

## Article

# Discretionary Operations of Frontline Forest Bureaucrats in Tropical Developing Countries: A Case Study from Java, Indonesia

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**Abstract:** Detailed exploration of why and how a certain forest management operation was not implemented will lead to more nuanced understandings of local policy realities. Drawing on the viewpoints of street-level bureaucracy, the present study examined discretionary operations practiced by frontline forest bureaucrats in Java, Indonesia. The study particularly focused on how changes in wider political economic situations affected power relations between frontline forest bureaucrats and locals, and how changed power relations generated discretionary operations both in regulatory and facilitation aspects. The author combined various data collection methods, including a mail-out questionnaire survey for frontline forest bureaucrats, a survey through in-person interviews of village representatives, a survey through in-person interviews of household heads in a village, and participatory observations of events in villages. The findings showed that frontline forest bureaucrats' discretion included both creative and passive forms; whereas they attempted to accommodate contrasting policy goals of protecting forests and meeting local demands for forests, they felt hesitation to cope with local situations due to increasing bargaining power of locals that resulted from recent democratization processes. Policy options or organizational measures to remove the conditions that result in negative types of discretion should be deliberated based on the realities of frontline forest bureaucrats.



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**Keywords:** policy implementation; street-level bureaucracy; political economy; policy goals; stakeholders; regulatory practices; facilitation; local livelihoods

## 1. Introduction

Understanding the implementation of public policy has been a difficult problem; public policies are often not implemented on the ground, as they were determined by lawmakers in a parliament or by high-ranking officials of a ministry. Actual processes of policy implementation are far more complex; therefore, enriching the understanding of such processes is of great importance [1,2].

In the tropical forest sector, it is common that forest policies are not actually implemented or are implemented in unexpected ways on the ground [3]. Such observed outcomes could be regarded simply as a “failure” of policy due to a lack of budget and human resources [4]. Such an account may be at least partly true, given the conditions of tropical developing countries. However, detailed exploration of why and how a certain forest management operation was not implemented will lead to more nuanced understandings of local policy realities in the tropical forest sector.

The present study provides a detailed case study analysis of discretionary operations practiced by frontline forest bureaucrats in Java, Indonesia. Forests in tropical developing countries have been mostly under state ownership due to the nationalization processes in the colonial period [5,6]. Forest bureaucrats; i.e., officers working for agencies or departments responsible for state forest management, administer and manage these forests. Their operations have included regulatory measures such as patrols or policing of local people.

Recently, in the context of increasing evidence of devolution of forest management rights to local communities [7,8], the conventional regulatory role of forest bureaucrats might be weakened, and new tasks such as facilitating community engagement are generally added. In any sense, forest administrators can continuously have a large influence on tropical state forest management in practice. To focus on frontline bureaucrats is of great importance when it comes to why and how a policy is (not) implemented as expected.

One of the influential theories informing the realities of public policy implementation is street-level bureaucracy. Michael Lipsky defined street-level bureaucrats as “public service workers who interact directly with citizens in the course of their jobs, and who have substantial discretion in the execution of their work” [9]. Examples of street-level bureaucrats include teachers, police officers, social workers, judges, public lawyers, and health workers. According to Lipsky, contrary to the general image of “rigid” bureaucracy, street-level bureaucrats have a large degree of discretion in their daily operations. Such frontline workers may determine the recipients of a public service, may tacitly exclude or pass over certain people for the delivery of a public service, or may give greater access to information related to a public service to certain people within the boundaries of existing laws and regulations. Frontline workers have a significant influence on delivering public services on the ground, and general citizens encounter and experience the state via these frontline workers. The work of street-level bureaucrats can be particularly characterized by the chronic inadequacy of human resources for the tasks and by ambiguity, vagueness, and conflict over expectations of goals and measurement of work performance [9]. In addition, street-level bureaucrats and service recipients develop contextual relationships, often affected by their everyday lives as well as by certain cultural or ethnic background or social class commonalities. These conditions work as a foundation for discretionary behavior.

However, such discretionary operations are not necessarily negative; rather, discretion may be crucial to making things work in the realities of street-level bureaucrats’ working conditions and relationships with the recipients of public services. Lipsky did not focus on “what street-level bureaucrats *should* do”, but instead focused on “what they *did* and why” [10]. In other words, the policies that work are only those that are compatible with the ground realities of frontline bureaucrats. Applying the perspective of street-level bureaucracy and considering how and why discretion is exercised by frontline forest bureaucrats would help us understand the complex realities of policy implementation.

In the following sections, the author will first review previous studies related to street-level bureaucracy and discretionary operations by forest officials in forestry and natural resource management sectors. For a deeper synthesis, the author also reviews studies about developed countries in addition to those about tropical developing countries. The review will identify the importance of making analyses that focus on changing political economy and power relations between forest bureaucracy and local people in contemporary tropical countries. Java in Indonesia was selected as the case study site. Findings obtained through various data collection methods will be presented, followed by discussions about what kinds of policy implications can be derived.

## 2. Background

### 2.1. Street-Level Bureaucracy in the Tropical Forest Sector

Several studies indicate that frontline forest bureaucrats may tacitly avoid regulating or policing “illicit” local forest use in light of local circumstances (e.g., poverty, peasant resistance, and so on) in tropical developing countries. Kubo [11] reported that frontline forest bureaucrats in a national park in Indonesia exercised various types of discretionary decision making. The discretionary operations included implicitly allowing fuel wood and fodder collection, which is illegal inside national parks. Robbins et al. [12] analyzed conservation practices and local forest resource use in a protected area of India and found “conservation noncompliance” by frontline forest bureaucrats. Hyakumura [13] reported that local forestry officials did not strictly apply the regulations of the ban on swidden agriculture, thereby securing local livelihoods. These studies described the cases as “discre-

tionally decision making” [11], “conservation noncompliance” [12], and “slippage” [13]. They did not interpret discretion in regulatory practices negatively, since such discretionary operations provided room for accommodating local needs related to forest resources.

However, the non-application of regulatory rules can be double-sided. For example, frontline staff may tacitly permit existing encroached plots on forestland while prohibiting new clearing of forests for cultivation. This can be regarded as a passive type of discretionary decision, as this kind of inaction maintains the status quo and does not solve local resource problems at a fundamental level [11].

Another important point mentioned in these studies is that frontline forest bureaucrats are caught up in the existing local situations; therefore, it is often difficult to enforce the law or policy as stipulated. If strict enforcement of the law was applied, such as through evictions, antagonistic protests might have taken place, resulting in higher transaction costs for frontline forest bureaucrats [11]. Thus, the implementation of regulatory operations could be the result of frontline forest bureaucrats’ deliberations with respect to the relationship with local villagers. This indication was reinforced by Vasan’s [14] ethnographic study of the social and professional aspects of Indian frontline forest bureaucrats. Frontline forest bureaucrats’ identities could be ambiguous; for one thing, they are bureaucrats, but at the same time, they are residents in villages. They have to manage good relations with villagers: sometimes they may have to behave as a patron, and sometimes they may have to show mercy regarding illicit activities. Frontline forest bureaucrats’ behavior is not independent of local human relations, but rather is embedded in local political economic circumstances.

With respect to facilitation under participatory approaches, frontline forest bureaucrats are responsible for supporting or facilitating bottom-up processes among communities or forest user groups. Such tasks may include preparing management plans, applying forest resource uses, and tasks related to development projects. Focusing on community forestry policy in Nepal, Uprety [15] reported cases of informal coping strategies of frontline forest bureaucrats—such as gatekeeping, cartelization of clients, and withholding of information—in circumstances where human and budgetary resources were limited and local demand for government support was high. Addressing community-based forest management policy in the Philippines, Sugimoto et al. [16] presented a case wherein frontline bureaucrats worked to coordinate stakeholders by prioritizing the interests of certain stakeholders in the local context of a community forestry project. These two studies positively evaluated street-level bureaucracy as a way that can help frontline forest bureaucrats cope with existing realities.

At the same time, several studies have reported cases where street-level bureaucracy was used to manipulate participatory processes and control forest resource users through facilitation aspects. Basnyat et al. [17,18] analyzed perceptions among community forest user groups in Nepal on several topics—such as the preparation of management plans and annual plans, silvicultural technical support, etc.—in terms of several elements of street-level bureaucracy, including discretion and responsiveness. He discovered “bureaucratic recentralization”: frontline forest bureaucrats not doing things they should have done, such as provide technical support free of charge, and manipulating local processes in the direction of strengthening their own power. Additionally, many studies of India have indicated that although frontline forest bureaucrats were expected to facilitate collaborative processes under joint forest management programs, such participatory processes had not taken place. Local processes were firmly under the control of state forest departments, and everything was established by frontline forest bureaucrats in a top-down manner [19–21]. These studies can be understood as cases where the required decentralization is hindered or manipulated by the discretion of frontline forest bureaucrats.

Matta et al. [22] and Sood and Gupta [23] addressed the perceptions of joint forest management among various forest officials, from frontline forest bureaucrats to higher-ranking officials, in India. They discovered that forest officials felt that embodying the concept of participatory approaches at the local level would be difficult due to the existing organizational hierarchical culture of forest departments. Fleischman [24] analyzed why

Indian foresters were eager to plant trees even though tree-planting is not actually a suitable policy tool for sustainable forest management. He used five logics—rent-seeking, discursive power, institutionalized incentives, scientific bureaucracy, and professionalism—and two phases of analysis—adoption by high-ranking forest bureaucrats and implementation by frontline forest bureaucrats. He discovered that forest bureaucrats' tree planting was driven by multi-causal processes of several logics, implying that what foresters did in the field might differ from what the policy specified, as it was influenced by the combination of professional values (logics) held by foresters. Fleischman [25] reviewed tendencies of forest bureaucracy in India and developed a typology of institutions among forest bureaucrats; i.e., imposed, sly, adapted, and tacit.

## *2.2. Street-Level Bureaucracy in Forestry and Natural Resource Management in Developed Countries*

In the context of developed countries, many studies have addressed challenges to balance or accommodate contradictory policy goals and various stakeholders in resource management policy. The most notable example is a shift from timber production-oriented policy to nature conservation-oriented policy due to the increased societal demand for protecting the environment. Stakeholders often become diverse and include local residents, politicians, and scientists, resulting in more complex and difficult negotiation processes for frontline staff. Maier and Winkel [26], in taking up the case of the German public forest sector, examined how implementation of integrative nature conservation policies can be affected by five factors; i.e., individual, contextual, external, organizational, and political. They discovered that rangers were supportive of implementing nature conservation, but perceived that their local actions were strongly influenced or potentially hindered by contextual, organizational, and external factors, including available human resources and the agency's economic goal. Maier and Abrams [27] reported that US district rangers were caught up in dilemmas of contradictory management goals and various local stakeholders who may veto rangers' decisions. Fleischman [28] also presented similar insights that the US Forest Service has been significantly affected by political coalitions of environmentalists since the 1960s. Putkowska-Smoter and Niedziałkowski [29] discovered that street-level bureaucrats in Poland may distance themselves from new environmental demands and expectations when they perceive that such new directions are constructed by certain fractions of society whose scientific knowledge is inadequate and inappropriate. Cinque et al. [30] indicated that in large carnivore management in Sweden, county administrative board managers faced dilemmas in balancing and aligning policy goals (effectiveness) and public participation (responsiveness), and they prioritized effectiveness by focusing more on scientific knowledge and regulations than on local knowledge and collaboration. These studies indicated that street-level bureaucrats' discretion is strongly influenced by their professional values, and at the same time they are likely to perceive that their professionalism and autonomy is being lost due to increasing social embeddedness and the influence of external actors.

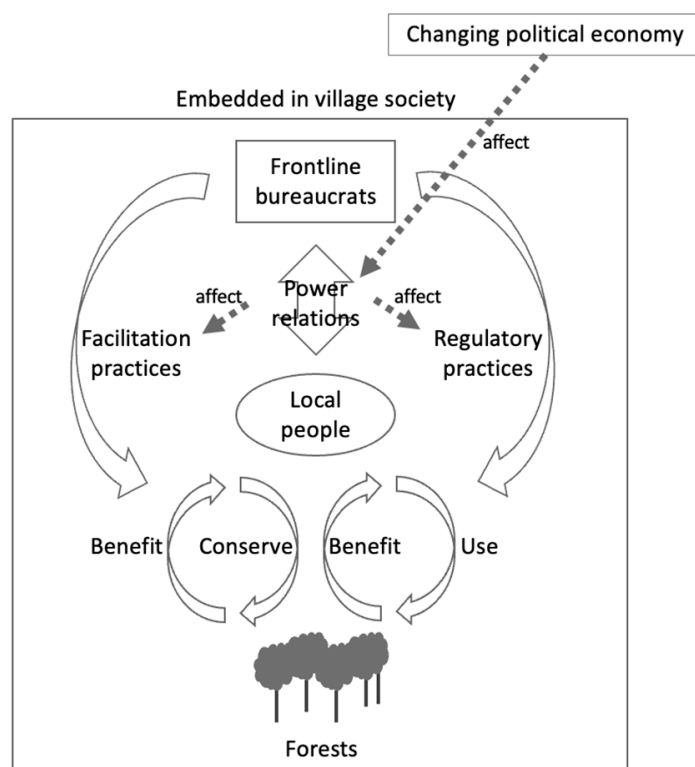
Other previous studies include Sevä and Jagers [31], which compared Swedish fishery management and water management bodies, and confirmed that capacity and freedom to exercise discretion could be contradictory with pre-existing assumptions; i.e., hierarchical organizations may allow greater freedom of action; Trusty and Cervený [32], which found that there were variations in values among resource professionals in the US Forest Service, and these diverse values could lead to discretionary operations; Schweizer [33], which developed a framework for law activation strategies that was meant to analyze which actor applied what strategy to activate a law (implement a policy) in a political game; and Zachrisson et al. [34], which analyzed collaboration strategies of environmental officials and project leaders in Sweden using a typology of confirmation, consultation, facilitation, and negotiation.

### 2.3. Analytical Viewpoints

The author's synthesis of the previous studies provides several important implications. First, various kinds of discretionary operations can take place in the tropical forest sector, ranging from positive or creative to negative or passive. It also suggests distinguishing regulatory and facilitation aspects. Second, frontline forest bureaucrats are embedded in rural society, and hence their behavior should not be analyzed in isolation from village-level circumstances. Third, research on frontline forest bureaucrats should involve viewpoints of dilemmas with contradictory policy goals. In developed countries, policy gaps are likely to be between forest administrators' operations of forestry production and societal expectations for nature conservation. However, in developing countries, forests and forestland are an important source of local livelihoods, and hence gaps between forest administrators' control, either of forestry production or conservation, and local demands for forest resources should have a greater emphasis. Fourth, to capture realities of the tropical forest sector where contextual human relations matter as related to daily forest use and village-level projects, it is desirable to include information from field observations in addition to perceptions among frontline forest bureaucrats.

The author should add one more viewpoint. In contemporary tropical countries, changes in political economic situations can be extensively observed. Particularly in Asia, democratization and decentralization have been generally implemented in the forest sector [35–37]. In the context of growing citizens' voices, the conventional power of bureaucracy might decrease. Hence, wider political economic changes should be incorporated in the analysis of the tropical forest sector.

Thus, the present study proposed a conceptual framework to analyze how changes in wider political economic situations; e.g., democratic transition, political decentralization, etc., affect power relations between frontline forest bureaucrats and locals, and how changed power relations generate discretionary operations both in regulatory and facilitation aspects (Figure 1).



**Figure 1.** Framework to analyze discretionary operations by frontline forest bureaucrats in tropical developing countries.



### 3. Materials and Methods

#### 3.1. Case Selection

The present study applied a case study method that focused on a particular sector in a particular locality. In general, case study approaches can effectively deal with how a program is actually implemented [38]. The present study involved the clarification of actual processes of policy implementation by frontline forest bureaucrats, and hence a case study approach was suitable. Previous studies also applied case study methods in a particular sector and locality [26,29].

The present study selected teak plantation regions of Java in Indonesia as the case study site. Unlike other parts of Southeast Asia, a rigid forest administration has been in place in Java since the Dutch colonial period. Since 1972, *Perum Perhutani*, or the State Forestry Corporation (SFC), has functioned as a forest administration body. The SFC has established and operated an intensive management system for high-value teak (*Tectona grandis*) plantation forests, with clearly demarcated forestlands, systematic and detailed management plans, and professional foresters.

In terms of demography, Java has high population density (i.e., more than 1000 people/km<sup>2</sup>). Intense demand from locals for smallholdings inside forestland is evident. A classic study [6] characterized the conventional situation of rural Javanese forestry areas as having “rich forests, poor people,” as the SFC’s rigid control over forest resources has typically perpetuated the impoverishment of locals.

The relationship between the forest administration and local communities on Java has changed drastically since 1997. Triggered by political economic turmoil due to the Asian financial crisis and the collapse of the Suharto regime, looting of plantation forests (in the form of illegal logging and unofficial cultivation on forestlands) intensified sharply in the late 1990s [39]. The illegal logging occurred particularly in teak plantation regions. As the structure established by the SFC became paralyzed, forest management became impossible to control. To cope with the situation, the SFC established *Pergelolaan Sumberdaya Hutan Bersama Masyarakat*, or Joint Forest Management (JFM), in 2001. JFM is a community forestry initiative in which committees, known as *Lembaga Masyarakat Desa Hutan*, are formed at the village level, and the SFC cooperates with these committees to manage state forests through formal contracts. Official benefit-sharing mechanisms from forestry production represent one of the most distinctive features. However, evaluations of JFM are mixed; a body of evidence indicates ineffective, inequitable implementation conditions and outcomes [40].

Overall, the above-mentioned political and institutional changes have led to greater bargaining power on the part of the locals counter to the SFC [41,42]. This tendency has also been backed by the general trends of democratization in Indonesia after the 2000s. Thus, the author chose teak plantation regions in contemporary Java as a case where the authority and power held by the forest administration has been decreasing while the bargaining power of the locals has been increasing. This case was suitable for using the developed framework to observe how frontline forest bureaucrats manage regulatory and facilitation processes in the changing political economic relations with the locals.

The present study particularly focused on the Randublatung Forest District in Central Java. This forest district is one of the major teak plantation regions in Central Java. Similar to other parts of Java, the state forests in the Randublatung Forest District have been severely degraded, particularly due to widespread illegal logging and unofficial forestland cultivation during the insurgent period of 1997–2003. Before 2003, the extensive looting of forests led to a drastic increase in nonproductive forest areas; however, the damage was not so severe as to denude all forest areas in the district.

In the Randublatung Forest District, JFM has been in place since approximately 2003; as of the beginning of 2018, a total of 34 JFM committees were established, one in each of the 34 villages in the district. According to forest district-wide data for Central Java, the amount of monetary benefit sharing under JFM is largest in Randublatung.

### 3.2. Data Collection and Analysis

The present study involved various methods of data collection and diverse sources of information to best capture the actualities of frontline forest bureaucrats. Before the data collection process started, the author visited the Randublatung Forest District office of the SFC in August 2016, January 2017, and January 2018 to confirm official documents and statistics related to forest administrative systems.

First, the author conducted an anonymous mail-out questionnaire survey for all field frontline forest bureaucrats in the forest district in January 2018. The present study defined frontline forest bureaucrats as forest guards, foremen, and forest police officers. A total of 267 responses were collected, which was equivalent to 94.7% of the total number of forest guards, foremen, and forest police officers in the district. The topics in the survey that were related to the regulatory aspect included the frequency of encountering forest offenses (i.e., illegal logging, illegal collection of firewood, newly started forestland encroachment, and illegal grazing) in the previous year, experiences of intentionally overlooking such offenses, and reasons for overlooking offenses. The topics in the survey that were related to the facilitation aspect included perceptions of the JFM committees.

Second, the author conducted surveys on 14 randomly selected JFM committees in the Randublatung Forest District in August 2016 and January 2017. Surveys were carried out through in-person interviews with the presidents and other executive members of the committees, and dealt with basic characteristics of the committees, uses of shared benefits in the village, and activities conducted by the committees under JFM.

Third, the author conducted household surveys in a village in January 2018. The village (pseudonymously called Bodang) had extensive evidence of forestland encroachment. The author collected the household-level data from 43 randomly selected respondents. Topics included basic characteristics of the household, livelihood activities, and farming plots outside and inside the forestland.

Fourth, during the period when the author was engaged in the second and third data collection processes in rural areas, participatory observations of the village dairy situation and events related to forest management were made. Observations involved informal conversations with frontline forest bureaucrats and locals. The second, third, and fourth processes provided evidence of how forest policy is implemented on the ground by incorporating villagers' views and activities, and served as supplementary information to the data collected through mail-out questionnaires. The data collection methods applied are summarized in Table 1.

**Table 1.** Data collection methods applied.

Approach	Questionnaire About Frontline Forest Bureaucrats' Operations and Perceptions	Village-Level Data Collection to Confirm Actual Policy Implementation
Quantitative	Mail-out questionnaire survey for frontline forest bureaucrats <i>n</i> = 267	Survey through in-person interviews of 14 village representatives <i>n</i> = 14
		Survey through in-person interviews of household heads in a village (Bodang) <i>n</i> = 43
Qualitative		Participatory observations of events in villages

Quantitative data were summarized as descriptive statistics to be presented as tables or figures. Regarding the organizational settings of frontline forest bureaucrats, roles among foremen are divided, so foremen of a certain role skipped the questions meant for foremen of another role. As a result, the numbers of respondents for some questions were less than 267. The numbers of valid responses are provided in each table and figure in the Results section. Quantitative information that was recorded in the author's notebooks was analyzed in terms of the analytical framework.

## 4. Results

### 4.1. Administrative Settings of Frontline Forest Bureaucrats at the SFC

Similar to other forest administration bodies across the world, the SFC has a hierarchical organizational structure. The most important unit in local forest management is the forest district (KPH), and the head of a forest district office is the administrator (ADM). Administrators are the top managers in local forest management, and they are not regarded as frontline forest bureaucrats. The territory of a forest district is divided into several sub-districts (BKPH), which are further divided into several resorts (RPH). The heads of a sub-district and a resort are the forest ranger (*asper*) and the forest guard (*mantri*), respectively.

Resorts are the lowest unit of administration of the SFC, and their offices are generally located in village areas. A forest guard has several subordinates called foremen (*mandor*). Foremen are categorized into several types: foremen for seeding, planting, tending, felling, and patrolling. The categories from seeding to felling involve the silvicultural operations needed for teak plantation forests, while patrolling spans all these phases and involves protecting tree standings from illicit felling or extraction.

Apart from these officials, there are several forest police officers (*polhut mob*) who rush to the scene where/when needed. They are not stationed at any single resort, but rather are a mobile brigade covering the entire forest district.

The present study defined forest guards, foremen, and forest police officers as frontline forest bureaucrats. Table 2 shows the numbers of these officers in the Randublatung Forest District at the time of the survey (January 2018). It should be noted that there were no special foremen for JFM.

**Table 2.** Staffing of frontline forest bureaucrats in the Randublatung Forest District (January 2018).

Position		Number of Personnel
Forest Guard ( <i>Mantri</i> )		43
Foreman ( <i>Mandor</i> ) for	Seeding	3
	Planting	27
	Tending	10
	Felling	33
	Patrolling	152
Forest Police Officer ( <i>Polhut Mob</i> )		14
Total		282

(Information provided by the Randublatung Forest District office).

### 4.2. Regulatory Aspects

#### 4.2.1. Findings from the Questionnaire Results

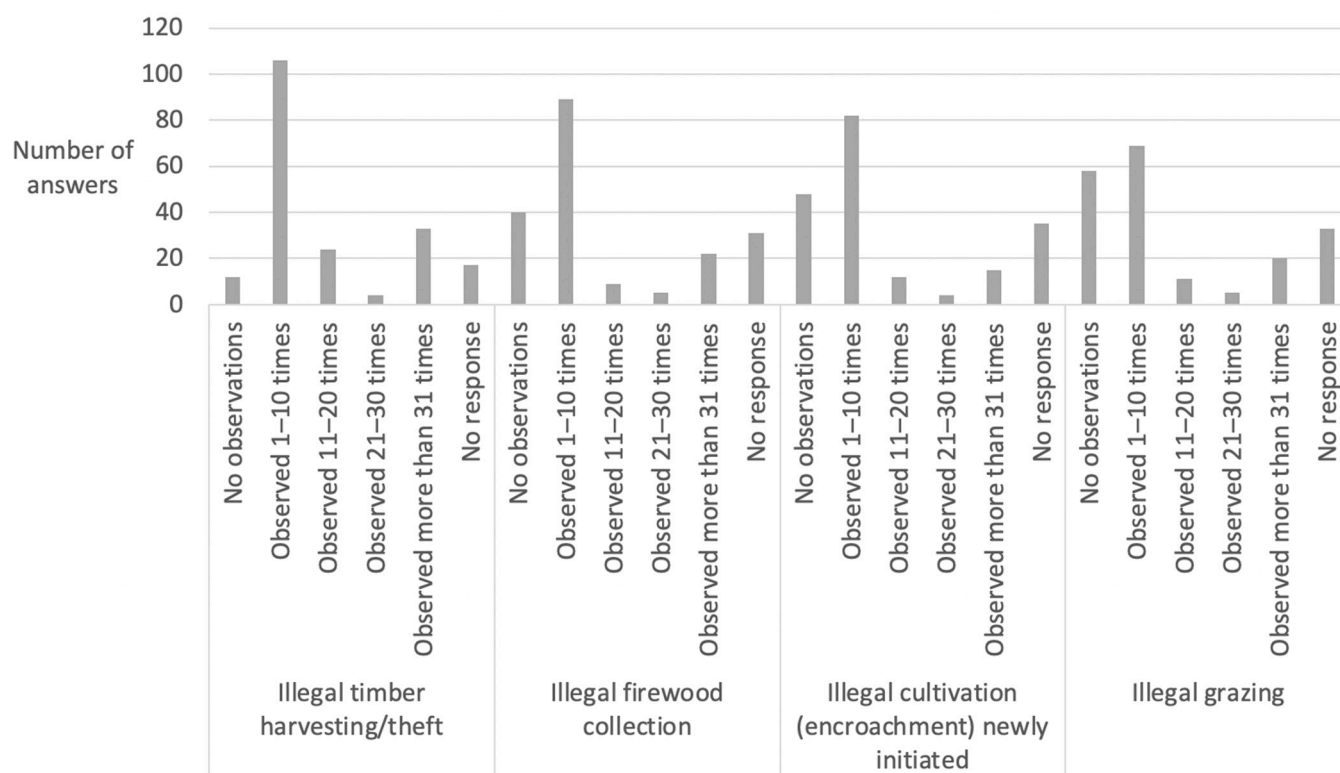
The SFC explains their strategy of forest protection as “preemptive, preventive, and repressive.” Preemptive measures involve establishing formal and informal relationships with villagers, all the while being respectful of them, in order to detect and monitor any signs of (impending) forest crimes. Specific methods include attending community events, socializing about the importance of forests, and supporting the community in solving problems. The SFC recognizes that the preemptive aspect is of primary importance; a few forest guards told the author that they always keep in mind that frequent visits to villages are important. Close relationships with villagers can lead to greater information provision, such as short-message services from villagers via mobile phones.

Preventive measures include routine patrols by thoroughly roaming the forest areas. Patrolling is one of the most important routine tasks for forest guards and patrolling foremen. They work in shifts, every day, around the clock. Forest guards are responsible for administering patrol activities in their resorts.

Repressive measures involve policing activities after an offense has occurred. Specific tasks include securing the site where a forest offense was perpetrated, searching for or arresting the perpetrators, securing the evidence, and making records. In the Randublatung



Forest District, various forest offenses were evident; Figure 2 shows rough estimates of the frequency of illegal activities. The author's questionnaire asked the forest guards, foremen for patrolling, and forest police officers—a total of 196 respondents—to score the frequency of encountering illegal activities. The numbers in Figure 2 indicated that many frontline forest bureaucrats have encountered illegal activities; in particular, approximately 85% of the respondents have encountered illegal timber harvesting/theft at least more than one time in a year.



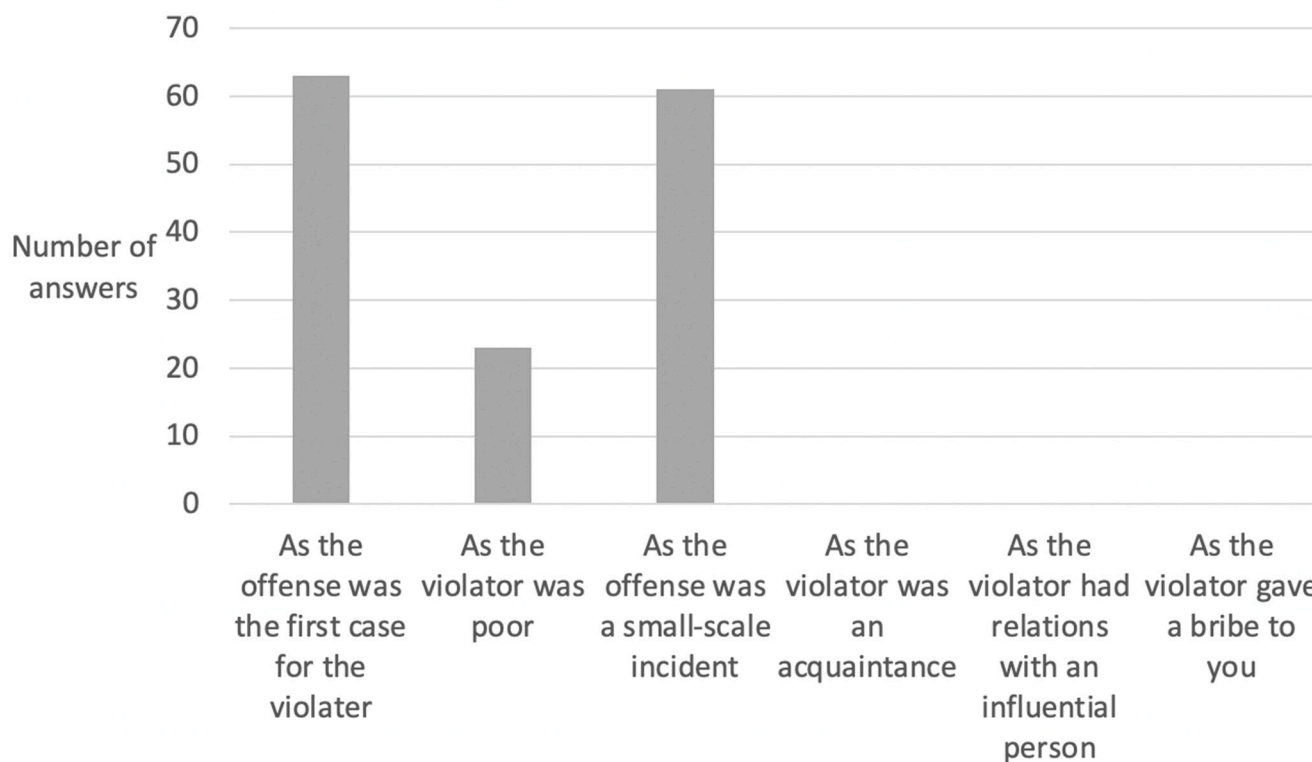
**Figure 2.** Frequency of observing illegal activities during patrol from January to December 2017. ( $n = 196$ : forest guards, foremen for patrolling, and forest police officers).

Repressive measures could become a context wherein discretionary operations within the regulatory aspect are exercised. According to the questionnaire survey, 125 respondents, or approximately 64% of the relevant respondents, answered that they have had experiences of not enforcing regulations of illegal activities. Figure 3 shows the reasons for overlooking offenses, which included “because it was the first case for the violator”, “because it was small-scale,” and “because the violator was poor.” No respondent answered “because the violator is an acquaintance,” “because the violator has a relationship with an influential person,” or “because the violator gave a bribe.” It should be noted that Figure 3 represents the answers from frontline forest bureaucrats on the questionnaire, and disparities with their actual actions cannot be confirmed or denied. Even with this taken into consideration, it can be argued that the frontline forest bureaucrats are likely to exercise discretion when they encounter new violators in negligible cases. Cases related to poverty can also be subject to discretion, with a result of not applying strict rules.

#### 4.2.2. Findings from the Village-Level Information

The issue of forestland encroachment was evident in many villages. In the village of Bodang, in the author's randomly sampled household survey ( $n = 43$ ), 69.7% of the respondents answered that their households had cultivation plots, both official and unofficial, on forest lands. The average area of cultivation plots on forestland was 0.76 ha. Here, official cultivation on forestland refers to cultivation plots under *tumpangasari* contracts,

an agroforestry-cum-reforestation system in which contract farmers plant and tend teak trees on certain plots of forestland [43]. The contracts between the SFC and farmers last three years. If the cultivation plots fall under the *tumpangsari* arrangements, they are considered official. Unofficial cultivation refers to cultivation plots outside the *tumpangsari* arrangements. Of the households with cultivation plots on forestland, the percentage of households with plots that were suspected to be unofficial was 90.0%.



**Figure 3.** Reasons for overlooking offenses. ( $n = 125$ : forest guards, foremen for patrolling, and forest police officers answering that they have had experiences of overlooking offenses; multiple answers allowed).

From the viewpoint of the SFC, such situations are problematic. Frontline forest bureaucrats did have information on who had encroached with which plots; however, these encroached plots were a *fait accompli*, and in daily operations, the bureaucrats had not succeeded in dealing with this issue effectively.

When conducting household surveys in Bodang, the author had the opportunity to observe a village meeting held by frontline forest bureaucrats to address the forestland encroachment issue. They had identified people with illegal cultivation plots on forestland and requested them to gather. Around 30 villagers, all men, were present. In addition to forest guards and foremen, a forest ranger (their boss) was also in attendance. The forest ranger and forest guards generously began by mentioning that the forestland was subject to joint management by the SFC and the JFM committee, and would be managed appropriately as forests providing proper ecosystem services. Then, they thanked the villagers' for their cooperation in planting and growing teak trees with a *tumpangsari* contract, allowing cultivation for three years. At that point, they stated that the cultivation practice would be discontinued due to the end of the contract period, and for the mutual prosperity of the SFC and JFM, trees would be planted again to reforest the plots. They also said that seedlings to be planted would be prepared by the SFC. They emphasized that the new contract would no longer be effective after three years; after the contract finished, another *tumpangsari* opportunity might come. Villagers agreed to reforest the plots that they were currently cultivating; i.e., encroached plots. The frontline forest bureaucrats told

the author that they had tried the same procedures a few times in this village as well as in other localities, suggesting that this attempt might also be unsuccessful.

Such a method to persuade villagers suggested that the frontline forest bureaucrats did not coercively evict them from the plots on the forestland; rather, the bureaucrats made use of the logic of formal agreement with JFM and asked for cooperation and collaboration for reforestation.

#### *4.3. Facilitation Aspects*

##### *4.3.1. Findings from the Questionnaire Results*

Since the implementation of JFM in 2001, the role of the SFC has included facilitation and interaction with villagers. Facilitation has been said to be crucial to motivating villagers around forest management and conservation, with proper understandings of the concept of JFM. However, as already mentioned, there was no specific JFM foreman (Table 2). This indicated that the SFC does not view JFM in the same way as conventional silvicultural and regulatory tasks. Resorts were not in the primary position of administering JFM.

JFM-related issues were managed by the Sub-Section of Joint Forest Management at the forest district office. Officials in this sub-section were essentially stationed at the forest district office to engage in various kinds of desk work. Although they visited villages in keeping with the occasions and tasks, they were outside the present study's definition of frontline forest bureaucrats. One of their most important tasks was to calculate the amounts of money to be allocated from the SFC's forestry production to JFM committees; the amounts were determined by considering how much value was earned from each forest compartment after deducting operational costs and other expenditures, and more. This aspect did not have room to exercise discretion.

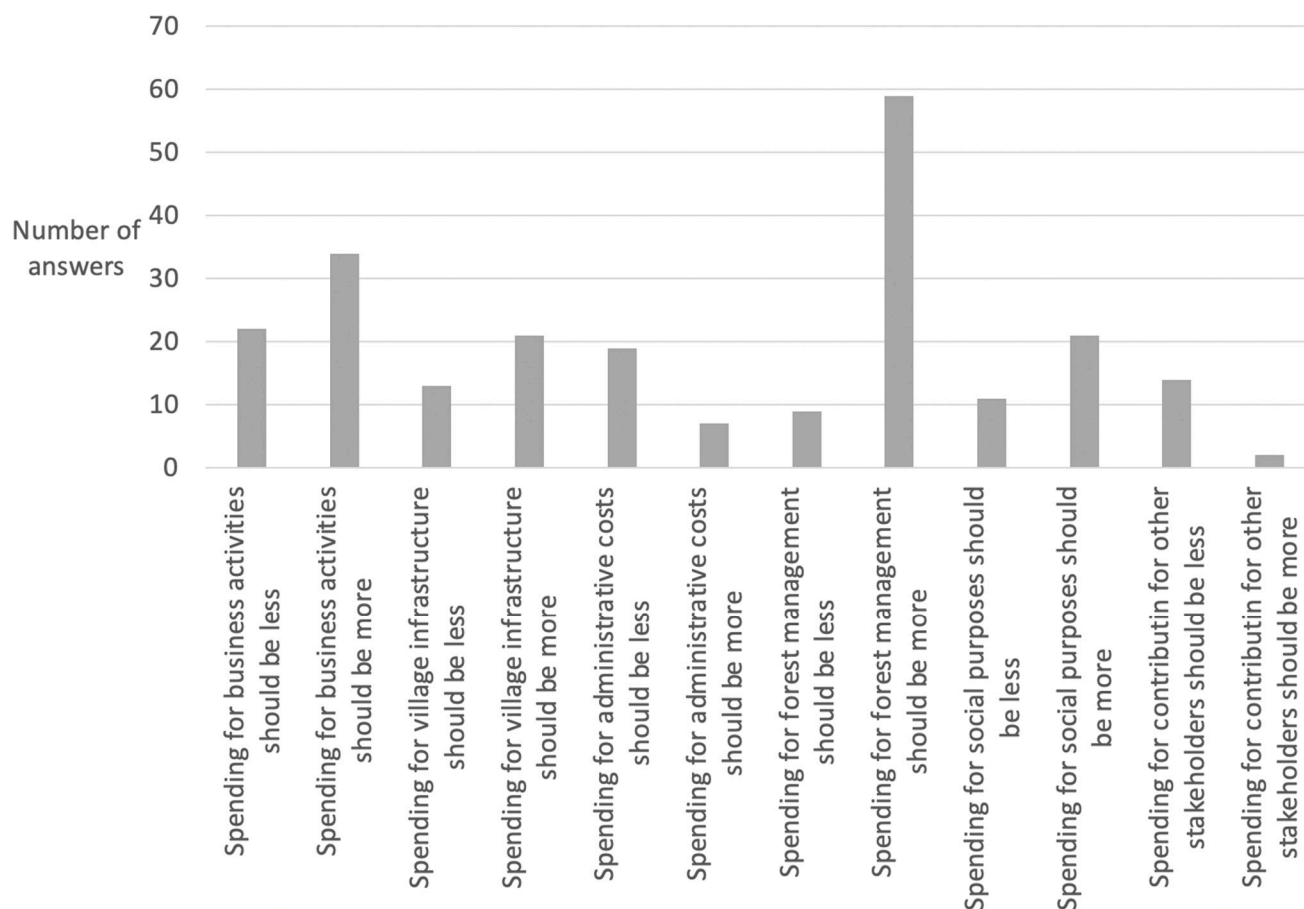
In addition, the sub-section was also responsible for making agreements with JFM committees about the principles of using shared benefits for each committee (village). The principles for how to use shared benefits were decided every year through official meetings between the staff of the sub-section and the presidents of all JFM committees in the forest district. In 2014, the purpose-wise allocations at the committee (village) level were as follows: 30% for business activities, 15% for village infrastructure, 17% for administrative costs, 15% for forest management, 10% for social purposes, and 13% for contributions for other stakeholders.

According to the questionnaire results from frontline forest bureaucrats about their opinions of the villagers' uses of shared benefits under JFM, 143 respondents—or 54% of the 267 respondents—considered that the use of shared benefits under joint forest management is “problematic”; 17% considered it “no problem”, and 30% said “no idea”. Figure 4 shows the reasons for the choice of “problematic”. “Spending for forest management should be more” received the greatest number of answers. This reflected the forest bureaucrats' value that the more money is invested in the forest, the better the situation is; from an “ideal” standpoint, the present uses of shared benefits for conducting forest management are insufficient. Additionally, they were also likely to state that “spending for business activities should be more”. This could be interpreted as the bureaucrats considering that local livelihoods should be improved more through JFM committees' business activities. Overall, these responses indicated that frontline forest bureaucrats were not fully on board with the situation of implementing JFM at the local level; at the very least, their viewpoint was that there is room for improvement.

##### *4.3.2. Findings from the Village-Level Information*

According to the author's survey of 14 JFM committees, the uses of shared benefits in each committee were not exactly effective and equitable. For business activities, non-forestry practices—such as cooperatives, rearing cows or goats, and renting ceremonial tools—had been preferred. Richer committees, with greater amounts of benefit sharing, were likely to have implemented more business activities, but the percentages of business activities that remained in practice by the time of the author's visits were lower in such

committees: many business activities had failed. Benefits from business activities, if any, tended to be pooled among the executive members of the JFM committees, and ordinary villagers had enjoyed few benefits.



**Figure 4.** Reasons for choosing the answer “problematic”. ( $n = 143$ : all kinds of frontline forest bureaucrats answering that the use of shared benefits under joint forest management was problematic; multiple answers allowed).

In terms of forest management, money from the shared benefits was mostly used to hire villagers as watchmen. In total, 9 committees had conducted patrol activities out of the 14 committees. Of these, only the four richest committees that could afford to pay for watchmen had kept up patrol activities by the time of the author’s visits. This is the context in which questionnaire respondents gave the answers shown in Figure 4—i.e., frontline forest bureaucrats were likely to believe “spending for forest management should be more” and “spending for business activities should be more”.

However, frontline forest bureaucrats were not likely to share such opinions with villagers. During fieldwork, the author was told by a few forest guards that “uses of shared benefits are a matter of the village.” This indicated that frontline forest bureaucrats thought that because benefit-sharing was an issue under the village’s purview, it would not be appropriate to offer advice or say something about the uses of shared benefits, as such advice could be seen as a type of interference. Although forest rangers and forest guards were generally executive members of committees as supervisors or advisors, they appeared to not advise on or facilitate the use of shared benefits. Consequently, a sort of hesitation among frontline forest bureaucrats was confirmed.

Thus, under JFM, frontline forest bureaucrats were not likely to be involved in facilitation aspects. JFM issues were handled by the staff of the Sub-Section of Joint Forest Management, who are not stationed in resort (lowest level) offices. Except for minimal

agreements and directions, neither the staff of the sub-section nor frontline forest bureaucrats had intervened concerning the uses of shared benefits or other JFM activities.

## 5. Discussion

Various kinds of discretionary operations have been confirmed. Here, the author summarizes the findings categorizing discretion into creative regulatory, passive regulatory, creative facilitation, and passive facilitation (Table 3).

**Table 3.** Discretionary operations confirmed in the present case study.

	Regulatory	Facilitation
Creative	Non-application of strict regulatory rules Persuasion of forestland encroachers	No relevant case found
Passive	Ineffective measure on conduct that causes prolonged damage for forest resources	Absence of advice or communication under JFM

Frontline forest bureaucrats creatively exercised discretion for their regulatory practices; i.e., non-application of strict regulatory rules and persuasion of forestland encroachers. They tacitly avoided strict enforcement of forest law in view of the local context in terms of the frequency and scale, as well as violators' economic conditions. In addition, they tried to persuade de facto forestland encroachers to reforest the encroached forestland plots by applying the *tumpang sari* framework.

At the same time, frontline forest bureaucrats' regulatory activities also corresponded to the category of passivity. Although there was evidence of creative discretionary operations; i.e., persuasion of locals to reforest the encroached forestland plots, the effectiveness of such measures was doubted. The scale of implementation was also limited. Thus, conduct that caused serious and prolonged damage to forest resources remained largely unaddressed.

Passive facilitation discretion included absence of advice or communication, particularly related to the uses of shared benefits under JFM. Frontline forest bureaucrats did not present clear opinions or intervene in local processes. This situation was quite different from Indian cases [19–21], where frontline forest bureaucrats dominate decision making processes. No creative case was found in the facilitation aspect.

There are two important implications of these findings. First, frontline forest bureaucrats had been creative to some extent to accommodate contrasting policy goals of protecting forests and meeting local demands for forests. The creative regulatory operations could be interpreted as attempts at aiming for both policy goals to a maximum extent. However, the absence of creative discretion in the facilitation aspect implied that forest bureaucrats had a value to put regulation above facilitation.

Second, at the same time, frontline forest bureaucrats had been caught up in dilemmas between organizational management strategies and growing demands from and increasing voices of locals, resulting in passive discretion. Passivity in the regulatory and the facilitation aspects are two sides of the same coin, with the key word being hesitation. Absence of interventions and inaction by law enforcement were not due to a lack of budgets or human resources; rather, frontline forest bureaucrats hesitated to intervene in village issues. They applied a method of persuasion to address forestland encroachment issues when, according to the principles of the SFC, repressive measures should have been taken. They acted as though they should not advise villagers on the uses of shared benefits; even when the effectiveness and equity of the uses were doubtful, they simply left them untouched and unresolved.

The author posits that the hesitation of frontline forest bureaucrats to get involved in village issues reflects the increasing bargaining power of locals. Until the 1990s, the SFC's authority over locals had been strong enough to regulate and control local forest use [6]. However, the political economic turmoil after 1997 fundamentally changed these conventional relations between forest administrators and locals. Locals dared to clear forests under



the authority of the SFC to sell timber and to occupy forestland for cultivation, and it became an uncontrollable situation [39]. Even after this turmoil was resolved in the beginning of the 2000s, the power relations between the SFC and locals were transformed [41,42]. Against this backdrop, frontline forest bureaucrats have felt hesitation, in which their creative discretion is limited. This shift in power relations between forest administrators and locals has also had positive effects. Unlike in many other devolution cases [20], the SFC had not exercised top-down and exclusive decision making under JFM.

Foresters are, both in the developed and developing worlds, street-level bureaucrats who are demanded to accommodate contradictory policy goals while considering various stakeholders, in which discretion is an indispensable element in actual operations [11,29]. Absence or deviation of implementation of a policy may not be due to a lack of budgets or human resources alone; rather, it could be a consequence of bureaucrats' deliberate discretion. In Java's case, frontline forest bureaucrats' discretion included both creative and passive forms as a result of their attempts to pursue both forest management and local livelihoods in the context of increasing local bargaining power and growing hesitation among bureaucrats. Policies had been implemented in such subtle relationships between two different policy goals, as well as between frontline forest bureaucrats and locals.

## 6. Conclusions

The present study explored that tropical frontline forest bureaucrats can exercise various kinds of discretion, and the exercise of discretion would be for coping with contrasting policy goals of forest management and local livelihoods in the context of increasing bargaining power of locals. The study also suggested the importance of examining the wider political economy that generates discretionary operations.

In terms of policy implications, as the fundamental issue may not be a lack of budget or human resources, as were the power relations with locals in Java's case, increasing the budget or human resources of the forest administration may not directly lead to better situations. Policy options or organizational measures to remove the conditions that result in negative types of discretion should be deliberated based on the realities of frontline forest bureaucrats [11]. Efforts to minimize gaps between different policy goals and mediating relationships with stakeholders would be important. At the same time, environments in which frontline forest bureaucrats can engage in creative discretionary operations are favorable. To make such a situation happen, foresters' values and local or societal expectations should converge [24,27,29]. As already mentioned, discretionary operations are inevitable for frontline forest bureaucrats, as they must accommodate contradictory policy goals while considering the demands of various stakeholders. Hence, to encourage and discourage positive and negative kinds of discretion, respectively, it would be a first step to understand the local situations that they are facing and the kinds of discretion that they are exercising.

With regard to the issue of generalization, the SFC in Java is a case where substantive forest administration has been developed with a firm organizational system in which conventional authority has been weakened due to changes in political situations and increasing local bargaining power. However, situations of forest administration differ across regions. For example, there are cases where substantive forest administration systems had not been developed [44]. Further studies are desirable to accumulate the insights of various locations under different political economic settings.

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