

Social capital and institutional gaps in forest governance of Indonesia's new capital city

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Abstract. Anwar S, Sardjono MA, Rujehan, Suhardiman A, Kiswanto, Setiawati, Herlambang H. 2025. Social capital and institutional gaps in forest governance of Indonesia's new capital city. *Asian J For* 9: 381-389. Social capital is a cornerstone of sustainable forest management, but its benefits depend on the institutional arrangements that shape how local communities participate in decision-making. The relocation of Indonesia's new capital city (IKN) to East Kalimantan is rapidly transforming forest landscapes and governance structures, creating both opportunities and risks for forest-dependent communities. This qualitative case study examines how social capital interacts with institutional gaps in forest governance across six villages located within and around the IKN development area. Data were collected through in-depth interviews with 35 purposively selected informants, focus group discussions, and document analysis. Stakeholder power was analysed using an interest–influence matrix, while institutional coherence was evaluated across operational, collective-choice, and constitutional rule levels, drawing on Ostrom's Institutional Analysis and Development framework. The findings show a pronounced "social–institutional capital gap": local communities possess strong bonding and bridging social capital and high interest in forest protection, yet they have limited influence over formal land-use decisions dominated by state agencies and private investors. National and IKN-level regulations only partially recognise local rules and customary institutions, leading to overlapping authority and implementation gaps. These governance arrangements create conditions that may increase the risk of unsustainable forest conversion and biodiversity loss, even though our study does not directly measure ecological outcomes. We conclude that aligning formal rules with existing social capital through inclusive, multi-level co-governance is essential to maintain local legitimacy and reduce long-term forest-governance risks in the IKN region.

Keywords: Biodiversity conservation, forest governance, institutional gaps, Nusantara Capital City, stakeholder analysis

INTRODUCTION

Social capital (comprising trust, reciprocity, networks, and shared norms) is a critical driver of collective action and adaptive capacity in natural resource governance (Puspita et al. 2020; Sylviani et al. 2020). In the Indonesian context, community forest management has demonstrated that strong social capital can enhance conservation outcomes, particularly where local institutions are aligned with formal governance structures (Ekawati and Nurrochmat 2014; Febryano et al. 2014; Lee et al. 2017).

For this study, we define the following key concepts: Social capital consists of the resources embedded in social relationships, accessible and mobilizable by individuals or groups to achieve common goals, measured through the dimensions of trust, norms, and networks (Hasbullah 2006; Lee et al. 2017). Institutional gaps refer to the misalignment between informal rules (customary norms) practiced by local communities and the formal regulations (state policies) governing resource management (Widiyanto et al. 2025). Local communities are defined as social units, including both indigenous and migrant

populations, who reside in or around forest areas and have a historical dependence on those resources (Sardjono 2004).

The management of forest areas in the Nusantara Capital City (IKN) presents a unique socio-ecological challenge. As a National Strategic Project, its development directly intersects with long-standing indigenous land-use systems, creating significant potential for land-use change, biodiversity loss, and socio-cultural disruption if not managed through inclusive and adaptive governance (Rakatama and Pandit 2020; Syaban and Appiah-Opoku 2023). The IKN development area is divided into three primary zones: the Central Government Core Area (KIPP), the broader IKN Area (KIKN), and the IKN Development Area (KP-IKN), each imposing different pressures on the landscape (Hudalah 2025).

This governance gap may exacerbate existing threats to the rich biodiversity of East Kalimantan, Indonesia, through accelerated habitat fragmentation, intensified human-wildlife conflict, and erosion of ecological resilience, given that insufficient community participation limits adaptive management (Teo et al. 2020). This study

does not measure biodiversity directly; instead, we infer risks from community narratives and published ecological literature. Without careful management, IKN development risks repeating the extractive patterns that have historically degraded Kalimantan's ecosystems, where the effectiveness of environmental law enforcement remains weak.

The region is a habitat for numerous endemic and threatened species, including the Bornean orangutan (*Pongo pygmaeus*) and proboscis monkey (*Nasalis larvatus*), whose survival depends on the integrity of the forest ecosystem (Rustam et al. 2025). Without the active participation of local communities, who possess generations of ecological knowledge, conservation efforts are likely to be ineffective and unsustainable (Kurniawan et al. 2025).

Previous research on forest governance in IKN has largely focused on macro-level development strategies and environmental risk assessments (Muhtar et al. 2021; Mutaqin et al. 2021), with limited empirical work on the social-institutional capital gap. Drawing on Ostrom's (1990) institutional analysis framework, sustainable common-pool resource management depends on the coherence between operational, collective-choice, and constitutional rules. Preliminary evidence suggests a disconnect between the operational rules used by indigenous communities and constitutional-level decision-making, thereby undermining policy legitimacy (Mantlean and Meiliana 2022).

This study aims to fill this gap by: (i) mapping the power and interest dynamics among stakeholders in IKN forest management; (ii) identifying the nature and drivers of the social-institutional capital gap; and (iii) proposing pathways for inclusive governance that integrate local norms into formal policy frameworks. The novelty of this research lies in its systematic analysis of the "social-institutional capital gap" within the unique context of a capital city relocation, highlighting how the neglect of local social capital can undermine policy legitimacy and threaten ecological sustainability.

MATERIALS AND METHODS

Study area

This research was conducted between March and September 2024 within the administrative boundaries of Nusantara Capital City (IKN), East Kalimantan, Indonesia (Figure 1). The research sites focused on six villages across two districts: North Penajam Paser District (Sepaku, Bumi Harapan, Mentawir, and Wonosari) and Kutai Kartanegara District (Bukit Merdeka and Batuah).

These locations were purposively selected based on three criteria: (i) conservation potential, (ii) environmental vulnerability, and (iii) the degree of community participation in government forestry programs (Murniati et al. 2022). The study area encompasses parts of the KIPP (Central Government Core Area), KIKN (IKN Area), and KP-IKN (IKN Development Area) zones.

For instance, conservation potential was assessed based on forest cover extent and presence of endemic species; vulnerability was measured through socioeconomic indicators such as livelihood dependence on forests and poverty rates; participation degree was determined by prior engagement with government forestry schemes.

The study area is characterised by mixed lowland forests and mosaic landscapes of agroforestry plots, secondary forest, and smallholder farms. The climate is humid tropical with high annual rainfall (approximately 3,000-4,000 mm per year) and only a short dry season, and village territories are situated on gently undulating hills and lowlands (elevations 0-200 m) typical of East Kalimantan. Forests around the villages provide fuelwood, non-timber forest products, water regulation, and cultural spaces for customary practices. At the same time, the area has been increasingly affected by logging, plantation development, and infrastructure expansion related to the IKN project, which intensifies competition over land and forest resources.

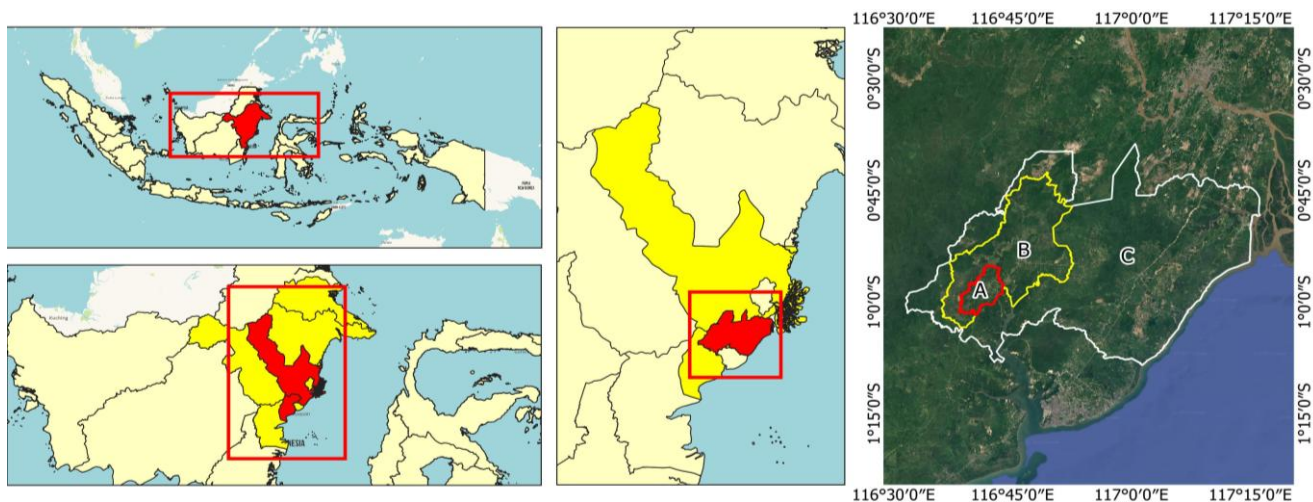


Figure 1. Study area map showing six selected villages across three IKN administrative zones (A. KIPP, B. KIKN, C. KP-IKN), East Kalimantan, Indonesia

Research design and methodology

This study employed a qualitative research design with a case study approach (Creswell and Creswell 2018). The case study method was chosen to enable in-depth exploration of the complex institutional dynamics and social-ecological interactions within the IKN context.

Data collection

Data were collected between March and September 2024 through semi-structured interviews and Focus Group Discussions (FGDs). Interviews typically lasted 45-90 minutes and followed a flexible guide covering themes such as local forest use, perceptions of IKN, experiences with government programmes, and views on formal and customary rules. FGDs were used to explore collective narratives about forest governance and to cross-check information obtained from individual interviews. With participants' consent, most sessions were audio-recorded and later transcribed verbatim; when recording was not possible, detailed field notes were taken. We also reviewed policy documents, spatial plans, project reports, and media articles related to the IKN project and forestry programmes in East Kalimantan. These documents were used both to contextualise the case and to triangulate interview and FGD data. Specific documents included national legislation (IKN Law 3/2022, Forestry Law, Environmental Protection Law), provincial regulations, IKN Master Plan, and KIKN Detailed Plan. Documents were selected based on direct relevance to governance of forest and land within the IKN area. Documents were coded to identify rules at three IAD levels: constitutional, collective-choice, and operational rules.

Sampling strategy and participants

We employed a qualitative case-study design focusing on six villages located within and around the development area of Indonesia's new capital city (IKN) in East Kalimantan. The villages were selected purposively based on three criteria: (i) conservation potential (presence of remaining forest and forest-dependent livelihoods), (ii) exposure and vulnerability to land-use change associated with IKN infrastructure and related investments, and (iii) degree of prior engagement in government or community-based forestry programmes. These criteria were operationalised using a combination of existing programme documents, spatial information, and preliminary discussions with local authorities and community leaders.

Within the selected villages and relevant governance levels, we used purposive stratified sampling to capture variation across key stakeholder categories. We sought representation from village heads and officials, customary leaders, ordinary community members (men and women), officials from the IKN Authority and government forestry agencies, representatives of NGOs and civil-society organisations, and private-sector actors involved in land-use and infrastructure development. Individuals were

identified based on their involvement in forest-related decision-making or resource use, their knowledge of IKN-related planning processes, and their role in representing particular interests or institutions.

In total, 35 informants were interviewed. We aimed for sufficient coverage within and across stakeholder groups rather than proportional representation. Recruitment continued until thematic saturation was reached, that is, when additional interviews no longer produced substantially new themes. To reduce the risk of sampling bias and to include marginalised perspectives, we combined initial nominations from formal leaders with snowball sampling that intentionally reached out to women, youth, smallholder farmers, and other less visible actors. Where feasible, we organised separate discussions with women and younger community members to ensure that their views were not overshadowed by village elites. Table 1 summarises the main stakeholder categories and the number of participants in each group.

Ethical considerations

Ethical approval for this study was granted by the Health Research Ethics Commission, Medical Faculty, Universitas Mulawarman, East Kalimantan (Approval No. 189/KEPK-FK/III/2024, March 08, 2024). The study adhered to WHO 2011 Standards and CIOMS 2016 Guidelines for ethical conduct in research involving human subjects. All participants provided informed consent in local languages (Paser, Banjarese, or Javanese); anonymity and confidentiality were assured; and community permissions and cultural protocols were respected throughout data collection and analysis.

Informed consent was obtained from all participants with written or verbal documentation. Guarantees of anonymity and confidentiality were provided. Interviews with indigenous communities were conducted in the local language (Paser, Banjarese, or Javanese) with the assistance of trained interpreters who understood cultural protocols and power dynamics.

Table 1. Stakeholder groups and number of informants

Stakeholder group	Number of informants (n)
Village heads and village officials	6
Customary leaders / adat institutions	5
Community members (men)	7
Community members (women)	5
Representatives of IKN Authority and government forestry agencies	5
NGO and civil-society organisations	4
Private-sector actors (concessions/investors)	3
Total	35

Data analysis framework

Stakeholder analysis: Interest-influence matrix

Stakeholder interest and influence were assessed using a five-point Likert scale (1 = very low to 5 = very high) on two dimensions: interest, understood as the stakeholder's dependence on and concern with forest-governance outcomes, and influence, understood as the stakeholder's formal and/or informal decision-making power. This simple ordinal scale has been widely used in Indonesian forestry governance research (Roslinda et al. 2012) and allows for transparent cross-comparison and triangulation with qualitative findings. We treat the resulting scores as relative rankings rather than interval-level measurements; they are therefore interpreted as categorical classifications and are not subjected to arithmetic operations such as means or totals.

For the stakeholder analysis, we used these scores to construct an interest–influence matrix and to locate stakeholder groups within four quadrants (Key Players, Subjects, Context Setters, and Crowd). Scores for each group were derived from a combination of interview and FGD material, observed interactions, and document analysis, and were agreed through team discussions. Where there was disagreement or uncertainty, we revisited the underlying qualitative evidence (including key quotes, frequency of mention, and observed patterns of influence) until a shared justification for the final classification was reached. The matrix is thus used as a heuristic device to visualise relative power asymmetries rather than as a statistical model. Table 2 summarises the resulting interest and influence scores and the position of each stakeholder group in the matrix.

Operationalisation of social capital

In this study, social capital is conceptualised in line with classic and contemporary literature as comprising three interrelated dimensions: (i) trust (horizontal and vertical), (ii) shared norms and rules, and (iii) social networks and collective action. To move from this conceptual definition to empirical analysis, we adopted a theory-informed coding strategy. First, an initial codebook was developed deductively from the literature on social capital and community-based natural resource management, with preliminary codes grouped under the three dimensions above (e.g. "interpersonal trust," "trust in government agencies," "informal sanctions," "customary rules on forest use," "mutual aid and gotong royong," "bridging networks with NGOs/private sector"). Second, this codebook was applied to a subset of interview and FGD transcripts and iteratively refined through team discussions, allowing for inductive addition of context-specific codes such as local institutions (*lembaga adat*, RT/RW, farmer groups) and culturally embedded practices (e.g. *Sempolo*, *Sinoman*, communal festivals). In the main analysis, each segment of text related to cooperation, conflict, rule-following, trust or mistrust, and cross-actor relations was coded to one or more of these categories. We then examined how patterns in trust, norms, and networks varied across stakeholder groups and sites, and how they interacted with formal institutions governing land, forests,

and the IKN development. This approach enabled us to systematically interpret local narratives as empirical manifestations of different dimensions of social capital, rather than treating social capital as an abstract or purely rhetorical concept.

Application of the IAD framework

The Institutional Analysis and Development (IAD) framework is used here to structure our analysis of how rules and decision-making arenas shape local communities' participation in, and benefits from, the IKN Forest City. Following Ostrom (1990), we distinguish three levels of rules: (i) operational rules that directly shape day-to-day access, use, and monitoring of land and forest resources; (ii) collective-choice rules that determine who can participate in making, modifying, or enforcing operational rules; and (iii) constitutional rules that define overarching authority, jurisdiction, and the actors entitled to participate in collective-choice arenas. Empirically, we identified these rules by coding interview, FGD, and document data for explicit and implicit statements about "who is allowed to do what, where, and under which conditions." References to local customary tenure, traditional sanctions, and community-based conflict resolution were coded as operational rules. Statements about village meetings, multi-stakeholder forums, requirement (or absence) of consent, and representation in planning processes were coded as collective-choice rules. National laws, government regulations, presidential decrees, and the IKN-specific legal framework were coded as constitutional rules. We then compared these three rule levels to identify institutional gaps, defined as misalignments or inconsistencies between formal and informal rules that undermine the legitimacy, effectiveness, or fairness of forest and land governance in the IKN context.

All interview and FGD transcripts were read several times and analysed using qualitative thematic coding. We began with a set of deductive codes derived from the research questions and the literature on social capital and multi-level forest governance (e.g., bonding, bridging, and linking ties; participation; benefit-sharing; rule enforcement) and iteratively added inductive codes to capture locally specific themes that emerged from the field. The first author led the coding process and regularly discussed emerging categories and interpretations with co-authors to refine the codebook and reduce individual bias. Three coders participated in the coding process, and an initial codebook was piloted on a subset of five interviews. Disagreements in coding were resolved through team discussion and refinement of code definitions. Coded segments were then organised into broader themes that described (i) configurations of social capital, (ii) stakeholder power and interests, and (iii) institutional gaps across rule levels.

Triangulation and validation

We took several steps to enhance the credibility of the findings. First, we triangulated information across interviews, FGDs, and documents, and paid particular attention to contradictions between official narratives and

community accounts. Preliminary findings from interviews informed FGD guides and were then used in FGDs for member-checking and further elaboration; discrepancies were discussed within the team. Rather than treating such inconsistencies as errors, we interpreted them as evidence of institutional gaps and competing claims. Second, we assured participants of confidentiality and, where politically sensitive issues were discussed, conducted interviews without the presence of government officials to reduce social desirability bias. Third, the authors engaged in ongoing reflexive discussion about their positionality as researchers working in the contentious IKN context and how this might shape interactions with participants and the interpretation of data. Finally, we shared preliminary interpretations with a small group of community representatives and local stakeholders and incorporated their feedback where it clarified or corrected our understanding, while keeping analytical responsibility with the research team. Member-checking was conducted with 12 community representatives and local officials across 6 villages during FGDs. Feedback was used to refine our understanding of rule alignment and stakeholder classifications across the categories used in the analysis. Approximately 70% of preliminary interpretations were confirmed; about 20% were refined based on participant input; and roughly 10% were contested but retained as analytical points with notation of dissent.

RESULTS AND DISCUSSION

Stakeholder landscape: Asymmetric power dynamics

The stakeholder analysis reveals a highly centralized power structure in IKN's forest governance. The IKN Authority (OIKN) and KLHK solidly occupy the "Key Players" quadrant, controlling regulation, budgets, and strategic planning. Indigenous peoples and local communities are positioned in the "Subjects" quadrant—despite high interest and dependence on forest resources, their formal influence on decision-making is minimal. Academics/researchers are classified in the 'Crowd' quadrant based on their limited formal decision-making authority over IKN land-use decisions in the early implementation phase, despite their high interest and potential discursive influence.

Private-sector actors (plantation companies, developers) occupy the 'Key Player' quadrant due to a combination of formal and informal influence. Formally, they hold concessions and development permits granted by government, which gives them decision-making authority over significant land areas. Informally, they wield bargaining power through capital investments, employment provision, lobbying networks, and strategic access to high-level decision-makers.

Stakeholder quote (Indigenous Leader 2024): "*We are invited to meetings, but only to listen. The maps are already made. We are just asked to agree.*"

To make these patterns of rule misalignment more transparent and analytically systematic, Table 3 synthesises key examples of operational, collective-choice, and

constitutional rules that emerged from our empirical material. The table highlights, for instance, how customary norms regulating shifting cultivation, water-source protection, and sacred forest areas are increasingly constrained by state-led land classification and concession allocation, while local actors remain weakly represented in the formal arenas where these higher-level rules are defined and revised. This systematic misalignment between rule levels constitutes a central institutional gap that shapes communities' perceived (il)legitimacy of the IKN Forest City project and their willingness to participate in formal governance.

Social capital dimensions: Internal strength, external weakness

Analysis of social capital reveals a paradoxical pattern: strong internal cohesion (bonding social capital) but weak external connections (bridging and linking social capital).

Trust

Trust—defined as the shared expectation within a community that others will behave cooperatively (Fukuyama 2007)—remains high among community members but is significantly low toward government actors. In indigenous communities, trust is grounded in long-term face-to-face relationships and cultural protocols. However, interviews revealed consistent distrust of state institutions, particularly the IKN Authority. Community members cited past experiences of unfulfilled promises, inadequate compensation, and exclusion from decision-making.

Norms

Norms—unwritten rules guiding behavior (Hasbullah 2006)—persist through local traditions and institutions:

Sempolo (Paser tradition): Collective mutual help in farming and community work

Sinoman (Javanese tradition): Mutual assistance in rituals and communal labor

Seribu Ketupat Festival (Wonosari): Annual celebration emphasizing community self-reliance and cultural identity.

These norms encode principles of equity, reciprocity, and resource sharing that align closely with sustainable resource management principles. However, formal government policies often fail to recognize these norms and, in some cases, actively undermine them by criminalizing traditional livelihoods (e.g., rotational farming labeled as "forest encroachment")

Networks

Networks—social ties connecting individuals—are dense internally but limited externally. Community members are strongly connected to family, lineage, and local organizations. However, connections to government agencies, market actors, and broader policy forums are weak. This constrains the community's ability to influence policy, access information, and secure benefits from development.

Table 2. Summary of stakeholder interest and influence scores

Stakeholder	Interest (1-5)	Influence (1-5)	Classification
IKN Authority (OIKN)	5	5	Key Players
Ministry of Environment & Forestry (KLHK)	5	4	Key Players
Indigenous Peoples & Local Communities	5	2	Subjects
Local Government	4	3	Context Setters
Private Sector/Investors	5	4	Key Players
Environmental NGOs	4	2	Crowd
Academics/Researchers	3	1	Crowd

Table 3. Examples of operational, collective-choice, and constitutional rules relevant to forest and land governance in the IKN Forest City, East Kalimantan, Indonesia

Rule level	Empirical example in the IKN context	Main actors involved	Governance function / content of the rule	Identified institutional gap or tension
Operational rules	Customary norms regulating shifting cultivation (<i>ladang berpindah</i>) and fallow periods	Customary leaders, farmer households, neighbourhood groups	Define where, when, and how communities may clear land, use fire, and rotate plots to maintain soil fertility and forest cover	Increasingly constrained or invalidated by state land classification and concession permits; local practices are not formally recognised in IKN planning documents
	Informal prohibition on cutting large trees around springs and sacred forest sites	Customary institutions, village elders, local youth	Protect water sources and culturally important forest patches through social sanction and moral obligation	Overlaps with state-defined protection forests but without clear coordination; enforcement is weakened when external actors enter with formal permits
Collective-choice rules	Village development meetings dealing with relocation, compensation, and IKN-related projects	Village government, village council, selected community representatives	Provide a formal arena to discuss project proposals, prioritise activities, and channel local preferences	Agendas and budgets are strongly shaped by higher-level programmes; limited space to question core IKN decisions or negotiate land status
	Multi-stakeholder forums convened by district or provincial authorities	Local governments, OIKN, line ministries, NGOs, private sector, selected communities	Coordinate planning of infrastructure and environmental management across sectors and jurisdictions	Community representatives are often invited late and in small numbers; highly technical information reinforces existing asymmetries of knowledge and influence
Constitutional rules	National laws on state forest classification and land allocation (e.g., production forest, APL)	National ministries, parliament, central government agencies	Define state ownership, land-use categories, and authority to issue permits and reclassify areas	Legal categories rarely recognise customary tenure; local communities remain "users" without secure rights despite long-term occupation
	Special legal framework for IKN, including establishment of the IKN Authority (OIKN)	President, national parliament, OIKN, central ministries	Concentrates decision-making power over planning, land use, and investment licensing in a single authority	Weak formal requirements for Free, Prior, and Informed Consent (FPIC) and limited mandated seats for local communities in strategic decision-making bodies

Note: This table is illustrative rather than exhaustive and focuses on rules that emerged as particularly salient in the empirical material gathered through interviews, FGDs, and policy document analysis

Institutional gaps: Misalignment between rules and levels

The analysis reveals systematic misalignment between operational, collective-choice, and constitutional rules.

Operational level (local rules): (i) Customary land tenure systems recognizing family and community claims, (ii) Rotational farming and agroforestry systems for livelihood and soil conservation, (iii) Local conflict resolution mechanisms based on mediation and consensus, (iv) Informal monitoring and enforcement by community members.

Constitutional/collective-choice level (constitutional/state rules): (i) National forest classification designating areas as "state forest", (ii) IKN law and regulations prioritizing urban development and government control, (iii) Environmental regulations prohibiting forest conversion and traditional land use, (iv) Centralized permit systems requiring government authorization.

Gap: The two rule systems diverge fundamentally. Customary systems recognize community tenure and adaptive livelihood strategies; state systems deny indigenous claims and criminalize traditional practices.

Consequences: Erosion of trust and policy illegitimacy

This institutional gap has eroded local trust in governance and undermined the legitimacy of IKN policies among communities. Key informants reported: (i) Reluctance to participate in government-sponsored programs, (ii) Continued engagement in traditional practices despite legal prohibition, (iii) Recourse to alternative informal mechanisms for dispute resolution, (iv) Growing skepticism about the "Forest City" narrative.

In addition, Table 4 presents the main thematic categories used to operationalise social capital (trust, norms, and networks), along with illustrative excerpts from community narratives. This thematic structure provides the empirical basis for our interpretation of how different forms of social capital are mobilised—or sidelined—within the evolving governance landscape of the IKN Forest City. A summary of key thematic frequencies: Trust-related codes appeared in approximately 140 coded segments across interviews and FGDs; Norms-related codes in 95 segments; Network-related codes in 78 segments.

Discussion

The social-institutional capital gap framework

The core finding of this study is the structural misalignment between local operational rules and national constitutional rules. This gap reflects what Ostrom (1990) identified as a lack of congruence across governance tiers, which is critical for successful common-pool resource management. The centralization of power in IKN risks diminishing local ownership, a phenomenon also observed in capital-relocation projects elsewhere.

Comparative examples illustrate both the risks and opportunities. Experiences from purpose-built capitals such as Naypyidaw (Myanmar) and Abuja (Nigeria) show that centrally driven capital-relocation projects can marginalise nearby communities and intensify environmental pressures when local voices are weakly represented in planning (Momoh et al. 2018; Obiadi and Onochie 2018; Seekins 2021). Similar concerns have been raised in debates on Indonesia's planned new capital, where capital-relocation scenarios and political analyses highlight the risk of uneven benefits and ecological degradation if decision-making remains highly centralised (Shimamura and Mizunoya 2020; Hudalah 2025). In post-conflict Cambodia, even where social capital had been eroded by conflict, leveraging existing local networks and norms proved vital for the success of collective action in community forestry (Ido 2019). These cases suggest that integrating local institutions and social capital into capital development is both ethically necessary and practically essential for long-term sustainability.

At the same time, our findings confirm that social capital is not uniformly positive. Strong bonding ties within villages can reinforce existing hierarchies, for instance by allowing male elders or long-term residents to speak on behalf of the "community" while women, youth, or migrant groups remain largely unheard in formal consultations. In the IKN context, this means that participation processes that rely only on existing leaders may reproduce exclusion and mask internal disagreements. Recognising these internal power dynamics is therefore crucial when designing participatory mechanisms that aim to be both locally legitimate and socially inclusive.

Table 4. Main thematic categories used to operationalise social capital (trust, norms, and networks), with illustrative excerpts from community narratives

Social capital dimension	Thematic code / category	Short description	Illustrative excerpt from the data*	Analytical interpretation
Trust (horizontal)	Interpersonal trust and mutual support	Everyday cooperation and reciprocity amongst neighbours and kin	"If someone's field is burned or flooded, we help each other without calculating the cost."	Indicates strong bonding social capital that can facilitate collective action in times of crisis
Trust (vertical)	Trust in government agencies and IKN authority	Perceptions of credibility, fairness, and responsiveness of state actors	"We are invited to meetings, but the decisions are already made; we just listen."	Reflects low vertical trust and perceived tokenism, which undermines legitimacy of formal processes
Norms and informal rules	Customary rules on forest and land use	Locally embedded norms regulating access, sanctions, and conflict resolution	"From our ancestors, it is forbidden to cut big trees near the mata air (spring); there will be consequences."	Shows how informal norms already regulate conservation-relevant practices, even without formal law
	Norms of participation and speaking up	Social expectations shaping who is allowed to speak and decide in community forums	"Usually the elders and men talk. Women just listen, even if they are the ones affected."	Reveals internal exclusions that can limit inclusive participation and reproduce power imbalances
Networks and collective action	Mutual aid and gotong royong	Organised or semi-organised collective labour for communal tasks	"For Sempolo and village events, we all contribute labour or food, even if we are busy."	Suggests a strong base of collective action that could be mobilised for co-management arrangements
	Bridging and linking networks	Connections to NGOs, private sector, and higher-level government	"Only when the NGO came did we understand our rights and how to negotiate with companies."	Demonstrates the importance of bridging/linking ties in accessing information and influence beyond the village

Note: Quotations are paraphrased and anonymised for confidentiality

Biodiversity conservation implications

This governance gap has direct implications for biodiversity conservation. A centralized approach devoid of meaningful local participation risks creating policies blind to local ecological contexts. Recent research indicates that the initial phase of infrastructure development has already led to significant habitat fragmentation, while biodiversity offsetting policies have not been effectively implemented (Gunawan et al. 2024).

The disregard for indigenous ecological knowledge could lead to degradation of critical habitats for endemic and endangered species within the IKN area. The Bornean orangutan (*P. pygmaeus*) is highly dependent on intact dipterocarp forests, and habitat fragmentation from development directly threatens its survival (Rustam et al. 2025). The proboscis monkey (*N. larvatus*), found only in Borneo, is also sensitive to forest loss and human disturbance (Kurniawan et al. 2025). In tropical forests, many small mammal species and other forest-dependent fauna are highly sensitive to habitat fragmentation and hunting, and therefore rely on continuous forest cover with low levels of human disturbance for their long-term persistence (Meijaard et al. 2005; Brodie et al. 2015; Wearn et al. 2017). This is particularly critical in East Kalimantan, where road construction and urban expansion for the new capital may create barriers and increase hunting access in previously remote forest blocks.

We therefore discuss biodiversity not as a measured outcome of this study, but as a plausible risk emerging from the observed governance configuration. Our empirical evidence on biodiversity risk is inferential: it is derived from (i) local community narratives about changes in forest cover, water regimes, and wildlife encounters, and (ii) existing ecological literature on habitat fragmentation and infrastructure development in the IKN and broader Kalimantan region. Institutional gaps at operational, collective-choice, and constitutional levels weaken the enforcement of existing forest rules and reduce the ability of communities to contest large-scale land-use changes. This creates conditions in which forests surrounding the IKN project are more likely to be converted, fragmented, or degraded, thereby increasing pressure on habitats that are known from other studies to host high levels of biodiversity. Our contribution is to describe this governance pathway and the associated risk, rather than to provide direct ecological measurements. Future mixed-methods research combining governance analysis with biodiversity monitoring would be needed to empirically test this pathway.

Limitations and future research

This study has several limitations. It is based on a qualitative case study in six villages and therefore does not aim to be statistically representative of all communities in the IKN region; findings should be read as context-specific and exploratory rather than definitive for all IKN contexts. The analysis captures institutional dynamics at a single point in time (2024), so longitudinal data would be needed to assess whether governance gaps widen, narrow, or persist as the IKN develops. Political sensitivity

surrounding the new capital project may have constrained what some informants felt comfortable sharing, despite our efforts to ensure confidentiality, which means that grievances, conflicts, or informal practices may be underreported. Finally, we do not collect primary ecological or biodiversity data; any statements about risks to biodiversity and ecosystem functions are inferential and should be validated through future studies that integrate ecological indicators.

Nevertheless, the findings provide an empirically grounded starting point for further comparative and mixed-methods research on institutional gaps and social capital in large-scale infrastructure and relocation projects. In conclusion, this study shows that the development process of IKN is characterized by a highly centralized, exclusive governance structure that marginalizes local and indigenous communities. A profound institutional gap between formal state policies and local practices has eroded social capital and undermined incentives for community participation in conservation. Ultimately, the failure to genuinely integrate local social capital not only threatens social justice and local livelihoods but also fundamentally subverts the ecological objectives of the “Forest City” vision. While we do not measure biodiversity outcomes directly, our findings indicate that current institutional arrangements and weak integration of local social capital create conditions that may amplify existing pressures on biodiversity and ecological functions in and around the IKN Forest City, particularly for habitat-dependent species such as the Bornean orangutan and proboscis monkey.

Based on these findings, we argue that addressing the social–institutional capital gap in the IKN region requires coordinated action from multiple levels of government. The IKN Authority, the Ministry of Environment and Forestry, and provincial and district governments should jointly recognise and strengthen existing community institutions, integrate them into formal planning and licensing procedures, and establish co-management arrangements for critical forest areas. Forest management units (KPH) and the conservation agency (Balai KSDA) can play a bridging role by collaborating with local communities to monitor forest condition and to protect key habitats within and around the new capital. The main novelty of this study lies in conceptualising how strong local social capital can coexist with weak institutional recognition in a large-scale capital-relocation project, and in showing how this mismatch creates governance risks for both communities and forests.

Future research should address these limitations by: (i) extending qualitative fieldwork to additional villages within the KIKN zone to assess whether governance gaps are widespread across the IKN area; (ii) combining governance analysis with quantitative ecological indicators (e.g. forest cover change, species occurrence data) to empirically test the hypothesised links between institutional gaps and biodiversity outcomes; and (iii) conducting longitudinal studies to track how community institutions and formal governance arrangements adapt as the IKN develops over the next decade.

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