21</sup>

Soil fertility is one of the main reasons that the Dutch decided to industrialise Java, rather than the other islands, which then brought about two-thirds of the population to Java, effectively crowding the island.<sup>22</sup>

The Cultivation System policy also succeeded in benefiting the Dutch through the rural economy and helped Java to become the largest producer of sugar cane in Asia in the mid 19th century.<sup>23</sup> However, the Dutch did not use advanced technology because the Indonesian population, at the

time, was still small with less than 20 million people living in Java, even though there was a rapid population increase, almost a doubling in the 1890s.<sup>24</sup> Thus, the land was relatively abundant until the 1880s. One good legacy from the Dutch Agrarian law was the prohibition of sales on land by members of the local population to non-indigenous parties, simply to protect the Javanese from Western entrepreneurs.<sup>25</sup>

## FOOD AND LAND POLICIES IN SUKARNO ERA (1945-1965)

Until the independence of Indonesia, there had not been any vivid reports on an agricultural revolution to maximise food and agricultural products in the country. Like any other new independent country, the new Indonesian government faced numerous social, political, and legal challenges in the first two decades. Several serious challenges included widespread poverty, land ownership, and agrarian conflict between the peasant people and state enterprises. These problematic realities worsened food production in Indonesia during the two decades after independence. Higgins, for example argues, 'Food production was failing behind population growth, making the country depend on imports at a time when export earnings were declining, and successive budget deficits were runaway inflation'.<sup>26</sup>

Under Article 33 of the Indonesian Constitution (UUD 1945), the Sukarno Old Order regime theoretically had legal authority to control and maximise the use of land for the welfare realisation of the country. Thus, after gaining independence in 1945, there had been several legal and political policies on agricultural reform adopted by the Indonesian government. The first legal policy to maximise agricultural products was made by the Indonesian government in the late of 1940s.

<sup>20</sup> Andrew McWilliam, 'Historical Reflections on Customary Land Rights in Indonesia' (2006) 7(1) *The Asia Pacific Journal of Anthropology* 45, 48.

<sup>21</sup> C. Fasseur, 'The Cultivation System and its Impact on the Dutch Colonial Economy and the Indigenous Society in Nineteenth-Century Java' in CA Bayly and DHA Kolff (eds), *Two Colonial Empires: Comparative Essays on the History of India and Indonesia in the Nineteenth Century* (Springer Netherlands 1986) 137.

<sup>22</sup> Geertz (n 19).

<sup>23</sup> G Roger Knight, *Sugar, Steam and Steel: The Industrial Project in Colonial Java, 1830-1885* (University of Adelaide Press 2014) 2.

<sup>24</sup> Fasseur (n 21) 140.

<sup>25</sup> *ibid* 139.

<sup>26</sup> Anne Booth, *The Indonesian Economy in the Nineteenth and Twentieth Centuries: A History of Missed Opportunities* (Palgrave Macmillan 1998) 7.

For example, the Minister of Food, Kasimo, introduced a Three-Year Production Plan in 1948, also known as the Kasimo Plan. The Welfare Program in 1952 directed to achieve food self-sufficiency by intensifying the cultivation of vacant land in East Sumatera and to grow rice seedlings in Java.<sup>27</sup> Unfortunately, the Kasimo Plan, created to promote food production through cooperatives and farmers associations, made little progress in disseminating new production technologies in rice and other staple crops.<sup>28</sup>

In the 1950s, Prime Minister Natsir stressed the importance of industries producing basic needs, such as agricultural processing and equipment with local and foreign investment.<sup>29</sup> Sukarno then adopted other strategic policies to intensify agricultural products and provide seed centres, which did not succeed until the end of the Old Order regime in 1965.<sup>30</sup> The reason for this failure is because the Sukarno Old Order regime did not only focus on the maximisation of the food program, but also shifted attention to registration and management of land ownership. During the two decades of his tenure, most of his legal policies were to revitalise agriculture, especially land ownership, rather than tackle the famine that was occurring mostly in Java, Bali, and Nusa Tenggara in the mid 1960s.<sup>31</sup> Land ownership became Sukarno's main policy during his tenure due to the chaotic claiming of unregistered land by state companies and peasants, previously under Dutch registration.<sup>32</sup>

The first of Sukarno's legal policies to manage land ownership for social welfare was the enactment of Law No. 13/1948, with one of its purposes to abolish autonomous villages (*Desa-Desa Perdikan*). Daryono argues that *desa perdikan* was

derived from the privileged grant by the sultanate or emperor that gave special privileges to the owners of lands to act as a government, to manage huge tracts of lands without being required to pay tax on those lands.<sup>33</sup> This law was also meant, by Sukarno, to give more authority for peasants to control lands that were previously managed by the Dutch and private companies during the colonial era (especially in Java). As the most populated island, land ownership in Java was crucial, because about 70 percent of the land in Java was cultivated yearly in the 1960s, while the outer islands still used shifting cultivation and slash and burn farming.<sup>34</sup> Clifford Geertz noted that in 1959, Java produced about 63 percent of Indonesia's total rice production.<sup>35</sup> Rice and other food production, during this time, was essentially insufficient to fulfil domestic food demand because some farmers, who mainly lived in remote areas, still used extensive agriculture that also functioned to protect forest resources.<sup>36</sup>

Sukarno then also enacted the Law No. 5/1960 on Basic Agrarian Law (BAL), which one of its main objectives was to limit land ownership by preventing monopoly and land possession.<sup>37</sup> The BAL was aimed at the abolition of the class of landowners and further give land only to peasants or those who need to cultivate it more intensively to meet their daily needs. Additionally, the BAL was also intended to give legal framework to the government so that it could determine land ownership and maximise the land for agriculture and other purposes. According to Sukarno, the limitation of land ownership is part of the Indonesian revolution, which was aimed to protect the interest of peasants, many of whom highly depended on land for their livelihood.<sup>38</sup> Sukarno believed that land is for the In-

<sup>27</sup> Michelle Engel Limenta and Sianti Chandra, 'Indonesian Food Security Policy' (2017) 7(2) *Indonesia Law Review* 245,248.

<sup>28</sup> Booth (n 26) 53-54.

<sup>29</sup> *ibid* 54.

<sup>30</sup> Imam Subkhan, 'GBHN Dan Perubahan Perencanaan Pembangunan Di Indonesia GBHN' (2016) 5 *Aspirasi: Jurnal Masalah-masalah Sosial* 131,134.

<sup>31</sup> Van der Eng (n 9) 5.

<sup>32</sup> Daryono, 'The Transformation of Land Law in Indonesia: The Persistence of Pluralism' (2010) 5(1) *Asian Journal of Comparative Law* <<https://www.degruyter.com/document/doi/10.2202/1932-0205.1180/html>>.

<sup>33</sup> *ibid* 19.

<sup>34</sup> Geertz (n 19) 14.

<sup>35</sup> *ibid* 13.

<sup>36</sup> Scott Brainard, 'The Impact of Indonesian Agricultural Policies on Indigenous Populations, Natural Resources and the Economy: The Limits of Democratic Self-Determination Under Capitalist Regimes' (2011) 43(1) *Inter-American Law Review* 165.

<sup>37</sup> Nani Afrida, 'Centuries of Futile Efforts' *The Jakarta Post* (31 March 2017) <<https://www.thejakartapost.com/news/2017/03/31/centuries-futile-efforts.html>>.

<sup>38</sup> Anton Lucas and Carol Warren, *Land for the People: The State and Agrarian Conflict in Indonesia* (Ohio University Press 2013).

donesian people, and the state must hold a mandate to manage land resources to create social welfare for all Indonesians.<sup>39</sup>

It can be said that the BAL under Sukarno was meant to develop self-sufficiency (*berdikari*) with reference to food self-sufficiency (*swasembada pangan*).<sup>40</sup> Under Sukarno, Indonesia did not have a serious famine threat because of the abundant fertile land across the archipelago that produced a variety of food, such as cassava, maize, sweet potatoes, and rice. However, the availability and accessibility of nutrient food was questionable because most Indonesians during that time lived in poverty. Java, as the most fertile island and the centre of the economy, was also inhabited by most Indonesians. Geertz, for example, reported that in 1961 the total population of Indonesia was about 97 million people, where 63 million lived in Java mostly working as farmers.<sup>41</sup> One of the main reasons for food insufficiency during the Sukarno era was because the application of technologies in agricultural sectors was limited. The pattern of agricultural processes at that time still applied cultivation systems from the colonial period. Additionally, most farmers also planted old rice varieties, and any other agricultural varieties, as there had not been any new agricultural varieties introduced by the government.

Until the end of the Old Order era, the BAL had not been effective in preventing land disputes in Indonesia, especially if the dispute was between peasants and state companies. Most peasants reclaimed the lands that had previously been occupied by companies or commercial operators, but some others also claimed the lands they needed as part of their economic and social right for a decent livelihood.<sup>42</sup> These land disputes became more complicated when Suharto took power in 1965 and started to discontinue land ownership management under the BAL. One common reason was because the BAL was asso-

ciated with Sukarno's socialism legacy and was considered, by the Suharto regime, as one of the Indonesian Communism (PKI) characteristics.<sup>43</sup> Thus, many state officials stopped implementing the land reform program, while others became included in the land mafia, selling and claiming redistributed land, which back then caused a chaotic land ownership dispute between peasants, state officials, and companies.<sup>44</sup>

## FOOD AND LAND POLICIES IN SUHARTO ERA (1965-1998)

During the Suharto New Order era from 1965 to 1998, the government had focused on food production and always included it in the New Order Five Year Development Plan (*Rencana Pembangunan Lima Tahun, Repelita*). Suharto also successfully implemented *Repelita* from the 1970s until 1990s with the agricultural sector as one of the key sectors of national development. Yet under Suharto, Indonesia had difficulties in diversifying agricultural plantations, which resulted in the lack of national rice stock, especially in his first five-year tenure.<sup>45</sup> Drought and natural disasters frequently hit several regions, as rice producers in the country ushered Suharto to import millions of tons of rice during his first tenure to supply national demand.

Suharto started to expand the building of water irrigation across the country from the 1970s to the 1980s around the same time that the Green Revolution had sparked around Asia, including Indonesia. The International Rice Research Institute (IRRI) in the Philippines helped the distribution of IR8, a new rice variety, also known as the miracle rice to Indonesia during the chronic hun-

<sup>39</sup> *ibid* 41-43.

<sup>40</sup> Sediono MP Tjondronegoro, 'An Agricultural Development Legacy Unrealised by Five Presidents, 1966-2014' (2017) 39(2) *Masyarakat Indonesia* 379, 382.

<sup>41</sup> Geertz (n 19) 12.

<sup>42</sup> Dianto Bachriadi, 'Fighting for Land' (*Inside Indonesia*, 23 January 2012) <<https://www.insideindonesia.org/editions/edition-107-jan-mar-2012/fighting-for-land>>.

<sup>43</sup> One of the main propagandas by Suharto regime is to discredit Sukarno and link him closely with Indonesian Communism Party (PKI) which results in the elimination of Sukarno policies including Sukarno policy on land management during the ruling of New Order.

<sup>44</sup> Lucas and Warren (n 38) 5.

<sup>45</sup> Peter C Timmer, 'Food Security in Indonesia: Current Challenges and the Long-Run Outlook' (2004) Center for Global Development, Working Paper No. 48 <[https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1112807](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1112807)>.



ger and poverty and later succeeded in helping the country to gain food self-sufficiency in 1984.<sup>46</sup> Since then, the combination of the massive plantation of miracle rice and irrigation system has succeeded in increasing Indonesia's rice production.

Suharto's policy on irrigated agricultural systems might have motivated the increase of rice production, especially after agriculture became a key sector of his four consecutive Repelita in the 1970s. To maximise national rice production, Suharto also introduced and implemented food self-sufficiency programs, through the improvement of agricultural technology, fertilizer subsidies, special guidance for farmers, establishment of national research centre, development of agricultural irrigation and infrastructure, as well as an agricultural extension to intensify national rice production.<sup>47</sup> During his era, Indonesia also managed to spread the growing of IR64 as a new rice variety developed by IRR1, which had still been growing until recently.

It may be asserted that the increase of rice production during the New Order era had not been solely managed by Suharto's food policy, but rather stimulated by the success of the Green Revolution, which offered modern varieties of agricultural plantations across Asia, including Indonesia. A research study by Craig Thorburn, for example, reported that in the 1970s, Indonesia did not only succeed in adopting the Green Revolution, especially the massive planting of IR8 as the first rice variety of the Green Revolution in Asia, but also in growing the government's own rice breeding programme.<sup>48</sup> Another report by Herdt and Capule also argued that Indonesia was among eight Asian countries that produced 85 percent of Asia's rice production in the 1980s.<sup>49</sup> This means that during the New Order era, Indonesia gained a large amount of success in increasing rice production because Suharto

managed to combine improved irrigation, national food policy, and the spread of the Green Revolution in Southeast Asia. His success in increasing rice production had become his major legacy for the country because, at that time, Indonesia had already achieved self-sufficiency in rice for some time during the 1980s.<sup>50</sup>

Suharto's reputation in the agricultural sector could be achieved because, unlike Sukarno who shifted attention to land distribution, he had not considered land ownership as a basic problem in the country's development process, but rather considered 'food sustainability' as one of the nation's main policies.<sup>51</sup> Suharto had succeeded to integrate agriculture as part of national economic development by establishing State Logistic Agency (BULOG), which is authorised to manage food management.<sup>52</sup> A. C. Jacqueline, et al further asserts:

During the Suharto regime, food security and food self-sufficiency were important pillars of economic development, forming a key element of a productivist supply-orientated approach that pursued food security-related policies to further national stability. To that end the state established institutions to buy and to distribute food to stabilize prices at the farm gate and for consumers.<sup>53</sup>

However, the achievement of food self-sufficiency in the Suharto era also resulted in the loss of food diversity. The doubling of rice production in the mid 1980s sacrificed cassava, corn, wheat, and other staple foods in the country because Suharto, similarly with the Dutch, instructed farmers to grow crops suitable not only for domestic demand, but also for international trade. He used rice as part of his economic policy so that Indonesia was seen by other countries as prosperous. He never cared about the stigma of agriculture

<sup>46</sup> Justin Rowlett, 'IR8: The Miracle Rice Which Saved Millions' *BBC News* (1 December 2016) <<https://www.bbc.com/news/world-asia-india-38156350>>.

<sup>47</sup> Craig Thorburn, 'The Rise and Demise of Integrated Pest Management in Rice in Indonesia' (2015) 6(2) *Insects* 381.

<sup>48</sup> *ibid* 381.

<sup>49</sup> Per Pinstrup-Andersen and Peter BR Hazell, 'The Impact of the Green Revolution and Prospects for the Future' (1985) 1(1) *Food Reviews International* 1.

<sup>50</sup> Jacqueline AC Vel, John F McCarthy and Zahari Zen, 'The Conflicted Nature of Food Security Policy: Balancing Rice, Sugar and Palm Oil in Indonesia' (2016) 26(3) *Anthropological Forum* 233.

<sup>51</sup> Tjondronegoro (n 40) 389.

<sup>52</sup> Michael T Rock, 'The Politics of Development Policy and Development Policy Reform in New Order Indonesia' (2003) William Davidson Institute Working Paper Number 632 <<https://core.ac.uk/download/pdf/7051027.pdf>>.

<sup>53</sup> Vel, McCarthy and Zen (n 50) 237.

as a sector that provides dirty work with little reward. The food self-sufficiency achievement still allowed the poor, mainly small farmers, to benefit from the Suharto revolutionary agricultural policy. He had put agricultural land on the market to attract investment from big industrial companies, which industrialised the agricultural sector.

Since the fall of the Old Order, land that was previously not for sale soon became commodities in the New Order era, especially agricultural land. Large scale foreign and domestic enterprises treated the land for their own business. This also meant that the increase of rice production during the Suharto tenure had also been caused by national and foreign investments in the agricultural sector. Unlike Sukarno, who ruled strict regulations on land ownership, especially for private companies, Suharto provided land, on a large scale, for the needs of foreign and domestic investments, overriding the land needs of Indonesian peasants in the name of development.<sup>54</sup> Suharto argued that land reform, previously implemented by the Old Order regime, would not give significant contribution to the national food supply and agricultural productivity, so he chose 'industrialisation' to resolve these problems.<sup>55</sup>

Transmigration also became Suharto's main policy to maximise agricultural production. During his era, especially from the 1970s to the 1990s, Suharto transmigrated hundreds of thousands of people from populated areas like Java and Bali to outer islands, such as Sumatera, Kalimantan, Sulawesi, and Papua.<sup>56</sup> In the late 1980s, for example, even though transmigration only contributed to 3 percent of national rice production, this program undoubtedly contributed to the increase of significant rice production from 20-40 percent in several transmigration destination provinces, such as Bengkulu, Jambi, Riau, South Sumatera, South and West Kalimantan, and Southeast Sulawesi.<sup>57</sup> Transmigration had also been used by the Suharto regime to impose

partial national unity through demographic redistribution, which then broke down when he fell from power in 1998. He expected the distribution of people and the industrialisation of land to be capable of empowering national food self-sufficiency, which ultimately proved differently at the end of his long tenure.

Several policies were also adopted to endorse national food sustainability programs, including an initiative to introduce technology, and spread knowledge to farmers about the harms of using pesticides in the agricultural sector. For example, the New Order regime introduced the Integrated Pest Management (IPM) program in the 1980s, with one of its main objectives as reducing the usage of pesticides and revitalising land fertility to boost rice production in the country. The New Order regime also discontinued pesticide subsidies in 1989, while at the same time the subsidy for fertilisers were also reduced gradually.<sup>58</sup>

To respond to the need of sufficient food production, the New Order Government introduced technology in the agricultural sector. For example, the New Order regime enacted Law No. 5/1994 on the Ratification of the United National Convention on Biotechnological Diversity (Biotechnological Diversity) two years after the enactment of the Convention. This ratification was meant by the New Order government to empower Law No. 12/1992 on the Plantation Cultivation System, which restricted certain pesticides and biotechnology plantations that could harm people and the environment.<sup>59</sup> Article 12 of this law also regulated that all biotechnology plantation varieties and new varieties must meet a certain qualification standard set up by the government. These laws were also used by the government to have absolute control of mass production and distribution of new plant varieties and pesticides in Indonesia. Additionally, the enactment of these laws show that the New Order regime believed that the uncontrolled, long use of pesticides might contaminate and decrease soil fertility, as well as threaten national food self-sufficiency.

<sup>54</sup> Lucas and Warren (n 38) 43.

<sup>55</sup> Ibid 44.

<sup>56</sup> Ibid 7.

<sup>57</sup> Haposan Saragih and Shigeru Yoshida, 'Assessment of Food Crop Production Associated with Transmigration Schemes in Southeast Sulawesi-Indonesia' (2002) 46(1) Japanese Journal of Tropical Agriculture 1.

<sup>58</sup> Joko Mariyono, 'Rice Production in Indonesia: Policy and Performance' (2014) 36(2) Asia Pacific Journal of Public Administration 123, 125.

<sup>59</sup> See article 7, 16, 22 & 40 of the Law.

Theoretically, reducing pesticides and fertilisers also means creating new problems, such as decreasing rice production. Yet, this problem can be solved if the government introduces technologies to preserve agricultural production. To solve these threats, the New Order regime established the Biotechnology Committee in 1985 to endorse the implementation of the Law No. 5/1994 on Biotechnological Diversity. This policy was also meant to respond to the rapid development of global biotechnology and to transfer technology, with reference to biotechnology, from well-established countries.<sup>60</sup> The committee was also mandated, not only to undertake research and development of biotechnology crops, but also to disseminate information regarding the biotechnology crops to the public.<sup>61</sup>

The government also established a university consortium on biotechnology in 1985 to train lecturers and undertake research on biotechnology, which consisted of the top four universities in Indonesia: University of Indonesia (UI), University of Gadjah Mada (UGM), Bogor Agriculture Institute (IPB) and Bandung Institute of Technology (ITB).<sup>62</sup> Additionally, the Suharto government also established a centre for biotechnology at the Indonesian Institute of Science (LIPI) in 1986 to endorse the national program of biotechnology development. The Law on Food strictly regulates that all parties can develop biotechnology crops to increase Indonesia's national production of staple foods. For example, Article 13 of this Law regulates farmers, industries, and any other parties that grow biotechnology crops must comply with regulations on health, human safety, and environmental concerns.

During this time, Indonesia essentially succeeded in having all facilities to gain food self-sufficiency due to regulations, irrigation systems, new varieties, and abundance of lands. However, the application of technology in modifying farm goods in Indonesia has not been tapped until recently, so the policy failed in increasing significant development of biotechnology crops until the

end of Suharto era in 1998. After Indonesia benefitted from the success of the Green Revolution during the New Order era, there had not been any government policies that significantly offered a significant development of agricultural sector. The agricultural sector in Indonesia during the post Green Revolution has appeared stagnate, even though the government enacted several regulations to increase the agricultural productivity and establish food self-sufficiency. Indonesia now needs government visionary policies that can maximise the land for agriculture because most of its people are living and working in the agricultural sector, making land and water the basic resources for Indonesian sustenance and welfare.<sup>63</sup>

## POST SUHARTO GOVERNMENT POLICIES ON FOOD AND LAND

Food policies, with reference to the invention of rich yield crops to support food self-sufficiency, remains questionable because up until 2017, Indonesia had still imported agricultural commodities to meet its national food demand. In fact, Indonesia has developed some crops, such as Rice IR64, which have also been endorsed by the establishment of the Biotechnology Committee in 1985, as well as the biotechnology consortium, consisting of the four prestigious and biggest universities in Indonesia. Since then, the government has also enacted regulations and provided a large amount of money to extensive training for Indonesian scientists, as well as guidelines for government policy on the implementation of biotechnology crops in the country.<sup>64</sup> Yet, these policies on food price control and production on high yield crops seemed to have failed in securing food sufficiency and accessibility because, in the last few decades, people have experienced 'unstable prices' of main food commodities, which do not only affect poor

<sup>60</sup> AT Karossi, *Selected Topics on Biotechnology as Indonesian Country Reports, 1988-2000* (Yayasan Obor Indonesia 2005) 31-32.

<sup>61</sup> *ibid* 32-33.

<sup>62</sup> *ibid* 34.

<sup>63</sup> Tjondronegoro (n 40) 381.

<sup>64</sup> Gabrielle J Persley and L Reginald MacIntyre (eds), *Agricultural Biotechnology: Country Case Studies; a Decade of Development* (CABI Publishing 2002) 18.

people's access to sufficient nutritious food, but also farmers.

## **POLICY ON FOOD SELF SECURITY (2004-2014)**

One of SBY's popular policies during his presidential tenure was to establish political stability that required him to provide enough white rice for all Indonesians. So, it was not surprising that in his first tenure from 2004 to 2009, SBY's main policy was to deal with food security rather than food self-sufficiency, providing stability and accessibility of the national food demand through imports, making Indonesia the fourth largest global rice importer. A report by the Asia Development Bank in 2006 asserted that Indonesia was the world's largest rice importer, which could have undermined Indonesia's food self-sufficiency.<sup>65</sup>

The import policy finally changed slightly when the food crisis hit the global market in 2007.<sup>66</sup> The food crisis led the SBY government to search for solutions to intensify Java and identify new rice production in Sulawesi, Kalimantan, and Papua as an effort to initiate food self-sufficiency. Principally, the SBY Government started to renew interest in making food self-sufficiency a priority and attempted to establish food sovereignty after the food crisis in 2017.<sup>67</sup> To respond to massive land conversion and initiate food self-sufficiency, SBY enacted Law No. 41/2009 on the Protection of Sustainable Agricultural Land (SAL) in 2009 as a response toward the massive land conversion in the country.

The Law No. 41/2009 was intended to respond to the growing pressure toward agricultural land because of urbanisation and the expansion of cities, which have converted land into housing, infrastructure, and business centres. Principally, this law is the first secret canopy in the Post

Suharto era for the protection of agricultural lands in all regions, mainly in Java, Sumatera, Sulawesi, Bali, and other homes of crop's production. However, the legal enforcement in Indonesia always matters because some regulations are not effective. In contrast, Indonesia during this time had apparently been driven to become the world's leading palm oil producer, which greatly hurt the sustainability of Indonesian agriculture and biodiversity.<sup>68</sup>

The law has been met with concerns because it encountered local dynamics as part of the implementation of decentralisation since 1999, which authorised regional governments to manage their home affairs. The first Regional Autonomy Law (RAL) was enacted in 1999 through the Law No. 22/1999 on Regional Government, then renewed respectively by Law No. 32/2004, Law No. 12/2008, and Law No. 23/2014 on RAL. All these laws were mainly enacted to endorse a co-management system between the central government and regional governments in all levels (province, city, and district) to distribute economic development and prosperity to all regional governments that previously had been centralised and monopolised by the Suharto regime. Since the implementation of the RAL, the central government has not owned land because all land, including agriculture, belonged to the districts and cities.

It is very common for most regional governments, particularly in regions that have the SAL, to enact policies intended to receive instant benefits because they face chronic shortfalls in regional revenue and are heavily dependent on subsidies from the central government.<sup>69</sup> Most regions want to generate short term revenue from the agricultural sector and choose industrialisation, which on many occasions exploits the SAL. Mass residence housing, warehousing, and shophouses are among the three most common projects which converted agricultural land. The RAL principally authorises all governments in different levels to co-manage and maximise natural and economic potential in every region. This

<sup>65</sup> Asian Development Bank, *Indonesia: Strategic Vision for Agriculture and Rural Development* (Asian Development Bank 2006) 95.

<sup>66</sup> Ito, Rachman and Savitri (n 5) 29,38.

<sup>67</sup> Clapp (n 15) 92.

<sup>68</sup> Eusebius Pantja Pramudya, Otto Hospes and CJAM Termeer, 'Governing the Palm-Oil Sector through Finance: The Changing Roles of the Indonesian State' (2017) 53(1) *Bulletin of Indonesian Economic Studies* 57.

<sup>69</sup> McWilliam (n 20) 56.

means that principally, the SAL is protected by the central government and is controlled by regional governments, which results in the complex realisation of a co-management system to effectively protect the SAL.

One example of the ineffective norms in RAL is its penal sanction. Article 72 and 73 of the Law No. 41/2009 on SAL regulates penal sanctions for everyone who converted agricultural land - five years in prison or pay compensation of up to one billion rupiah for an individual or five billion rupiah for a state apparatus. It should be assumed that until now, no one has been accused or fined regarding land conversion, even though some regents from certain regions produced concession for estate companies to convert SAL for housing, warehousing, and factories. For example, a study by some researchers from the Bandung Institute of Technology from 2004 to 2013 illustrated that there was land conversion in some districts in West Java, such as Subang (one of the largest rice producers in Indonesia) whose 10,000 hectare lands converted to become industrial or residential within the last ten years.<sup>70</sup> It may be assumed that similar situations have occurred in other regions because land conversion has become a blatant phenomenon and an integral part of Indonesian economic development. This also means that the food self-sufficiency program under SBY has been complex after the expansion of autonomy and the implementation of regional autonomy. This indeed results in a legal and political conundrum because regional autonomy brings about diverse policies among regions to develop their economic potential.

Amid land conversion in some regions, SBY has also adopted and implemented a broad policy called Masterplan for Acceleration and Expansion of Indonesia's Economic Development, also known as MP3EI, to boost economic development, which includes the protection of the SAL. The MP3EI was initiated in Law No. 17/2007 on the Long-Term National Development Plan, which puts food and agriculture as one of the 22 main priority programs to make Indonesia become self-sufficient and a world food supplier by

<sup>70</sup> Sri Maryati, Syfa Humaira and Fransiska Pratiwi, 'Spatial Pattern of Agricultural Land Conversion in West Java Province' (2018) 131(1) IOP Conference Series: Earth and Environmental Science 012034.

2025.<sup>71</sup> This project was officially stated in Law No. 32/2011 on MP3EI. One of the MP3EI projects was to increase intensive production systems in the agricultural sector to meet domestic demand because of the decrease of space and farmers, environmental concerns, and urbanisation in existing agricultural land.<sup>72</sup> Yet, depending on the existing land in Java and Sumatera, the two largest rice producers in Indonesia, the food project will likely be threatened because the two islands have massive land conversion, mainly due to city expansion and housing estates.

As part of an extensive agricultural productivity program, SBY also initiated a mega project called Merauke Integrated Food and Energy Estate (MIFEE), officially launched by the Ministry of Agriculture in 2010 to integrate farming and a food-based energy generator in 1.5 million hectares of agricultural land.<sup>73</sup> The massive and ambitious MP3EI projects in West Papua were part of the government's efforts to achieve food self-sufficiency in 2014. However, they failed because of complex factors, such as human rights abuse, land grabbing, environmental concerns, and habitat of indigenous people. Additionally, the ambitious goal of MP3EI to support national food policy has been misled by the government, as more palm oil and sugarcane corporations were authorised. From 44 corporations that have received concessions in the MIFEE, only two corporations were interested in growing rice, corn, and cassava, while the rest were focused on sugarcane, lumber, and palm oils.<sup>74</sup>

The SBY regime also ratified the Cartagena Protocol in 2004 on biotechnology to boost the production of agricultural products. Additionally, SBY enacted Law No. 18/2012 on Food to renew the Law No. 7/1996, by which one of its missions is to protect and support research and develop-

<sup>71</sup> Bappenas, *ASEAN Indonesia Master Plan Acceleration and Expansion of Indonesia Economic Development 2011-2025* (Coordinating Ministry for Economic Affairs 2011) 22.

<sup>72</sup> Raoul Oberman and others, 'The Archipelago Economy: Unleashing Indonesia's Potential' (McKinsey Global Institute 2012) <[https://www.mckinsey.com/-/media/McKinsey/Featured%20Insights/Asia%20Pacific/The%20Archipelago%20Economy/MGI\\_Unleashing\\_Indonesia\\_potential\\_Full\\_report.ashx](https://www.mckinsey.com/-/media/McKinsey/Featured%20Insights/Asia%20Pacific/The%20Archipelago%20Economy/MGI_Unleashing_Indonesia_potential_Full_report.ashx)>.

<sup>73</sup> Ito, Rachman and Savitri (n 5) 29.

<sup>74</sup> *ibid* 36.

ment of biotechnology in agriculture as a foundation to establish food self-sufficiency. Yet, it seemed that both the norms of Cartagena and the Law on Food worked slowly and had not been widely implemented in agriculture.<sup>75</sup> For example, biotechnology-based crops invented and developed by research centres in Indonesia had not been integrated into government national agendas. Additionally, some innovative food diversifications by Indonesian researchers to support domestic food demand failed to compete with rice and other staple foods.

The SBY experience shows that Indonesia must adjust and adopt policies on food programs directed to endorse domestic food production capabilities, rather than relying on importing food commodities, because importing food commodities might force Indonesia to be self-reliant, rather than self-sufficient.<sup>76</sup> A report by McKinsey in 2012 alerts that:

In agriculture, if Indonesia pursued three approaches; boosting yields, shifting production into high value crops, and reducing post-harvest and value chain waste, Indonesia could become a large net exporter of agriculture products, supplying more than 130 million tons to the international market.<sup>77</sup>

There have been several biotechnology-based crop research projects undertaken in Indonesia, either by scientific research centres or by state institutions as part of a government effort to boost agricultural productivity. For example, the Indonesian Research Centre Institute (LIPI) has produced transgenic paddy varieties, which are resistant to stem borer insects up to the fourth generation and transgenic paddy resistant to blast fungi.<sup>78</sup> This kind of biotechnology-based crops application in agriculture will not only help farmers increase their income, but also support food self-sufficiency because this technology offers high productivity with less production

costs. Yet, the SBY two-term presidency produced more regulations that were apparently ineffective in initiating food self-sufficiency.

Consequently, it is not excessive to say that the SBY era was more concerned with importing food as a strategy to establish food security, rather than maximising domestic capacity to provide national food demand. The challenges of realising food self-sufficiency in the ten years of the SBY tenure were exaggerated by the co-management system under the SAL, as part of the decentralisation policy that authorised regional governments to manage their home affairs.

## FOOD AND INFRA-STRUCTURE POLICY (2015-2023)

As shown by his predecessors, the current president, Joko Widodo (Jokowi), also enacted some policies to establish food self-sufficiency. These policies were asserted in nine priority programs known as *nawacita*, with the goal of increasing domestic productivity and economic sovereignty. Besides constructing physical infrastructure, like water reservoirs, and fixing irrigation systems, Jokowi also allocated subsidies from the national budget to fertilizers and rice production. This included up to 45 trillion rupiah every year, which almost reached the amount for the fuel subsidy in 2018, up to 55.6 trillion rupiah.<sup>79</sup>

During his first five-year term (2014-2019), Jokowi succeeded in rebuilding and fixing damaged irrigation systems, as well as building water reservoirs in several regions of agriculture producers, as part of his policy to boost national crop production. Since the fall of Suharto, this was the first time that the government has rebuilt irrigation networks. Jokowi's policies on rejuvenating the agricultural sector are like Suharto's program, because both believe that repairing and building physical infrastructure is the essential key in

<sup>75</sup> Hermanto Siregar and Bustanul Arifin, 'Challenges for Sustainable Agricultural Biotechnology Development in Indonesia' (2010) 7(2) *Asian Journal of Agriculture and Development* 17, 22.

<sup>76</sup> Limenta and Chandra (n 27) 259.

<sup>77</sup> Oberman and others (n 72) 6.

<sup>78</sup> Siregar and Arifin (n 75) 20.

<sup>79</sup> Novy Lumanauw and Edi Hardum, 'Jokowi: Indonesia Can Attain Food Self-Sufficiency in Next Four Years' (*Jakarta Globe*, 13 February 2015) <<https://jakartaglobe.id/news/jokowi-indonesia-can-attain-food-self-sufficiency-next-four-years>>.

making Indonesian agriculture more productive and may also attract industry to this sector.<sup>80</sup>

He is also optimistic that Indonesia can become food self-sufficient by the end of his term. To realise his optimism, Jokowi introduced the Indonesia National Plan (2014-2019), designed to establish food self-sufficiency, where rice self-sufficiency would have been achieved in 2016. It is true that after four years in office, Jokowi succeeded in gaining rice self-sufficiency by the end of 2018. The Indonesia Statistic Bureau (BPS) reported that in 2018, rice production was estimated at 32.4 million tons, while national rice consumption was approximately 29.5 million tons, which means there were 2.9 million surpluses.<sup>81</sup> Even though there has been an increase trend of rice production since 2015 until 2018, it should be noted that the 2018 achievement cannot guarantee the durability of food self-sufficiency in Indonesia. The reason is that the rice surplus is only for about two million tons in 2018, not durable to protect 264 million people in the country. Referring to the Suharto experience in achieving about five years of food self-sufficiency, one-year achievement does not demonstrate the real domestic capacity to make Indonesia food sufficient.

In the long term, the Jokowi food self-sufficiency program encountered serious problems, due to the massive infrastructure development and housing, mainly in Java, Sulawesi, and Sumatera, which decreased productive lands in these regions significantly. Jokowi's main priority was to realise 'nawacita' by connecting regions through highways, as he also converted lands of the SAL. Commitments of the Joko Widodo government (2014-2019) declared and made a roadmap of Indonesia becoming a country of world food barns by 2045, but this is now viewed as questionable. One main reason is because the policy to open new lands, protect existing lands, and apply technology in agriculture as the three main components to establish food self-sufficiency are

encountering massive land conversion for housing and infrastructure.<sup>82</sup>

For example, until the end of 2017, there were about 5000 hectares of lands in Java, mainly rice fields, converted to build the 522 km Trans-Java highway project.<sup>83</sup> According to Article 44 of the Law 41/2009, the SAL can be converted if its main objective is solely for national interest, such as a road system, an electricity network and other strategic economic development projects. Paragraph 5 of this article also obliges that the government should find replacement land as part of the mechanism to protect the sustainability of the SAL within two years after the conversion.

Replacement of the land, however, cannot be initiated as the best solution for the massive land conversion, considering infrastructure development has taken away the living space of local communities and indigenous peoples. For example, the indigenous people of Momo in Papua have lost their sacred customary forest due to the construction of the Trans Papua through the National Strategic Project (PSN).<sup>84</sup> The construction of new capital of Nusantara (IKN) in East Borneo that started in 2023 has also threatened the living space of the local indigenous people of Balik Sepaku. The plan for the new city will convert 256,000 hectares of forest land of East Kalimantan, a home to nearly 1.8 million hectares of protected forest and 438,000 hectares of conservation areas. The construction of IKN and Trans Kalimantan Highway could spell environmental troubles due to the logging concession for the remaining forests in the region.<sup>85</sup>

<sup>80</sup> Eve Warburton, 'Deepening Polarization and Democratic Decline in Indonesia' in Thomas Carothers and Andrew O'donohue (eds), *Political Polarization in South and Southeast Asia: Old Division, New Dangers* (The Carnegie Endowment for International Peace 2020) 25.

<sup>81</sup> BPS, '2018 Harvested Area and Rice Production in Indonesia: Executive Summary' (BPS 2018).

<sup>82</sup> Anny Mulyani and Fahmuddin Agus, 'Kebutuhan Dan Ketersediaan Lahan Cadangan Untuk Mewujudkan Cita-Cita Indonesia Sebagai Lumbung Pangan Dunia Tahun 2045' (2017) 15(1) Analisis Kebijakan Pertanian 1,2.

<sup>83</sup> Kompas, 'Pemerintah Habiskan Rp 17,27 Triliun Demi Lahan Tol Trans Jawa' *KOMPAS.com* (27 July 2017) <<https://properti.kompas.com/read/2017/07/27/210000121/pemerintah-habiskan-rp-17-27-triliun-demi-lahan-tol-trans-jawa>>.

<sup>84</sup> Fenny Tria Yunita, Hery Prasetyo and Dien Vidia Rosa, 'The Undeclared Defeat: Indigenous Identity Politics in the Indonesian Law on Advancement of Culture' (2023) 7(1) *Journal of Southeast Asian Human Rights* 93.

<sup>85</sup> Basten Gokkon, 'As Indonesia's New Capital Takes Shape, Risks to Wider Borneo Come into Focus' *Mongabay Environmental News* (8 March 2023) <<https://news.mongabay.com/2023/03/as-indonesias-new-capital-takes-shape-risks-to-wider-borneo-come-into-focus/>>.

Additionally, as admitted by the Indonesian Finance Minister Sri Mulyani Indrawati, Jokowi spent more budget on infrastructure as one of his strategic policies to boost the Indonesian economy in his first five-year term.<sup>86</sup> This statement seems to justify the Jokowi three-word mantra: infrastructure, deregulation, and de-bureaucrat-isation to alleviate poverty and reduce economic inequality.<sup>87</sup>

Yet, these economic policies with land concessions have a major impact on food supply. The statistical data shows that 19 out of 34 provinces in Indonesia have experienced a significant reduction in agricultural land area in the last 3 years as shown below.<sup>88</sup>

Figure 1. Agricultural Land Area in Indonesia (2020-2022)

PROVINCES	AREAS (ha)			PRODUCTION (ton)		
	2020	2021	2022	2020	2021	2022
ACEH	317,869	297,058	271,750	1,757,313	1,634,640	1,509,456
SUMATERA UTARA	388,591	385,405	411,462	2,040,500	2,004,143	2,088,584
SUMATERA BARAT	295,664	272,392	271,883	1,387,269	1,317,209	1,373,532
RIAU	64,733	53,062	51,054	243,685	217,459	213,557
JAMBI	84,773	64,412	60,540	386,413	298,149	277,744
SUMATERA SELATAN	551,321	496,242	513,378	2,743,060	2,552,443	2,775,069
BENGKULU	64,137	55,705	57,152	292,834	271,117	281,610
LAMPUNG	545,149	489,573	518,256	2,650,290	2,485,453	2,688,160
BANGKA BELITUNG	17,841	18,278	15,108	57,324	70,496	61,425

<sup>86</sup> Sri Mulyani Indrawati, 'Upbeat on Indonesia's Economy' *The Straits Times* (Singapore, 14 October 2017) <<https://www.straitstimes.com/opinion/upbeat-on-indonesias-economy>>.

<sup>87</sup> Eve Warburton, 'Jokowi and the New Developmentalism' (2016) 52(3) *Bulletin of Indonesian Economic Studies* 297, 308.

<sup>88</sup> Badan Pusat Statistik/ Central Bureau of Statistics (BPS) (n 7).



PROVINCES	AREAS (ha)			PRODUCTION (ton)		
	2020	2021	2022	2020	2021	2022
KEP. RIAU	299	270	179	853	855	507
DKI JAKARTA	915	560	477	4,544	3,249	2,338
JAWA BARAT	1,586,889	1,604,109	1,662,404	9,016,773	9,113,573	9,433,723
JAWA TENGAH	1,666,931	1,696,712	1,688,670	9,489,165	9,618,657	9,356,445
DI YOGYAKARTA	110,548	107,506	110,927	523,396	556,531	561,700
JAWA TIMUR	1,754,380	1,747,481	1,693,211	9,944,538	9,789,588	9,526,516
BANTEN	325,333	318,248	337,241	1,655,170	1,603,247	1,788,583
BALI	90,981	105,201	112,321	532,168	618,911	680,602
NUSA TENGGARA BARAT	273,461	276,212	270,093	1,317,190	1,419,560	1,452,945
NUSA TENGGARA TIMUR	181,691	174,900	183,092	725,024	731,878	756,050
KALIMANTAN BARAT	256,575	223,166	241,479	778,170	711,898	731,226
KALIMANTAN TENGAH	143,275	125,870	108,227	457,952	381,190	343,919
KALIMANTAN SELATAN	289,836	254,264	214,909	1,150,307	1,016,314	819,419
KALIMANTAN TIMUR	73,568	66,269	64,970	262,435	244,678	239,425
KALIMANTAN UTARA	9,883	8,881	8,604	33,574	29,967	30,534
SULAWESI UTARA	61,828	59,183	58,196	248,879	232,885	243,730
SULAWESI TENGAH	178,067	182,187	168,993	792,249	867,013	744,409
SULAWESI SELATAN	976,258	985,158	1,038,084	4,708,465	5,090,637	5,360,169
SULAWESI TENGGARA	133,697	127,517	118,259	532,773	530,029	478,958
GORONTALO	48,686	48,714	46,823	227,627	234,393	240,135
SULAWESI BARAT	64,826	59,763	69,324	345,050	311,072	353,513
MALUKU	28,668	28,320	23,988	110,447	116,804	92,601
MALUKU UTARA	10,302	7,782	6,416	43,383	28,051	24,486
PAPUA BARAT	7,571	6,415	5,461	24,378	26,927	23,964
PAPUA	52,728	64,985	49,742	166,002	286,280	193,944

This table showcases that conversion of agricultural land and the decrease of food production occurred in most areas of Sumatera, Sulawesi, a small part of the Java, almost the entire of Kalimantan (except West Kalimantan) and Papua. In fact, these islands have become the strategic areas for the development of infrastructure and toll roads through the PSN policy.

The expansion of the PSN project through the regulation of the Coordinating Minister for Economic Affairs No. 9/2022 released 13 new PSN projects, which included the Konawe Indonesia Industrial Zone Project (IKIP) in Sulawesi, the Development of Large-Scale of Solar Power Plants in † Riau Island, The Coconut Oil Development Project in West Papua, Kepulauan Seribu Tourism Project of Jakarta, and the construction of an Electric Battery Nickel Smelter in North Maluku.<sup>89</sup>

On the other hand, President Joko Widodo also initiated food estate programs in different regions, particularly in Central Kalimantan. Until 2023, Central Kalimantan hosts two ongoing initiatives of food states. The first entails a 31,719-hectare cassava plantation in the Gunung Mas District and the second plan focuses on establishing a food repository, particularly by cultivating rice across 165,000 hectares of swampland in Kapuas and Pulang Pisau Districts. In the past two years, the objectives of these projects remain questionable in providing national food reserve because the 600 hectares of cassava plantations experienced delays, and the attempt to cultivate 17,000 hectares of new rice fields in Central Kalimantan ended in an unsuccessful harvest.<sup>90</sup> Most of these projects have affected the life of Dayak indigenous community who have been relying on the forest as a major source of food supply.

It should be noted that food, as part of the Jokowi government strategy to feed the entire nation, must tackle the misleading co-management system of agricultural land in the era of decentral-

isation. The decentralisation created three layers of governments: central government of Jakarta, province, and city/district. The enactment of Law 41/2009 on the SAL should be followed by the enactment of the same regulation by provinces, districts, and cities. The three layers of regulations are required to effectively protect the SAL in the regions. Yet, enacting and applying regulations in the three layers usually require longer than three years. For example, East Java, as the largest rice producing province, enacted Province Regulation No. 2/2016 that similarly regulated a protection mechanism of the SAL or seven years after the enactment of the Law 41/2009. This means that the effort to protect the SAL is challenging about bureaucracy, while at the same time land conversion is also still expanding.

## CONCLUSION

Overpopulation and industrialisation in top food producer regions such as Java, Sumatera, and Bali, as well as weak enforcement of land protection have become two main concerns for food self-sufficiency in Indonesia. The massive land conversion for industries and uncontrolled rapid urbanisation might also cause serious degradation of soil fertility, depletion of groundwater, and national disasters. However, the land conversion which destroy forests in Kalimantan, Sumatera, and Papua have affected two sides negative effects. Besides the loss of diversity, deforestation, and a long impact on indigenous people, most projects which converted forests did not successfully establish food self-sufficiency. The contrasting realities may not only threaten the capacity of the country to establish food self-sufficiency but also indigenous communities and wildlife whose livelihoods depend on the forest. The policy to establish agricultural sustainability in the future should deals with adequate policy to intensify agricultural sectors and protect the customary rights of the communities that have long relied on forest for their livelihood.<sup>91</sup>

<sup>89</sup> Galih Gumelar, 'The Government Releases 13 New National Strategic Projects' *CNN Indonesia* (9 August 2022) <<https://cnnindonesia.com/ekonomi/20220809204710-532-832524/pemerintah-rilis-13-proyek-strategis-nasional-baru>>.

<sup>90</sup> Quin Pasaribu, 'Food Estate: Perkebunan Singkong Mangkrak, Ribuan Hektare Sawah Tak Kunjung Panen Di Kalteng' *BBC News Indonesia* (15 March 2023) <<https://www.bbc.com/indonesia/articles/c2ez8gm679qo>>.

<sup>91</sup> Hans Nicholas Jong, 'Indonesia's Plantation Program on Collision Course with Wildlife, Indigenous Groups' *Mongabay Environmental News* (6 January 2021) <<https://news.mongabay.com/2021/01/indonesia-food-estate-program-wildlife-indigenous-groups/>>.

Feeding the entire Indonesian population of about 264 million people is not an easy task, especially in this era of regional autonomy governance. There should be interrelated government policies to establish food self-sufficiency for the long term. Principally, the government can adopt the Dutch eco-friendly cultivation system and combine it with intensifying agriculture through the growing of high yield grain varieties. The production can be maximised if there is an appropriate irrigation system, not only to tackle the ineffective regulation on the protection of the SAL, but also as a response to persistent pressure toward the land from city expansion and any other forms of economic development. This means that efforts for food self-sufficiency should work cohesively with efforts to protect lands. If the government only relies on less than 2 million ton of rice per year to establish food

self-sufficiency, a déjà vu of Suharto's food self-sufficiency era will return.

In the past, Indonesia had succeeded in developing and maximising the biotechnology-based crops to feed the nation. Yet, the lack of technology, poor management of agriculture and lack of support in government policy to protect the SAL has failed to sustain the food production. The introduction of new varieties of rice has been significant in boosting production because there has not been much improvement of technology in the agricultural sector, which may not successfully attract the future generation to work in this sector. If the government spends significant budget, energy, and policy in this sector, it will be very likely that in the long term, Indonesia can rely on agriculture as its backbone for the national economy.

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