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FIELD OF FALSE

Reflections on the Central Kalimantan Food Estate Project After Three Years

2024

Pantau Gambut is a non-govermental organization that networks in nine provinces which focuses on research and advocacy, and campaigns for the peatland protection and sustainability in Indonesia.

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EXECUTIVE SUMMARY

> **A mere 1% of the total ex The Mega Rice Project area is suitable for agriculture.**

This study evaluates of the Indonesian government's efforts to expand the Food Estate project in Central Kalimantan. This issue is important because the president-elect has made it a key priority in his vision. As one of the National Strategic Projects (PSN) aimed at achieving food security, this initiative risks causing ecological disasters and social conflicts.

The political move to expedite the project, leveraging the global crisis caused by the COVID-19 pandemic, has drawn widespread criticism. These critiques focus on land unsuitability, environmental impacts—particularly on peatland ecosystems—and the catastrophe perceived by communities surrounding the project. The project can potentially repeat the failure of The Mega Rice Project/*Proyek Pengembangan Lahan Gambut* (PLG) at the end of President Soeharto's administration.

This study monitored 30 points in the ex-PLG areas of Kapuas and Pulang Pisau regencies between 2020 and 2023. The monitoring methods involved analyzing Tree Cover Loss (TCL), forest and land fires/*kebakaran hutan dan lahan* (karhutla), and land suitability for rice cultivation. The data utilized included project work maps, satellite imagery, and soil tests to assess land fertility and the acidity of peat soils.

Key findings reveal that the majority of land within the Food Estate area is unsuitable for rice cultivation. Only 1% of the ex-PLG area is suitable for agriculture, while the rest ranges from moderately to poorly suited. Much of the cleared land has been abandoned, and other portions have been converted into privately owned palm oil plantations.

Additionally, the annual forest fires in this area continue to threaten peatland ecosystems, leading to forest cover loss and the release of greenhouse gas emissions. The study also found that many abandoned lands are experiencing degradation, with the peat layer thinning or disappearing altogether.

Pantau Gambut conclude that the Food Estate project in Central Kalimantan is repeating the mistakes of similar past initiatives, with detrimental environmental and social impacts. The project has failed to achieve its food security goals, contributing to widespread ecological damage.

We urge the government to reassess and halt the project, focusing instead on the restoration

of peatland ecosystems. Furthermore, the government should prioritize local sovereignty-based food approach that is more suited to the conditions of peatlands, engaging local communities as the primary stakeholders in managing natural resources.

Land Clearing Undertaken for the Food Estate Extensification in Palingkau Jaya Village, Kapuas Murung District, Central Kalimantan

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> The Central Kalimantan Food Estate constitutes a grave violation of the food sovereignty of local farmers.

1. BACKGROUND

The Beginning of Catastrophe

The end of 1997–1998 marked a suffocating moment for Indonesians. During a period of escalating political turbulence, dense and hazardous haze from large-scale forest and land fires swept through and engulfed large parts of Kalimantan and Sumatera. The haze was, in a sense, the most prominent export to neighboring countries during that period. Singapore, Malaysia, the Philippines, Sri Lanka, and Australia felt its impact.[1]

Central Kalimantan became one of the provinces most heavily affected by the haze. This was mainly due to the One Million Hectare Peatland Development Project (Mega Rice Project). At the time, President Soeharto initiated this 1,385,280-hectare project in response to the sharp increase in Indonesia's rice imports in 1993.[2] The target was ambitious—Soeharto aimed to produce 2.7 million tons of rice annually.[3] However, this goal conflicted with another national program he promoted, the food diversification program.[4]

The project was hastily executed to meet this colossal target. Farmers from Java and Bali were brought to Kalimantan through the transmigration program. However, the agricultural land they encountered in Kalimantan vastly different from what they were accustomed to in Java and Bali. The peatlands' high acidity (pH) levels made them difficult to cultivate for rice paddies.

Many transmigrant farmers ultimately abandoned the nutrient-depleted soil and left behind the vast expanses of cleared land.[5] However, some remained and struggled to discover new seeds and cultivation techniques that could adapt to the land's specific conditions.

Due to these difficulties, the project's results fell short of its targets. Out of the intended 1.45 million hectares of rice fields, only about 110,000 hectares were realized.[6] The failure to meet these targets was attributed mainly to poor planning and exacerbated by weak oversight during implementation. The project fell short of expectations, particularly in light of the large amount of financial support provided. It was also suspected that the project caused state financial losses

1 Tropical Rainforest. *The Asian Forest Fires of 1997-1998*. https://worldrainforests.com/08indo_fires.htm

2 Gamma Galudra et al.. 2010. *Hot Spot of Emission and Confusion: Land Tenure Insecurity, Contested Policies and Competing Claims in the Central Kalimantan Ex-Mega Rice Project Area*. World Agroforestry Centre Working Paper nr 98.

3 Tropical Rainforest. *Loc.Cit.*

4 Hendaru Tri Hanggoro. 2021. *Dari Swasembada Beras ke Swasembada Pangan*. https://historia.id/ekonomi/articles/dari-swasembada-beras-ke-swasembada-pangan-P74KE/page/1

5 Jenny Goldstein. 2016. *Carbon Bomb: Indonesia's Failed Mega Rice Project*. https://www.environmentandsociety.org/arcadia/carbon-bomb-indonesias-failed-mega-rice-project

6 Pantau Gambut. 2021. *Food Estate Kalimantan Tengah, Kebijakan Instan Sarat Kontroversi*.

> President Joko Widodo's administration appears to be deliberately falling into the same pitfall.

totaling 1.97 trillion rupiah.

The reckless execution of the project turned the dream of food self-sufficiency into a boomerang. In addition to missing the production targets, the project brought about an ecological disaster with dire consequences. By 1997–1998[7], at least 730,000 hectares of Indonesia's forests had been consumed by fire—an area equivalent to 11 times the size of Jakarta.

The abandoned lands from this million-hectare project have since been converted into oil palm plantations owned by nine major corporations.[8]

Falling into the Same Pitfall

The proverb, "Only a donkey falls into the same hole twice," seems fitting to describe the journey of the Food Estate project. The difference, however, is that President Joko Widodo's administration appears to be intentionally walking into the same trap. Despite 23 years having passed, he is ambitiously retracing Soeharto's footsteps.

In 2020, he officially launched the Food Estate program in the ex-PLG area,[9] citing the threat of a global food crisis caused by the COVID-19 pandemic.[10] Just a year later, the project's failure became evident. In 2021, data from Indonesia's Ministry of Agriculture showed that the rice intensification efforts in Central Kalimantan only yielded 3.5 tons of Dry Milled Grain (GKG) per hectare. In contrast, ideal rice yields should reach at least 4 tons per hectare.[11]

Apart from rice, Pantau Gambut found that the cassava tubers planted for the Food Estate in Tewai Baru Village, Gunung Mas Residence, were small, carrot-shaped, yellow-like turmeric, and bitter to the taste. These characteristics point to a high cyanide content.[12]

This failure was further reinforced by the 2022 Global Food Security Index report, which highlighted the significant gap for

7 Pantau Gambut. *Food Estate, #KenapaBuruBuru?*. https://foodestate.pantaugambut.id/

8 Indra Nugraha. 2020. *Pelibatan Petani dalam Proyek Food Estate di Kalteng Tak Jelas*. https://www.mongabay.co.id/2020/09/24/pelibatan-petani-dalam-proyek-food-estate-di-kalteng-tak-jelas/

9 Reza Felix Citra. 2024. *Program Food Estate: Dari Rencana Hingga Realitas*. https://kompaspedia.kompas.id/baca/paparan-topik/program-food-estate-dari-rencana-hingga-realitas

10 FAO. 2020. *FAO Director General video message on Global Report on Food Crises 2020 edition*. https://www.youtube.com/watch?v=ohpyxqjB6V4

11 Diani Nafitri, Agiel Prakoso, Yoga Aprillianno. 2023. *Jilid 2: Proyek Food Estate Kalimantan Tengah Setelah 2 Tahun Berlalu*.

12 *Ibid.*

the Indonesian government in creating a resilient and sustainable food system, despite being recognized for ensuring affordable food prices for consumers.[13] In that period, Indonesia ranked 83rd out of 113 countries and performed weakest in food sustainability and adaptability compared to others.[14]

Amid a worsening climate crisis, the sustainability of the Food Estate program remains highly questionable. Forest and land fires persisted since 1997, releasing hundreds of thousands of tons of carbon dioxide into the atmosphere in the ex-PLG area.[15] This glaring failure and the impending risk of a "carbon bomb" should have made the government aware of the ecosystem's delicate state. Unfortunately, this realization did not prevent the Indonesian government from further extending the Food Estate area in 2022.

The government's food security concept promoted through the Food Estate program also deserves criticism. The FAO defines food security as a condition in which all people have physical and economic access to sufficient, safe, and nutritious food at all times, meeting their dietary needs and preferences for an active and healthy life.

However, even the FAO's concept of food security is not without its flaws. Focusing solely on food supply without acknowledging farmers as central figures will eventually result in free market dynamics and price fluctuations, creating a less-than-ideal scenario.[16] The aspects of sustainability and the right to food sovereignty are not prioritized in this concept of food security. Nevertheless food sovereignty should receive greater attention, as every person, nation, and country has the right to determine food policies that suit their needs and local production contexts.[17]

The facts show that Joko Widodo is no better than Soeharto. Their development patterns are similar: massive, hasty, and using "crisis" as a basis for legitimacy.

Latest Updates of the Food Estate in Central Kalimantan

Initially, the government, through the Ministry of Agriculture, the Ministry of Public Works and Housing, and the Ministry of Defense, was optimistic about the success of the Food Estate project. Joko Widodo who orchestrated these ministries, argued that the project could succeed due to the presence of 4,000 km of artificial canals left from the Mega Rice Project (PLG) as an irrigation system for rice farming. However, it turned out that achieving success was not as easy as envisioned. Many canals and irrigation systems did not meet standards or match the topography, creating potential problems.

Peatlands with high acidity character dominate the ex-PLG area. Special treatment is necessary to engineer the land's characteristics to allow non-endemic crops to thrive. However, this engineering must be executed carefully to prevent land degradation. If degradation occurs, this ecosystem will be prone to disasters throughout the year. The humid tropical climate and

13 Global Food Security Index. 2022. Economist Impact, hlm. 3.

14 *Ibid.*

15 Nuthammacot, N., Phairuang, W., Stratouillas, D.. 2019. *Estimation of Carbon Emission in the Ex-Mega Rice Project, Indonesia Based on SAR Satellite Images*. Applied Ecology and Environtmental Research, 17(2). https://www.aloki.hu/pdf/1702_24892499.pdf.

16 Gusti Nur Asla Shabia. 2021. *'Hak Atas Pangan dan Gizi, Sebuah Pengantar' dalam Pangan untuk Siapa? Politik Pangan di Indonesia dan Marginalisasi yang Mengiringi*. Jurnal Hak Atas Pangan dan Gizi Edisi 01. FIAN Indonesia, hlm. 3-4.

17 Via Campesina. 2021. Food Sovereignty | Explained. https://viacampesina.org/en/food-sovereignty/.

high rainfall, make the area susceptible to flooding. Meanwhile, during the dry season, average temperatures ranging from 26°C to 30°C[18] significantly increase the potential for forest and land fires.[19]

Pantau Gambut's monitoring in 2022[20] and 2023[21] brought to light the abandonment of massive areas of cleared peatland. This reflects the lack of preparation and preliminary studies behind the government's ambitious initiative. The series of problems that Pantau Gambut has observed, recorded, and published since 2022 have not deterred the government's ambitions. Joko Widodo, through the Ministry of Agriculture, expanded the project by an additional 16,643.6 hectares in Kapuas and Pulang Pisau districts,[22] with only Katingan district not receiving project expansion. This situation prompted Pantau Gambut to continue monitoring the progress of the Food Estate in Central Kalimantan.

The Food Estate in Central Kalimantan represents a severe violation of the food sovereignty of local farmers. The project has forced them to plant crops that do not align with their needs, such as cassava and rice varieties unsuitable for cultivation on peatland and not necessarily consumed by them.

This publication aims to dissect this "disaster planning" by highlighting the conditions of the Food Estate in the ex-PLG area, Central Kalimantan, up to 2023. Developments include the extent of area expansion, findings on tree cover loss, burned areas, neglected land, and the unsuitability of peatland for rice cultivation.

If philosophers claim that "history repeats itself," this publication poses a significant question: Which history do we wish to repeat? Are we set to relive a history filled with tragedy or create a new narrative by halting the destruction of nature under the guise of food sovereignty and true food sustainability?

18 Biro Perencananaan Kementerian Pertanian. 2020. *Grand Design Pengembangan Kawasan Food Estate Berbasis Korporasi Petani di Lahan Rawa Kalimantan Tengah*.

19 Widjaja-Adhi, I P.G. 1997. *Developing tropical peatlands for agriculture*. In: J.O. Rieley and S.E. Page (Eds.). pp. 45-54. Biodiversity And Sustainability Of Tropical Peat And Peatland. Proceedings Of The International Symposium On Biodiversity, Environmental Importance And Sustainability Of Tropical Peat And Peatlands, Palangka Raya, Central Kalimantan 4-8 September 1999. Samara Publishing Ltd. Cardigan. UK.

20 Oriz A. Putra, Desti Ayunda, Agiel Prakoso, Iola Abas. 2022. *Jilid 1: Proyek Food Estate Kalimantan Tengah Setelah 2 Tahun Berlalu*.

21 Diani Nafitri, Agiel Prakoso, Yoga Aprillianno. Loc.Cit.

22 Tempo.co. 2022. Kementan Realisasi Ekstensifikasi Lahan di Kalimantan untuk Food Estate. https://nasional.tempo.co/read/1600361/kementan-realisasi-ekstensifikasi-lahan-di-kalimantan-untuk-food-estate.

A land-clearing excavator at PT WUL's palm oil plantation site, located near the Food Estate expansion area in Tajepan Village, Kapuas Murung District, Central Kalimantan ©Pantau Gambut 2024

2. MONITORING METHODOLOGY

Pantau Gambut monitored the development of the Food Estate project extensification in Central Kalimantan, which has been ongoing for three years since 2020. As if that were not enough, the government's expansion of the Food Estate area was also observed between 2021–2023. This is evident from the Work Map of the Food Estate Study Investigation and Design (SID) Project in Central Kalimantan. The areas on the SID work map represent land intended to expand of the Food Estate, most of which is located within the ex-PLG area.

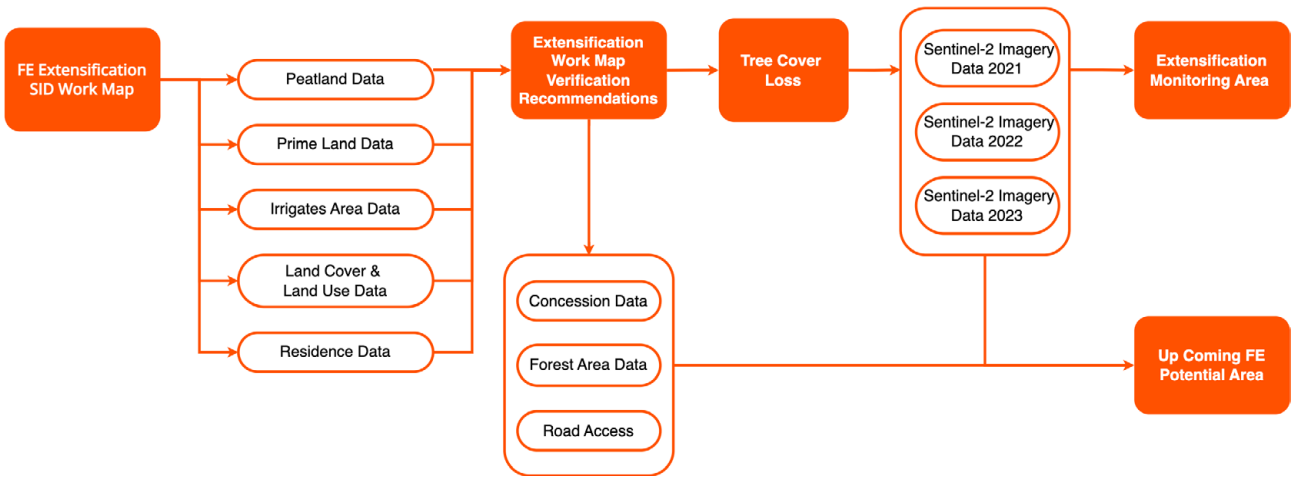
The analysis and verification of this expansion monitoring were focused on two main aspects:

1. Tree cover loss and forest and land fires in 2023
2. The suitability of the land for rice farming in the expansion areas.

Nineteen locations across Kapuas Regency and Pulang Pisau Regency were selected as observation samples.

2.1. Monitoring Area Selection Method

Figure 1 Flowchart of Location Selection for Monitoring the Food Estate Expansion in Central Kalimantan



The primary basis for selecting the monitoring locations in this study was the data from SID Project Work obtained from the Provincial Department of Food Crops and Livestock of Central Kalimantan. This data was then analyzed by overlaying it with supporting data such as the

Prime Land Areas and other relevant datasets. According to Law No. 37 of 2014 on Soil and Water Conservation, Prime Land is land that functions optimally for cultivating crops. This data helps determine whether the land quality is suitable for growing cultivated plants.

In the context of the Food Estate, this data provides an overview of whether the land designated for expansion is suitable for rice cultivation. The suitability is then compared with the analysis of peatland suitability in the Food Estate expansion areas. Therefore, this overlay map can reveal the potential rice fields are located within peatland areas and if it's appropriate to plant in those locations. Besides the Prime Land data, several other datasets were used to strengthen the selection basis for the sample monitoring areas, as shown in the following table.

Table 1 Supporting Data for Monitoring Area Sample Selection

No	Data	Source
1	Map of SID Distribution of the Food Estate Extensification Project in Central Kalimantan	Department of Food Crops and Livestock of Central Kalimantan
2	Prime Land Data in the ex-PLG Area	The Ministry of Environment and Forestry & Ministry of National Development Planning
3	Irrigated and Non-Irrigated Area Data in the ex-PLG Area	The Ministry of Environment and Forestry
4	PBPH and HGU Concession Data	The Ministry of Environment and Forestry & The Ministry of Agrarian Affairs and Spatial Planning
5	Peat Hydrological Unit (PHU) Data from 2017	The Ministry of Environment and Forestry
6	Land Use Data from 2021–2022	The Ministry of Environment and Forestry
7	Land Cover Data from 2021–2022	The Ministry of Environment and Forestry
8	Sentinel-2 Satellite Imagery Data from 2021–2023	European Space Agency (ESA)

After identifying recommended points through data overlay, validation was conducted using satellite imagery. By comparing the satellite images taken before and after the expansion, the changes in land cover at the marked locations were noticeable. These land cover changes validate that Food Estate expansion activities have occurred at the designated points.

The supporting data analysis and satellite imagery validation results became the foundation for Pantau Gambut's direct monitoring. From the overlay and satellite imagery monitoring, 30 monitoring points were identified across 19 villages in 5 districts of Kapuas Regency and 1 district in Pulang Pisau Regency.

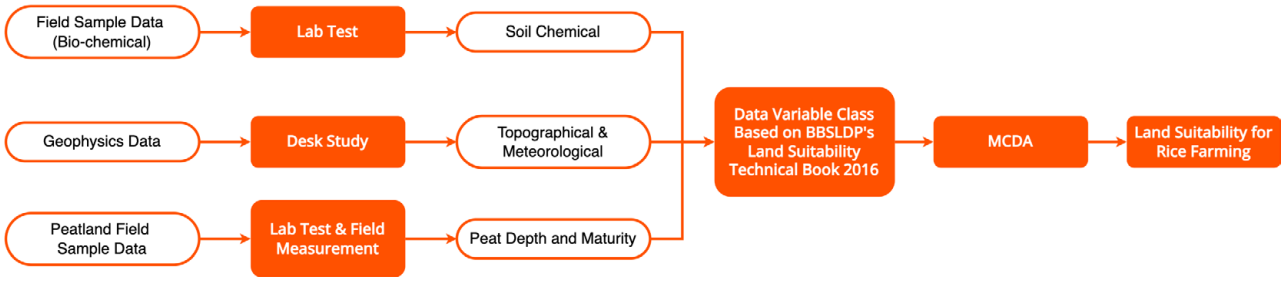
Table 2 Monitoring Locations

No	Village Name	District	Regency
1	Tajepan	Kapuas Murung	Kapuas
2	Palingkau Jaya	Kapuas Murung	Kapuas
3	Palingkau Asri	Kapuas Murung	Kapuas
4	Penda Katapi	Kapuas Barat	Kapuas
5	Mandomai	Kapuas Barat	Kapuas

No	Village Name	District	Regency
6	Pantai	Kapuas Barat	Kapuas
7	Sei Kayu	Kapuas Barat	Kapuas
8	Sei Dusun	Kapuas Barat	Kapuas
9	Pangkalan Sari	Basarang	Kapuas
10	Basarang	Basarang	Kapuas
11	Pangkalan Rekan	Basarang	Kapuas
12	Tambun Raya	Basarang	Kapuas
13	Basungkai	Basarang	Kapuas
14	Maluen	Basarang	Kapuas
15	Tarung Manuah	Basarang	Kapuas
16	Murung Karamat	Selat	Kapuas
17	Betawi Permai	Bataguh	Kapuas
18	Budi Mufakat	Bataguh	Kapuas
19	Mintin	Kahayan Hilir	Pulang Pisau

2.2. Land Suitability Analysis Method

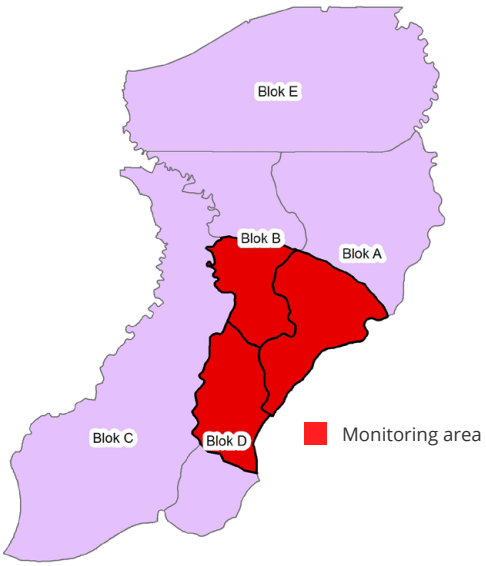
Figure 2 Flowchart of Land Suitability Assessment Analysis for the Central Kalimantan Food Estate



Selecting sample monitoring points is essential to ensure that the samples accurately represent the overall land condition. To achieve this, Pantau Gambut selected three out of five blocks of the ex-PLG land as monitoring samples for the Food Estate project, specifically for planting rice crops. Blocks A, B, and D, covering a total area of 243,216 hectares, were chosen because they met the criteria for representing the expansion areas and land cover conditions.

The next step involved laboratory testing to analyze the soil's chemical properties and peat soil maturity. These tests were conducted at the Integrated Laboratory Unit of Palangkaraya University.

Figure 3 Ex-PLG Blocks Map



After receiving the laboratory results, Pantau Gambut proceeded with the analysis using the land suitability assessment approach developed by the Center for Research and Development of Agricultural Land Resources (Balai Besar Penelitian dan Pengembangan Sumber Daya Lahan Pertanian/BBSLDP) in 2016.[23] This approach considers various factors such as soil chemical properties, topographical and meteorological conditions, and peatland characteristics in the analyzed area.[24] The following data were used in this analysis:

Table 3 Parameters for Land Suitability Assessment

No	Parameter	Source(s)
Soil Chemical Properties Parameters		
1	ph H_2O	Field Sample (Laboratory)
2	N-Total	Field Sample (Laboratory)
3	C-Organic	Field Sample (Laboratory)
4	P-Bray I	Field Sample (Laboratory)
5	K-dd	Field Sample (Laboratory)
6	KTK	Field Sample (Laboratory)
Peatland Parameters		
7	Peat Depth	Field Sample (Laboratory) & Peatland Data 2019 (Spatial)
8	Peat Maturity	Field Sample (Laboratory) & Peatland Data 2019 (Spatial)
Topographical, Meteorological, and Hazardous Conditions Parameters		
9	Temperature	Modis LST Daily Data from 2019–2023
10	Canal Density	BRGM Canal Network Distribution Data
11	Slope	DEMNAS Data
12	Precipitation	CHIRPS Daily Data from 2019–2023
13	Erosion Hazard Level	Pantau Gambut Analysis from 2024
14	Flood Vulnerability	Pantau Gambut Analysis from 2024

Soil chemical properties parameters evaluate the soil's quality and ability to support agricultural activities, such as nutrient content, acidity level (pH), and the capacity to absorb essential nutrients for plants. Meanwhile, topographical and meteorological parameters are used to understand the geophysical conditions of the land, including slope, elevation, climate, and environmental hazards that affect the suitability of the environment for agricultural activities. Peat depth is also a critical factor to assess, as it helps determine soil characteristics, particularly concerning depth, maturity, and stability, and their overall impact on land productivity.[25]

These data were analyzed spatially using a Multi-Criteria Decision Analysis (MCDA) approach, which evaluates each parameter against its class. The method incorporates an Analytic Hierarchy Process (AHP)[26] that allows each parameter to be weighted according to its importance.

Subsequently, each parameter is classified and multiplied by weight to produce a land suitability

23 Petunjuk Teknis Pedoman Penilaian Kesesuaian Lahan Untuk Komoditas Pertanian Strategis Tingkat Semi Detail Skala 1:50.000, 2016

24 Widiatmaka, Ambarwulan, W., Santoso, P. B. K., Sabiham, S., Machfud, & Hikmat, M. 2016. *Remote Sensing and Land Suitability Analysis to Establish Local Specific Inputs for Paddy Fields in Subang, West Java*. Procedia Environmental Sciences, 33, 94–107. https://doi.org/10.1016/j.proenv.2016.03.061

25 Petunjuk Teknis Pedoman Penilaian Kesesuaian Lahan Untuk Komoditas Pertanian Strategis Tingkat Semi Detail Skala 1:50.000. 2016

26 Adrian, Widiatmaka, Munibah, K., & Firmansyah, I. 2022. *Evaluate land suitability analysis for rice cultivation using a GIS-based AHP multi-criteria decision-making approach: Majalengka Regency, West Java Province*. IOP Conference Series: Earth and Environmental Science, 1109(1). https://doi.org/10.1088/1755-1315/1109/1/012062

score.[27] The land suitability classes are divided into: high, moderate, and low.[28] The following are the land suitability classifications:

Table 4 Land Suitability Classification

No	Land Characteristic Factors	High	Moderate	Low
Topography, Meteorological and Hazards				
1	Average Annual Temperature (°C)	25–28	>28–30 and 23–<25	>30–33 and 21–<23
2	Slope (%)	<3	3–5	5–8
3	Erosion Hazard	-	Very light	Light
4	Flood Hazard	-	Light	Moderate
5	Canal Network	Dense	Slightly dense	Moderate
Peatland				
6	Peat Depth	<50	50–100	100–150
7	Peat Maturity	Sapric	Sapric and hemic	Hemic
Soil Chemical Properties				
8	Nutrient Retention (nr) - KTK Soil (cmol/kg)	>16	5–16	<5
9	Nutrient Retention (nr) - pH H_2O	5,5–7,0	4,5–5,5 and 7,0–8,0	<4,5 and >8,0
10	Nutrient Retention (nr) - C-organik (%)	>1,2	0,8–1,2	<0,8
11	Available Nutrient (na) - N total (%)	Moderate	Low	Very low
12	Available Nutrient (na) - P_2O_5 (mg/100 g)	High	Moderate	Low–very low
13	Available Nutrient (na) - K_2O (mg/100 g)	Moderate	Low	Very low

27 Robertson, N., & Oinam, B. 2023. *Rice suitability mapping using the analytic hierarchy process approach in a river catchment*. Global Journal of Environmental Science and Management, 9(1), 141–156. https://doi.org/10.22034/GJESM.2023.01.11

28 Disesuaikan dengan buku panduan kesesuaian lahan pertanian BBSLDP 2016

Land in the Food Estate area that has been cleared and divided by canals for conversion into a palm oil plantation in Tajepan Village, Kapuas Murung District, Kapuas Regency, Central Kalimantan ©Pantau Gambut 2024

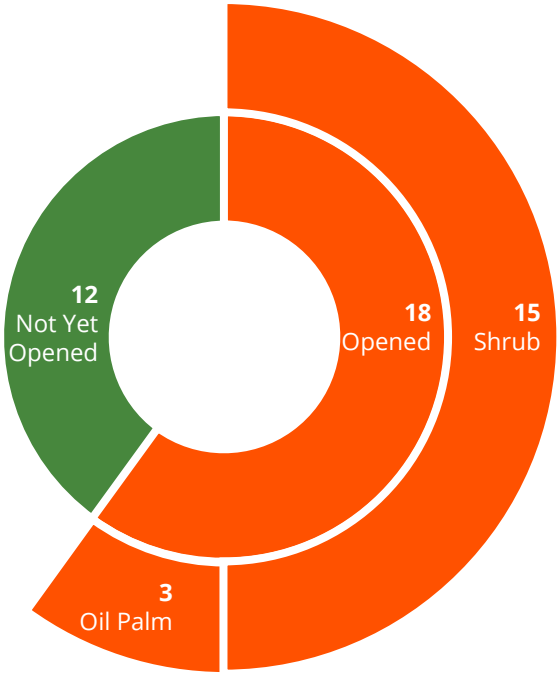
3. MONITORING RESULTS

3.1. Cleared and Neglected

The ex-PLG (One Million Hectare Peatland Development) areas are generally overgrown with shrubs as tall as an adult (1–2 meters). Despite their height, these shrubs resemble grass rather than trees. They thrive because the trees that once covered the land have been completely cleared. However, after the land was opened, it was abandoned, following the failure of the One Million Hectare Peatland project, leaving the land deserted.

Shrubland, categorized as unopened land, was found at 12 out of 30 locations visited by Pantau Gambut. Meanwhile, other areas had undergone land clearing for the creation of new rice fields. However, even though the land had been cleared, it did not immediately turn into rice fields. Of the 18 cleared sample locations, 15 were left open and neglected, eventually becoming overgrown with shrubs again. Strangely, the land cover at three sample locations had transformed into palm oil plantations due to acquisition by palm oil plantation companies (see subsection 3.2).

Figure 4 Proportion of Food Estate Land at 30 Sample Points



There is no clarity on what the government plans to do next with these abandoned areas. Not only was the land neglected, but the fate of the residents there was also left in limbo. Farmers living near the expansion areas have to live amidst land claimed by the government, with their living space and livelihood becoming more restricted.

The community was never involved in executing this project. The government did not provide support for agriculture to assist them, including guidance on how to adapt to the large-scale project entering their territory. If this continues to be forced, these farmers will likely become the next victims of the same mistakes made by the government in the past.

Abandoned land in the Food Estate expansion area in Pantai Village, Kapuas Barat District, Kapuas Regency, Central Kalimantan ©Pantau Gambut 2024

Inconsistency between planning and on-ground implementation has also been a problem. The government included Betawi Permai Village and Pulau Kidang in the SID Work Map for the initial plan of this project. In 2020, they gathered the people of both villages to inform them that parts of their village would become Food Estate expansion areas. However, when Pantau Gambut visited the field in mid-2024, no activities occured in their villages.

The land conditions in the villages selected as Food Estate expansion sites can be seen in the following table.

Table 5 Land Conditions in Villages Selected for Food Estate Expansion

No	Village Name	Regency	Condition
1	Tajepan	Kapuas	Abandoned (opened by PT WUL)
2	Penda Katapi	Kapuas	Planted with oil palm
3	Pangkalan Asri	Kapuas	Abandoned (shrubs & untreated paddy fields)
4	Mandomai	Kapuas	Abandoned (shrubs)
5	Pantai	Kapuas	Abandoned (shrubs & untreated paddy fields)
6	Tambun Raya	Kapuas	Abandoned (shrubs)
7	Basungkai	Kapuas	Abandoned (shrubs)
8	Murung Kramat	Kapuas	Abandoned (shrubs)
9	Palingkau Jaya	Kapuas	Planted with oil palm

No	Village Name	District	Condition
10	Palingkau Asri	Kapuas	Planted with oil palm
11	Maluen	Kapuas	Abandoned (shrubs)
12	Sei Dusun	Kapuas	Cultivated by the community
13	Sei Kayu	Kapuas	Abandoned (shrubs)

These vegetation changes will undoubtedly significantly impact the surrounding environment, particularly following the massive deforestation and canalization after the PLG program. Ongoing forest fires, water pollution, greenhouse gas (GHG) emissions, and the most frightening outcome is the loss of the peat layer itself, marking the collapse of its ecological functions.

Our concerns were confirmed: several monitoring points no longer had a peat layer. All monitoring points should still have a peat depth of more than 20 cm. However, out of the 30 sample points included in the new rice field development plan, only five locations still had peat coverage. In some locations, the peat depth was only 5 cm.

These findings indicate a correlation between deforestation and peatland drying, resulting in the loss of the peat soil layer. Laboratory tests further supported this, showing that most of the monitored points were now mineral soil with high acidity levels.

3.2.
Not Rice, but Palm Oil

Pantau Gambut didn't just find abandoned lands in the field findings. It was quite surprising to discover that areas originally designated to meet food needs were instead planted with palm oil trees owned by companies. This finding occurred in Palingkau Jaya Village, Palingkau Asri Village, and Tajepan Village.

These areas were opened by the government in 2022. Over time, no further development occurred. The lack of community participation granted by the government from the start limited local residents' access to the land, leaving them unable to the open land, now barren of biodiversity, became overgrown with shrubs.

According to local villagers, this neglected condition led PT Wira Usahatama Lestari (WUL) to purchase the land through one of the village officials who was still in office at the time. The land that had been earmarked as a national food granary has now been converted into palm oil plantations by PT WUL.

Through spatial analysis, Pantau Gambut found that 274.67 hectares of PT WUL's land were confirmed to be located within the Food Estate expansion area. This location falls directly within FE locations 19, 24, and 27, which align with the SID Work Map in Tajepan and Palingkau Asri Villages, Kapuas Murung District, Kapuas Regency.

Figure 5 Overlay Map of Food Estate Expansion Area & PT WUL Concession Area
Source: Pantau Gambut Analysis

Suspicions of violations arose due to the presence of a plantation company with a Cultivation Rights (HGU) permit within the Forest Area for Food Security (Kawasan Hutan untuk Ketahanan Pangan/KHKP), as regulated in Ministry of Environment and Forestry Regulation No. 24 of 2020. According to the regulation, companies with HGU permits are only allowed to operate in Other Land Use Areas (APL). Article 6 of the Ministry of Environment and Forestry Regulation No. 24 of 2020, concerning the Provision of Forest Areas for Food Estate Development, already governs the use of this area.

Land cleared by PT Wira Usahatama Lestari (WUL) overlapping with the Food Estate expansion area ©Pantau Gambut 2024

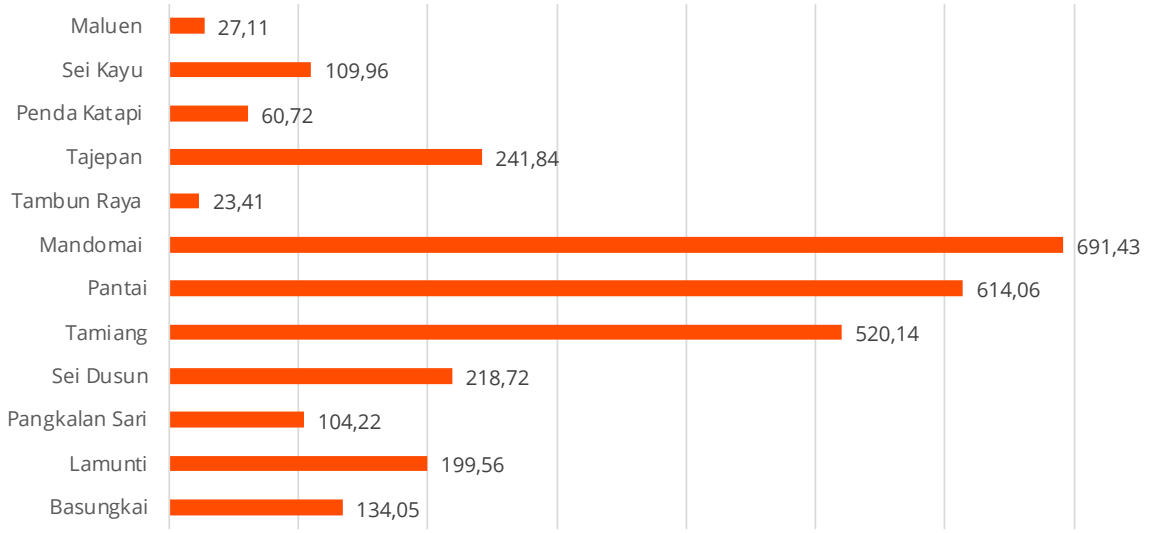
Land owned by PT Wira Usahatama Lestari (WUL), which overlaps with the Food Estate expansion area and is already planted with palm oil seedlings ©Pantau Gambut 2024

3.3.
Tree Cover Loss in the Extensification Area

Discussing land clearing will always be linked to tree cover loss. Based on satellite imagery analysis, Pantau Gambut has identified significant tree cover loss in areas targeted for expansion under this project. A retrospective analysis shows that much of the land cleared for the expansion of the Food Estate project was previously dominated by moderately to densely vegetated areas.

In 2022 alone, tree cover loss in the Food Estate expansion area reached 2,945.26 hectares. To put that into perspective, this area could accommodate up to 4,207 football fields. This tree cover loss is spread across 12 affected villages, including 13 hectares within peatland ecosystem protection zones. The villages of Pantai and Mandomai recorded the largest areas of tree cover loss.

Figure 6 Tree Cover Loss by Village (Ha)



Figures 8 and 10 reveal that land expansion occurred in areas with dense tree cover, extending beyond the predetermined boundaries. According to the SID Work Map, the areas designated for clearing were clearly outlined, yet the clearing extended into surrounding regions that were not supposed to be subject to land-use changes.

The tree cover that once balanced the ecosystem has now vanished in several areas, endangering the peatland ecosystems they safeguarded. The impact of this tree cover loss includes annual flooding during the rainy season, along with forest and land fire during the dry season.[29]

29 Tempo.co. 2005. *Banjir Rendam Areal Transmigrasi Kapuas*. https://koran.tempo.co/read/nusa/38648/banjir-rendam-areal-transmigrasi-kapuas

Figure 7 SID Work Map for FE Expansion in Mandomai Village
(Source: Central Kalimantan Provincial Office of Food Crops, Horticulture, and Livestock)

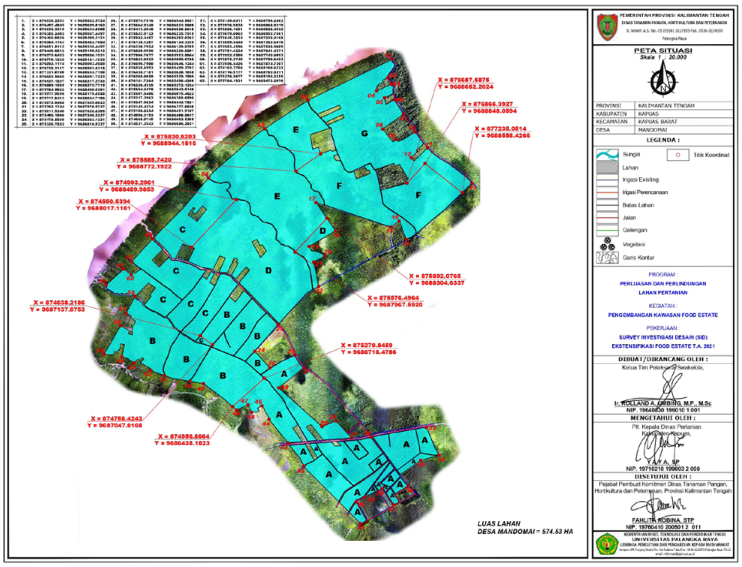


Figure 8 Map of Tree Cover Loss in Mandomai Village
(Source: Pantau Gambut Analysis from Sentinel-2 Imagery)

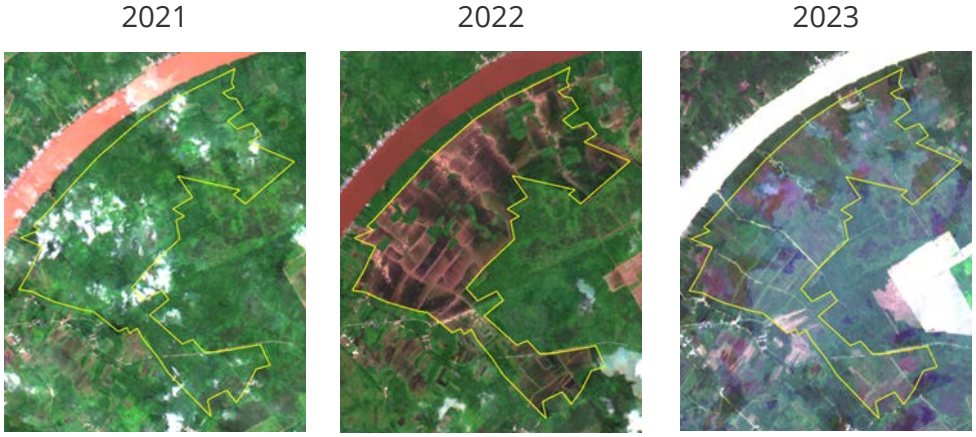


Figure 9 SID Work Map for FE Expansion in Pantai Village
(Source: Central Kalimantan Provincial Office of Food Crops, Horticulture, and Livestock)

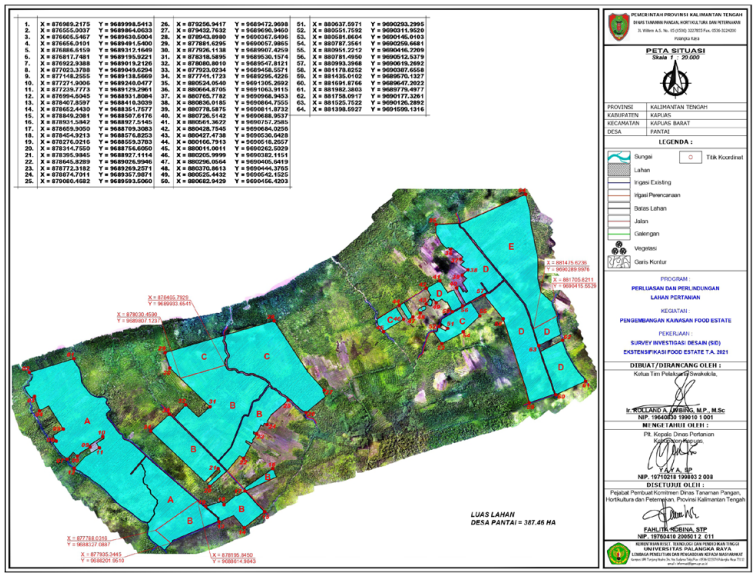


Figure 10 Map of Tree Cover Loss in Pantai Village
(Source: Pantau Gambut Analysis from Sentinel-2 Imagery)

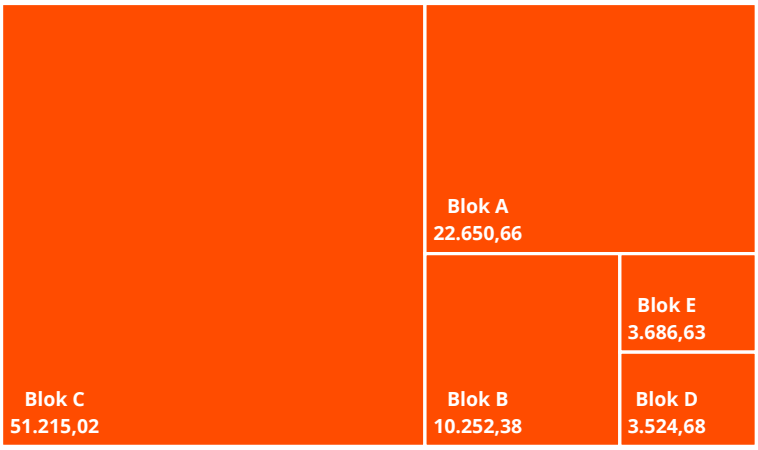
3.4.
Forest and Land Fires in the Ex-PLG Area

When forest cover over peatland is cleared, the peat becomes exposed to continuous sunlight. If left unattended for too long without restoring vegetation cover, the peat will dry out and become highly prone to forest and land fires. This is precisely what happened in the areas once part of the PLG project.

According to data from the Ministry of Environment and Forestry, processed by Pantau Gambut, 434,277 hectares of fires, resulting from peatland damage in the ex-PLG area, burned between 2015 and 2020. This region contributed 249,346 hectares to the burned area during the massive 2015 forest and land fire tragedy. Four years later, fires struck again, burning 153,193 hectares.

Most recently, in 2023, Pantau Gambut's analysis recorded fires over 91,352 hectares of ex-PLG land. Ironically, the fires occurred in Block C of the ex-PLG area, which is designated as a Peatland Ecosystem Protection Function (FLEG) area. This region, which is supposed to be strictly off-limits to fires, was devastated, with 48,955 hectares burned. The remaining 42,334 hectares burned were areas designated for ecosystem cultivation.

Figure11 Extent of Karhutla in Ex-PLG Lands in 2023 (Ha)



The area belonging to PT WUL, which should not be in the location, also recorded fire incidents. Two villages near PT WUL were affected. Tajepan Village was the hardest hit, with 713 hectares burned in 2023. Meanwhile, 100.18 hectares of land in Palingkau Asri and Tajepan Villages, that overlap with PT WUL's area, also burned that same year. This event highlights the vulnerability

of this region to fires, especially in lands already degraded due to uncontrolled land clearing.[30]

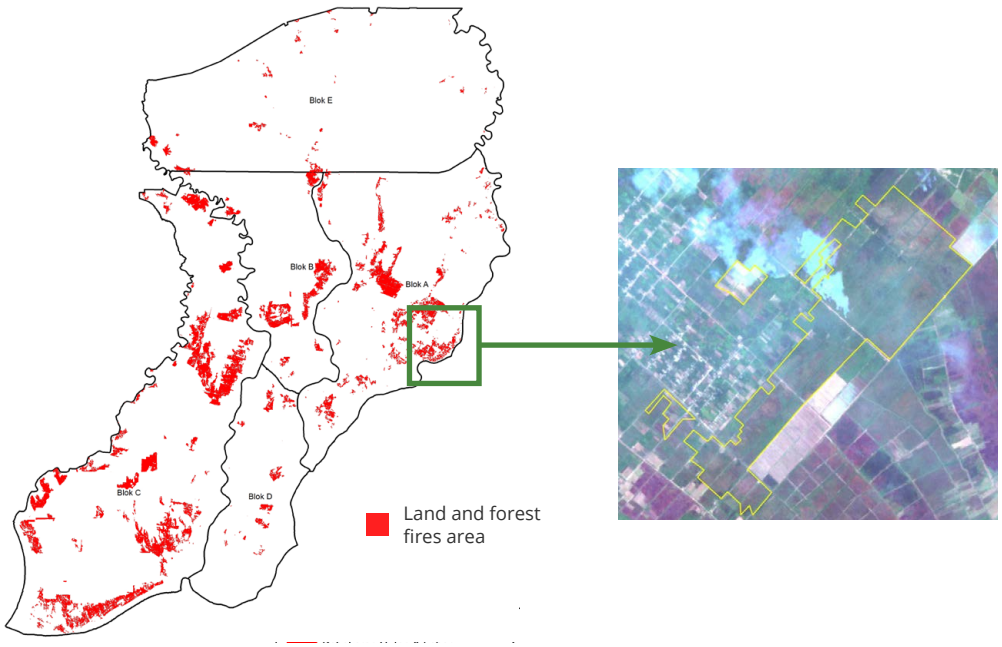
Not Just Smoke

The issue of forest and land fires in the ex-PLG area concerns not only the choking smoke but also the severe damage to the peatland ecosystem. Peat hydrological areas, which are supposed to act as natural water and carbon reservoirs, have become lands prone to drought and fires.[31] Most of this damage stems from the PLG project initiated during the Soeharto era, where land clearing was carried out by draining the peatland ecosystem through large-scale canalization.

The habitat of various protected wildlife, such as orangutans, is also threatened. The smoke from forest and land fires in the ex-PLG area often drifts into the nearby Sebangau National Park (TN Sebangau), which is adjacent to Block C. Sebangau National Park still serves the critical functions of preserving biodiversity and regulating natural water systems in the area.

Peatlands that have been burned must be restored, as mandated by Government Regulation (PP) No. 57 of 2016 in conjunction with PP No. 71 of 2014 on Peat Ecosystem Protection and Management. Furthermore, this regulation emphasizes the damage caused by the PLG and Food Estate projects. Both ambitious projects have created artificial drainage systems in the form of canals and have reduced land cover. Given the similar development patterns, it seems likely that the Food Estate will lead us down the same path as the PLG project.

Figure 13 (Left) Map of Forest and Land Fires in the Ex-PLG Area in 2023, and (Right) Fire smoke captured in the Food Estate expansion area in Palingkau Asri Village, Kapuas Regency
(Source: Pantau Gambut Analysis from Sentinel-2 Imagery)



30 Almi Ramadhi, et. al. 2023. *Waspada Api: Kerentanan Kebakaran Hutan dan Lahan (Karhutla) pada Area Kesatuan Hidrologis Gambut (KHG) Tahun 2023*.

31 Safrudin. 2020. *Food Estate Keberlanjutan Masalah di Eks-PLG?*. https://luk.staff.ugm.ac.id/rawa/PLG/2020SafrudinFoodEstateDiEksPLG.pdf

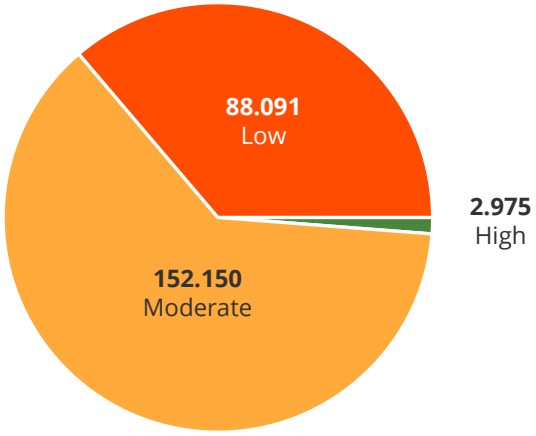
3.5.
Land Suitability for Rice Cultivation

Not every crop can flourish on peat soil. This holds true for irrigated and rainfed rice as two central commodities in the Central Kalimantan Food Estate project.[32] Generally, these two rice varieties grow best in soils with a neutral pH level, typically between 5 and 6. However, planting these varieties on acidic and nutrient-poor peatland will only lead to losses.

It takes an extraordinary effort to 'force' these varieties to grow well. Besides providing seeds to meet the needs of the Central Kalimantan Food Estate project, which spans an area equivalent to 4,207 football fields, the vast expanse of peatland also has to be treated with lime or dolomite. Lime is essential for raising the soil's pH and neutralizing its acidity. Using of organic fertilizers is also important to maintain the fertility of peat soil, which is typically low in nutrients.[33]

Due to these various factors, not all areas are ideal for planting rice. To get an overview of land suitability distribution, Pantau Gambut selected three out of five ex-PLG land blocks (see Chapter 2.2) as monitoring samples for the Food Estate project, specifically for rice cultivation.

Figure 14 Land Suitability Levels (Ha)



Of the three ex-PLG blocks analyzed by Pantau Gambut, covering 243,216 hectares, only 1% of the land is suitable for agriculture. In contrast, 63% of the total land falls into the moderately suitable category, and 36% is categorized as low suitability. When combined, 99% of the ex-PLG land is unsuitable or unfit for large-scale large-scale productive agricultural land.

Furthermore, looking at the 30 sample points spread across 19 villages, only 10% of the area designated for expansion is highly suitable for rice cultivation. The rest is categorized as having moderate or low suitability. In other words, the land at these 30 sample points is unsuitable for the expansion of the Food Estate. The distribution of land suitability in the 19 villages is shown in the table below.

32 Eli Nur Nirmala Sari. 2020. *Peluang dan Tantangan Pertanian Padi Berkelanjutan di Lahan Gambut*. https://www.mongabay.co.id/2020/06/22/peluang-dan-tantangan-pertanian-padi-berkelanjutan-di-lahan-gambut/

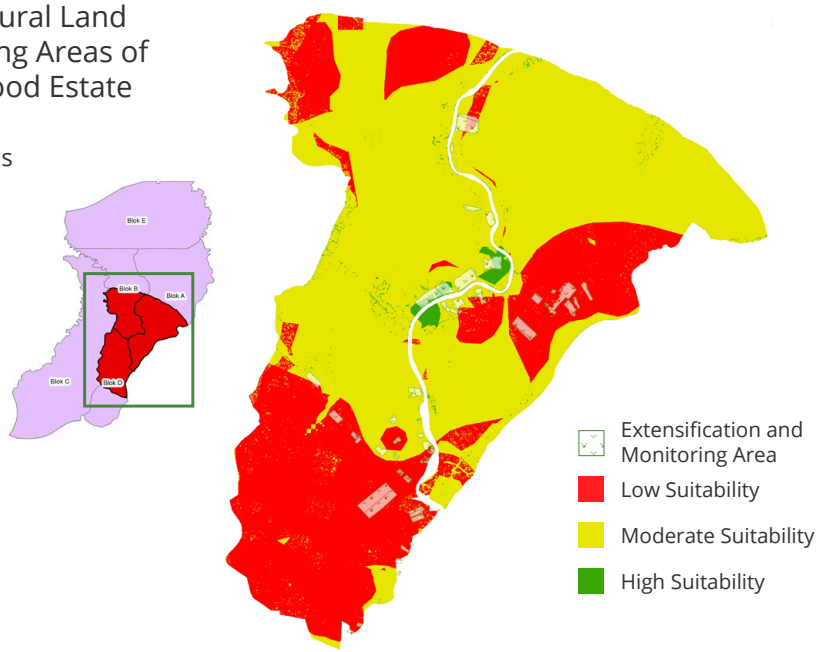
33 Neneng Laela Nurida, et. al. 2014. *Panduan Pengelolaan Berkelanjutan Lahan Gambut Terdegradasi*. Balai Besar Penelitian dan Pengembangan Sumberdaya Lahan Pertanian. ISBN: 978-602-8977-82-1

Table 6 Land Suitability Levels in the Expansion Area

No	Monitored Village	High	Moderate	Low
1	Basarang	567,56	1,27	-
2	Basunkai	43,88	81,10	-
3	Betawa Permai	12,96	-	-
4	Budi Mufakat	45,08	-	-
5	Maluen	49,15	-	-
6	Mandomai	-	204,25	213,21
7	Mintin	23,18	120,60	0,19
8	Murung Keramat	180,11	22,54	-
9	Palingkau Asri	375,00	1,07	-
10	Palingkau Jaya	844,00	4,26	-
11	Pangkalan Rekan	404,58	2,02	-
12	Pangkalan Sari	23,85	86,73	-
13	Pantai	58,22	688,40	162,52
14	Penda Katapi	-	108,47	165,17
15	Sei Dusun	-	235,44	0,45
16	Sei Kayu	-	139,99	1,91
17	Tajepan	270,90	3,78	-
18	Tambun Raya	84,14	111,08	-
19	Tarung Manuah	122,05	1,98	-
	Total	**3.104,66**	**1.812,98**	**543,45**

Regarding this matter, Pantau Gambut suspects that the process of designating the expansion areas was carried out without careful consideration and appears to be aimed solely at meeting the target of creating new rice fields, disregarding actual field conditions. This suspicion is reinforced by findings in areas planted by residents, such as in Pantai and Mandomai villages, where the land turned out to be infertile and has now been abandoned.

Figure 14 Map of Agricultural Land Suitability in the Monitoring Areas of the Central Kalimantan Food Estate Expansion
Source: Pantau Gambut Analysis



Abandoned land designated as a Food Estate expansion area in Palingkau Asri Village, Kapuas Murung District, Kapuas Regency, Central Kalimantan ©Pantau Gambut 2024

4. CONCLUSIONS AND RECOMMENDATIONS

4.1. Conclusions

Overlapping Regulations

Regulatory overlap is the main issue in the Central Kalimantan Food Estate project. Many areas with Forest Concession Rights (HPH) overlap with land designated as Cultivation Rights (HGU) or Forest Areas for Food Security (KHKP). Pantau Gambut also discovered overlaps in the status of Peat Ecosystem Protected Areas (FLEG) that have been converted for cultivation purposes.

The introduction of the Job Creation Law (UUCK) further complicates this project. UUCK grants greater flexibility to the Food Estate because of its designation as a National Strategic Project (PSN). With the backing of UUCK, the Food Estate enjoys many exemptions from pre-existing environmental protection standards, such as the loosening of peat ecosystem protection standards previously regulated under the Strategic Environmental Assessment (KLHS).

The overlapping status of land is also correlated with overlapping authority between ministries and agencies. At least three ministries and agencies are involved in the Central Kalimantan rice Food Estate project: the Ministry of Agriculture (Kementan), the Ministry of Environment and Forestry (KLHK), and the Peatland and Mangrove Restoration Agency (BRGM).

This overlapping of roles and responsibilities creates difficulties for the public in obtaining transparent information regarding the project's progress. As a result, public oversight is hindered, increasing the risks of regulatory violations, corruption, and environmental degradation.

Rejecting to Heed the Past Lessons

Peatlands have been proven unsuitable for rice cultivation, as the Food Estate project demonstrated. Numerous studies have highlighted this project's failures, both in the past and present. Many lessons could have been learned over a considerable period. However, the ambition to gain validation has led President Joko Widodo's administration to disregard learning from past experiences.

The Peatland Development Project (PLG) during the Soeharto era already demonstrated that peatlands, with their high acidity, low nutrient content, and susceptibility to fires, are not suitable for large-scale agriculture. This land unsuitability has resurfaced in the current Food Estate program, where crop yields have fallen far short of targets, much of the land that has been cleared has been abandoned, and oil palm has even been found in some of these areas.

Regulations clearly prohibit the clearing of peatlands designated as protected areas, yet the Food Estate project has violated these regulations by draining and re-clearing peatlands that were damaged by the previous PLG project. These degraded peatlands should be restored, not converted into large-scale monoculture farming areas like the Food Estate.

The repeated failures of the Central Kalimantan Food Estate program are inextricably linked to the unsuitability of the land and poor management. According to monitoring data, around 50% of the land that has been cleared is now abandoned, and much of the active land is planted with oil palm rather than food crops. This indicates that the government has not learned from the failures of the PLG and continues to force the use of unsuitable land.

Social and Environmental Impact

Peatland ecosystems have become victims. Not only the wildlife within that bears the cost, but the people who share its heartbeat. Even people far from Central Kalimantan are feeling the accumulated impacts.

The Food Estate has removed the local communities' access to productive land. In addition to the central government distancing them from their land, companies with HGU permits, whose areas overlap with community territories, have worsened the situation. Without proper socialization and guidance, the communities struggle to manage their land and ultimately face damaged and infertile lands.

The expansion of Food Estate land has also led to massive deforestation across various villages in Central Kalimantan. According to Pantau Gambut's satellite imagery analysis, between 2021 and 2023, tree cover loss reached 2,945 hectares in the ex-PLG areas. In 2022, part of this loss occurred in protected peatland areas. This deforestation is directly linked to the increasing frequency of forest and land fires each year, especially in peatlands degraded by the canals constructed during the PLG project.

4.2. Recommendations

1. The Government Must Evaluate and Terminate the Food Estate Project

The Food Estate (FE) project in Central Kalimantan, which is part of the National Strategic Program (PSN), must undergo a thorough evaluation. The continuous failures that have left a trail of environmental damage and peatland ecosystem degradation are sufficient reasons to halt this project. This evaluation is crucial, especially given that Prabowo Subianto's administration, as the elected president, includes the Food Estate program as part of the 17 priority programs in its vision and mission document.[34]

The evaluation must cover several aspects, focusing on land suitability, governance effectiveness, and socio-ecological impacts. Field monitoring findings reveal that much of the land is unsuitable for rice or other food crops. Forcing peatlands, with high acidity, will only result in economic losses for local communities that depend on these natural resources.

34 Abil Salsabila, Wahyu Perdana, Yoga Aprillianno, Iola Abas. 2023. *Melihat Rekam Jejak Sikap Partai Pendukung Calon Presiden*. https://pantaugambut.id/storage/widget_multiple/melihat-sikap-partai-pendukung-capres-3zwjd.pdf

2. **The Government Must Halt Peatland Exploitation and Rehabilitate Degraded Peatland Ecosystems**

   The government must cease exploitation of peatlands and focus on rehabilitating the damaged ones. Their ecological function as carbon sinks and natural water regulators must be restored. This rehabilitation aligns with Government Regulation No. 57 of 2016 in conjunction with PP No. 71 of 2014, emphasizing the need for peatland ecosystem protection. Draining peatlands for rice cultivation under the FE project will only worsen environmental impacts and accelerate the process of forest and land fires.

3. **The Government Must Review National Strategic Project (PSN) Policies**

   A comprehensive policy review of PSN is necessary, particularly concerning existing regulations. The Food Estate program, included in the 2020–2024 PSN, has received a privileged position under the Job Creation Law (UUCK). The acceleration of PSN implementation is repeatedly mentioned in the 'Considerations' section of UUCK and is embedded in the definition of 'Job Creation' in the general provisions section. Several laws have also been adjusted to facilitate the smooth implementation of PSN.

   These laws include Law No. 22 of 2019 on Sustainable Agricultural Culture Systems, Law No. 41 of 1999 on Forestry, and Law No. 41 of 2009 on the Protection of Sustainable Agricultural Land. The most significant change is the allowance for converting sustainable agricultural land for PSN purposes. Specific investment incentives to support PSN are also regulated in Articles 154–173 of the Job Creation Law.

   The PSN policy must be reviewed. PSN projects should not compromise environmental standards, even though the Job Creation Law grants large-scale national projects considerable leeway. Every project, whether registered as a PSN or not, must adhere to strict environmental standards. This is crucial to prevent excessive exploitation that could lead to ecological disasters, such as those already seen in the FE project in Central Kalimantan.

4. **The Government Must Prioritize Local Food Sovereignty with an Ecosystem-Based Approach to Peatlands**

   The government must replace the agribusiness-based food security approach with a local food sovereignty approach. Large-scale monoculture plantations have proven ineffective in peatland areas. Instead, paludiculture—agricultural practices that utilize wetlands without draining peatlands—should be adopted as the primary strategy for managing peatlands, with local communities and farmers positioned as the key stakeholders.

Providing food for citizens is an absolute responsibility of the government. However, it is inappropriate for this effort to neglect the ecological and socio-cultural dimensions of local communities. Even worse if this national strategic project serves as little more than a podium for validation or self-enrichment. All the more so, if it leaves the community to bear the burden of a self-sufficiency initiative that leads to scarcity rather than sustenance in our national granary.

pantau gambut