Indonesia Gender and Environmental Empowerment Contour:

An Ecofeminist Approach to Joko Widodo's Development Model

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This paper examines the contour of Indonesia's development under President Joko Widodo, focusing on three prominent megaprojects: the Ibu Kota Nusantara (IKN) new capital city project, nickel industry downstreaming, and the Food Estate program. Using an ecofeminist framework developed from previous key literature, this study assesses these projects through the lenses of inclusive participation and indigenous integration, sustainability, and environmental justice. Ecofeminism critiques development models that prioritize economic growth over ecological and social well-being, often at the expense of marginalized communities and the environment. This research adopts a qualitative approach, relying on internet-based data collection from official statements, media sources, and relevant academic articles. The findings reveal that, while these projects are framed as drivers of economic progress, they frequently sideline local communities, overlook sustainable practices, and worsen environmental inequalities. The study highlights the lack of indigenous participation and the uneven distribution of benefits and burdens, reinforcing the need for a more just and inclusive approach to development in Indonesia. This analysis addresses a gap in previous studies on Indonesian development, which have seldom applied a macroscopic ecofeminist perspective to Jokowi's policies. The findings therefore suggest the importance of integrating local knowledge and sustainable practices in future and existing development endeavors.

Keywords: *ecofeminism, Joko Widodo, Indonesia Development Policy, Indonesia Megaprojects, Ibu Kota Nusantara, nickel downstreaming, food estate, sustainability, environmental justice, inclusivity*

Introduction

Under President Joko Widodo's (popularly known as Jokowi) leadership, Indonesia's development agenda has centered around state-led megaprojects designed to stimulate economic growth and industrial competitiveness. From 2015 to 2024, the government allocated over IDR 6,400 trillion (~USD 410 billion) toward national strategic projects, ranging from infrastructure and energy development to food and resource security programs (Bappenas, 2020). Among these, three initiatives stand out in terms of scale, environmental footprint, and social implications: the Ibu Kota Nusantara (IKN) new capital city relocation project, the downstreaming of the nickel industry, and the national food estate program.

These projects share common characteristics: high land-use demands,

intensive natural resource extraction, and significant socio-ecological transformation. IKN, for example, spans over 256,000 hectares of forest-rich terrain in East Kalimantan and is projected to displace dozens of indigenous communities whose customary rights are not fully protected under national land-use law (Buana et al., 2022; Simarmata, 2023). The nickel industry, centered in Sulawesi, has seen a fivefold increase in output since 2017, positioning Indonesia as the world's largest producer but also contributing to widespread deforestation, river pollution, and land conflicts in mining regions (Ilham et al., 2017; Kurniawan et al., 2020). Meanwhile, the food estate program has been implemented across over 165,000 hectares, including fragile peatland ecosystems in Central Kalimantan and Papua, triggering carbon emissions, ecological degradation, and the marginalization of local and indigenous farmers (Bayu et al., 2023; Maskun et al., 2021).

Despite their strategic importance, these projects have received limited critique beyond economic or technical perspectives. There is a notable gap in scholarship addressing how these development models reproduce structural inequalities, particularly those that affect women, indigenous communities, and the environment. This is where ecofeminism becomes an important analytical framework. Unlike conventional approaches, ecofeminism foregrounds the intersection of gender, ecological sustainability, and power. It critiques development models that prioritize economic gain at the expense of local communities and ecosystems—especially in the Global South where both women and nature are often simultaneously exploited under capitalist-patriarchal systems (Mies & Shiva, 1993; Warren, 2000; Plumwood, 1993).

Applying an ecofeminist lens allows for a deeper analysis of the power asymmetries embedded in Jokowi's development policies. It exposes how large-scale environmental transformation is often carried out through centralized, technocratic planning that marginalizes grassroots perspectives and traditional ecological knowledge (TEK). It also highlights the disproportionate burden placed on women and indigenous communities, both of whom play critical roles in sustaining natural ecosystems. By focusing on three of the most prominent and environmentally consequential projects under Jokowi's administration, this paper aims to explore how Indonesia's development trajectory aligns—or fails to align—with the principles of inclusive participation, sustainability, and environmental justice embedded within ecofeminist thought.

Methodology

The research question relevant to the writing purpose addressed in the previous part that this paper tries to address is: **"How does Joko Widodo's development model align with principles of ecofeminist perspective?"**. By examining large-scale development projects: *Ibu Kota Nusantara*; nickel industry downstreaming; and food estate, this research aims to critically assess whether these initiatives adhere to values emphasized within ecofeminist theory.

The decision to limit data collection to large-scale projects allows for a comprehensive analysis of overarching trends that define the development approach in a national context, as it helps capture the systemic and structural patterns in development strategies. The three projects were selected not only for their prominence in national development agendas but also because they represent some of the largest and most resource-intensive state-led initiatives under the Jokowi administration. Each involves significant public investment, wide-ranging policy coordination, and substantial physical and social impact. Moreover, they have drawn public and academic scrutiny for issues related to environmental degradation, land use conflicts, and the limited involvement of local and indigenous communities.

Further justification on the use of the three projects as case study necessitates a literature review on existing research:

- ***Ibu Kota Nusantara*** **(IKN)**, the ambitious new capital city project in East Kalimantan, has drawn considerable scholarly attention for its sheer scale and its potential to rebalance regional development in Indonesia. Covering an area of over 256,000 hectares, IKN has been conceptualized as a solution to the over-centralization of economic and political activity on Java and as a model of sustainable urban design (Aprianti et al., 2023). The project encompasses a broader developmental shift toward decentralization and has been framed within discussions of governance reform, environmental management, and spatial planning (Nugroho & Setijaningrum, 2023). Past writings (Berawi, 2022; Buana et al., 2022; Sulasno & Sucahyo, 2023) have highlighted the project's symbolic and practical implications for national identity, economic distribution, and global positioning, hence its central role in shaping the nation's long-term developmental vision.
- **Nickel industry downstreaming** has been the subject of studies focusing on industrial policy and resource-based development. Indonesia's position as the world's largest producer of nickel has enabled the government to craft policies aimed at transitioning from raw material exports to value-added production processes, such as nickel refining for electric vehicle (EV) batteries (Pandyaswargo et al., 2021). This initiative has been explored in the context of global energy transitions and Indonesia's aspirations to occupy a more competitive role in global value chains (Tan, 2022). Previous writings have noted that nickel downstreaming reflects Indonesia's strategic use of natural resources to foster industrial development, attract foreign investment, and reduce dependency on primary commodity exports (Rosada et al., 2023). Previous research has also underlined its broader implications for national

economic growth and its alignment with global trends in sustainable energy (Kusumawardhana & Permata, 2023).

- **Food estate**, positioned as a cornerstone of Jokowi's agricultural policy, has similarly attracted attention within academic literature and media discourse. Focused on large-scale agricultural production to enhance national food security, the program aims to address vulnerabilities in Indonesia's food system while optimizing underutilized land (Juhandi et al., 2023). Previous studies have contextualized this initiative within Indonesia's broader efforts to achieve food sovereignty and rural development, being optimistic in its potential in combating import dependency and enhancing agricultural productivity (Marwanto & Pangestu, 2021). Bayu et al. (2023) and Fadillah et al. (2021) have also provided insight into how this program reflects the government's attempt to balance immediate national needs with long-term sustainability objectives.

The conclusive framework of this paper applies an ecofeminist lens across three analytical pillars to interrogate Indonesia's development model through the previously discussed case studies. These pillars are based on different but complementary perspectives within ecofeminist theory. Using multiple approaches is necessary because ecofeminism includes a range of ideas and priorities; each thinker focuses on different aspects of the relationship between gender, the environment, and development. Relying on just one viewpoint—whether it be Warren's ethics of care, Plumwood's critique of human-nature separation, or Mies & Shiva's emphasis on subsistence and indigenous knowledge— would risk oversimplifying the complexities of Indonesia's development dynamics. Therefore, this framework consists of the following pillars:

- **Inclusive participation & indigenous integration** focuses on assessing the extent to which Indonesia's development policies foster inclusive decision-making and integrate indigenous knowledge systems. Inclusive participation requires meaningful involvement of marginalized groups, particularly indigenous women, in environmental governance processes. Policies and programs must be evaluated for their ability to incorporate traditional ecological knowledge (TEK) and ensure fair representation in policy formation. Evidence suggests that when indigenous women are actively engaged in these processes, outcomes are more equitable and environmentally sustainable. Additionally, this aspect investigates whether mechanisms exist to empower these communities as stakeholders, rather than passive recipients of top-down development policies (Mies & Shiva, 1993; Warren, 2000; Theresia et al., 2020).

- **Sustainability** in this framework goes beyond environmental conservation to anthropocentrically encompass social and economic resilience. This pillar holistically sees whether development policies maintain ecological balance, protect biodiversity, and reduce environmental degradation. It also examines whether these projects align with long-term sustainability goals, such as carbon neutrality and ecosystem restoration (Plumwood, 1993; Juhandi et al., 2023).

- **Environmental justice**, centers on the fair distribution of environmental benefits and burdens, particularly for vulnerable and marginalized communities. This pillar assesses whether development projects address systemic inequalities that disproportionately affect women and indigenous populations. Environmental justice also requires addressing ecological harm in ways that repair historical injustices and prevent future inequities. This includes examining whether compensatory mechanisms, like reforestation programs or land restoration projects, are equitably distributed and culturally appropriate for affected communities (Plumwood, 1993; Buana et al., 2022; Simarmata, 2023).

To justify and substantiate the use of this framework of analysis, a review of past literature on ecofeminism must be done. Several scholars had implied or outright provided the necessary theoretical grounding to apply ecofeminist principles to the Indonesian context:

- Mies and Shiva (1993) critique of development through the lens of a subsistence perspective provides a critical foundation for this study. Their argument that "development" as conventionally pursued often undermines ecological and social diversity resonates deeply in Global South contexts, where economic policies have historically marginalized indigenous communities and ecosystems. Their advocacy for localized, community-led approaches offers became a blueprint for exploring how inclusive and sustainable practices can emerge as alternatives to extractive development.

- Warren (2000) ecofeminist ethics emphasize inclusivity, interconnectedness, and an ethics of care as central to ecological and feminist praxis. Their framework stresses the importance of dismantling systems of oppression that simultaneously exploit women and the environment. This perspective also underscores the need for participatory frameworks in decision-making processes. Warren also engages critically with the roles of science, technology, and development—questioning their assumed neutrality and examining how they often perpetuate gendered and ecological hierarchies.

- Plumwood (1993) extends the perspective through their critique of dualistic thinking that separates humans from nature and legitimizes dominant hierarchies. Their deconstruction of binaries—such as culture versus nature or male versus female—challenges the philosophical underpinnings of conventional development model. Plumwood's contribution can be used to analyze how development can move toward more holistic, equitable paradigms that recognize ecological interconnectedness and social justice.

Data for this study will be sourced from a variety of internet-based platforms, including official government statements, policy documents, scientific articles, and online media reports. By synthesizing information from both official and alternative sources, the study aims to capture not only the government's developmental intentions but also the voices of local communities, activists, and scholars who engage with these issues critically. The data will be analyzed through an interactive analysis framework, as suggested by Newman (2014). Interactive analysis involves systematically categorizing and interpreting data, often through graphical or narrative forms, to reach conclusions based on identified patterns within the research framework.

Results & Discussion

Ibu Kota Nusantara

The *Ibu Kota Nusantara* (IKN) project has been presented by the Indonesian government as a transformative step toward decentralizing development and reducing regional inequalities. By relocating the capital from Java to East Kalimantan, this initiative aims to rebalance the distribution of economic opportunities and public resources (Aprianti et al., 2023). However, while the overarching goals appear ambitious and forward-looking, the processes underpinning the project reveal significant concerns regarding inclusivity, sustainability, and environmental justice. Central to these concerns is the extent to which indigenous communities and marginalized groups have been meaningfully involved in the decision-making processes. In principle, Indonesia's legal framework reflects a commitment to public participation, as outlined in Article 37 of Law No. 3 of 2022 on the National Capital, which states that "communities can participate in the preparation, development, relocation, and administration of the local government of the special capital region". While this provision appears to promote inclusivity, its implementation has been critiqued for failing to engage communities at a meaningful level. Studies suggest that participatory efforts are often procedural, emphasizing information dissemination rather than genuine involvement (Nugroho & Setijaningrum, 2023). Indigenous groups, for example, are frequently informed about key developments rather than being invited to contribute to shaping the project (Gede & Mahayasa, 2023). This lack of meaning-

ful inclusion undermines the government's claims of equitable development and raises questions about the long-term social legitimacy of the project.

The planned construction of IKN overlaps with ancestral lands that hold deep cultural and ecological significance for indigenous communities. These lands are not merely spaces for habitation but serve as reservoirs of traditional ecological knowledge (TEK), which could play a vital role in ensuring sustainable urban development (Buana et al., 2022). However, despite the legal guarantees of participation enshrined in Pasal 37, evidence of efforts to integrate TEK into the planning of the new capital is scarce, reflecting a broader neglect of indigenous perspectives (Simarmata, 2023). Local leaders and community representatives have voiced concerns over potential displacement, the erosion of cultural heritage, and the limited safeguards in place to protect their rights (Valentina & Elsera, 2023). As the project progresses, the risk of cultural alienation and dispossession grows, emphasizing the need for governance structures that move beyond formal provisions to ensure active and impactful participation. Without transparent mechanisms that actively incorporate the voices of indigenous peoples, the IKN project risks perpetuating historical patterns of marginalization, undermining the equity it aims to promote.

While the government has placed significant emphasis on the sustainability of IKN, framing it as a "smart, green, and sustainable city", the environmental realities tell a more complicated story. The project includes ambitious plans for renewable energy systems, eco-friendly building designs, and low-emission transportation networks. Smart building management systems are expected to optimize energy use and contribute to improved health outcomes for residents (Sihite & Sucahyo, 2023). Furthermore, the incorporation of renewable energy sources, such as bioenergy and carbon capture technologies, aligns with Indonesia's broader commitment to achieving net-zero emissions by 2060 (Rino, 2023). These features highlight a vision of urban development that prioritizes environmental innovation. However, this vision is undermined by significant ecological risks associated with the project's implementation. Large-scale deforestation to clear land for construction has already resulted in habitat destruction, threatening the biodiversity of East Kalimantan and jeopardizing the ecological balance of the region (Nugraha et al., 2022). Critics argue that the sustainability rhetoric surrounding IKN does not align with the project's environmental footprint, as the emphasis on green development has yet to materialize in concrete, measurable outcomes (Berawi, 2022).

The tension between development and environmental preservation is emblematic of broader challenges in Indonesia's approach to sustainability. Without robust environmental impact assessments and strict accountability mechanisms, the ecological costs of IKN could outweigh its benefits. Habitat loss and the displacement of wildlife further illustrate the disconnect between the sustainability goals and the realities on the ground (Valentina & Elsera, 2023). To

address these contradictions, independent monitoring bodies must oversee the project's adherence to environmental standards, while ecological restoration initiatives should be implemented to compensate for the damage caused by urban expansion. Balancing economic growth with long-term ecological stewardship remains a critical challenge that the IKN project must address if it is to fulfill its sustainability aspirations.

The social implications of the IKN project extend beyond questions of inclusion and sustainability to the realm of environmental justice. The relocation and construction of the new capital disproportionately impact indigenous communities and women, who rely heavily on local ecosystems for their livelihoods (Buana et al., 2022). Land acquisition processes have often overlooked customary land rights, leading to displacement and the loss of access to essential natural resources (Simarmata, 2023). These practices perpetuate systemic inequalities, as the burdens of development are unequally distributed while the benefits remain inaccessible to many marginalized groups (Valentina & Elsera, 2023). Bureaucratic barriers and inequitable compensation policies have further compounded these challenges, leaving affected communities without viable alternatives for securing their livelihoods (Nugroho & Setijaningrum, 2023). Women, in particular, face unique vulnerabilities due to their exclusion from formal land ownership structures, which worsen their economic insecurity in the face of displacement (Buana et al., 2022).

Although the government promotes IKN as a symbol of equity and progress, the project risks reinforcing existing inequalities if historical injustices are not addressed. Achieving environmental justice within this framework requires a fundamental rethinking of how development is conceptualized and implemented. Land acquisition processes must adhere to principles of free, prior, and informed consent (FPIC) to ensure that affected communities are genuinely involved in decisions that shape their futures (Simarmata, 2023). Additionally, gender-sensitive policies are essential to empower women as key stakeholders in environmental governance. While Pasal 37 provides a legal basis for inclusive participation, its promise must be matched by actions that prioritize equitable policies and protect marginalized groups (Gede & Mahayasa, 2023). By centering these voices and fostering a more inclusive framework, the IKN project could become a model for just and inclusive development.

An ecofeminist perspective offers valuable insights into the interconnected challenges of inclusivity, sustainability, and environmental justice within the IKN project. Ecofeminism emphasizes the intrinsic link between social justice and ecological well-being, advocating for governance systems that respect both human and environmental rights (Warren, 2000). From this standpoint, the exclusion of women and indigenous groups from decision-making processes is not merely a social issue but an ecological one, as their knowledge and contributions are vital for sustainable development (Plumwood, 1993). Women in East

Kalimantan, for example, often play crucial roles in managing natural resources, yet their perspectives are rarely incorporated into formal planning frameworks (Buana et al., 2022). Similarly, indigenous ecological wisdom could provide innovative solutions to the challenges of urban development, from biodiversity conservation to sustainable land management (Nugraha et al., 2022).

Realizing the transformative potential of an ecofeminist approach requires systemic changes in governance structures. The current top-down model of decision-making must be replaced with participatory systems that actively involve marginalized groups at every stage of the project. Education and capacity-building initiatives can further empower women and indigenous leaders to take on prominent roles in shaping the project's direction. By embedding these principles into the IKN framework, Indonesia could set a global precedent for development that bridges social and environmental priorities. The IKN project's success hinges on its ability to transcend symbolic gestures and embrace genuine inclusivity, sustainability, and justice.

Nickel Industry Downstreaming

The downstreaming of Indonesia's nickel industry, driven by policies such as the raw nickel export ban and the establishment of smelters, has been framed as a transformative initiative to boost economic growth and enhance the nation's global competitiveness. Central to this strategy is the effort to add value to raw materials domestically, particularly for high-demand industries like electric vehicle (EV) battery production. However, while these policies have generated significant economic opportunities, the inclusivity of the decision-making processes and the degree to which indigenous communities are integrated into this industrial shift remain deeply contested. Despite the promise of increased employment opportunities and advancements in human resource development—partially achieved through international partnerships like Indonesia-China nickel cooperations—marginalized groups in resource-rich regions often face systemic barriers in accessing these benefits (Rosada et al., 2023). These barriers expose a disconnect between national economic ambitions and the lived realities of local communities who are often excluded from critical stages of planning and implementation (Kurniawan et al., 2020).

In regions rich in nickel deposits, such as Southeast Sulawesi and Central Sulawesi, indigenous groups have raised persistent concerns over land use practices and resource allocation. Corporate Social Responsibility (CSR) programs associated with nickel mining operations have sought to address some of these challenges by improving community resilience and fostering collective efficacy. In certain cases, these programs have provided limited benefits, such as infrastructure development and access to education. However, meaningful participation by indigenous communities in decision-making processes remains insufficient. While CSR initiatives attempt to mitigate social and environmental impacts, they frequently fail to address the structural exclusion of these groups from key

decisions that directly affect their lives (Rela et al., 2020). Moreover, public engagement in environmental assessments tied to nickel smelter operations has been constrained by inadequate government oversight and poor dissemination of information. Communities often receive limited opportunities to voice their concerns, with consultations reduced to formalities rather than substantive dialogues. This lack of genuine participatory governance exacerbates tensions and leaves affected populations vulnerable to exploitation by corporate interests (Kusumawardhana & Permata, 2023).

The sustainability of Indonesia's downstream nickel industry is another critical dimension of the discussion. Policies such as Ministerial Regulation No. 11 of 2019, which mandate the domestic processing and refining of mineral resources, have spurred the establishment of smelters and associated infrastructure. This regulatory shift has positioned Indonesia as a key player in the global EV battery supply chain, offering the potential for economic diversification and reduced reliance on raw material exports (Setiawan & Horman, 2022). However, these developments are accompanied by significant ecological costs that raise questions about their long-term sustainability. Nickel mining and smelter operations have caused widespread deforestation, water contamination, and biodiversity loss in several affected regions. For instance, in Pomalaa, Southeast Sulawesi, rivers have shown signs of light pollution and contamination linked to mining activities, raising alarm over the long-term environmental degradation of critical ecosystems (Ilham et al., 2017). These environmental harms creates a pressing need to balance economic growth with ecological preservation, a balance that has proven difficult to achieve (Kurniawan et al., 2020).

Despite progress in adopting renewable energy technologies within the nickel industry, challenges persist in scaling production sustainably. Certain operations have integrated cleaner energy solutions, such as solar and wind power, to reduce their carbon footprint. However, these efforts remain limited in scope and impact, particularly in light of the scale of environmental destruction caused by mining and refining activities (Kusumawardhana & Permata, 2023). As global demand for nickel surges, driven by the rapid expansion of the EV market, the pressure to increase production risks worsening existing ecological challenges. Without robust environmental safeguards and a commitment to sustainable practices, the environmental costs of downstreaming could undermine its economic benefits (Ilham et al., 2017). Achieving true sustainability requires more than technological innovation; it demands comprehensive policy reforms, independent environmental monitoring, and active collaboration with affected communities to ensure the equitable distribution of both the benefits and burdens of industrial development.

The downstreaming of the nickel industry has also intensified environmental injustices, particularly for marginalized communities that disproportionately bear the ecological costs of resource extraction. Land acquisition processes often sideline customary land rights, displacing indigenous

populations and severing their cultural and economic ties to the land. Conflicts over land use and environmental degradation are especially pronounced in Central Sulawesi, where local communities have been forced to resort to protests and, in some cases, communal violence to demand fair compensation for land seizures (Hudayana et al., 2020). These conflicts highlight the broader socio-environmental challenges associated with nickel mining, where the pursuit of national economic goals frequently overrides the rights and well-being of local populations (Kurniawan et al., 2020).

The environmental impact assessment (EIA) processes associated with nickel smelters have been another area of contention. While EIAs are intended to identify and mitigate environmental risks, they are often criticized for failing to address community concerns or implement adequate safeguards. In many cases, the synchronization of monitoring mechanisms is inefficient, leading to gaps in accountability and oversight (Kurniawan et al., 2020). This systemic weakness not only undermines the credibility of the EIA process but also exacerbates environmental harm by allowing industries to operate with minimal checks on their activities (Kusumawardhana & Permata, 2023). Strengthening governance frameworks is essential to address these shortcomings, particularly through the establishment of independent regulatory bodies and mechanisms that prioritize community involvement. Transparent and accountable governance is critical to ensuring that the benefits of downstreaming are equitably distributed and that affected communities are adequately protected from the adverse impacts of industrial activities.

To achieve environmental justice within the nickel industry, the government and corporate stakeholders must address the structural inequities that underlie resource extraction and processing. This involves not only recognizing the rights of indigenous communities but actively involving them in decision-making processes from the outset. Land acquisition practices should adhere to principles of free, prior, and informed consent to ensure that communities have a meaningful say in the decisions that affect their livelihoods and environments (Hudayana et al., 2020). Additionally, mechanisms for fair compensation and alternative livelihood programs must be strengthened to mitigate the socio-economic disruptions caused by displacement and resource exploitation (Rela et al., 2020).

Food Estate

Indonesia's food estate program has been positioned as a cornerstone of the country's strategy to enhance food security and reduce dependence on imports by establishing large-scale agricultural zones. While the program reflects a national ambition to bolster self-sufficiency in staple crops, its implementation has raised serious concerns regarding the inclusivity of its processes and the integration of local and indigenous knowledge. In regions such as Central Kalimantan, where food estate projects have been developed, community engagement has often been reduced to superficial interactions which might include -- informational

meetings, ceremonial events, symbolic discussions, and related meetings with limited transparency – rather than meaningful dialogues. Local populations, including indigenous groups, have reported feeling excluded from decision-making processes, particularly in the planning and execution stages of these initiatives (Marwanto & Pangestu, 2021). Policies governing land acquisition frequently overlook the customary rights of these communities, leading to land use changes that fail to account for cultural and ecological considerations (Hajati, 2022). While the government has introduced measures to increase community participation, such efforts remain inadequate for addressing the deep-seated issues faced by marginalized groups. This disconnect highlights a broader pattern of marginalization that undermines the program's potential to deliver equitable and sustainable outcomes.

A critical gap in the food estate program is its failure to integrate traditional ecological knowledge (TEK) into agricultural practices. Indigenous communities often possess rich knowledge about local ecosystems, including sustainable methods for managing soil, water, and biodiversity. However, this knowledge is rarely acknowledged in the planning and operational phases of food estate projects. For instance, traditional practices such as rotational farming or mixed-cropping systems, which have been proven to sustain soil health and enhance crop diversity, are often disregarded in favor of monoculture approaches (Achmad & Diniyati, 2021). This exclusion not only marginalizes the cultural practices of indigenous groups but also limits the potential for these projects to adapt to local environmental conditions effectively. Without meaningful engagement and the inclusion of local expertise, the food estate program risks perpetuating social inequalities while undermining the ecological foundations necessary for its success.

The sustainability of food estate projects has been another contentious issue, particularly in terms of their environmental impact. While these projects aim to secure a stable food supply, their reliance on monoculture farming systems has exposed them to vulnerabilities that threaten their long-term viability. Monocropping, characterized by the cultivation of a single crop species over large areas, increases susceptibility to pest outbreaks and soil degradation, weakening the resilience of these projects to environmental stresses (Achmad & Diniyati, 2021). Over time, these practices can lead to reduced agricultural yields, undermining the very objective of ensuring food security. Moreover, the clearing of peatlands for agricultural use—a common practice in some food estate regions—has resulted in significant carbon emissions, directly contradicting Indonesia's commitments to reducing greenhouse gas emissions and combating climate change (Maskun et al., 2021). This highlights a critical tension within the program: while its stated aim is to ensure sustainable agricultural production, its environmental practices often run counter to sustainability principles.

Adding to these challenges is the uneven development of essential infrastructure, such as irrigation systems, which play a vital role in supporting large-scale agri-

cultural production. Poorly designed or inconsistently implemented irrigation infrastructure has hampered the effectiveness of food estate projects in several regions, limiting their ability to achieve consistent yields and exacerbating environmental stresses on local water systems (Achmad & Diniyati, 2021). Without reliable irrigation, the program risks further degrading soil and water resources, creating long-term ecological and economic vulnerabilities. To address these sustainability challenges, alternative models such as agroforestry have been proposed as more ecologically viable solutions (Rakuasa & Latue, 2023). Agroforestry systems, which integrate trees, crops, and livestock in a synergistic manner, have the potential to enhance land productivity while conserving biodiversity and maintaining ecosystem services. By shifting toward such sustainable alternatives, food estate projects could mitigate their environmental impacts and contribute to more resilient agricultural systems.

Environmental justice is another critical dimension of the food estate program, with marginalized communities bearing a disproportionate share of its socio-environmental costs. Large-scale land acquisitions for food estate projects frequently lead to the dispossession of indigenous populations and smallholder farmers, depriving them of access to ancestral lands and natural resources (Obidzinski et al., 2013). In many cases, these communities rely on the land not only for their livelihoods but also for cultural and spiritual practices, making their displacement particularly damaging. The Merauke Integrated Food and Energy Estate (MIFEE) in Papua serves as a stark example of these injustices. This project has been widely criticized for its socio-environmental consequences, including deforestation, loss of biodiversity, and the disruption of traditional livelihoods (Ito et al., 2014). For indigenous groups in Merauke, the clearing of forests for large-scale agricultural production has led to the erosion of their cultural heritage and economic independence, forcing many to seek alternative, often precarious, sources of income.

The displacement caused by food estate projects not only disrupts traditional livelihoods but also exacerbates existing socio-economic inequalities. Smallholder farmers, who often operate on the margins of formal land tenure systems, are particularly vulnerable to the impacts of land consolidation and resource extraction. In many cases, compensation for land acquisition is either inadequate or inaccessible, leaving affected communities with little recourse to challenge the loss of their land and livelihoods (Obidzinski et al., 2013). Moreover, the absence of robust mechanisms to address grievances has led to rising tensions and conflicts in food estate regions, further undermining the program's social legitimacy (Ito et al., 2014). Hence, again for the third time in this writing, to address these inequities, the government must adopt policies that prioritize free, prior, and informed consent (FPIC) as a cornerstone of land acquisition processes. Ensuring that communities are fully informed and actively involved in decision-making can help mitigate the socio-economic disruptions caused by large-scale agricultural projects.

In addition to FPIC, fair compensation mechanisms are essential to achieving environmental justice within the food estate program. Compensation should not only reflect the economic value of the land but also account for the social and cultural losses experienced by displaced communities. Innovative approaches, such as community-led development programs, can provide displaced populations with opportunities to rebuild their livelihoods while maintaining their cultural identity (Rakuasa & Latue, 2023). Additionally, environmental impact assessments (EIAs) for food estate projects must be strengthened to ensure that they address the concerns of affected communities and implement robust mitigation measures. EIAs should not be treated as procedural requirements but as critical tools for promoting accountability and minimizing environmental harm (Achmad & Diniyati, 2021). By addressing these structural issues, the food estate program can move closer to achieving its goals of enhancing food security while upholding the principles of environmental justice.

Conclusion

The findings of this study highlight several key aspects of how Indonesia's development initiatives—examined through the previously established ecofeminist framework—reflect persistent challenges related to inclusivity, sustainability, and environmental justice. The data and analysis presented in the previous sections have been systematically mapped according to the methodological framework employed in this study:

Table 1. Conclusion of the results based on the ecofeminist framework

	***Ibu Kota Nusantara* (IKN)**	**Nickel Industry Downstreaming**	**Food Estate**	**Ecofeminist Alignment**
Inclusive Participation & Indigenous Integration	Limited engagement of indigenous communities; decision-making often excludes local voices; policies lack meaningful participation mechanisms.	Marginalized groups face systemic barriers; indigenous knowledge and participation are minimally integrated in policy.	Local and indigenous communities are excluded from meaningful participation; TEK largely overlooked in planning.	These findings align with Mies & Shiva's (1993) critique of centralized, top-down development that marginalizes local, subsistence-based communities and dismisses indigenous knowledge systems. They also resonate with Warren's (2000) emphasis on participatory ethics and the moral obligation to include diverse, especially marginalized, voices in environmental governance.

Sustainability	Ambitious green city initiatives overshadowed by deforestation and habitat destruction; weak alignment with ecological preservation.	Economic benefits of downstreaming offset by significant environmental damage, including water pollution and deforestation.	Monoculture farming practices increase vulnerability; peatland clearing raises carbon emissions, threatening ecological goals.	These outcomes are in line with Plumwood's (19930 critique of anthropocentric and dualistic thinking that separates humans from nature and justifies exploitative development. Their framework calls for an ecological rationality that is clearly lacking in projects that pursue economic growth at the expense of environmental balance.
Environmental Justice	Indigenous populations face displacement and cultural erosion; benefits unequally distributed among stakeholders.	Displacement of communities; weak compensation mechanisms exacerbate socio-environmental inequalities.	Large-scale land acquisitions dispossess indigenous groups and disrupt traditional livelihoods, deepening inequality.	This reflects Warren's (2000) concern with intersecting systems of oppression that marginalize women and indigenous communities, and the need for an ethics of care in environmental policy. It also draws from Mies & Shiva's (1993) emphasis on how environmental harms disproportionately affect marginalized communities, and Plumwood's (1993) critique of hierarchical systems that perpetuate injustice.

The findings of this study reveal critical shortcomings in Indonesia's key development initiatives—*Ibu Kota Nusantara* (IKN), *Nickel Downstreaming*, and *Food Estate Projects*—when assessed through an ecofeminist framework. Across all three cases, issues of inclusivity, sustainability, and environmental justice remain persistent and interconnected challenges. The exclusion of marginalized groups, particularly indigenous communities, is a recurrent theme. Decision-making processes often lack meaningful engagement with local populations and fail to integrate traditional ecological knowledge (TEK), which could offer innovative solutions to sustainability and equity challenges. This systemic marginalization not only undermines the legitimacy of these projects but also limits their ability to achieve inclusive and effective outcomes.

Sustainability is another critical dimension where these initiatives fall

short. While IKN is envisioned as a green and sustainable city, its environmental footprint, marked by deforestation and habitat destruction, contradicts its ecological aspirations. Similarly, nickel downstreaming's economic gains are offset by significant environmental costs, including water pollution and biodiversity loss. The food estate program, intended to secure food self-sufficiency, faces similar criticisms for its reliance on monoculture farming and the clearing of peatlands, which contribute to carbon emissions and soil degradation. These findings highlight a critical tension between economic development priorities and the need for long-term ecological preservation, emphasizing the necessity of integrating sustainability into the core of planning and implementation.

Environmental justice emerges as another key issue across all three projects. The socio-environmental costs of these initiatives are disproportionately borne by marginalized communities, including indigenous populations and smallholder farmers, who face displacement, loss of livelihoods, and cultural erosion. Weak compensation mechanisms and limited recourse for grievances exacerbate these inequities, further deepening social divisions and eroding trust in governance. These outcomes challenge the ethical foundation of these projects and underscore the urgent need for policies that ensure equitable distribution of benefits while addressing the structural injustices inherent in large-scale development.

The findings suggest that Indonesia's development strategies require a fundamental shift toward participatory governance, sustainable practices, and environmental justice. By integrating the voices of marginalized groups, prioritizing ecological resilience, and ensuring fair compensation and resource access, these initiatives could move closer to their stated goals of equity and sustainability. Future research should explore inclusive governance models, the viability of sustainable alternatives such as agroforestry and renewable energy, and the development of comprehensive impact assessments that consider both socio-economic and ecological dimensions. Such efforts could provide valuable insights to inform policy reforms that align Indonesia's development agenda with principles of equity, sustainability, and justice.

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