

FOOD ESTATE IN CENTRAL KALIMANTAN, INSTANT POLICY FULL OF CONTROVERSY



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FOOD CRISIS WARNING

Figure 1 | **The newly planted rice field in Belanti Siam Village, Pandih Batu Sub-District, Pulang Pisau District, Central Kalimantan**



Photo: Walhi Central Kalimantan

Food estate in peatlands remains to be a frequently discussed hot topic in the mass media. The Coordinating Minister for Economic Affairs, Airlangga Hartarto, stated that [President Joko Widodo \(Jokowi\) instructed the State-Owned Enterprises \(BUMN\) to create new rice fields in the wetlands and peatlands through a food estate program during a Limited Meeting on 28 April 2020](#). This instruction is a follow up of the government's quick response to a warning from the Food and Agriculture Organization (FAO) about a potential global food crisis due to the COVID-19 pandemic. On 24 March 2020, [FAO stated that a global food crisis might potentially occur](#) as the quarantine policies applied by countries will disrupt supply chains.

One of the government's quick responses to FAO's warning was to establish a food estate development plan on the land previously used for a peatland development project (PLG) in Central Kalimantan. The new food estate program aims to meet the national food demand, especially rice, by prioritizing rice field intensification and extensification. Food estate development has also been included in the National Strategic Project (PSN) as stipulated in [Presidential Regulation No. 109/2020](#).

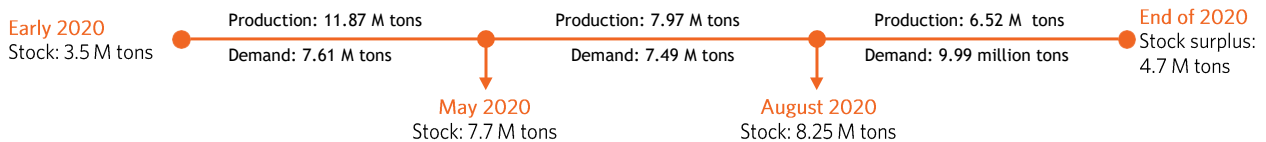
However, is this program the right course of action in anticipating the food crisis as announced by the FAO? Especially considering the potential adverse environmental and social impacts resulting from this policy.

INDONESIA'S ESTIMATED RICE STOCK IN 2020

We need to understand and evaluate the estimated rice stock in Indonesia. Indonesia should have sufficient rice stock in 2020 according to rice production and demand estimates prepared by the [National Logistics Agency \(Bulog\)](#) and the [Ministry of Agriculture \(MoA\)](#).

Figure 2 | [The National Logistics Agency \(Bulog\) and the Ministry of Agriculture Estimates](#)

Bulog Estimates



Ministry of Agriculture Estimates



Source: Katadata & Food Security Agency, Ministry of Agriculture of the Republic of Indonesia

Bulog predicts that the surplus of rice stock in December 2020 will amount to 4.7 million tons. On the other hand, based on the Ministry of Agriculture's calculations of rice availability and demand for 2020, with a population of almost 270 million people and a national rice demand of 111.58 kilograms/capita/year, the total demand for rice is estimated to reach 30.08 million tons. Meanwhile, the national rice production in 2020 is estimated to reach 30.26 million tons, hence there is a surplus of approximately 175,870 tons. Combined with the initial stock of 5.94 million tons from early 2020, the rice stock surplus at the end of 2020 will amount to 6.11 million tons.

Based on the rice stock estimates issued by Bulog and the Ministry of Agriculture and the estimated rice demand in 2020, the national

rice stock should be sufficient for 2020.

Lecturer at the Faculty of Agriculture and Head of the Biotechnology Center - IPB, Prof. Dr. Ir. Dwi Andreas Santosa, M.S., [stated](#) that Indonesia's Food Security Index has improved in 2019.

Food security refers to a condition where the national demand and individual food needs are fulfilled. In this case, food includes other staple food, not just rice.

Based on the data issued by the Global Food Security Index (GFSI), Indonesia's Food Security Index has improved from ranking 65th in 2018 to ranking 62nd in 2019. This index is assessed based on three aspects, i.e. **affordability, availability, as well as quality and safety of food.**

Affordability refers to an aspect that measures the consumers' ability to buy food. **Availability** refers to an aspect that measures the adequacy of national food supply, the risk of supply disruption, the state's capacity to distribute food, and

research efforts to increase agricultural output. **Food quality and safety** are related to the nutritional standards quality and safety and also import control. In other words, Indonesia has managed to improve the three aspects on an annual basis.

Figure 3 | **Food Security Index**



Source: Global Food Security Index (2019)

However, although Indonesia's food security index has improved, Indonesia is still below the global average in several assessment indicators according to the [GFSI](#) data, namely:

1. Affordability

- Low gross domestic product per capita
- Farmers have limited access to financing

2. Availability

- Public expenditure for agricultural research and development is insufficient
- Limited agricultural infrastructure
- Corruption in food distribution and subsidies for farmers are still commonly found
- Food loss¹ remains high

3. Quality and Safety

- Low food diversity
- Lack of micronutrients in food
- Poor protein quality

In other words, the availability of food stock is not the main focus that must be addressed, but the points above should become a priority in an effort to improve national food security.

¹ Food loss refers to food waste originating from vegetables, fruits, or raw food that cannot be processed and ends up being discarded.

FOOD ESTATE PROGRAM ISSUES

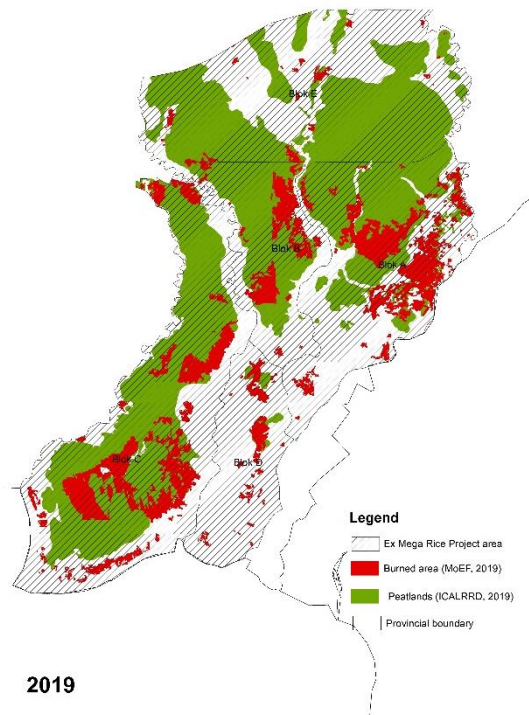
As the rice stocks are still sufficient in meeting the population's needs, why does the government seem to be in a hurry to implement the new food estate program in an area previously designated as the peatland development area (PLG) in Central Kalimantan, an area which mostly consists of peatlands?

The new food estate program is not an ideal short-term solution for the current food crisis. The new food estate program plan requires a more in-depth review in terms of concept, technology, socio-culture, and environmental carrying capacity. In addition, a significant amount of time to build the supporting infrastructure for this project is also required.

Issues concerning land clearance and forest fires on peatlands

The government's plan to clear the land that was previously used as PLG land to be used for the new food estate program raises concerns regarding recurrent peatlands fires that could adversely affect the country. Pantau Gambut's analysis of the burned area indicates that fire is still a yearly issue in areas previously designated as PLG areas. The total burned area in areas previously designated as PLG land reached 167,000 hectares (ha) in 2019.

Figure 4 | **Distribution of Burned Areas in Areas Previously Designated as PLG Area**



Source: Pantau Gambut Analysis



Photo: Alvi KGS - Gemindo/HKV for Pantau Gambut

This condition may potentially be exacerbated by the issuance of Minister of Environment and Forestry Regulation No. 24/2020 which allows the utilization of forest areas for food estate development. [A policy review](#) issued by the Indonesian Center for Environmental Law (ICEL) found that there are contradictions between the new regulation and Law No. 41/1999 concerning Forestry, which regulates the utilization of protected forests, namely utilization of the area, environmental services, and harvesting of non-timber forest products. Article 38 of Law no. 41/1999 also clearly stipulates the requirements for selective designation in developing protected forest areas and prohibits activities that can seriously damage and cause the respective forest to lose its function. Although Article 19 of MoEF Regulation No. 24/2020 states that protected forest areas that can be utilized are areas that can no longer provide protection as stipulated in the statutory provisions, but there is no explanation on the process of determining how a protected forest is considered to have lost its function.

Other findings based on ICEL's study indicate that Article 30 paragraph (1) of MoEF Regulation No. 24/2020 regulates that the Ministerial Decree on the Management of Forests Area for Food Security (KHKP) can serve as a timber utilization permit (IPK). In other words, the trees in protected forest areas can be cut down and the timber can be utilized based on the KHKP. In fact, referring to Law no. 41/1999, utilization in protected forest areas is limited to non-timber forest products.

In addition to the contradiction with other regulations, MoEF Regulation No. 24/2020 also causes legal uncertainty with the use of the Rapid SEA (Strategic Environmental Assessment) for changes in the designation of forest areas. There is no comprehensive explanation on why the government chose the Rapid SEA. The Rapid SEA only relies on qualitative analysis from the expert's point of view which reduces the essence of the SEA which should include a comprehensive, systematic, and collaborative analysis to ensure that the principles of sustainable development are integrated into regional development. The implementation of the Rapid SEA needs to be criticized considering the track record of food estate projects on peatland which ultimately causes serious environmental damage.

In addition, there are concerns that the conversion of protected forest areas into food estate areas will increase the deforestation rate which is contrary to the policies that have been implemented as part of Indonesia's commitment to preventing climate change. Climate change is bad for agriculture because it can potentially cause droughts, floods, pest infestation, and makes it difficult for farmers to predict the harvest season.

Social Issues

Suraya Afiff Ph.D, a lecturer of anthropology from the University of Indonesia, [explained](#) that the area previously designated as PLG area which will be used for the food estate program has a long history of tenurial conflicts and has not been completely resolved to this day. "Unresolved overlapping land claims and ownership status will result in land conflicts, which will lead to the abandonment of the project," she said.

Another important issue in the Central Kalimantan food estate program is the provision of workers who will work on this program and the issue of local community engagement. Based on [the presentation](#) conveyed by the Director of Yayasan Petak Danum, Muliadi, the farmers and the local community are only involved in the food estate program during the information dissemination stage. Food estate planning which does not involve local communities and farmers will result in the loss of land management rights for food and living space for the local communities.

In addition, Suraya also stated that rice cultivation is labor-intensive. The [research conducted by Kawengian et al. \(2019\)](#), states that a 30,000 ha food estate area will need approximately 4,080,000 man-days (HOK). Even if the equipment and machines are used effectively, this activity will still require 2.8 million HOK with an increased production cost.

Most likely, workers will be brought in through the transmigration program to work on the existing land. The transmigration program must be carefully prepared otherwise it will be difficult for the migrants to adapt to the local culture, hence there are concerns that this will result in a conflict between the local community and migrants. In addition, [the migrant's limited knowledge](#) and skills on wetland farming will cause other issues that could result in the land being abandoned due to management failures.

Figure 6 | Land preparation by the community for rice cultivation



Photo: Eli Nur Nirmala Sari/WRI Indonesia

Issues concerning rice productivity on peatlands

Pantau Gambut conducted a comparative analysis of rice productivity value in peatland and mineral land based on the academic research outcomes to evaluate the productivity level of rice planted on peatlands. Rice productivity can be obtained by comparing the total rice production and the size of the cultivated area (usually expressed in kilograms/ha or tons/ha).

The rice productivity in the peatlands case study was taken from the outcomes of researches conducted in [Blang Ramee Village - West Aceh](#), [Tanjung Jabung Timur District - Jambi](#), and [Katingan District - Central Kalimantan](#). The three research outcomes indicate that rice productivity in peatlands is only approximately 1.5 tons/ha - 2.9 tons/ha.

On the other hand, data on rice productivity in mineral land was obtained from data and researches conducted in [Senduro Lumajang Village, Banyu Biru Sub-District](#), and [Badung District, Bali Province](#). The typical outcomes of the research conducted showed that rice productivity ranges between 6.2 tons/ha - 7.3 tons/ha.

Table 1 | Rice production on peatland and non-peatland

	Rice on Peatlands			Rice on Mineral Lands		
	Blang Ramee Village, West Aceh	Tanjung Jabung Timur District, Jambi	Katingan District, Central Kalimantan	Senduro Lumajang Village	Banyu Biru Sub-District, Semarang	Badung District, Bali
Rice productivity	1.5 tons/ha	2.9 tons/ha	1.9 tons/ha	7.2 tons/ha	7.3 tons/ha	6.2 tons/ha

Description: This comparison only considers the rice production on peatland and non-peatland. Parameters such as type of rice, climate/weather, management/cultivation techniques, and other treatments for rice were not taken into consideration.

This comparison concludes that rice farming on peatlands has lower productivity when compared to rice farming on mineral soils.

Many factors contribute to the lower rice productivity in peatlands when compared to rice productivity in mineral soils.

First, the low level of macro and micronutrients for plants on peatland resulted in low rice productivity. Peatlands severely lack nutrients due to the low mineral levels it contains.

Second, the high acidity of peatlands makes it hard for some plant species to grow well.

Third, inappropriate use of farming technology. *Fourth*, [when managed using a rice field system, peatland will also produce toxic organic acids](#)

In addition, the use of heavy equipment on peat, which has a low bearing capacity, will trigger peat compaction which will lead to land subsidence and cause flooding in the region.

Figure 7 | **Agricultural land in Belanti Siam Village, Pandih Batu Sub-District, Pulang Pisau District, Central Kalimantan**



Photo: Walhi Central Kalimantan



Photo: Hidayah Hamzah/WRI Indonesia

Issues concerning information transparency and accuracy

In addition to the controversy surrounding the food estate program and the threat of forest and land fires, information about the location and size of the food estate program remains unclear. Some parties gave different figures for the planned area of the food estate program. The Coordinating Minister for Economic Affairs, Airlangga Hartarto, informed that [they are preparing 900,000 ha of land to support the program](#).

On the other hand, in a hearing with Commission IV of the House of Representatives (DPR) in Jakarta on Monday, 4 May 2020, the Minister of Agriculture, Syahrul Yasin Limpo, [stated](#) that approximately 600,000 ha of land have been prepared (consisting of 400,000 ha of peatland and 200,000 ha of dry land).

Afterward, the Rapid SEA Interim Report prepared by the Ministry of Environment and Forestry was distributed at the end of May 2020, the report discussed the potential availability of 165,000 ha of land, in the area previously designated as PLG area, for rice intensification and extensification.

On 16 June, the Minister of Public Works and Public Housing (PUPR), Basuki Hadimuljono, mentioned that the potential [165,000 ha of land](#) is located in an alluvial area, not peatland, in the previously designated PLG area in Central Kalimantan.

However, in a follow-up meeting discussing food estate on 23 September 2020, President [Jokowi stated](#) that a food estate will be developed in Central Kalimantan Province on 148,000 ha of irrigated areas for rice and 622,000 ha of non-irrigated areas for cassava, maize, and livestock.

The irrigation repair work has commenced and approximately 30,000 ha have been repaired in 2020 by using paddy, although an EIA has not been carried out. President Jokowi also made the first planting on 8 October.

Amid the confusing information circulating, the government has yet to publish the outcomes of the land suitability study and the map of the food estate program. There are concerns that the location of the food estate program (extensification) will be in protected areas. If this were to occur, it will cause significant social and environmental impact.

FAILURE OF FOOD ESTATE PROJECTS ON PEATLAND

Figure 9 | Land prepared for rice cultivation in Belanti Siam Village, Pandih Batu Sub-District, Pulang Pisau District, Central Kalimantan



Photo: Walhi Central Kalimantan

Many food estate programs on peatland have failed in the past, such as:

1. Ketapang Food Estate (KFE)

The food estate program in Ketapang, West Kalimantan, was planned by the Minister of SOE, Dahlan Iskan, in 2012-2014. The planned area was originally 100,000 ha, but the realization was only 0.1 percent (100 ha) in Sukamaju Village, Ketapang. The obstacles and issues faced by this program that led to its failure were:

A. Issues concerning corruption

- The Ketapang Food Estate program failed and was terminated because there were [allegations of corruption that resulted in a loss for the state of up to Rp. 67.69 billion.](#)

B. Issues concerning technology and knowledge

- Irrigation networks that were not suitable for peatland management in the program location resulted in water scarcity during the dry season and flooding during the rainy season.
- Cultivation issues, such as:
 - 1) High mechanization costs;
 - 2) Land clearance causes pest infestation;
 - 3) The type of rice planted is not suitable with the land, and
 - 4) The land clearing technique was unsuitable because it was carried out by the road contractor.

C. Social Issues

- Labor issues. Because they could not find people with the required skills, the program ended up being carried out manually despite the original plan of mechanization. This program employed too many workers. At that time, the recruitment system and employment contracts were unclear, which resulted in inadequate livelihood and safety for workers.
- Land provision and overlapping land. Approximately 38% of the planned area was located in Production Forest and Convertible Production Forest when the spatial plan (RTRW) had not been revised, 42% was located in non-forest areas, Areas for Other Use controlled by the community through land certificates (SKT) and non-SKT, and 20% with the right to cultivate based on the Plantation Law.

2. Merauke Integrated Food and Energy Estate (MIFEE)

The MIFEE project started under the leadership of President Susilo Bambang Yudhoyono in 2008, more than 1 million ha of land was allocated for the integrated food estate. This project was also considered a failure. The remaining realization is [only 400](#) ha. Some of the issues faced and the impacts caused by this project are:

A. Social and health issues

- [The MIFEE project created agrarian conflicts](#) because sacred customary land was cleared, hence legal and customary obstacles were encountered in the land acquisition process.
- Conflict and social inequality emerged between the local community and the migrants.

- Child and female labor. The forest conversion for the MIFEE project resulted in local communities, who were previously relied on the forest as a source of food, no longer being able to meet their needs. As a result, children and women were forced to work to sell Gambir wood to the middlemen.
- The emergence of various diseases such as ARI, HIV/AIDS, and malnutrition. [The migrants](#) brought prostitution and alcohol, which did not exist in the village in the past. This led to new diseases within the village community.

B. Environmental issues

- Drastic changes in the landscape. 3,000 ha of forest area was cleared within a year.

3. One Million Hectares PLG Central Kalimantan

The One Million Hectares PLG started in 1995 during Soeharto's leadership. The failure of the PLG resulted in significant losses. Only [110,000 ha](#) of land was developed out of a targeted 1.45 million ha. Some of the issues faced and the impacts caused by this project are:

A. Environmental issues

- This project was implemented without a thorough environmental impact assessment.
- Peatlands were not suitable for agricultural cultivation.
- A significant proportion of the lands were abandoned as it cannot be used for agricultural purposes and abandoned land are prone to fires.

- Large-scale forest and land fires occurred due to the massive clearing of peatlands at that time. Nearly 80% of the PLG area was heavily burnt during the dry season in 1997/1998. [The fires in the PLG area alone have released 0.12-0.15 Gt of carbon emissions into the atmosphere.](#)
- The construction of a 187 km canal during the PLG program resulted in pyrite exposure, which made the soil very acidic (pH <3.5). This condition made it difficult for plants to grow and resulted in the [mass death of fish](#) in the Mangkatip River and Barito Creek in 1997.

B. Social Issues

- Migrants faced difficulties in cultivating peatlands due to their lack of understanding of the land conditions and the peatlands were not suitable for agricultural cultivation. The land that was supposed to be cultivated and planted with rice ended up as idle land which was difficult to manage, hence the [community preferred illegal logging of peat forest.](#)

The examples of food estate projects on peatland that have been implemented in the past show that the management always ends in failure and rarely provides room for the socio-cultural integration of local residents. In addition, large-scale changes in the natural landscape continue to destroy the balance of the ecosystem. Corporate management of food estates also creates opportunities for brokers/free riders who only benefit the social elite and disadvantages the community by increasing social inequality, as well as triggering corruption which is detrimental to the state.

If the concern about the extensification of rice fields on peatlands is proven - i.e. a practice that is not supported with a comprehensive study, adequate technological improvements, and is not followed by an improvement in farmer capacity and the appropriate farming model - there is a possibility that a food estate plan will not produce optimal results or will even repeat the failure of previous food estate projects that have been carried out in the same location in the last 23 years.

We must be mindful of the fact that peatlands are highly vulnerable to damage, i.e. physical damage (subsidence and irreversible dryness) and chemical damage (nutrient deficiency and toxic elements). Inappropriate peatland management, including water management and managing peat-friendly land, will cause the peatland to become increasingly damaged and prone to fires.

Burnt peat will release enormous amounts of carbon emissions into the atmosphere. This clearly has a negative impact on efforts to address climate change. [The WRI study](#) found that each hectare of tropical peat drained for plantation development emits an average of 55 metric tons of CO₂ every year, roughly [equivalent to](#) burning more than 6,000 gallons of gasoline.

CONCLUSION AND RECOMMENDATIONS

Figure 10 | Land used for rice cultivation in Belanti Siam Village, Pandih Batu Sub-District, Pulang Pisau District, Central Kalimantan



Photo: Walhi Central Kalimantan

The study and analysis carried out by Pantau Gambut indicate that the food estate program or extensification on peatlands to respond to the threat of a food crisis in Indonesia needs to be re-reviewed in detail. In fact, the issue that need to be addressed is food distribution which is hindered by the social restrictions implemented by a number of countries and regions, as opposed to the lack of food supply/reserves.

The concern is that a poorly planned food estate program on peatland will result in losses that far exceed the potential benefits obtained in the short term and long term.

In addition, the government must answer many questions about the food estate program, such as:

- How are the social and economic environmental impacts assessed?
- What are the planning, implementation, and monitoring strategy?
- What is the next stage of the food estate development plan?
- What are the efforts to increase transparency and accuracy of the information for the public?

Therefore, Pantau Gambut recommends several solutions to overcome the threat of the food crisis **in addition to** the food estate program on the peatland ecosystem landscape in the area previously designated as PLG area in Central Kalimantan, namely:

1. Improve Indonesia's food security

Although Indonesia's Food Security Index has improved from ranking 65th to 62nd, the GFSI data shows that Indonesia still has weaknesses, especially in terms of improving access to food distribution, improving the quality of protein and micronutrients in food, eradicating corruption, and increasing farmers' access to financing. Therefore, Indonesia must also improve these weaknesses in an effort to increase national food security.

2. Not converting forest and peat areas

Forest and peat areas serve as a source of food, medicine, and other daily necessities for the local community. These areas are also a source of germplasm and biodiversity which play a crucial role in maintaining food security, the environment, and the health of the world population. In addition, forest and peat areas also play an important role in controlling global warming which can have a negative impact on food security. Therefore, forest and peat conversion for food production will have the opposite effect in the long term, i.e. reducing food production.

3. Food diversification with local food alternatives

Diversification is considered to be a good solution for overcoming the food crisis because rice is still the main staple for Indonesians. Indonesia received low scores for food diversity in the 2019 GFSI assessment. Food diversification can be done on degraded peatlands with local peat-friendly food commodities, e.g. sago. The government can assist the community through facilitation, information dissemination, and capacity building related to the development of peat-friendly local food commodities to boost the local economy.

4. Intensification of existing agricultural land

Intensification of agricultural land can be implemented by firstly identifying agricultural land with low productivity. The priorities for land intensification can be determined by a number of factors, such as distribution access, close proximity to markets, warehouses, and others. The development of existing agricultural land can be an effective solution to boost production by increasing agricultural mechanization, repairing malfunctioning irrigation, improving fertilization, and selecting superior rice seeds. Post-harvest processing also needs to be improved to increase production.



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Pantau Gambut is an online medium or platform that provides access to information about the development of peat ecosystem restoration activities and commitments carried out by all stakeholders in Indonesia.