

*Full Length Research Article***A Trilogy Framework of Forest Training Governance in Indonesia: Integrating Training, Tenurial Conflict, and Protection in Multi-Mandate Systems**Pemilu Arman Labahi¹, Andi Mujetahid², Yusran³, Muhammad Alif K Sahide*⁴

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* Corresponding author. E-mail address: muhhammad.alif@unhas.ac.id**ARTICLE HISTORY:***Received: 1 January 2026**Peer review completed: 7 April 2026**Received in revised form: 16 April 2026**Accepted: 7 May 2026***KEYWORDS:***Forest governance**Forest protection**Multi-mandate management**Tenurial conflict***ABSTRACT**

Forest training areas increasingly operate under multiple management mandates that simultaneously require capacity building, conflict governance, and forest protection, yet their interactions remain underexplored in the forest governance literature. This study examines the compatibility of multi-mandate forest governance in a forest training area in Indonesia. Using a qualitative case study approach, data were collected through interviews, document analysis, and observations. The study develops a trilogy framework of forest training governance that conceptualizes management as the interaction of training functions, tenurial conflict governance, and forest protection. The findings show that these mandates are neither inherently synergistic nor entirely conflicting. Their compatibility depends on governance arrangements, including institutional coordination, leadership capacity, and community engagement. Training activities can support forest protection through increased field presence, yet may intensify social tensions when access overlaps with contested land uses. Conflict governance plays a mediating role in shaping the legitimacy of protection measures and the effectiveness of training. This study contributes to the forest governance literature by offering an analytical framework for understanding multi-mandate compatibility in forest training areas and by providing policy-relevant insights for managing special-purpose forest areas.

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1. Introduction

Forest governance in tropical regions has increasingly shifted from single-purpose management toward multi-mandate and multifunctional forest systems, where forests are expected to deliver ecological conservation, socio-economic benefits, and institutional functions simultaneously (Angelstam and Dawson 2025; Rana and Chhatre 2017; Rayner 2012; Sayer et al. 2013; Ziegert and Sotirov 2024). This shift reflects broader transformations in forest policy that emphasize sustainability, capacity building, and stakeholder engagement, but it also introduces governance complexity arising from overlapping mandates, competing objectives, and institutional fragmentation (Pacheco et al. 2008; Sahide and Giessen 2015; Wibowo and Giessen 2015).

A growing body of literature suggests that multifunctional forest management often produces trade-offs rather than synergies, particularly when governance arrangements are weak or poorly coordinated (Alfajri et al. 2025; McShane et al. 2011). Studies on protected areas, community forestry, and landscape governance show that overlapping authorities and unclear mandates frequently lead to conflict, reduced management effectiveness, and policy incoherence (Reed et al. 2018; Sahide et al. 2019). However, most existing studies focus on conservation or production-oriented forests, while forest areas designated for education and training remain largely absent from international forest governance analyses.

In Indonesia, governance challenges related to multifunctional forests are particularly evident in special-purpose forest areas or *Kawasan Hutan dengan Tujuan Khusus* (KHDTK), which are designated for educational, research, and forest management development purposes (Rahmadwiati et al. 2022), while remaining part of the state forest estate. Forest training areas (*Kawasan Hutan Diklat*) represent a distinctive form of KHDTK, functioning simultaneously as institutional learning spaces, conservation areas, and socially contested landscapes. In this study, the term “forest training area” is used consistently to emphasize the institutional and spatial governance function of forests designated for education and training within the KHDTK framework. Despite their strategic role in strengthening human capacity for sustainable forest management, forest training areas have received limited attention in peer-reviewed international journals, especially from a governance perspective.

A central challenge in forest training areas is the coexistence of multiple management mandates, as formally embedded in Indonesia’s forestry regulatory framework. Under Ministerial Regulation Number P15 of 2018, KHDTK are explicitly designated for education and training, research and development, and socio-cultural functions, and are required to be managed comprehensively and integratively across disciplines. At the same time, broader forestry regulations, including Ministerial Regulation Number 7 of 2021, position forest protection, planning, and sustainable management as inherent obligations within all forest areas. This regulatory configuration effectively situates forest training areas as multi-mandate governance arenas, where educational, protective, and socio-tenurial functions coexist and interact in practice. First, forest training areas are institutionally mandated to support structured education and professional training, which requires accessibility, infrastructure development, and intensive field-based learning, as explicitly defined in the regulatory framework governing KHDTK. Second, these areas are often embedded within socio-ecological landscapes characterized by overlapping land uses, informal tenure claims, and human–wildlife interactions, necessitating continuous engagement and conflict governance in practice. Third, as part of the state forest estate, forest training areas are mandated to ensure forest protection and biodiversity conservation, including law enforcement, boundary maintenance, and prevention of forest degradation (Ministerial Regulation Number 7 of 2021). In the Indonesian context, special-purpose forest areas are designated portions of the state forest estate allocated for specific functions, including research, education, and training. Among these, forest training areas represent a distinct institutional configuration, as they are primarily managed by state forestry training institutions tasked with developing human resource capacity in the forestry sector. Unlike forest education areas, which are commonly oriented toward academic research and university-based learning, forest training areas are closely embedded within bureaucratic structures and are used to train forestry personnel across national and subnational levels.

Forest training areas are selected as the focus of this study due to both their practical relevance and analytical significance. As institutionally designated sites for capacity building, forest protection, and interaction with surrounding communities, these areas represent a governance setting where multiple mandates are simultaneously operationalized within a single institutional framework. This makes forest training areas a critical case for examining how mandate compatibility emerges in practice, particularly in contexts where institutional objectives are actively negotiated through everyday governance processes.

The simultaneous implementation of these mandates raises a fundamental governance question: are training, conflict governance, and forest protection compatible in practice, or do they generate institutional tensions and fragmentation? While institutional and environmental governance literature acknowledges that overlapping mandates often produce coordination dilemmas (Young 2002), empirical studies rarely examine how different mandates interact within a single forest management unit. In particular, there is a lack of analytical frameworks to explain whether multiple mandates function in a synergistic, fragmented, or contradictory manner in forest training contexts.

While these studies have significantly advanced understanding of multifunctional forest governance, they tend to focus on how different objectives are managed across separate institutional arrangements or landscape scales. Less attention has been given to how multiple institutions and actors are coordinated within a single forest management system, where governance practices often remain fragmented in implementation (Edison et al. 2025). In particular, forest training areas remain largely overlooked as governance arenas, despite their unique role in combining capacity building, forest protection, and engagement with socio-tenurial dynamics. This gap limits our understanding of how multifunctionality operates in practice, especially in contexts where mandates coexist and actively interact within the same institutional and spatial setting.

This study addresses this gap by examining the compatibility of multi-mandate forest governance in a forest training area in Indonesia. The study develops a trilogy framework for forest training governance, comprising the training mandate, tenurial conflict governance, and forest protection. Rather than treating these dimensions as independent management components, the study analyzes their interactions and the governance arrangements that enable or constrain their compatibility.

Based on the gaps identified in the literature, this study addresses the following research questions: (1) How are training, tenurial conflict governance, and forest protection mandates implemented in a forest training area; (2) To what extent are these mandates compatible or conflicting in practice; and (3) What governance arrangements influence the compatibility of multiple mandates in forest training management.

2. Materials and Methods

2.1. Study Design and Area

This study adopts a qualitative approach (case study method) to examine the compatibility of multiple governance mandates in a forest training area. The case study focuses on the Forest Training Area Tabo-Tabo, located in Pangkajene Kepulauan Regency, South Sulawesi, Indonesia, which is functionally managed by the Environmental and Forestry Education and Training Center or *Balai Diklat Lingkungan Hidup dan Kehutanan* (BDLHK) Makassar.

The Tabo-Tabo Forest Training Area covers approximately 601 ha and is designated as a special purpose forest area (KHDTK) (**Fig 1**). The historical development of the KHDTK Tabo-Tabo Forest Training Area reflects a gradual institutional transformation shaped by both state intervention and pre-existing community land use. Historical records indicate that local communities had occupied and utilized the area since at least the 1960s, primarily for shifting cultivation and small-scale agriculture. During the 1970s, the regional forestry authority or *Bidang Kehutanan Daerah* (BKD), a provincial-level government unit responsible for implementing forestry management under centrally defined policies, began managing the area, including reforestation programs and controlled cultivation arrangements with residents.

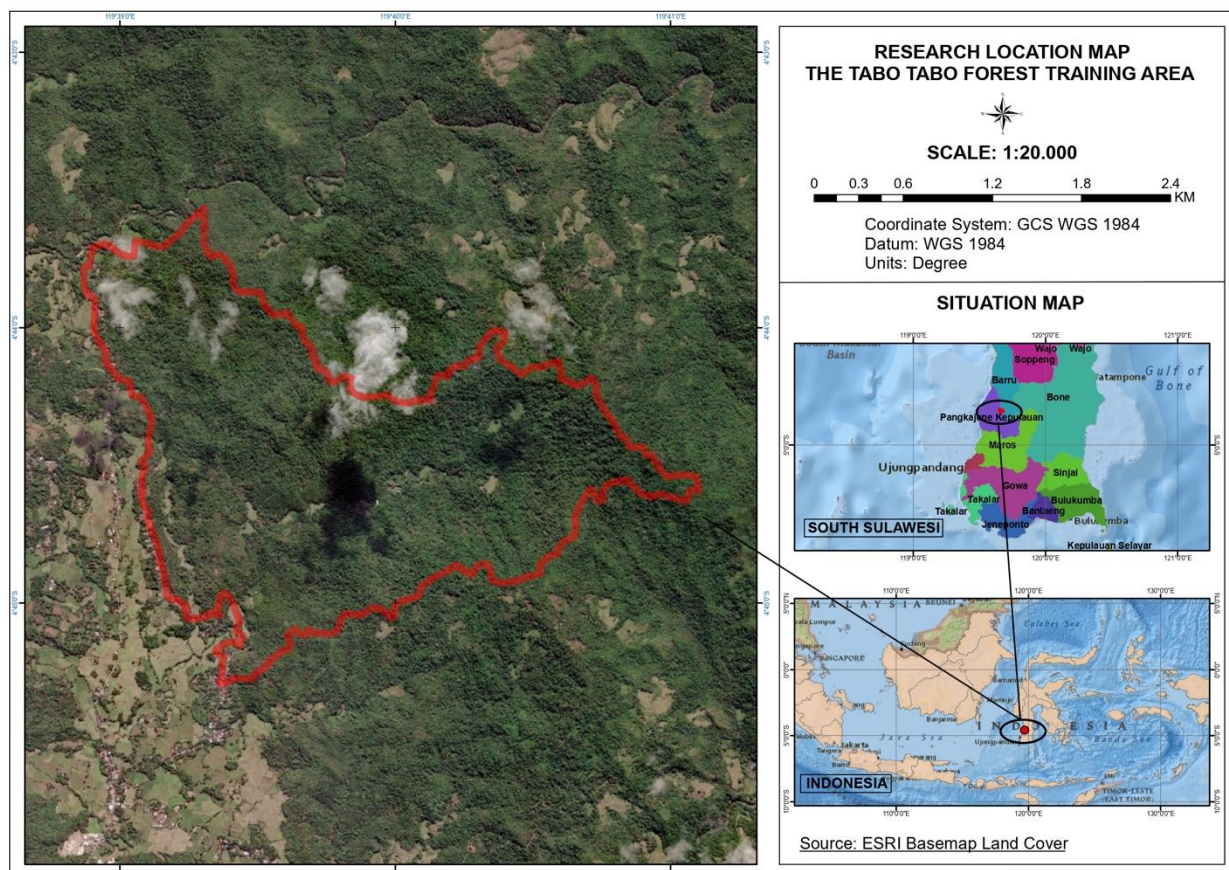


Fig. 1. Location map of the KHDTK Tabo-Tabo Forest Training Area, South Sulawesi, Indonesia.

The area was formally integrated into the state forest system following its designation as a protection forest under the Consensus-Based Forest Land Use Planning or *Tata Guna Hutan Kesepakatan* (TGHK) framework in the early 1980s. In 1980, the site began to be developed as a forest training area, followed by boundary demarcation in 1984. Subsequent institutional consolidation occurred through the issuance of the official boundary report (BATB) in 2003 and its formal designation as a KHDTK for training purposes under Ministerial Decree Number 105 of 2004.

These developments indicate that the forest training area emerged through a layered historical process, where training functions were introduced into a landscape already shaped by community use and evolving state control. This historical trajectory helps explain the coexistence of multiple mandates and the persistence of tenurial tensions observed in the present study.

These historical transformations indicate that the establishment of the forest training area did not replace pre-existing land-use practices, but rather reconfigured them. While local communities previously exercised relatively flexible access through shifting cultivation and small-scale agriculture, the formalization of the area as a KHDTK introduced new institutional controls over space and resource use. As a result, local land-use practices evolved into more negotiated and adaptive forms, shaped by the interaction between training activities, protection measures, and ongoing tenurial claims. This historical trajectory provides important context for understanding how the forest training area functions today as a site of overlapping mandates and competing land uses.

2.2. Data Collection

Fieldwork was conducted over multiple periods between September 2021 and March 2022. This was complemented by retrospective analysis of management documents spanning 1996–2021. In addition, the first author has maintained ongoing professional engagement with the forest training area beyond the formal fieldwork period, enabling continued observation and contextual validation of the findings up to the present. This extended engagement ensured that the analysis reflects both the formal fieldwork period and more recent institutional developments in the study area. Data were collected through three complementary qualitative methods: in-depth interviews, field observations, and document analysis. This triangulation allowed the study to capture both formal governance arrangements and everyday practices shaping mandate interactions.

Primary data were obtained through in-depth interviews with key actors directly involved in or affected by the governance of the forest training area. A purposive sampling strategy was employed to select informants based on their institutional roles, level of engagement, and relevance to the three governance mandates examined in this study (training, tenurial conflict governance, and forest protection). A total of ten (10) informants were interviewed, consisting of: (1) Five institutional actors, including managers and technical staff of BDLHK Makassar, responsible for forest training, protection, and area management, and (2) Five local community members, interacting with the forest training area and affected by land-use conflicts and wildlife disturbances.

Interviews followed a semi-structured guide, allowing respondents to elaborate on their experiences with training activities, conflict governance, and forest protection practices. In-depth interviewing was chosen to explore institutional perspectives, perceptions of legitimacy, and informal governance practices that are often inaccessible through structured surveys. These formal interviews were complemented by extensive field engagement and informal interactions with a broader range of actors in the forest training area. The first author, who has long-standing professional involvement in KHDTK management, regularly engaged with field officers, training participants, and local community members throughout the research period. These interactions provided additional contextual insights and were used to triangulate and interpret findings from formal interviews, observations, and document analysis. This approach strengthens the depth and contextual validity of the data by combining formal interviews with embedded field-based knowledge.

2.3. Field Observation

Field observations were conducted within the forest training area and its surrounding villages to document training activities and field practices; protection and monitoring routines; interactions between officials and local communities; and observable manifestations of tenurial conflict and wildlife-related disturbances. These observations complemented interview data by capturing everyday governance practices and spatial dynamics that shape mandate interactions.

2.4. Document Analysis

Secondary data were collected through systematic document analysis to examine how training, tenurial conflict governance, and forest protection mandates are formally defined and operationalized in forest training areas. This approach captured both the regulatory frameworks governing special-purpose forest areas and the everyday institutional practices through which multiple mandates are enacted.

The analysis covered internal documents of the BDLHK Makassar, including KHDTK Tabo-Tabo management reports (1996–2021), annual training activity reports (2016–2021), forest protection and patrol reports (2018–2021), organizational structure and mandate documents, and institutional work plans. These materials provided longitudinal insight into institutional priorities, mandate allocation, and resource orientation.

In addition, national forestry laws and ministerial regulations on forest protection, KHDTK governance, and forestry education and training institutions were reviewed to identify formal mandates and authority structures. By triangulating regulatory texts with institutional documents and empirical data from interviews and field observations, the analysis assessed gaps, overlaps, and discretionary spaces shaping multi-mandate compatibility in practice. **Table 1** summarizes the key documents analyzed.

2.5. Analytical Framework and Data Analysis

This study applies a qualitative analytical framework to examine the interaction and compatibility of multiple governance mandates in forest training areas. The framework conceptualizes forest governance as the interaction of three key mandates: training, tenurial conflict governance, and forest protection. Rather than treating these mandates as discrete managerial components, the framework views them as interacting governance logics that are negotiated through bureaucratic practices, institutional arrangements, and power relations.

Building on insights from the institutional evolution, bureaucratic politics, and forest governance literature, the framework departs from linear, technocratic models of forest management. It instead emphasizes that governance outcomes emerge from recursive interactions among mandates, shaped by how institutions interpret their authority, engage with social actors, and operationalize rules in contested landscapes (Haque 1997; Myers 1988; Myers et al. 2018; Sahide et al. 2019).

The framework is structured around three analytical dimensions, with mandate compatibility as the central integrative concept.

Table 1. Documents and regulatory frameworks analyzed

Document Category	Document Type	Issuing Institution	Time Coverage	Analytical Relevance
Management plan	<i>Rencana Pengelolaan Jangka Panjang (RPJP) KHDTK Tabo-Tabo</i>	BDLHK Makassar	2020–2039	History, context, and governance priorities
Institutional management documents	KHDTK Tabo-Tabo Management Reports	BDLHK Makassar	1996–2021	Evolution of mandates, governance priorities, boundary management, and conflict records
Institutional activity records	Annual Training Activity Reports	BDLHK Makassar	2016–2021	Training intensity, institutional focus, integration of training and protection
Protection records	Forest Protection and Patrol Reports	BDLHK Makassar	2018–2021	Enforcement practices, patrol routines, and disturbance detection
Organizational documents	Organizational structure and mandate documents	BDLHK Makassar	Various years	Allocation of authority, mandate hierarchy, and role distribution
Planning documents	Annual work plans and planning documents	BDLHK Makassar	Various years	Resource allocation and prioritization of institutional outputs
National legislation	Forestry Law No. 41/1999	Government of Indonesia	Enacted 1999	Legal basis of the state forest authority and protection mandates
Ministerial regulations	Regulations on forest protection and law enforcement	Ministry of Forestry / Ministry of Environment and Forestry	Various years	Formal protection obligations and enforcement authority
Ministerial regulations	Regulations on special-purpose forest areas (KHDTK)	Ministry of Environment and Forestry	Various years	Legal status and governance scope of KHDTK
Ministerial regulations	Regulations on forestry education and training institutions	Ministry of Environment and Forestry	Various years	Institutional mandate and performance orientation of training centers

2.5.1. Field observation

The training mandate is conceptualized not merely as an educational or technical function, but as a governance instrument that shapes access, authority, and institutional behavior within forest training areas. Training activities influence who enters the forest, how knowledge is legitimized, and which practices are normalized as “proper” forest management.

Studies on institutional evolution demonstrate that training can strengthen governance by enhancing leadership capacity, organizational learning, and compliance with rules (Krishna and Mehra 2002). However, training may also reinforce technocratic dominance, privileging formal knowledge and bureaucratic procedures over local practices, thereby generating exclusion and resistance (Giri and Ojha 2011).

Within forest training areas, training functions often require infrastructure development, repeated field activities, and institutional presence. These interventions can either support forest protection by increasing monitoring and awareness or intensify tenurial tensions when training activities overlap with contested land use or livelihoods. Thus, the analytical focus is not on

training effectiveness per se, but on how training is institutionalized and how it interacts with other mandates.

2.5.2. *Tenurial conflict governance: bureaucratic politics and legitimacy*

The second dimension addresses tenurial conflict governance, understood as a continuous political process rather than an episodic problem to be administratively resolved. Conflicts in forest training areas often arise from contested authority, recognition, and access, especially where formal forest status intersects with local claims and everyday forest use.

Drawing on bureaucratic politics, this framework emphasizes that state agencies manage conflict through a combination of formal authority (legal status, mandates, budgets) and informal capacities (negotiation, trust-building, discretionary practices). These capacities shape whether conflicts are accommodated, suppressed, or transformed into governance-learning processes (Haque 1997; Sahide et al. 2019).

Technical approaches that focus solely on procedures or compliance often depoliticize conflict, producing what has been described as “messy governance”, characterized by recurring disputes, legitimacy deficits, and fragmented interventions (Myers et al. 2018). In forest training contexts, conflict governance plays a mediating role, determining whether training and protection mandates are perceived as legitimate or coercive.

2.5.3. *Forest protection mandate: regulation, authority, and power*

The third dimension conceptualizes forest protection as both a regulatory obligation and a political practice. While protection is often framed as a technical task involving law enforcement and conservation measures, governance literature shows that its effectiveness depends on how authority is exercised and contested.

Rigid, technocratic protection approaches may undermine legitimacy and provoke resistance, particularly in socially contested forests (Myers 1988; Myers et al. 2018). Conversely, protection strategies that are negotiated and embedded within broader governance processes may reinforce compliance and stewardship.

In forest training areas, protection interacts closely with the other mandates:

- Training can strengthen protection by embedding conservation norms and increasing institutional presence.
- Conflict governance influences whether protection measures are accepted, negotiated, or resisted.

From a bureaucratic politics perspective, protection outcomes depend on the capacity of managing institutions to navigate competing mandates, reconcile formal rules with informal practices, and adapt to local socio-ecological realities (Sahide et al. 2023).

2.5.4. *Mandate compatibility as a dynamic governance outcome*

At the center of the framework is mandate compatibility, defined as the extent to which training, conflict governance, and forest protection mutually reinforce, coexist without coordination, or undermine one another. Compatibility is treated as a dynamic outcome, shaped by institutional coordination, leadership, and power relations rather than as a fixed design feature. This approach is consistent with qualitative institutional analysis that examines governance

interactions through patterns of coordination, authority, and practice (Haque 1997; Reed et al. 2018).

The framework distinguishes three ideal-typical outcomes: (1) Synergistic compatibility, where training enhances protection and conflict governance strengthens legitimacy; (2) Fragmented coexistence, where mandates operate in parallel with limited interaction; and (3) Contradictory dynamics, where one mandate systematically weakens the others.

To operationalize these ideal-type outcomes in the empirical analysis, the study uses the following set of observable indicators. Synergistic compatibility is indicated by situations where activities under one mandate directly support or enhance the implementation of others, such as increased forest monitoring during training activities or improved communication with local actors that reduces tensions.

Fragmented coexistence is reflected in the parallel implementation of mandates, with limited coordination, in which training, protection, and conflict governance operate through separate routines, reporting systems, and institutional priorities, without significant interaction or mutual reinforcement. Contradictory dynamics are identified when the implementation of one mandate systematically constrains or undermines others. Empirically, this is indicated by situations in which training activities restrict local access and intensify tensions, in which protection enforcement is delayed or avoided due to unresolved tenure conflicts, or in which conflicting institutional priorities result in inconsistent or reactive governance responses.

These indicators allow the analysis to move beyond descriptive categorization and provide a systematic basis for interpreting how mandate interactions produce different governance outcomes in practice. This analytical lens (Fig. 2) enables the study to move beyond descriptive accounts and assess how forest training areas function as multi-mandate governance systems in practice.

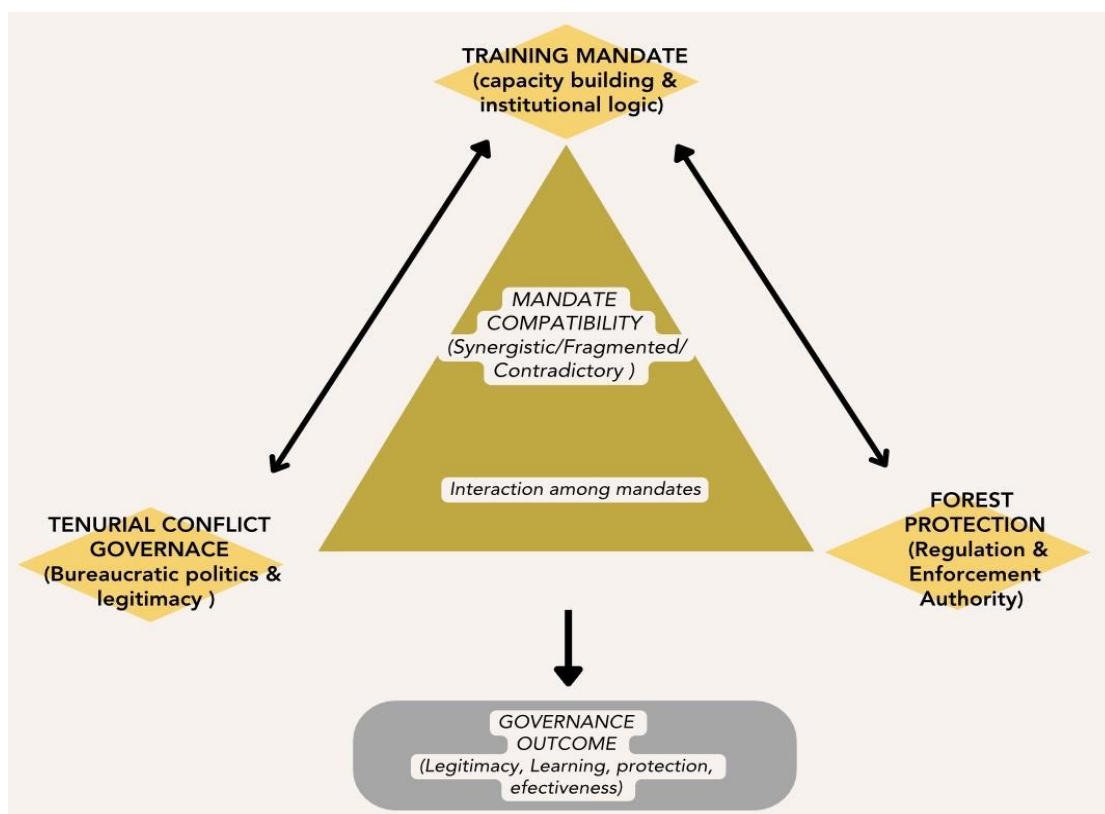


Fig. 2. Analytical framework of multi-mandate compatibility in forest training governance.

Fig. 2 illustrates the dynamic interactions among training, tenurial conflict governance, and forest protection within a forest training area. These interactions produce different patterns of mandate compatibility (synergistic, fragmented, or contradictory), which subsequently shape governance outcomes such as legitimacy, learning, and protection effectiveness. The interaction among institutional coordination, leadership capacity, and power relations shapes the emergence of different patterns of mandate compatibility in practice. Coordination determines the extent to which mandates are aligned through planning and communication, leadership influences how actors interpret and prioritize overlapping mandates, and power relations shape how authority and legitimacy are exercised. Together, these factors explain why mandate interactions result in synergy, fragmentation, or contradiction in different contexts.

2.5.5. *Data analysis*

This study applies a qualitative analytical framework to examine the compatibility of multiple governance mandates in a forest training area. The analysis is guided by the multi-mandate governance framework, which conceptualizes forest training management as the interaction of three interrelated mandates: (1) Training; (2) Tenurial conflict governance; and (3) Forest protection. Data analysis focuses on how these mandates are operationalized, how they interact in practice, and how their interactions shape governance outcomes (**Table 2**).

Table 2. Analytical dimensions and indicators of multi-mandate compatibility

Analytical Dimension	Focus of Analysis	Key Indicators	Main Data Sources
Training mandate	Training as a governance instrument	<ul style="list-style-type: none"> • Role of training activities in shaping access and forest use • Institutionalization of training routines and field practices • Interaction between training activities and local livelihoods • Perceptions of training legitimacy among local actors 	Interviews (managers, trainers, communities), training documents, and field observations
Tenurial conflict governance	Bureaucratic management of conflict	<ul style="list-style-type: none"> • Types of tenurial claims and conflicts present • Formal mechanisms for conflict handling (procedures, regulations) • Informal practices (negotiation, discretion, mediation) • Perceived legitimacy of conflict governance 	Interviews (bureaucrats, communities), policy documents, and observation
Forest protection mandate	Protection as a regulatory and political practice	<ul style="list-style-type: none"> • Enforcement strategies and protection measures applied • Coordination between protection and training activities • Community responses to protection measures • Flexibility or rigidity in enforcement practices 	Interviews, protection reports, and field patrol observations
Mandate interaction	Cross-mandate dynamics	<ul style="list-style-type: none"> • Points of synergy between mandates • Areas of overlap or duplication • Instances of mandate tension or contradiction • Institutional coordination mechanisms 	Cross-analysis of interviews, documents, and observation
Governance outcomes	Effects of mandate interaction	<ul style="list-style-type: none"> • Levels of perceived legitimacy • Learning and adaptation within institutions • Conflict recurrence or mitigation • Effectiveness of forest protection 	Synthesis of all data sources

Qualitative data from interviews, documents, and field observations were analyzed using thematic coding, guided by predefined analytical dimensions and indicators derived from the analytical framework. Coding was conducted iteratively, allowing empirical themes to refine and contextualize the analytical categories, following an iterative qualitative coding approach commonly used in institutional and governance studies (Reed et al. 2018). The analysis does not aim to measure mandate performance quantitatively, but to assess patterns of interaction, coordination, and tension among mandates.

Mandate compatibility was analyzed as a dynamic outcome emerging from institutional arrangements, bureaucratic practices, and interactions with social actors. Based on the framework, interactions among mandates were interpreted as resulting in synergistic compatibility, fragmented coexistence, or contradictory dynamics. We break down this approach in **Table 2** to guide the empirical analysis of mandate interactions.

The analytical indicators presented in **Table 2** were developed through an iterative process combining theoretical grounding and empirical refinement. Initially, the indicators were derived from the analytical framework, which conceptualizes forest training governance as the interaction of three core mandates: training, tenurial conflict governance, and forest protection.

To enhance empirical relevance, these theoretically informed indicators were further refined through preliminary reading of institutional documents and early field observations. This process allowed the study to align abstract conceptual dimensions with observable governance practices in the field.

During data analysis, the indicators were used as guiding categories for thematic coding, while remaining open to adjustment as new empirical patterns emerged. This iterative approach ensured that the indicators were both analytically robust and grounded in the empirical realities of the forest training area.

2.6. Researcher Positionality and Ethical Considerations

The first author has over 20 years of professional experience as a senior official at BDLHK Makassar, the institution responsible for managing the forest training area under study. This positionality provided deep contextual knowledge, long-term institutional memory, and privileged access to internal documents and field practices.

At the same time, this insider position required careful reflexivity. To mitigate potential bias, the study emphasized triangulation across multiple data sources, inclusion of perspectives from different actor groups, and analytical distance between institutional roles and research interpretation.

All interviewees were anonymized, and personal identifiers were removed from transcripts and analysis. Informant names and positions are withheld to ensure security, comfort, and confidentiality, particularly given the sensitivity of land tenure issues, bureaucratic decision-making, and forest protection practices. Ethical considerations were prioritized throughout the research process, and the data are presented in a way that avoids attributing potentially sensitive statements to identifiable individuals.

3. Results and Discussion

3.1. Training Mandate in Practice: From Capacity Building to Governance Instrument

This section examines how the training mandate is enacted in practice within the forest training area and how it operates as a governance instrument rather than a purely educational function, consistent with broader institutional analyses emphasizing the governance effects of bureaucratic training and knowledge systems (Giri and Ojha 2011; Haque 1997). Drawing on institutional mandate documents, KHDTK management reports, annual training activity reports, organizational structure documents, field observations, and interview data, the section analyzes how training structures authority, spatial use, knowledge production, and resource allocation. The analysis highlights both the enabling and constraining effects of training dominance for multi-mandate forest governance.

3.1.1. Institutional embedding and organizational dominance of training

Empirical evidence from the Tabo-Tabo Forest Training Area shows that the training mandate constitutes the primary institutional logic shaping forest governance. Its formal designation as a special purpose forest area (KHDTK) for education and training provides the legal foundation for BDLHK Makassar to exercise both educational and managerial authority over the area (KHDTK designation decrees; Ministry of Environment and Forestry regulations on KHDTK; **Table 1**).

Institutional mandate documents and KHDTK Tabo-Tabo management reports (1996–2021) consistently position training as the core function of the forest, while forest protection and tenurial conflict governance are embedded as complementary responsibilities rather than standalone mandates (**Table 1**).

Analysis of organizational structure and mandate documents further demonstrates that training dominance is reinforced through institutional design. Dedicated divisions, staffing arrangements, and performance indicators are oriented toward training delivery, curriculum implementation, and participant evaluation. In contrast, forest protection and conflict governance lack comparable institutional units or formal performance metrics (organizational structure documents; annual work plans, **Table 1**).

Annual training activity reports (2016–2021) show that institutional success is primarily measured through training outputs, such as the number of programs conducted and participants trained, rather than through protection outcomes or conflict mitigation indicators. This organizational configuration establishes training not merely as an activity conducted within the forest but as the principal governance framework through which authority, resources, and institutional attention are structured.

To clarify how institutional authority and responsibilities are distributed within the forest training area, **Table 3** summarizes the formal allocation of mandates across organizational units, drawing directly on organizational structure documents and internal mandate records listed in **Table 1**.

As shown in **Table 3**, institutional responsibilities related to forest protection and conflict governance are not organized as standalone mandates with dedicated units or performance indicators. Instead, they are functionally subordinated to training delivery and are often activated reactively, reinforcing the dominance of the training mandate in everyday governance practice.

Table 3. Institutional structure and mandate responsibilities in the forest training area

Institutional Function	Primary Unit	Main Responsibilities	Link to Training Mandate
Training delivery	Training division	Curriculum, field exercises	Core mandate
Forest protection	Field officers	Patrols, boundary control	Often embedded in training
Conflict handling	Management unit	Mediation, coordination	Reactive and informal

3.1.2. Spatialization of training through infrastructure and repeated field practices

The institutionalization of the training mandate is materially expressed through the spatial transformation of the forest area. KHDTK Tabo-Tabo management reports (1996–2021) document the gradual development of permanent and semi-permanent infrastructure, including access roads, training shelters, accommodation facilities, demonstration plots, and boundary markers (**Table 1**).

On the one hand, they facilitate intensive field-based learning and prolonged institutional presence. On the other hand, they operate as spatial markers of institutional authority, signaling prioritized zones of use and control. Repeated training exercises concentrate activities in specific forest compartments, creating training hotspots that are primarily governed by training schedules and institutional routines rather than by formal zoning documents alone.

These spatial dynamics illustrate how training governance reshapes forest use patterns, reinforcing the role of training as a governance instrument rather than a neutral educational function.

3.1.3. Training as an informal mechanism of access regulation

Although access regulation is not formally articulated as a training objective in policy texts, empirical findings reveal that training activities function as an informal mechanism of access control. During intensive training periods, access to certain forest sections is temporarily restricted to ensure participant safety and protect training infrastructure, as documented in field observation records and internal correspondence (**Table 1**).

Community members reported adjusting farming, grazing, and mobility practices to avoid areas used for training exercises. These adjustments are particularly evident when training activities coincide with peak agricultural periods or overlap with areas informally recognized as livelihood spaces. While such arrangements often prevent open confrontation, they also reinforce perceptions that training activities can override customary access practices.

In this way, training governance extends beyond education into everyday regulation of forest access, subtly reshaping local interactions with forest space.

3.1.4. Knowledge hierarchies and the technocratic orientation of training

Analysis of training curricula, manuals, and program documents shows a strong emphasis on standardized forestry knowledge, technical procedures, and regulatory compliance (**Table 1**). Training content prioritizes silviculture techniques, forest inventory methods, and enforcement protocols aligned with national forestry standards, as prescribed in ministerial regulations on forestry education and training institutions.

Field observations during training sessions show that forest-related problems, such as encroachment and human–wildlife interactions, are predominantly framed in technical and

regulatory terms. These framings privilege the bureaucratic expertise of trainers and participants while marginalizing experiential knowledge held by local communities.

As a result, training activities reproduce knowledge hierarchies that shape how governance challenges are interpreted and addressed. This finding resonates with broader critiques showing how forest policies and institutional interventions often privilege technocratic forms of knowledge while marginalizing local experiences and alternative understandings of forest governance (Wong et al. 2024). Training thus functions not only as capacity-building but also as a mechanism for reinforcing dominant governance narratives.

3.1.5. Training-protection interactions, resource allocation, and governance capacity

Empirical evidence indicates that training activities generate conditional synergies with forest protection. Forest protection and patrol reports (2018–2021) show increased detection of boundary disturbances, wildlife incidents, and signs of illegal activities during periods of intensive training (**Table 1**). The presence of trainers, participants, and supporting staff effectively expands surveillance coverage and institutional footprint within the forest.

However, these synergies are uneven and contingent. Annual work plans and planning documents indicate that protection activities lack dedicated funding streams and rely heavily on training-related mobilization (**Table 1**). Interview materials confirm that patrols and boundary maintenance are often conducted opportunistically during training programs.

This resource asymmetry shapes governance capacity. Training functions benefit from clear institutional support, stable resource channels, and performance metrics, while protection and conflict governance operate with greater discretion and uncertainty. As a result, training strengthens short-term protection outcomes but does not automatically translate into sustained governance capacity for addressing deeper tenure and protection challenges.

3.2. Tenurial Conflict Governance: Bureaucratic Practices, Mediation, and Legitimacy

This section analyzes how tenurial conflicts are governed within the forest training area and how conflict governance mediates interactions between training and forest protection mandates, reflecting broader findings that conflict governance in forest areas is shaped by legitimacy, discretion, and informal institutional practices (Myers et al. 2018; Sahide et al. 2019). Rather than focusing solely on conflict events, the analysis examines the institutional practices, discretionary mechanisms, and legitimacy dynamics through which conflicts are managed in everyday governance. The section demonstrates that conflict governance is a central, yet often informal, dimension shaping mandate compatibility in practice.

3.2.1. Persistent tenurial conflicts and the limits of formal regulation

Empirical evidence from the Tabo-Tabo Forest Training Area indicates that tenurial conflicts are persistent and structurally embedded within the governance of the forest training area. Document analysis of KHDTK management reports (1996–2021), protection activity logs, and field observation records from the doctoral research reveals recurring conflicts related to long-standing agricultural practices, informal cultivation, grazing activities, and access routes that predate the formal designation of the area as a special-purpose forest. These conflicts are further

compounded by recurring wildlife disturbances affecting crops and livelihoods in surrounding villages.

Interview materials collected during the doctoral research show that local community members often acknowledge the forest training area's formal legal status while simultaneously asserting historical, moral, and practical claims to continued access and use. These claims are frequently justified through references to prior land use, unclear boundary demarcation in earlier periods, and shifting institutional roles following the establishment and expansion of forest training functions. As a result, tenurial conflict in the area cannot be understood as episodic violations of forest rules, but rather as an ongoing governance condition rooted in overlapping claims to authority, access, and legitimacy.

Formally, tenurial conflict governance in the forest training area is grounded in national forestry legislation and ministerial regulations governing state forest land and KHDTK management. Relevant documents emphasize state authority, restrictions on land use, and administrative or legal sanctions for violations. However, empirical findings indicate that these formal regulatory instruments are rarely applied comprehensively or consistently in everyday practice. Protection reports and interview materials show that enforcement actions related to tenure conflicts are selective and constrained by limited operational capacity, overlapping institutional mandates, and concerns about disrupting training activities or damaging institutional relationships with surrounding communities.

As a result, formal regulations primarily serve as a source of background authority rather than as an operational mechanism for resolving conflicts. They provide institutional actors with a legal reference point, but do not determine how conflicts are managed on the ground. This gap between formal regulatory frameworks and practical governance creates space for discretionary practices, which become central to how tenurial conflicts are navigated within the forest training area.

3.2.2. Informal mediation, bureaucratic discretion, and fragmented responsibilities

In practice, tenurial conflicts in the forest training area are predominantly managed through informal mediation and bureaucratic discretion. Interview materials indicate that field officers, training managers, and protection personnel frequently engage in direct communication with community members to negotiate temporary arrangements for land use, access routes, and activity timing. These negotiations often result in situational compromises, such as tolerated cultivation in specific locations, delayed enforcement actions, or informal agreements to avoid particular forest sections during training periods.

Field observation records document that such discretionary practices are widely recognized among institutional actors as necessary for maintaining operational stability and preventing escalation of conflict. Rather than being treated as exceptional measures, informal mediation constitutes a routine governance practice embedded in everyday forest management. However, these practices are rarely formalized or documented in institutional reports, reinforcing their dependence on individual judgment and personal relationships.

Empirical findings further highlight significant fragmentation in institutional responsibility for conflict governance. Organizational structure documents and KHDTK management reports indicate that there is no dedicated unit specifically tasked with resolving tenurial conflicts. Instead, responsibilities are distributed across multiple actors, including training managers, field officers,

and protection staff. Interview materials reveal that this distribution leads to variability in responses, with similar conflict situations handled differently depending on personnel availability, institutional priorities, and timing relative to training activities.

Coordination with external factors, such as village authorities, local government agencies, or law enforcement institutions, occurs on an ad hoc basis and is typically initiated only when conflicts escalate beyond the immediate capacity of forest managers. Internal correspondence reviewed in the dissertation documents instances where external coordination was sought reactively, often after tensions had already intensified. This reactive approach reflects both institutional pragmatism and the absence of formalized mechanisms for cross-sectoral conflict governance.

While informal mediation and discretionary practices help contain short-term conflict, they also introduce ambiguity and uncertainty. Because informal agreements are rarely institutionalized, they remain vulnerable to changes in personnel, training schedules, or institutional priorities. This fragility becomes particularly evident during periods of staff rotation or expansion of training activities, when previously negotiated arrangements are revisited or contested.

3.2.3. Legitimacy, trust, and the mediating role of conflict governance

Despite their informality, conflict governance practices in the forest training area rely heavily on perceptions of legitimacy and trust. Interview materials indicate that informal arrangements are more likely to be accepted when field officers are perceived as communicative, consistent, and responsive to local concerns. Long-term interactions between institutional actors and community members foster interpersonal trust, a critical resource for managing conflict in the absence of formal resolution mechanisms. Similar dynamics have been observed in social forestry contexts in Indonesia, where long-term collaboration, informal mediation, and negotiated relationships become central to conflict transformation and governance stability (Maring 2022).

However, empirical evidence also reveals the limits of trust-based governance. Document analysis and interview materials indicate that unresolved or ambiguously managed conflicts frequently re-emerge over time, particularly when training activities intensify or protection measures are expanded. In several cases documented in the doctoral research, community members questioned the legitimacy of enforcement actions by referencing prior informal agreements or historical use claims, highlighting the fragile and contested nature of informal conflict governance.

Training activities play an ambivalent role in shaping conflict governance. On the one hand, increased institutional presence during training periods can reduce overt conflict by strengthening monitoring and facilitating informal communication. On the other hand, training exercises conducted in or near contested areas can intensify tensions, particularly when they are perceived as legitimizing institutional control over disputed land. Training curricula and field instructions reviewed in the dissertation indicate that institutional narratives communicated during training emphasize regulatory compliance and formal authority, with limited space for deliberation over local claims or historical tenure arrangements.

Taken together, the empirical findings demonstrate that tenurial conflict governance functions as a central mediating dimension within the multi-mandate governance system of the forest training area. Effective informal mediation can temporarily align training and forest

protection mandates by maintaining social stability and institutional legitimacy. Conversely, fragmented responsibilities, reliance on discretion, and the absence of formalized conflict resolution mechanisms amplify tensions between mandates and constrain both training implementation and protection effectiveness.

These dynamics underscore that tenurial conflict governance is not a peripheral or reactive function, but a central mechanism shaping how training and forest protection interact in practice. This mediating role is critical for understanding how multi-mandate compatibility is produced and for analyzing forest protection under overlapping mandates.

Although access restrictions associated with training activities rarely generate overt resistance, empirical findings indicate the presence of more subtle forms of response among local communities. These include spatial avoidance, adjustments in the timing of agricultural activities, and informal negotiations to maintain access to forest resources. Such practices reflect forms of everyday or latent resistance, where compliance is negotiated rather than fully accepted. Institutional actors typically respond through discretionary approaches, including temporary tolerance and informal mediation, which help prevent escalation but also sustain underlying tensions.

3.3. Forest Protection under Multi-Mandate Conditions: Regulation, Practice, and Institutional Constraints

Empirical findings show that forest protection in the Tabo-Tabo Forest Training Area is implemented under conditions of overlapping mandates and institutional constraints, consistent with studies showing that forest protection outcomes are shaped by institutional capacity, legitimacy, and competing governance priorities (Myers 1988; Reed et al. 2018; Sahide and Giessen 2015). Protection activities are formally mandated through national forestry regulations and KHDTK management rules, yet their implementation is deeply shaped by the coexistence of training functions and tenurial conflict governance. As a result, forest protection operates not as a standalone enforcement activity, but as a negotiated and adaptive practice embedded within everyday institutional routines.

3.3.1. Formal protection mandates and everyday operationalization

Empirical evidence indicates that forest protection in the Tabo-Tabo Forest Training Area is formally grounded in national forestry legislation and regulations governing state forest land and special-purpose forest areas. Document analysis reveals that Forestry Law Number 41 of 1999, ministerial regulations on forest protection, and KHDTK management guidelines assign clear responsibilities to the managing institution to prevent forest degradation, maintain boundaries, control illegal activities, and protect forest resources.

KHDTK management reports from 1996 to 2021 consistently list forest protection as a formal institutional obligation. These reports outline routine activities, including patrols, boundary maintenance, wildlife monitoring, and disturbance reporting. However, the same documents also indicate that protection is positioned alongside education and training as one of several concurrent responsibilities, rather than as a dominant institutional function. Protection objectives are articulated broadly, but their operationalization depends heavily on available personnel, training schedules, and situational priorities.

Protection activity reports from 2018–2021 show that patrols are conducted regularly but with variable frequency and spatial coverage. Field observations confirm that patrol routes tend to concentrate on areas with clearer boundaries or higher visibility, while more remote or contested sections receive less consistent attention. Interview materials indicate that protection officers are acutely aware of these limitations and often adjust patrol intensity based on perceived risk, recent incidents, and the presence of training activities.

These findings suggest that while formal mandates provide a regulatory framework for forest protection, everyday protection practices are shaped less by strict adherence to formal plans than by pragmatic responses to institutional capacity and competing mandates. Protection thus emerges not as a uniform enforcement regime, but as a flexible set of practices adapted to the realities of multi-mandate governance.

3.3.2. Selective enforcement, boundary ambiguity, and wildlife-related challenges

A defining feature of forest protection in the training area is selective enforcement. Empirical data from protection reports and interview materials indicate that enforcement actions are prioritized based on perceived severity, institutional capacity, and potential implications for training activities and community relations. Minor disturbances, such as small-scale cultivation or non-commercial resource use, are often addressed through warnings or informal negotiation rather than formal sanctions.

Boundary management represents a persistent challenge shaping enforcement practice. Document analysis shows that boundary demarcation has evolved incrementally over time, with periodic re-marking documented in KHDTK management reports. However, historical inconsistencies in boundary placement and limited dissemination of boundary information have contributed to ongoing ambiguity. Field observations confirm that boundary markers are unevenly maintained, with some sections clearly visible and others difficult to identify.

Interview materials reveal that boundary ambiguity constrains enforcement decisions. Protection officers frequently avoid strict enforcement in areas where boundaries are contested or poorly marked, as such actions risk escalating tenurial conflict. In these contexts, boundary management becomes both a technical and a political issue, requiring protection staff to balance regulatory obligations with concerns about legitimacy and social stability.

Wildlife protection and human–wildlife interaction further complicate forest protection efforts. Protection reports document recurring incidents involving crop damage attributed to forest fauna, which directly affect relationships between the managing institution and surrounding communities. Interview materials indicate that responses to wildlife-related incidents are often pragmatic and reactive, focusing on communication with affected residents, situational monitoring, and coordination with relevant authorities when incidents escalate.

Field observations indicate that wildlife monitoring is occasionally incorporated into training activities, providing opportunities for data collection and awareness-building. However, these efforts are intermittent and depend on training schedules rather than being embedded in a continuous protection strategy. As a result, wildlife-related challenges remain a source of recurring tension that protection practices alone cannot fully address.

3.3.3. Protection capacity, resource constraints, and interactions with other mandates

Empirical findings highlight significant organizational and resource constraints affecting forest protection capacity. Organizational structure documents indicate that dedicated protection personnel are limited in number and often share responsibilities with training support tasks. Protection staff frequently perform multiple roles, including assisting with training logistics, guiding field exercises, and responding to conflict-related issues.

The budget planning documents and annual activity reports reviewed in the dissertation show that forest protection does not have a standalone budget line comparable to that of training programs. Instead, protection activities are often embedded within broader operational expenditures or implemented opportunistically when training programs mobilize personnel and logistical support. Interview materials confirm that patrols, boundary maintenance, and monitoring activities are more intensive during periods of active training, when institutional presence in the forest is temporarily expanded.

This dependence on training-related mobilization creates both opportunities and constraints. On the one hand, training activities enhance protection by increasing surveillance coverage and extending institutional presence. Protection reports from 2018–2021 indicate higher disturbance detection during training periods, suggesting a positive spillover effect. On the other hand, protection efforts outside training periods are more limited, reflecting the absence of dedicated resources and personnel.

Interactions with tenurial conflict governance further shape protection outcomes. Interview and observation data show that effective informal mediation facilitates protection enforcement by reducing resistance and maintaining institutional legitimacy. Conversely, unresolved tenure disputes constrain protection actions, particularly in contested areas where enforcement may trigger renewed conflict. In such cases, protection officers often rely on discretion and negotiation rather than formal sanctions.

Taken together, these dynamics indicate that forest protection in the training area is deeply embedded within multi-mandate governance processes. Protection outcomes are shaped not only by formal regulations but also by how protection practices are coordinated with training activities and mediated through conflict governance mechanisms. Rather than operating as a standalone enforcement function, forest protection emerges as an adaptive practice negotiated within everyday institutional routines.

3.4. Patterns of Mandate Compatibility: Synergy, Fragmentation, and Contradiction in Practice

This section synthesizes empirical findings from the previous sections to examine how training, tenurial conflict governance, and forest protection interact in practice. Rather than producing a single, stable governance outcome, these mandates generate shifting patterns of compatibility shaped by institutional routines, resource allocation, and responses to social and ecological pressures. The analysis identifies three dominant patterns of mandate interaction that coexist within the forest training area, echoing broader debates on multifunctional forest governance and institutional fragmentation (Rayner 2012; Sayer et al. 2013).

3.4.1. *Situational synergy and conditional reinforcement among mandates*

Empirical evidence indicates that synergistic compatibility emerges under specific, situational conditions rather than as a sustained governance arrangement. Protection activity reports from 2018–2021 show that periods of intensive training are associated with increased detection of boundary disturbances, wildlife incidents, and other forest protection concerns. Field observation records confirm that the presence of trainers, trainees, and supporting staff during these periods expands institutional visibility and monitoring coverage.

Training exercises that incorporate protection-related modules create learning environments where trainees engage directly with real governance challenges, such as patrol routines, boundary identification, and disturbance reporting. In these contexts, training functions reinforce protection objectives by embedding enforcement practices within learning processes. Interview materials further indicate that increased institutional presence during training periods facilitates informal communication with local actors, clarifying institutional expectations and temporarily reducing overt conflict.

However, these synergies remain conditional and spatially uneven. They depend on the alignment of training schedules, the availability of personnel, and the absence of acute tenure disputes in training locations. Where training activities overlap with contested land use or sensitive ecological zones, synergy is less likely to emerge. As a result, synergistic compatibility operates as an episodic outcome rather than an institutionalized feature of forest training governance.

3.4.2. *Fragmented coexistence as the dominant governance pattern*

The most prevalent pattern observed across the empirical material is fragmented coexistence. Document analysis of organizational structures, annual plans, and management reports indicates that training, tenurial conflict governance, and forest protection are largely implemented through parallel institutional routines with limited formal coordination. Each mandate follows its own planning, reporting, and evaluation logic, reflecting distinct institutional priorities.

Training programs are designed and assessed primarily based on educational outputs, such as participant numbers and curriculum completion. Forest protection activities are reported through separate mechanisms, focusing on patrol frequency and disturbance detection. Tenurial conflict governance, meanwhile, operates largely through informal mediation and discretionary practices that are weakly documented and rarely linked to institutional performance indicators.

Interview materials reveal that institutional actors often manage these mandates sequentially rather than integratively, responding to immediate demands as they arise. For example, training schedules may proceed independently of protection planning, while conflict issues are addressed reactively when they threaten institutional stability or training continuity. Field observations confirm that this fragmentation allows mandates to coexist without constant confrontation, providing a degree of operational stability.

However, fragmented coexistence also constrains institutional learning and limits the capacity to anticipate or prevent emerging conflicts. Because interactions among mandates are not systematically reflected upon or coordinated, lessons learned in one domain are rarely translated into adjustments in others. As a result, governance remains adaptive but shallow, relying on short-term problem-solving rather than strategic integration.

3.4.3. Contradictory dynamics and governance tensions in contested spaces

Contradictory dynamics emerge most clearly in socially contested and ecologically sensitive areas of the forest training area. Empirical evidence from field observations and interview materials documents instances where training infrastructure development or repeated field exercises overlapped with areas informally used for agriculture, grazing, or access routes. In these contexts, training activities intensified tensions and undermined both conflict governance and protection efforts.

Unresolved tenure issues and boundary ambiguity often constrain the enforcement of protection in contested areas. Protection officers reported avoiding strict enforcement in such areas to prevent escalation, leading to selective enforcement and delayed action. In these situations, the protection mandate conflicts with the need to maintain institutional legitimacy and ensure the smooth delivery of training programs.

Document analysis indicates that contradictory dynamics are rarely addressed through formal institutional mechanisms. Instead, they are managed through temporary measures, such as relocating training activities, postponing enforcement actions, or relying on informal mediation. While these responses mitigate immediate tensions, they do not resolve underlying incompatibilities among mandates. Over time, unresolved contradictions contribute to recurring conflict and reinforce perceptions of inconsistency in governance.

3.5. Reframing Forest Training Areas as Multi-Mandate Governance Arenas

This study demonstrates that forest training areas cannot be adequately understood as neutral or purely technical spaces for capacity building. Instead, the findings reposition forest training areas as multi-mandate governance arenas, where training, tenurial conflict governance, and forest protection are continuously negotiated through institutional practices, power relations, and bureaucratic discretion. This perspective aligns with broader critiques in forest governance literature that challenge technocratic and sectoral understandings of forest management ([Arts and Visseren-Hamakers 2012](#); [Myers 1988](#); [Myers et al. 2018](#)).

While multifunctional forest management has been widely discussed, existing studies largely focus on protected areas, production forests, or community forestry arrangements ([Rana and Chhatre 2017](#); [Sayer et al. 2013](#); [Ziegert and Sotirov 2024](#)). Forest training areas have remained marginal in these debates, often assumed to be administratively straightforward due to their educational purpose. The empirical evidence from Tabo-Tabo challenges this assumption by showing that training mandates actively shape access, spatial use, and legitimacy, producing governance dynamics comparable to those observed in more explicitly contested forest categories.

By conceptualizing training as a governance instrument rather than a neutral function, this study extends institutional analyses of forest governance that emphasize how mandates are enacted through everyday bureaucratic practices ([Haque 1997](#); [Sahide et al. 2019](#)). Training routines, infrastructure development, and performance metrics do not merely support learning outcomes, but also structure authority and prioritize particular forms of knowledge and forest use. This finding resonates with studies showing that institutional functions, such as capacity building or technical assistance, can reinforce bureaucratic dominance and marginalize alternative knowledge systems ([Giri and Ojha 2011](#)).

Overall, the findings support the argument that forest training areas should be analyzed as evolving governance arenas rather than as auxiliary or technical units within the forest

administration system. This reframing is critical for understanding how multiple mandates interact and why governance outcomes cannot be reduced to policy design alone. This finding shifts the analytical focus from institutional design to everyday governance practice, emphasizing that compatibility is not engineered but continuously produced through interaction, negotiation, and discretion.

3.6. Mandate Compatibility as a Dynamic and Contingent Governance Outcome

A central contribution of this study lies in advancing mandate compatibility as a dynamic analytical concept. Rather than treating compatibility as a managerial objective or a design feature of forest policy, the findings show that compatibility emerges through continuous negotiation, adaptation, and discretionary practice within everyday governance. This perspective builds on institutional theories that emphasize the interplay of power and scale in environmental governance (Young 2002).

The Results identify three recurring patterns of mandate interaction: synergistic compatibility, fragmented coexistence, and contradictory dynamics. Importantly, these patterns coexist within the same forest training area, often simultaneously across different spatial and temporal contexts. This challenges linear governance models that assume multiple mandates can be harmonized solely through formal coordination or integration mechanisms.

Fragmented coexistence emerges as the dominant pattern, reflecting broader observations in forest governance literature that institutions often manage complexity through parallel routines rather than integration (Rayner 2012; Wibowo and Giessen 2015). In the Tabo-Tabo case, training, conflict governance, and forest protection operate through distinct institutional logics, reporting systems, and performance indicators. While this fragmentation allows mandates to coexist without constant confrontation, it limits institutional learning and constrains long-term governance effectiveness.

Synergistic compatibility appears episodically, particularly when training activities temporarily enhance protection capacity or facilitate informal communication with local actors. However, these synergies remain fragile because they depend on situational alignment rather than institutionalized coordination. This finding echoes critiques of multifunctional governance arrangements that rely on temporary alignment rather than durable governance mechanisms (McShane et al. 2011).

Contradictory dynamics are most evident in socially contested spaces, where training activities and protection enforcement intersect with unresolved tenure claims. These dynamics reinforce arguments that unresolved tenure and legitimacy issues fundamentally shape conservation and governance outcomes (Myers et al. 2018; Sahide et al. 2019). In such contexts, technical coordination alone is insufficient to resolve mandate incompatibilities.

These findings contribute to forest governance literature by challenging the assumption that multifunctional forest management can be effectively harmonized through formal coordination and institutional design alone (Rana and Chhatre 2017; Sayer et al. 2013). Instead, the results demonstrate that mandate compatibility emerges as a dynamic and contingent outcome shaped by everyday bureaucratic practices, discretionary decision-making, and power relations (Haque 1997; Myers et al. 2018; Sahide et al. 2019).

The study further refines existing debates by showing that fragmented coexistence, rather than synergy, may represent the dominant and relatively stable governance condition in multi-

mandate forest systems. This finding suggests that governance effectiveness may depend less on achieving full integration and more on institutions' capacity to manage fragmentation and navigate competing mandates in practice.

Finally, by introducing mandate compatibility as an analytical lens, this study extends current approaches to forest governance by providing a framework for examining how overlapping institutional objectives interact, reinforce, or undermine one another in practice, particularly in underexplored governance arenas such as forest training areas.

3.7. Bureaucratic Politics, Discretion, and the Limits of Technocratic Solutions

The findings underscore the central role of bureaucratic politics and discretion in shaping outcomes of multi-mandate governance. While formal regulations provide an overarching framework for action, they do not determine how mandates are implemented in practice. Instead, institutional actors navigate competing mandates through discretionary decisions, informal mediation, and selective enforcement. This aligns with bureaucratic politics perspectives that emphasize how authority is exercised through everyday practice rather than solely through formal rules (Haque 1997; Sahide et al. 2019; Sahide et al. 2023).

Reliance on discretion reflects both institutional pragmatism and structural constraint. Limited resources, overlapping responsibilities, and performance metrics focused on training outputs incentivize flexible, situational responses rather than systematic conflict resolution or proactive protection strategies. Similar patterns have been observed in other forest governance contexts, where discretion enables short-term stability but also produces ambiguity and uneven outcomes (Myers 1988; Myers et al. 2018).

The case of forest training areas highlights the limits of technocratic governance approaches that assume technical training, regulatory instruments, or standardized procedures can resolve complex socio-tenurial challenges. While technical capacity building enhances professional skills, it does not automatically address issues of legitimacy, historical claims, or power asymmetries. Without explicit attention to conflict governance and political dynamics, training risks reinforcing bureaucratic dominance and marginalizing local perspectives, as observed in other institutionalized forestry contexts (Giri and Ojha 2011; Reed et al. 2018).

This finding reinforces calls to move beyond depoliticized governance models and to recognize discretion, negotiation, and power as inherent elements of forest governance rather than as implementation failures.

3.8. Implications for Forest Governance and KHDTK Management

The findings suggest that improving mandate compatibility in forest training areas requires more than general coordination; it requires the development of concrete institutional mechanisms. First, conflict governance should be formally integrated into training activities, functioning not only as capacity-building exercises but also as platforms for engagement with local tenure realities.

Second, cross-functional coordination mechanisms need to be institutionalized, linking training units, protection personnel, and conflict management actors through joint planning, shared reporting systems, and regular coordination forums. Such mechanisms can help reduce fragmentation and improve alignment across mandates.

Third, institutional guidelines should allow for adaptive, context-sensitive enforcement practices, recognizing the need for discretionary decision-making in socially contested areas while maintaining accountability.

Finally, aligning performance indicators and resource allocation across mandates is essential to address the current asymmetry, where training functions dominate institutional priorities. Strengthening these mechanisms can enhance both governance effectiveness and legitimacy in forest training areas. Without such mechanisms, multi-mandate governance risks remaining adaptive but structurally fragmented.

4. Conclusions

This study demonstrates that forest training areas function as multi-mandate governance arenas, where training, tenurial conflict governance, and forest protection interact in dynamic and context-dependent ways. The findings show that these mandates are not inherently compatible, but produce varying patterns of interaction, including situational synergy, fragmented coexistence, and contradictory dynamics, depending on institutional arrangements, resource allocation, and everyday bureaucratic practices. By introducing mandate compatibility as an analytical lens, this study contributes to forest governance literature by highlighting how overlapping institutional objectives are negotiated in practice rather than harmonized through formal design. The results further emphasize the critical role of conflict governance as a mediating dimension that shapes legitimacy and the effectiveness of both training and protection functions. From a policy perspective, the study suggests the need for stronger integration of conflict governance into training systems, improved cross-mandate coordination, and more adaptive institutional arrangements to manage complexity in special-purpose forest areas (KHDTK).

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Author Contributions

P.A.L.: Conceptualization, Methodology, Investigation, Data Curation, Writing – Original Draft Preparation, A.M.: Formal Analysis, Investigation, Resources, Writing – Review and Editing, Y.: Investigation, Data Curation, Writing – Review and Editing, M.A.K.S.: Conceptualization, Supervision, Writing – Review and Editing, Project Administration.

Conflict of Interest

The authors declare no conflict of interest.

Declaration of Generative AI And AI-Assisted Technologies in the Manuscript Preparation

During the preparation of this manuscript, the authors used AI-assisted language tools, including ChatGPT and DeepSeek, to support translation and enhance English clarity. These tools were used solely for language assistance and not for generating data, analyses, or research findings. After using these tools, the authors carefully reviewed, revised, and validated the manuscript content. The authors take full responsibility for the accuracy, integrity, and originality of the work.

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