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Research article

Green Development Governance and Local Livelihoods: a Realist Synthesis

Ilham Aldelano Azre*, Annisa Aulia Putri, Erlina Gusti

Department of Public Administration, Andalas University, Padang, Indonesia

* Co-respondent Author: *ilhamaldelano@soc.unand.ac.id*

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Abstract

Green-development policies create opportunities for resource-dependent communities but can also impose restrictions, administrative costs, and livelihood uncertainty. This study examines how these conditions shape cooperation, withdrawal, exclusion, and resistance. A bounded realist synthesis was adopted to develop context-sensitive explanations across selected policy settings rather than estimate average effects or provide exhaustive global coverage. The boundaries comprised publication date, policy relevance, and geographical emphasis. The synthesis covered peer-reviewed publications from January 2022 to 16 August 2026 on social forestry, conservation, sustainable commodities, and community environmental governance, primarily in Indonesia, supplemented by comparative international evidence. Publications were identified through journal hand-searching, targeted publisher searches, and citation chaining. Eligibility required a governance or livelihood pathway and sufficient information to inform at least one context–mechanism–outcome (CMO) element. Purely technical studies without such a pathway were excluded. The evidence comprised 26 substantive publications and four methodological and public-administration sources. Implementation accounts, relevant associations, and contrasting findings informed six provisional configurations concerning rights and authority, participation, livelihood compatibility, administrative burden, market access, and restrictive enforcement. The Green Implementation Alignment Framework connects these configurations through rights, authority, livelihoods, implementation capability, and accountability. Its contribution is to explain how constraints in one domain may undermine improvements in another, including recognition without usable authority and certification without accessible markets. The framework offers diagnostic guidance for public administrators. Geographical concentration, heterogeneous evidence, and incomplete search and appraisal records limit causal confidence, warranting further comparative testing.

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1. Introduction

Green development has become a central language of contemporary public policy. Governments are expected to conserve forests, reduce ecosystem degradation, improve the sustainability of commodity production, protect biodiversity, and support climate-related goals while simultaneously maintaining rural welfare and economic opportunity. In Indonesia, these objectives are translated through diverse instruments: social forestry, protected-area rules, environmental rescue programmes, sustainable palm-oil standards, community empowerment, ecotourism, restoration, and other forms of environmentally oriented development. The policy ambition is attractive because it promises ecological improvement and social inclusion at the same time. Implementation, however, is not automatically coherent. The same environmental objective can be experienced locally as an opportunity for secure access and income, an administrative programme that is difficult to navigate, a market standard that excludes smaller producers, or a direct threat to an established livelihood.

Across the Indonesian studies considered here, a recurring problem is the distance between the opportunities formally offered by a policy and communities' ability to use them. Social-forestry policy formally seeks to devolve access and management opportunities, but fragmented bureaucratic mandates can obstruct the programme's intrinsic goals (Maryudi et al., 2022). This finding can be read alongside evidence that organizational maturity is associated with more sustainable social-forestry implementation (Situmorang et al., 2026). Together, the studies suggest that formal access depends partly on how administrative responsibilities and local organizational resources interact. However, bureaucratic constraints do not produce uniform outcomes. Community-level outcomes also differ substantially: stronger institutions and organizational maturity are associated with more sustainable social-forestry implementation, while weaker governance limits socioeconomic benefits (Situmorang et al., 2026). In South Sulawesi, commoning practices, locally developed rules, informal relations, and local knowledge enabled marginalized smallholders to work through formal administrative constraints and derive benefits from a social-forestry scheme (Sirimorok et al., 2024). This case qualifies an explanation centred solely on bureaucratic fragmentation: collective organization may help some groups navigate constraints that remain prohibitive for others. The explanatory question is therefore how similar requirements become manageable for particular groups while limiting access for others.

The same implementation problem appears outside social forestry. At Lake Maninjau, an environmental rescue policy generated overt resistance among floating-net-cage farmers whose economic dependence made restrictions appear threatening to livelihood security (Yudha et al., 2026). In Wakatobi National Park, conservation rules that insufficiently accounted for livelihood and cultural realities produced differentiated forms of everyday resistance shaped by gender, ethnicity, and class (Lynch & Turner, 2022). Both studies connect restrictions to livelihood pressures, but they also caution against treating resistance as a single

community response. Visible opposition at Maninjau and differentiated everyday resistance in Wakatobi direct attention to how dependence, social position, and opportunities to contest rules shape responses. In West Sumatran oil-palm landscapes, formal development arrangements around customary land generated disputes over authority, plasma benefits, and transparency (Indrizal et al., 2026). Meanwhile, sustainability standards in North Aceh were experienced as administrative and economic burdens where tenure was unclear, access to technology and training was limited, and trust in government or companies was low (Ade Ikhsan Kamil et al., 2026). Here, the central difficulty concerns the feasibility and perceived legitimacy of meeting standards. Livelihood threat, inability to comply, and distrust may overlap, but they should not be assumed to constitute the same mechanism or produce the same outcome.

JAKP's own publication offers useful starting points for this comparison. Research on agriculture in the Gayo Highlands argues that sustainable management requires integration between customary and village authorities to reduce overlapping responsibilities and strengthen governance (I. R. Latif et al., 2024). Read together, these studies identify two connected administrative problems: coordination among institutions and the distribution of decision-making power within those arrangements. Clarifying responsibilities may reduce institutional overlap without necessarily resolving whose claims prevail or who receives benefits.

Evidence on participation similarly suggests that the presence of a community programme is an insufficient explanation of collective action. A study of forest-edge empowerment in Riau found that a programme reduced to cash transfer did not constitute meaningful empowerment and called for more substantive involvement of government, companies, and communities (S. A. Latif et al., 2022). Research on community-based waste governance in Padang shows how transparency, communication, commitment, norms, and networks can generate trust and collective action (Tomimi, 2024). JAKP has also recently published work specifically on the management of a village-forest social-forestry scheme in Halaban, West Sumatra (Ardyusri et al., 2026), confirming that green implementation has become part of the journal's empirical policy terrain. The contrast directs attention to what participation enables people to do. Receiving assistance, contributing labour, obtaining information, and influencing rules are different forms of involvement. They may generate different expectations about whether cooperation is worthwhile and whether implementing institutions can be trusted. Research on village-forest management in Halaban adds another relevant implementation setting (Ardyusri et al., 2026), but the existence of such a scheme should not itself be treated as evidence that participation transfers meaningful influence.

A second strand of evidence concerns rights and authority. The distinction between formal rights and authority provides an important starting point for the analysis. Formal recognition can expand legal status without necessarily transferring substantive control. Setyaka and

Rahman (2025) describe how Indigenous land recognition may be incorporated into market-compatible forms of green governance without redistributing territorial sovereignty. Pratzer et al. (2023), by contrast, show that Indigenous stewardship can condition whether agricultural intensification translates into forest-sparing outcomes. In community forests across tropical countries, formal management associations and participation in rule-making are consistent predictors of simultaneous carbon, biodiversity, and livelihood benefits (Fischer et al., 2023). These findings imply that recognition becomes consequential when it changes who can make rules, control resources, and benefit from them. Administrative recognition that leaves decision authority elsewhere may generate legitimacy in form but not in practice.

A third strand concerns livelihood compatibility and market access. Ecosystem protection can have strong economic value: mangrove loss in Indonesia has measurable adverse effects on fishery household income, making conservation itself a livelihood issue rather than a trade-off that is always opposed to welfare (Yamamoto, 2023). Conservation-compatible livelihood approaches similarly emphasize reciprocal design in which local resource use and biodiversity goals are made mutually reinforcing (He & Jiao, 2023). Agroforestry diversification can support multifunctional social-forestry goals, but technical assistance, resources, species selection, and market access condition whether such benefits are realized (Willmott et al., 2023). At the commodity end of the policy spectrum, shorter oil-palm marketing chains are associated with higher farmer shares and income, highlighting the institutional importance of producer organizations and market access (Febrina Nur Annisa & Analisa, 2026). Green policy can therefore activate cooperation when it improves credible livelihood pathways, but the same policy can create opposition when costs are concentrated on local producers while benefits are uncertain or captured elsewhere.

Existing scholarship already explains important parts of this problem. Policy implementation research from Van Meter & Van Horn examines the relationship between policy objectives, resources, organizational coordination, and implementing actors (Riant D Nugroho, 2004). It helps explain why formal commitments to devolution may be weakened by conflicting mandates, inadequate support, or inconsistent implementation. Its emphasis on the policy delivery process is particularly relevant to the bureaucratic difficulties identified in social forestry. For the present inquiry, however, these organizational relationships need to be connected more explicitly to the responses of intended participants. Identifying fragmented authority does not yet specify why one group withdraws while another mobilizes informal relationships to obtain access. The task is to trace the intervening processes through which administrative arrangements become uncertainty, manageable obligations, or perceived exclusion.

Ansell and Gash (Ansell & Gash, 2012) explain collaborative governance through starting conditions, institutional design, facilitative leadership, and the development of dialogue, trust,

commitment, and shared understanding. Their account helps interpret why transparent communication and opportunities to influence rules may support collective action, while unequal resources or a history of conflict can constrain collaboration. This perspective is relevant to the contrast between collective environmental governance in Padang and assistance that offers little substantive empowerment in Riau. Yet a collaborative forum is only one part of the implementation setting. Participants may develop trust while remaining unable to finance compliance, secure resource access, or enter a market. Applying collaborative governance to these cases therefore requires examining how relationships within participatory institutions interact with material and administrative conditions beyond them. This extends the question from whether collaboration develops to whether participants can act on the opportunities it creates.

Research on social–ecological systems situates collective action within interacting resource, user, and governance conditions (Ostrom, 2009). Ostrom's (2009) social–ecological systems framework locates outcomes within interactions among resource systems, resource units, users, and governance arrangements. It offers a strong basis for understanding why institutional arrangements that support collective action in one setting may perform differently elsewhere. It also cautions against treating devolution or community participation as universally effective solutions. For this synthesis, the remaining task is to specify the causal processes within those interactions. Identifying tenure conditions, organizational capacity, or resource dependence does not alone establish how a particular permit, standard, or restriction changes actors' expectations and behaviour. Realist analysis can complement this diagnostic framework by examining how policy inputs generate different responses under identified conditions. The gap addressed here is narrower than an absence of institutional explanations: the selected green-development literature provides limited cross-policy explanation of how formal inclusion can coexist with practical exclusion, and how improvements in one institutional domain may be undermined by constraints in another. A realist synthesis is useful because it compares the circumstances and actor responses connecting an intervention to an outcome, rather than assuming that interventions with the same label operate in the same way (Dada et al., 2023; Greenhalgh & Manzano, 2022; Renmans & Castellano Pleguezuelo, 2023).

This study therefore develops a realist explanation of green-development implementation. It addresses three questions. First, which recurring context-mechanism-outcome configurations explain collaboration, compliance, adaptation, exclusion, or resistance in green-development policy? Second, how do rights, authority, livelihood incentives, administrative capability, and accountability interact in those configurations? Third, what policy-design implications follow for public administrators seeking both environmental and livelihood outcomes? The novelty lies in shifting analysis from a sector-specific catalogue of green programmes to a cross-policy implementation theory. The resulting Green Implementation Alignment Framework argues that durable implementation depends on simultaneous alignment among rights, authority,

livelihoods, implementation capability, and accountability. The objective is not to propose another environmental standard, but to explain the governance conditions under which existing standards and programmes become administratively workable and locally legitimate.

2. Method

This study uses a bounded realist synthesis. Realist synthesis is theory driven: it begins with an initial explanation of how a policy is expected to generate outcomes, searches for evidence that can confirm, refine, or challenge that explanation, and expresses causal reasoning through context-mechanism-outcome configurations. The bounded approach was adopted to support a focused comparison of implementation processes across selected green-development policies, rather than to estimate an average intervention effect or provide exhaustive global coverage. The boundaries were defined by publication period, policy focus, geographical emphasis, and explanatory relevance.

Context refers to conditions that influence whether a mechanism can be activated; mechanism refers to the reasoning, resources, opportunities, or responses triggered by policy arrangements; and outcome refers to the observed or expected consequence. Context is therefore not treated as a descriptive list of locations or demographic characteristics, but as a causal condition that changes how actors respond to an intervention (Greenhalgh & Manzano, 2022). This distinction guides the analysis by preventing a policy instrument, such as certification or a participatory forum, from being labelled a mechanism without examining how it operates for affected actors.

The evidence window covered publications from January 2022 to 16 August 2026. The substantive scope included social forestry, conservation, community environmental governance, sustainable commodities, agroforestry, and livelihood programmes with an identifiable governance dimension. Indonesia provided the principal geographical focus, while comparative international evidence was included to examine whether proposed explanations depended on specifically Indonesian conditions. The publication window defines a recent evidence set; it does not imply that the underlying implementation processes began in 2022. Older theoretical and methodological references were used separately to inform interpretation and reporting.

Literature identification combined journal hand-searching, targeted searches of journal and publisher websites, and citation chaining. The journal-based entry point provided access to locally situated research on public administration, customary authority, resource governance, and livelihoods. External publications broadened the comparison across policy instruments and institutional settings. This approach provided contextual depth but was not designed to produce a representative sample of all green-development research.

The identifiable Indonesian source outlets comprised Jurnal Administrasi dan Kebijakan

Publik (JAKP), Jurnal Antropologi: Isu-Isu Sosial Budaya, Jurnal Sosiologi Andalas, Andalas Journal of International Studies, and Jurnal Riset Perkebunan. External outlets include Environmental Science & Policy, Forest Policy and Economics, Trees, Forests and People, Environmental Development, Nature Climate Change, and Communications Earth & Environment. These outlets describe the documented coverage of the evidence set rather than a complete record of every source searched. The review does not claim a systematic search of Scopus, Web of Science, or another bibliographic database.

The reported search vocabulary covered social forestry, conservation livelihoods, green development, Indigenous or customary rights, palm-oil sustainability, certification, devolution, collaborative governance, administrative burden, community forest governance, and smallholder market access. These terms address three related concerns: the policy intervention, the institutional conditions of implementation, and the consequences for affected communities. They describe the conceptual coverage of the search, not a reproducible Boolean search string. Exact query strings, search dates for individual outlets, search-result exports, and citation-chaining routes are not available in the reporting materials. The terms should therefore be read as the reported conceptual coverage, not as a reconstructed Boolean strategy that can be claimed to reproduce the original search. The journal-based entry point offers context-rich Indonesian material, but also creates a risk of institutional and geographical selection bias. Adding external studies broadens the comparison without eliminating that risk.

Publications were eligible when they met four substantive requirements: publication within the specified period; publication as a peer-reviewed journal article; an identifiable policy, governance, or livelihood pathway relevant to the review; and sufficient information to inform at least one contextual condition, mechanism proposition, reported outcome, or competing explanation. Contribution to one CMO element was sufficient for inclusion, but was not treated as evidence that a publication established an entire causal sequence.

Publications outside the substantive evidence window, non-peer-reviewed material, and studies concerned solely with technical environmental performance without an implementation or livelihood pathway were outside scope. Conceptual and review articles were eligible when they informed the explanatory argument, but their contributions were distinguished from primary empirical observations. This distinction matters because a conceptual account can suggest how an intervention might operate without demonstrating that the proposed process occurred.

The evidence set comprises 26 substantive publications, supported by four recent methodological or public-administration sources. Six additional foundational theoretical and reporting references are not counted among the substantive publications. Appendix A identifies the 26 publications, their policy settings, and their roles in the configurations. Four substantive publications are from JAKP and seven from other Universitas Andalas journals.

These figures describe institutional concentration within the evidence set; they do not demonstrate that source-selection bias has been controlled.

The eligibility criteria make the intended basis of selection explicit, but the available documentation does not preserve the full screening process. Counts of retrieved, deduplicated, screened, and excluded records, together with reasons for individual exclusions, cannot be established from that documentation. Nor does it identify the number of screeners or how selection disagreements were resolved. The study therefore does not claim independent duplicate screening or report a reconstructed selection flow as an observed procedure.

Relevance, richness, and rigour provide the appraisal criteria (Dada et al., 2023). Relevance concerns whether a passage bears on a specific contextual condition, response, outcome, or competing explanation. Richness concerns whether the account connects identifiable actors, implementation events, and consequences in enough detail to interpret a mechanism. Rigour concerns whether the data and analytical design warrant the particular claim being made. An association between institutional characteristics and outcomes can inform a CMO without demonstrating actors' reasoning. A conceptual article can help formulate an explanation without supplying an observed outcome. These distinctions guide the revised evidence map; numerical quality scores and unsupported study-level quality ratings are not assigned.

The source-to-configuration map in this revision is reconstructed from the evidence cited and discussed in the manuscript. It distinguishes empirical findings, conceptual contributions, qualifications, and contextual uses. It is not a replacement for the original extraction sheets or a new independent full-text appraisal of every publication. The available record does not identify the number of screeners, disagreement procedures, passage-level extraction locations, or completed appraisal decisions for each source. Consequently, neither independent duplicate screening nor inter-coder agreement is claimed. This missing audit trail limits the reproducibility and confidence of the synthesis.

The original analysis was described as iterative and retroductive. It began with a programme theory linking secure rights, coherent authority, feasible livelihoods, accessible support, and participation to implementation responses. The coding fields were policy arena, affected actors, contextual conditions, policy resources or restrictions, actor reasoning, and reported outcomes. In the revised presentation, each configuration separates the intervention from the mechanism and states whether the proposed reasoning is inferred. Sources are linked to a configuration when they contribute to at least one element or a relevant qualification; a link does not mean that the study establishes the entire causal sequence. Contrasting observations are used to narrow propositions rather than counted as failed instances of an otherwise universal relationship.

For example, CMO 5 distinguishes the observed underrepresentation of independent

smallholders in certified mill supply from the inference that buyers favour suppliers perceived as easier to verify. Ekaputri et al. (2025) support a distinction between persistent limited access and an abrupt exit after certification. This qualifies a simple claim that certification directly displaces existing suppliers. Similarly, the devolution evidence from Berau (Rochmayanto et al., 2023) limits an inference that transferring formal rights is sufficient for improved environmental outcomes. These comparisons generate provisional explanations, not causal estimates.

The review makes no claim to exhaustive coverage, theoretical saturation, or a fully reproducible systematic search. Counts of identified, deduplicated, screened, and excluded records cannot be recovered from the available documentation. Table 2 reports only transparent counts of publications mapped to each configuration; publications may appear in more than one row, and the counts are neither independent replications nor measures of causal strength. The six configurations and GIAF should therefore be read as propositions for further inquiry. A database-based update with preserved searches, selection decisions, source extracts, and appraisal records is needed to strengthen their evidential basis.

Table 1. Realist synthesis design and evidence rules

Element	Operationalization
Design	Bounded realist synthesis; conditional theory development, not an exhaustive effect review.
Evidence window	January 2022 to 16 August 2026; older theoretical and reporting sources are separate.
Identification	Journal hand-searching, targeted publisher searches, and citation chaining reported in the original manuscript; exact strings and search logs unavailable.
Scope	Primarily Indonesia; comparative international material. Social forestry, conservation, environmental governance, commodities, and livelihoods.
Eligibility	Peer-reviewed publications with a governance pathway and material relevant to at least one CMO element; purely technical studies without that pathway excluded.
Evidence set	26 substantive publications, including empirical and conceptual work; four recent methodological or public-administration sources; six additional foundational references.
Appraisal	Relevance to an inference; richness of implementation detail; rigour of the supporting design. No unsupported quality scores assigned.

Source: Authors' synthesis (2026).

3. Results and Discussion

The synthesis generated six recurrent context-mechanism-outcome configurations. They are presented as explanatory propositions rather than universal laws: each configuration specifies the conditions under which a policy resource or restriction is likely to trigger a particular actor response and thereby influence implementation outcomes. Table 2 summarizes the configurations; the sections that follow explain how the evidence supports

and qualifies them.

Table 2. Context-mechanism-outcome configurations in green-development implementation

Configuration	Context	Mechanism	Outcome	Indicative evidence
CMO 1: Rights and authority	Meaningful recognition + clear decision space	Ownership, legitimacy	Cooperation and rule acceptance	Latif et al. (2024); Setyaka & Rahman (2025); Indrizal et al. (2026); Fischer et al. (2023)
CMO 2: Participatory institutions	Local organizations + transparent rule-making	Trust, reciprocity, collective efficacy	Adaptive governance and durable participation	Tomimi (2024); Sirimorok et al. (2024); Lestari et al. (2025)
CMO 3: Livelihood compatibility	Resource dependence + feasible benefit pathways	Economic security, perceived net benefit	Adoption and stewardship	Yudha et al. (2026); Yamamoto (2023); Situmorang et al. (2026); Annisa & Analisa (2026)
CMO 4: Administrative burden	Fragmented mandates + high procedural demands	Confusion, incapacity, unfairness	Low uptake, delay, symbolic compliance	Maryudi et al. (2022); Kamil et al. (2026); Syahputra et al. (2026); Campbell et al. (2025)
CMO 5: Marketized sustainability	Unequal capacity and market access	Buyer risk avoidance, capability mismatch	Passive exclusion and unequal benefit	Ekaputri et al. (2025); Nurliza et al. (2022); Ayompe et al. (2025)
CMO 6: Enforcement and threat	High livelihood dependence + weak participation	Threat appraisal, injustice, solidarity	Resistance, non-compliance, distrust	Yudha et al. (2026); Lynch & Turner (2022); Gilbert & Setyaka (2022)

Source: Authors' synthesis (2026).

1. Rights Recognition Produces Legitimacy Only When It Carries Decision Authority

The first configuration concerns the difference between recognition as administrative status and recognition as effective authority. In contexts where customary or community institutions have a recognized role and a credible ability to participate in decisions, recognition can activate a mechanism of legitimacy and ownership. Latif et al. (I. R. Latif et al., 2024) show why authority integration matters in the Gayo Highlands: village government and customary institutions both shape agricultural management, so sustainable governance requires coordination rather than parallel claims. The broader cross-national evidence on community forests is consistent with this logic. Formal community management associations and local participation in rule-making are associated with combinations of carbon, biodiversity, and livelihood benefits (Fischer et al., 2023). The mechanism is not recognition by itself; it is the experience that recognition changes the community's capacity to make or influence rules.

The opposite pattern appears when recognition is separated from material control. Setyaka and Rahman (Setyaka & Rahman, 2026) argue that green-capitalist governance can recognize Indigenous rights while re-scaling authority into administrative and market-compatible

forms. Indrizal et al. (Indrizal et al., 2026) demonstrate the local stakes of ambiguous authority in West Sumatran oil-palm development, where customary land arrangements eventually produced disputes over who had legitimate control and how plasma benefits were distributed. Evidence from Berau likewise shows that devolution does not consistently reduce forest loss when institutional robustness and livelihood preferences are misaligned; rights must be connected to workable governance rules and viable economic alternatives (Rochmayanto et al., 2023). Pratzer et al. (Pratzer et al., 2023) provide a comparative ecological-policy counterpoint: agricultural intensification was associated with forest sparing where Indigenous stewardship was widespread, suggesting that local stewardship institutions can condition whether a formally pro-development policy produces conservation-compatible outcomes. The implications at the community level also need to be examined across different groups. Greater authority for local institutions does not necessarily give every community member greater influence. Those managing these institutions may have different levels of access to information and bargaining power than ordinary members. The resulting CMO can be stated as follows: where recognition is accompanied by decision authority and institutional clarity (context), actors experience ownership and procedural legitimacy (mechanism), potentially supporting of cooperation and rule acceptance (outcome). Where recognition is nominal or authority remains contested, recognition may instead activate perceptions of dispossession or procedural unfairness, producing conflict or strategic disengagement.

Evidence and qualification. Six publications inform this configuration: I. R. Latif et al. (2024), Fischer et al. (2023), Setyaka and Rahman (2026), Indrizal et al. (2026), Rochmayanto et al. (2023), and Pratzer et al. (2023). They combine local institutional analysis, comparative governance evidence, and ecological associations. The recognition critique and the Berau findings qualify a simple positive account of devolution. Legitimacy and ownership are interpretive links in this synthesis; they are not uniformly measured across these publications.

2. Participatory Institutions Activate Collective Agency and Adaptive Governance

The second configuration concerns local institutions that transform participation from consultation into collective capacity. Community-based governance does not work simply because actors are invited to meetings. It works when participation creates usable rules, credible accountability, and relationships through which problems can be solved. Tomimi's (Tomimi, 2024) study of a Padang waste bank shows that transparency, communication, shared commitment, norms, and networks build trust that sustains collective environmental action. In social forestry, Sirimorok et al. (Sirimorok et al., 2024) show a similar mechanism through commoning: smallholder groups created collective local rules and activated informal relations and local knowledge to navigate formal administrative constraints. Participation therefore generates outcomes when it changes the social infrastructure of implementation.

Evidence from community forests in multiple tropical countries strengthens this interpretation. Fischer et al. (Fischer et al., 2023) found that local participation in rule-making

and formal community management associations were recurrent predictors of positive multi-dimensional outcomes. At the community-development level, Lestari et al. (Lestari et al., 2025) show that a tourism-awareness group can strengthen capacity and local economic opportunity, yet sustainability remains limited when coordination and infrastructure are weak and participation is concentrated in implementation rather than decision making. When local organisations provide opportunities for community members to voice concerns and participate in making rules, members may see their involvement as worthwhile and become more willing to uphold the resulting agreements. Attendance alone, however, is not enough to indicate a sense of ownership. Participation that depends on particular individuals or incentives also does not establish whether the organisation can sustain itself through internal change. These cases suggest a CMO in which organized local institutions, transparency, and genuine rule-making space (context) activate trust, reciprocity, accountability, and collective efficacy (proposed mechanisms), potentially supporting cooperation, adaptation, and more durable implementation (outcomes). When participation is limited to executing decisions made elsewhere, the same institutional label may generate compliance without ownership and become fragile when incentives or leadership change.

Evidence and qualification. Five publications contribute: Tomimi (2024), Sirimorok et al. (2024), Fischer et al. (2023), Lestari et al. (2025), and S. A. Latif et al. (2022). The last two qualify the proposition by showing the limits of participation confined to implementation or assistance reduced to transfers. The cases support attention to the substance of participation, but they do not establish its long-term durability. Local leadership, prior social ties, and outside support remain plausible alternative explanations.

3. Livelihood-Compatible Benefits Convert Environmental Goals into Policy Incentives

The third configuration concerns the economic meaning of environmental rules. Green policy is more likely to be accepted when communities can see a credible pathway from environmental action to livelihood security. Yamamoto (Yamamoto, 2023) demonstrates that ecosystem conservation itself can protect income: mangrove loss in Indonesia was associated with substantial reductions in fishery household income. He and Jiao (He & Jiao, 2023) similarly frame conservation-compatible livelihoods as a closed-loop relationship in which rural welfare and biodiversity conservation reinforce rather than negate each other. For public administration, this shifts the design problem. The relevant question is not whether a policy contains a livelihood component in formal documents, but whether affected groups can actually access and rely on that benefit.

The Indonesian evidence shows several routes through which this mechanism operates. Situmorang et al. (Situmorang et al., 2026) found stronger social-forestry sustainability where community institutions were more mature and socioeconomic benefits were greater. Willmott et al. (Willmott et al., 2023) show that diversified agroforestry can support multifunctional social-forestry outcomes, but resources, technical support, appropriate species selection, and

market mechanisms constrain implementation. In oil-palm supply chains, Annisa and Analisa (Febrina Nur Annisa & Analisa, 2026) find that shorter marketing channels produce higher farmer shares and income and recommend stronger farmer institutions and market information. Digital transformation can also open new livelihood pathways in forest communities, although it can create new consumption patterns and social changes (Mazya et al., 2023). These studies identify economic security and perceived net benefit as mechanisms that can translate environmental programmes into sustained local incentives.

The negative case is equally important. At Lake Maninjau, farmers resisted environmental restrictions because dependence on floating-net-cage aquaculture made policy costs immediate and livelihood alternatives uncertain (Yudha et al., 2026). The mechanism was not an abstract hostility to environmental goals; it was threat appraisal under economic dependence. From an analytical perspective, policy incentives and benefits need to be examined in terms of who receives them and when they become available. Seedling assistance, training, and access to markets may not compensate for income lost in the same month. Community members with assets, savings, and alternative sources of income may have greater scope to adapt. The CMO is therefore conditional: where environmental rules are accompanied by feasible alternatives, market access, productive support, or ecosystem benefits that communities can capture (context), actors perceive green implementation as compatible with livelihood security (mechanism), leading to adoption, cooperation, or sustained stewardship (outcome). Where restrictions remove income faster than alternatives become credible, the policy activates perceived loss and insecurity, increasing resistance or rule avoidance.

Evidence and qualification. Eight publications are mapped here: Yamamoto (2023), He and Jiao (2023), Situmorang et al. (2026), Willmott et al. (2023), Annisa and Analisa (2026), Mazya et al. (2023), Yudha et al. (2026), and Rochmayanto et al. (2023). They address ecosystem-dependent income, livelihood design, agroforestry, marketing, digital change, conservation conflict, and devolution. Their contributions differ: evidence of income effects does not establish policy acceptance, and a conceptual livelihood model does not establish programme effectiveness. The timing mismatch between restrictions and replacement income is a synthesis proposition requiring direct household-level testing.

4. Administrative Burden and Fragmented Bureaucracy Turn Formal Access into Exclusion

The fourth configuration is the most explicitly administrative. Green programmes often create permits, standards, verification procedures, group requirements, reporting obligations, training needs, and interactions with multiple agencies. These requirements can protect accountability, but they can also become learning, compliance, and psychological costs that are unequally distributed. Maryudi et al. (Maryudi et al., 2022) show how contested bureaucratic mandates and fragmentation can hold Indonesia's social-forestry objectives hostage. Intended beneficiaries face a policy whose formal commitment to devolution is

undermined by organizations pursuing competing mandates. Campbell et al. (Campbell et al., 2026) provide a broader public-administration explanation: administrative burdens are generated through implementation mechanisms such as devolution, conditionality, marketization, digitization, and frontline discretion, with consequences for procedural and distributive justice.

Social-forestry and sustainability evidence shows how this burden operates locally. Sirimorok et al. (Sirimorok et al., 2024) describe groups that succeeded partly because they could use collective local rules and informal relations to work through bureaucratic red tape, implying that groups without equivalent institutional capacity may be excluded. Kamil et al. (Ade Ikhsan Kamil et al., 2026) report that palm-oil good agricultural practice standards can be experienced as administrative and economic burdens when tenure is unclear, training and technology are limited, and trust is weak. Syahputra et al. (Syahputra et al., 2026) similarly find that sustainability certification has limited effects on core agricultural practices when technical and financial constraints persist. Thus, a policy can formally expand access while functionally selecting for actors with greater paperwork capacity, legal clarity, organization, finance, or external assistance.

The realist configuration is straightforward. Where mandates are fragmented and compliance requirements exceed local administrative, technical, or financial capacity (context), affected actors experience confusion, frustration, incapacity, and perceived unfairness (mechanisms). Outcomes include delayed implementation, low uptake, symbolic compliance, unequal access, and dependence on intermediaries. The policy implication is not simply to remove standards. It is to design administrative pathways proportionate to beneficiary capacity: clarify organizational mandates, reduce duplication, provide case management or extension support, recognize locally valid documentation where legally possible, and treat the time and learning costs imposed on citizens as implementation outcomes rather than invisible externalities.

Evidence and qualification. Four substantive publications inform this configuration: Maryudi et al. (2022), Sirimorok et al. (2024), Kamil et al. (2026), and Syahputra et al. (2026). Campbell et al. (2026) supplies a separate theoretical comparison and is not counted among the four. Sirimorok et al. provides a useful contrast: collective rules and informal relationships may help groups navigate burdens. The evidence therefore suggests uneven exposure and coping capacity, rather than a uniform effect of paperwork on every participant. Symbolic compliance is a possible outcome to investigate, not an outcome demonstrated in every mapped study.

5. Marketized Sustainability Can Passively Exclude Weaker Actors

The fifth configuration concerns access to sustainability markets. Certification and sustainable supply-chain policies are often attractive because they mobilize private buyers, traceability, premiums, and standards. However, market inclusion is not guaranteed by formal eligibility. Ekaputri et al. (Ekaputra et al., 2018) show that independent oil-palm smallholders contribute

substantially to regional production yet remain strongly underrepresented in certified-mill supply. Independent smallholders were underrepresented in certified mill supply, while the study found no evidence of their active exit following certification through 2020. Persistent limited access is therefore more strongly supported than a claim that certification abruptly displaced existing suppliers. The observation identifies an exclusion pattern; it does not, by itself, directly measure buyer motives.

Other studies identify the capability conditions behind this pattern. Nurliza et al. (Nurliza et al., 2022) find that farmer organization is central to the environmental, social, and economic benefits associated with sustainability standards. Ayompe et al. (Ayompe et al., 2025) emphasize stakeholder collaboration, adaptive management, finance, capacity building, and supply-chain integration in frameworks for sustainable palm-oil smallholders. Kamil et al. (Ade Ikhsan Kamil et al., 2026) show that globally framed standards can conflict with local tenure systems and agrarian practice, while Syahputra et al. (Syahputra et al., 2026) demonstrate that certification alone does not resolve technical and financial constraints to good agricultural practices. In this setting, standards create value for actors who can satisfy them, but the ability to satisfy them is itself institutionally produced.

This creates a fifth CMO. When sustainability markets operate in contexts of unequal legal status, finance, organizational strength, information, and buyer access, private actors respond to risk by sourcing from easier-to-verify or better-connected suppliers (mechanism). Smallholders may then be passively excluded or receive environmental obligations without proportional market benefits (outcome). By contrast, producer organization, extension, accessible finance, traceability support, and direct market channels can change the mechanism from selection to inclusion. For public administrators, market-based green policy therefore requires an inclusion architecture. The state cannot assume that setting a standard or endorsing certification automatically creates equal opportunity to enter the upgraded market.

Evidence and qualification. Five publications contribute: Ekaputri et al. (2025), Nurliza et al. (2022), Ayompe et al. (2025), Kamil et al. (2026), and Syahputra et al. (2026). Ekaputri et al. provides the principal evidence for passive exclusion. The others address organizational conditions, framework design, and barriers to adopting standards. They support related parts of the explanation rather than five independent demonstrations of passive exclusion. Buyer risk appraisal remains an inference, and geography, existing procurement relations, and tenure restrictions are competing or complementary explanations.

6. Top-Down Enforcement Under Livelihood Threat Activates Resistance and Counter-Politics

The sixth configuration explains why some green policies generate direct or covert resistance. Conservation restrictions redistribute access to resources, time, mobility, and income. When

rules are perceived as threatening established livelihoods and affected groups have little influence over design, compliance may be understood as surrender rather than cooperation. Yudha et al. (Yudha et al., 2026) show this clearly at Lake Maninjau, where farmers' resistance included rule violation, rejection of pollution claims, and symbolic action. Lynch and Turner (Lynch & Turner, 2022) similarly show that conservation policies in Wakatobi can generate everyday resistance when rules fail to account for livelihood and cultural realities, with responses differentiated by gender, ethnicity, and class.

The same mechanism is visible in agrarian transitions. Gilbert and Setyaka (Gilbert, 2022) describe a capitalist squeeze on Krui agroforestry in which market, government, agribusiness, inheritance, drought, and local trade relations combine to weaken a locally important forest-production system. Indrizal et al. (Indrizal et al., 2026) show how development around customary land can produce internal and external conflict where benefits and authority are opaque. Kamil et al. (Ade Ikhsan Kamil et al., 2026) demonstrate that technocratic sustainability rules can lose legitimacy when they are imposed top-down and do not align with agrarian culture. These cases suggest that resistance should not be treated merely as an information deficit or irrational opposition to sustainability.

The CMO is therefore: in contexts of high resource dependence, weak participation, contested authority, or uneven benefit distribution, restrictive enforcement may activates livelihood threat injustice (proposed mechanism), contributing to overt resistance,, covert non-compliance, political mobilization, or erosion of trust (outcomes). This does not imply that environmentally harmful practices should be left unregulated. It implies that implementation must distinguish between ecological necessity and governance strategy. Enforcement is more likely to be durable when restrictions are sequenced with credible alternatives, compensation or transition support, legitimate local mediation, transparent evidence, and opportunities to contest or revise implementation details.

Evidence and qualification. Five publications inform this configuration: Yudha et al. (2026), Lynch and Turner (2022), Gilbert and Setyaka (2022), Indrizal et al. (2026), and Kamil et al. (2026). The first two directly address conservation-related resistance; the remaining studies provide related accounts of agrarian pressure, contested benefits, and legitimacy. The Krui case should not be treated as a direct test of conservation enforcement. Gender, class, ethnicity, and dependence on resources may change who bears costs and how resistance is expressed. Shared exposure to a restriction does not imply a uniform community response.

7. Green Implementation Alignment Framework

GIAF organizes the six configurations into five domains of implementation. Rights concern the security and usability of recognized access. Authority concerns who can make decisions and

whether responsibilities across institutions are workable. Livelihoods concern accessible benefits, transition costs, and the timing of income. Capability concerns whether administrative, technical, organizational, and financial requirements can be met. Accountability concerns information, influence, explanation, and redress. These domains summarize the relations examined in the configurations. They have not been established as statistically independent dimensions or as a necessary-and-sufficient set of conditions for success.

The contribution lies in specifying dependencies between domains. CMO 1 suggests that recognition may have limited value when decision authority remains elsewhere. CMO 4 suggests that clarifying mandates may achieve little for participants who cannot meet compliance requirements. CMO 5 suggests that certification support may not secure market entry when procurement arrangements remain closed. CMO 6 suggests that participatory procedures may fail to reduce opposition if immediate livelihood losses remain unresolved. These are explanations to test in particular settings. The synthesis does not establish a universal sequence, an additive alignment score, or a threshold beyond which implementation succeeds.

For evaluation, the framework separates administrative outputs, actor responses, and substantive outcomes. Permits, training, and meetings are outputs; perceived security, fairness, or affordability are possible intermediate responses; resource use, income, and ecological change are outcomes. Measuring one does not establish the others. An evaluation should combine administrative records with accounts from affected groups and track changes over time. It should also consider rival explanations such as commodity prices, political brokerage, enforcement intensity, and the quality of local leadership.

Table 3. Green Implementation Alignment Framework for public administrators

Alignment domain	Policy-design question	Mechanism sought	Implementation indicators
Rights alignment	Does recognition provide secure access and meaningful control, or only formal status?	Security, ownership, willingness to invest	Tenure disputes; reversal; unresolved claims
Authority alignment	Are state, local, customary, community, and private responsibilities coherent?	Predictability, legitimacy, coordinated action	Conflicting mandates; duplication; unresolved authority
Livelihood alignment	Can affected groups capture viable benefits or transition support?	Perceived net benefit, reduced threat	Income change; market access; livelihood diversification
Capability alignment	Are administrative, technical, organizational, and financial demands feasible?	Self-efficacy, compliance capacity	Processing time; dropout; training/finance access
Accountability alignment	Can participants obtain information, influence rules, and seek redress?	Trust, reciprocity, procedural fairness	Participation quality; transparency; grievance resolution

Source: Authors' synthesis (2026).

4. Conclusion

This study develops six explanatory configurations to understand variation in responses to green development. The significance of rights recognition, participation, economic benefits, administrative requirements, market arrangements, and restrictions on resource use depends on the circumstances communities face. The central conclusion is that policy acceptance or rejection needs to be examined alongside people's ability to exercise their rights, sustain their livelihoods, and influence implementation. The proposed configurations help frame causal questions but do not establish a single pathway that applies across all policies or communities.

This realist synthesis shows that green-development policy outcomes cannot be explained by environmental ambition alone. Across social forestry, conservation, community environmental governance, sustainable palm oil, agroforestry, and livelihood programmes, similar policy goals produced different outcomes because implementation activated different mechanisms under different institutional conditions. Six recurrent configurations were identified: meaningful rights recognition; participatory collective agency; livelihood-compatible incentives; administrative burden and bureaucratic fragmentation; passive exclusion through marketized sustainability; and resistance under livelihood-threatening top-down enforcement.

The synthesis develops the Green Implementation Alignment Framework around five domains: rights, authority, livelihoods, capability, and accountability. These domains are analytically distinct but causally interdependent. Green policy becomes more implementable when recognition changes real decision rights, institutional roles are coherent, livelihood pathways are credible, compliance demands are feasible, and affected communities can participate and hold implementing actors accountable. Misalignment produces the opposite mechanisms: insecurity, confusion, perceived unfairness, incapacity, exclusion, and resistance.

For public administration, the practical implication is that implementation design must be treated as part of environmental policy design from the beginning. Administrators should assess beneficiary burdens, institutional overlaps, market-access barriers, local authority structures, and transition costs before assuming that a formally sound green programme is locally feasible. Future research should test and refine the GIAF through comparative policy studies, process tracing, and longitudinal evaluations across Indonesian regions and policy instruments. A larger database-derived realist review could also examine whether the same configurations hold beyond the recent evidence set used here. The central policy lesson is that sustainable outcomes depend not only on what governments ask communities to do, but on whether governance arrangements make that action legitimate, feasible, and worth sustaining.

5. Ethics Approval

This study does not involve human participants, personal data, or animal subjects. Therefore, ethics approval was not required.

6. Author Contributions

Ilham Aldelano Azre contributed to the conceptualization, methodology, formal analysis, investigation, and preparation of the original draft. Annisa Aulia Putri contributed to the literature review, data curation, validation, and writing, reviewing, and editing of the manuscript. Erlina Gusti contributed to supervision, validation, critical review, and editing. All authors have read and approved the final version of the manuscript.

7. Declaration on the Use of AI and AI-Assisted Technologies in Writing

The authors declare that AI and AI-assisted technologies were used in the preparation of this manuscript to support language refinement and improve clarity. All AI-generated or AI-assisted content was reviewed and verified by the authors, who take full responsibility for the accuracy, integrity, and originality of the manuscript.

8. Declaration of Competing Interest

The author declares that there are no known financial interests or personal relationships that could have influenced the research and writing of this article.

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11. Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request, subject to applicable confidentiality and ethical considerations.

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