

Mangrove Forest Tenure Conflicts: Institutional Approach to the Forest Management Unit Context in Aceh Province, Indonesia

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ABSTRACT. Mangrove forests are shared natural resources that are always contested by many parties in their use. Forest resources are often a source of conflict involving various interested parties in these resources. Community claims that demand access to state forests often lead to social conflicts involving the community, government and companies. The purpose of this study is to present an analytical framework in identifying emerging land conflicts and how to encourage conflict resolution. Primary data obtained by participatory observation by looking at the condition of the mangroves which is a source of conflict for the village community. Secondary data are in the form of permit documents, cooperation documents, and reports. The selection of research locations was carried out deliberately with the criteria of villages that have institutions in mangrove management where conflicts of interest occur due to mangrove management policies. A case study looking at community-based mangrove forest management in the area of Forest Management Unit (FMU) region 3 in Aceh Province has contributed to formulating policy reforms in handling conflicts. The institutional approach has explained how informal norms influence institutional behavior in natural resource management and institutional approaches in collaborative practices, formal and informal institutions, as well as understanding policy issues by different actors in exploiting the situation. By using an institutional approach as an effort to identify potential conflicts and analyze local institutional arrangements to resolve this conflict.

Keywords: *conflict, mangrove, institutional, FMU.*

1. INTRODUCTION

Conflict over the control of mangrove forests occurs due to the domination of the government as a state representation in forest management which is often contrary to the role and interests of local communities. This domination triggered the resistance of local communities to get a fair distribution of resources and certainty of access rights. Conflict is often caused by conflicting interests [1,2] (Krott 2005; Sahide and Giessen 2015) in the use of resources. Driven by increased competition for land and population pressure [3, 4], conflict often results in severe violence and economic and environmental losses [5]. It is estimated that an area of 17.6 million-24.4 million hectares of forest conflicts occur in the form of overlapping state forest claims and claims by indigenous peoples or other local communities, as well as other sector permits which are in practice located in forest areas [6]. Conflicts that occur are often very complex [7] because of different perceptions of various parties [8], or how they frame them [9]. This has been demonstrated by the existence of spontaneous and organized movements that demand access to state forests [10] and increasing demand for agrarian reform [11]. Even local communities claim ownership of some parts of the forest [10].

To overcome the conflict of mangrove resources, arrangements are needed in its utilization. Setting

rights to resources will determine the parties' incentives to conserve natural resources [12]. One of them is tenure security (tenurial security) as a form of recognition of the rights of local communities in forest management. The relationship between local people and the land is determined based on the history of land management for generations, the recognition of traditional leaders, and the testimony of others. The institution that develops in the tenure system at the local level is who first opens the land, then he is the owner [13]. In addition to conflicts over rights over forest areas, forestry issues are increasingly complex with institutional problems, including the still weak central-regional government relations forest protection and rehabilitation rather than addressing root causes such as overlapping land claims [6].

On the other hand, the role of local institutions as norms that protect local communities in managing mangrove resources is considered very effective. This condition shows that resource users have the ability to carry out collective actions, and make rules governing the use, management and protection of mangrove resources. Local communities are more likely to obey and enforce rules in which they themselves participate in making it. One of the efforts carried out by FMU in resolving these mangrove management conflicts is through collaboration in management with local communities. The involvement of local communities in mangrove resource management is possible because

local communities are more aware of the ins and outs of mangrove ecological processes and practices and are better able to effectively manage these resources [14], building partnerships between communities and the government to improve ownership regimes [15], cooperation management with the community can increase if the user group gets the right to resources and has the authority to exclude unauthorized parties [16, 17, 18]. By defining the resources and boundaries of user groups can clearly reduce conflict and improve the compliance of user groups according to the rules [19], and reduce uncertainty in resource ownership [18].

Therefore, it is necessary to formulate the institutional approach that is used including the regulation of the existence of the rights of local communities and the role of the parties involved in handling conflicts. This study formulates, how FMUs as institutions at the site level are able to synergize with local institutions in handling conflict constructively in the field. Thus, this study aims to: (1) analyze land conflicts; (2) identify the potential for conflict; and (3) explain the conflict resolution mechanism.

2. RESEARCH METHOD

2.1 Location And Time

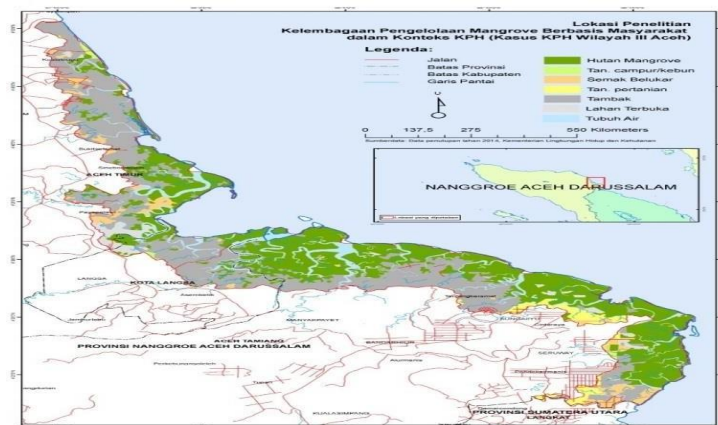


FIGURE 1. Map of research locations (source: aceh model protected fmu map and forest area function).

The research location in the mangrove forest area in FMU region 3 of Aceh Province, is administratively located in Aceh Tamiang District, Langsa City, and East Aceh Regency like Figure 1. Data collection in the field was carried out for three months, from January 2016 to March 2016.

2.2 Data Collection

The type of data collected in the form of primary data and secondary data. Primary data is obtained by participatory observation by looking at the condition of mangroves that are a source of conflict for the community of Pusong Kapal Village (CPKV), the community of Pusong Telaga Tujoh (CPTT), and Community Forest (CF) Bina Mufakat. An open interview (In Depth-Interview) on conflict with the case study method was conducted on community leaders, village heads, non-governmental organizations (NGOs), universities, several related agencies involved and affected. Secondary data were in the form of licensing documents, collaborative documents, and reports. The choice of the research location was intentionally (purposive sampling) with the criteria of the village which had an institution in the management of mangroves where there were

conflicts of interest due to mangrove management policies.

Suggestion forms [20] that patterns of conflict can be categorized into three forms, namely: (1) latent conflicts which are hidden and needed to be raised to the surface, so that they can be handled effectively; (2) open conflict that is deeply rooted and very real and requires various actions to overcome the root causes and various impacts; and (3) conflicts on the surface have shallow or rootless roots and arise only because of misunderstandings about something that can be overcome by good and intensive communication. [6] states that there are four typologies of tenurial conflicts that are grouped as follows: (1) severe tenurial conflicts, which are characterized by strong rights from the community, both in customary law and positive law; (2) minor tenurial conflict, which is characterized by the existence of land tenure that can be proved to be weak on the basis of its rights and generally arises as a result of poverty or an urge to fulfill its life needs; (3) the problem of access to forest resources, namely the utilization of forest resources without land tenure claims, but with historical evidence that can be

rationaly accounted for; and (4) the problem of illicit activities, namely land tenure and / or utilization of resources that do not have strong rights or do not have historical evidence that can be rationaly accounted for.

2.3 Data Analysis

The analysis uses a descriptive-qualitative approach with case study methods. This approach is used to describe in a comprehensive and in-depth manner the institutional conditions and control over mangrove forests.

3. RESULT AND DISCUSSION

3.1 Conflict in Mastering Mangrove Resources

Conflict and violence are different things. Conflict is a relationship between two or more parties (individuals or groups) who have or feel that they have goals that are not in line (Mitcheil 1981 referred to in [20]). Whereas violence is defined as including actions, words, attitudes, various structures or systems that cause physical, mental, social or environmental damage, and / or prevent someone from achieving their full potential. The statement from [21] that a conflict occurs in which a group feels restricted by another group.

Conflict is not something that can be avoided or hidden but its existence must be acknowledged, managed and transformed into a force for positive change. A conflict management approach is needed to minimize the negative consequences of conflict, requiring a good understanding of the causes and impacts of the conflict [22]. Conflict is an incentive for the adoption of a variety of natural resource management technologies by the community spurring positive social change and generating new ideas and incentives for natural resource management [23], and conflict interpreted as perceptions of differences in interests [24].

There are a various different interests in the same forest resources, consequently causing a lot of horizontal conflict between various elements of society. Changes in social, cultural, environmental, economic, legal and political conditions create new interests and needs for forest resources. [25] Notes that institutional conflict arises when formal (public) and informal (private) goals are conflicting and when

the government fails to maintain its policies, especially regarding to property rights.

The existence of an FMU can also increase conflict when interested parties insist on obtaining primary control. The cause of conflict refers to the basis of the problem being contested by the actor [26]. There is tenure uncertainty for local communities, by ignoring the existence and needs of local people who depend their lives on natural resources in the forest area [27]. Facts on the ground prove that so far, the mechanism for resolving conflicts has not taken sides with essential justice, which is acknowledged and adhered to by the people. The majority of solutions are only procedural. As a result, even though the case is de jure deemed complete, but in fact it has not.

In resolving conflicts, equality between parties is needed in the first opportunity to take a conflict resolution option. As long as equality does not exist, solution will not be obtained but rather the possibility of delay, damping, concealment or something new to cover the potential for greater conflict. In resolving the conflict an understanding of the basic values of justice and non-violence is needed. Conflict (root of the problem, conflict space, and parties involved), as well as conflict management mechanisms that are in accordance with the socio-cultural character of the community and institutional device readiness [28].

Conflict over control of mangrove resources occurs when resources are disproportionately distributed in terms of the abundance of certain resources enjoyed by some people while others cannot enjoy them. Meanwhile, mangrove forest resources as state property are shared resources, where people only use it without willing to maintain and are responsible for preserving it. In order to achieve sustainable management, effective institutions are needed [29].

Conflict analysis is approached by an institutional approach, in which a set of rights bundles can be used to regulate the behavior of people who use them and provide rules that must be obeyed by users in using them. Ostrom [30] has classified rights bundles consisting of: access rights, utilization rights, management rights, restricting rights, and transfer rights. To explain a set of mangrove resource rights in the study area as in Table 1.

TABLE 1. Bundle of rights in the study area

Bundle of Rights	DPK Community	DPTT Community	HKm Community
Access Rights	Passing right (yes)	Passing rights (yes in part)	Passing right (yes)
Withdrawal Rights	Limited to non-timber forest products and environmental services based on an agreement with FMU. (yes)	Use of wood if there is a permit from the village head and only for personal use. (yes in part)	Based on the permission of the Governor and Minister of Forestry (yes)
Management Rights	Based on agreement with FMU (yes)	Do not have (No)	By permission Governor and Minister of Forestry (yes)
Exclusion Rights	There are village rules both written and unwritten (yes)	There is an unwritten village rule (yes)	Obligation, based on the permission of the Governor and Minister of Forestry (yes)
Alienation Right	No	No	No

Source: Primary data processed (2016).

Table 1 shows that de facto, the community has almost all rights, except alienation rights. This proves that the community in and around the forest area is de facto recognized by the government (FMU) as the owner. With this fact, it can encourage the recognition of the rights of local communities with a formal legal approach, namely through the scheme of village forests, community forests, and community plantations. Cooperation carried out by the Provincial Forestry Service cq FMU with the PKV community stated in the cooperation agreement number: 050/1149-V (Aceh Forestry Office) and number: 470/76/2020 (Kampung Kuala Pusong Kapal) is an example that with this collaboration there is recognition from the government to the PKV community in mangrove management. With this recognition is a power incentive for the PKV community to manage mangrove forests. The more collections of rights (bundle of rights) owned by a person or group, the more perfect the ownership rights, so that the allocation efficiency can be expected [31]. Efforts to reduce demands and provide the best utilization options for resources and at the same time strengthen recognition through long-term management and collaborative forest management [32].

In this view, many research results have recommended that local institutions must be officially recognized in their forest management [33]. The reason is because they really understand the local practices and situations. However, in reality this recommendation is not always appropriate that local institutions always achieve successful forest

management. The interaction between formal institutions and informal institutions (as demonstrated by FMU and PKV communities) that do not operate independently of each other in influencing how people behave and act, but they interact and produce operational "rules" about how people act [34]. With this interaction where FMU and the PKV community motivate the same actions achieve the same results and influence their performance. In enforcing rules and norms in the management of mangrove resources, based on nationally applied rules and rules that are made and applied in the local community. However, in practice the local community adheres more to unwritten rules that apply in the community.

3.2 Conflict Typology

In Indonesia conflicts over forests often occur between indigenous / local communities and external actors, for example with mining companies, plantations and forest concession companies [35, 25, 36]. Land tenure issues are a key issue for several reasons. Unclear or insecure tenure by itself can drive deforestation. Resource users may have little incentive to protect resources that they feel are not their interests. Forest clearance may be one way of demonstrating occupation when claims of authorities are disputed [37]. Therefore, forest clearing can strengthen claims on land [38].

The statement from [37] in Indonesia, all land that is not encumbered by registered land rights is treated as state land. Because of the limited distribution of rights (on land) that are registered because procedures are not accessible, in practice this means that customary control over land, where local residents

have clear rights over forest land, is treated as state-owned land (or controlled by the state) by the national legal system.

To analyze the basic concepts of property rights and how the allocation of community rights to forest resources works in theory and practice, can be approached by typologies and property rights bundles from Schlager and Ostrom. The absence of ownership rights causes the depletion of resources, so resource users will organize themselves and make rules that determine property rights [39]. This typology is a way

of identifying and distributing rights and responsibilities to interested parties [40], which is mostly used to analyze property rights regimes relating to natural resources [41].

Table 2 shows that private property has more bundles of property rights, thus providing more incentives for resource management. The more collections of rights (bundle of rights) owned by a person or group, the more perfect the ownership rights, so that the allocation efficiency can be expected [31].

TABLE 2. Property Typologies and Rights Bundles

Bundles of Rights	Right of ownership	Incentives are expected to manage resources
Authorized user Claimant Proprietor Owner	Enter + utilize All of the above + Management All of the above + Exclusion All of the above + Alienation	Weak Better Strong Very strong

Source: [30]

Guaranteed tenure will elevate the position of local people in relations with the government and the private sector. On the other hand, unsecured tenure makes local communities vulnerable to revocation of ownership. Therefore, FAO [42] sees that natural resource management conflicts are based on differences of opinion and disputes regarding access and management of resources.

Land tenure conflicts arise as a result of various people's perceptions and interpretations of their rights to forest land and resources. These differences in perceptions and interests are seen from the actors or stakeholders involved. Actors or parties involved in this matter are called conflict subjects. The subject of conflict according to [43] is the actor involved in the land or land tenure system, both those who influence and those who are affected. The factors that cause conflict are due to claims to manage forest and land

resources, such as access and ownership rights [44], differences in interests [45]; conflicts arise when formal (public) and informal (private) have conflicting objectives and when the government fails to maintain stable provisions, especially in relation to property rights [25]. In identifying the root of the problem arising from control of forest resources through an approach that is oriented to the conflict management process that refers to the communication patterns of the actors and how existing regulations can regulate the interests of the parties. The main causes of land tenure conflicts can be known in various claims by actors involved due to lack of clarity, legitimacy and legality of land tenure policies. To find out the conflict typology, it is necessary to identify so as to facilitate analyzing the occurrence of the conflict. Table 5 shows the typology of conflicts that occurred in the three study areas.

TABLE 3. Typology of conflicts in the three study areas

Conflict typology *)					
Study Area	Weight	Light	Problems with access to forest resources	Problem of Illicit activity	Conflict pattern**)

PKV Community		<ul style="list-style-type: none"> Utilization of mangrove forest products by the local community after obtaining permission from the village head. Utilization by other users outside the PKV community 	<ul style="list-style-type: none"> Ownership based on hereditary customs 	<ul style="list-style-type: none"> Illegal land use comes from outside the community 	<ul style="list-style-type: none"> Conflict on the surface, especially for other users outside the community Due to the fact that they are not found out there are unwritten rules norms in the community
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PTTV community		<ul style="list-style-type: none"> Use of wood for making houses etc. after obtaining permission from the village head Utilization 	<ul style="list-style-type: none"> Ownership based on hereditary customs 	<ul style="list-style-type: none"> Illegal land use comes from outside the community 	<ul style="list-style-type: none"> Conflict on the surface, especially for other users outside the community. Due to the fact that they
		by other users outside the PTTV community			are not found out there are unwritten rules norms in the community
CF Bina Mufakat	There is an authority and the use of land for ponds, not having rights	Communities outside CF cut down mangroves to become charcoal	CF ownership based on permission from the government. Whereas the community believes ownership based on custom for generations	Illegal land use from outside CF	Latent conflict, especially in communities that are not included in the CF group

Source: Primary data processed (2016). *) [6]; **) [20].

Based on the conflict typology groupings shown in Table 3, there are interesting lessons that local communities do not always demand their land rights, especially for the PKV community and the PTTV community. Both of these regions are classified as minor tenurial conflicts, this is because they have been bound by unwritten rules governing the

procedures for managing and utilizing mangroves that are within their territory as well as protecting their territories. The existence of other users outside the two communities is more due to their lack of knowledge (other users) of the existence of unwritten rules or norms applied in both regions. Usually the resolution of the conflict is carried out by deliberation

by making a statement not to repeat the act or they are given social sanctions such as cleaning the mosque or the mosque in the area. Usually the resolution of the conflict is carried out by deliberation by making a statement not to repeat the act. However, if repeated errors will be subject to heavier sanctions.

Conflict over land tenure in forest areas in the study area is mostly due to weaknesses in forest management by the government which reduces the control function of forests as CPRs [46], so that forest areas become open access and prone to occupation of other unauthorized parties. While for CF Bina Mufakat it is classified as a heavy tenurial conflict, because there is land tenure for other purposes but does not have a strong rights base. This case is the result of a long-standing omission. Another typology of conflict is minor conflict, in which people outside CF cut down mangroves as raw material for charcoal

which is their source of livelihood. This was done because it was supported by cukong (investors) behind it; partly related to the problem of access to mangrove resources without land tenure claims and partly the problem of illicit activities, usually from other users outside the CF group. Indigenous peoples' claims are often not officially recognized by the state even though this claim process is carried out in many countries [44]. Seeing the pattern of conflict in the CF region, which is latent conflict which is hidden and needs to be brought to the surface so that it can be handled effectively, if it is allowed to drag on it will impact as a time bomb, while the type of conflict that occurred in the three study areas was mainly related to the mangrove logging case, distribution of utilization, and land claims. The type of conflict in the three study areas can be seen in Table 4 below.

TABLE 4. Types of conflicts in the three study areas observed

Type of Conflict	Main Case	Conflict description
A. PKV Community Local communities vs. outside communities	Mangrove logging	Outside communities (either from other villages or other sub-districts, other districts,
Local community vs government (FMU) Local communities vs. oil palm plantation companies	Distribution of utilization	even from other provinces), cut down mangroves within the PKV community management area. This often leads to the anger of the community by making arrests, and giving sanctions. In addition to the unwritten rules norms the PKV community has also made and ratified the written rules in mangrove protection efforts. The collaboration carried out by FMU with the PKV community, makes other villagers, who live next to the PKV community, reap jealousy, why only PKV villagers are invited to cooperate while other neighboring villages do not.
	Land claim	An oil palm plantation is clearing land by conducting land clearing in front of the PKV community. The community assisted by the NGO Lembah Tari in advocating for the community to protest to the local government because it was not in accordance with the spatial layout. Finally, the operations of the oil palm plantation company were stopped.
	Mangrove logging	Usually outside communities from other sub-districts in one city or outside the district do mangrove logging, which is

<p>B. PTTV community Local communities vs. outside communities</p> <p>C. Community of CF Bina Mufakat Local communities vs. outside communities (outside CF)</p>	<p>Land claim</p>	<p>protected by the PTTV community. Outside communities do not know and do not understand the rules norms applied by the PTTV community in protecting mangroves in their area.</p>
<p>CF community vs farmers</p>	<p>Land claim</p>	<p>Local people outside the CF community claim that they are cutting down the CF area in an effort to fulfill their daily needs, while CF is only letting go.</p> <p>In addition there are land claims by the community by opening ponds because they assume that this land is a hereditary right, the CF does not take preventive or sanctioned actions</p>

Source: Primary data processed (2016)

3.3 Conflict Management Strategy

Conflict resolution is an effort made to overcome and find a way out of a conflict event. Initiatives can come from parties involved in the conflict or from third parties who are not involved in the conflict. The form of efforts taken can vary, from the very simple to the court level by taking legal action [20]. In the context of resource policy, conflict itself is not a problem, but the problem is, how to manage the conflict. A conflict management approach is needed to minimize the negative consequences of conflicts. The first approach requires a good understanding of the causes and impacts of the conflict [22]. Some parties may be interested in maintaining conflict at a low level, conflicts managed properly can benefit all stakeholders.

The involvement of local communities participating in the forestry sector will strengthen forest users. Empowerment of disadvantaged groups gets some strength [47]. Empowerment is manifested as control over access to resources means that it has to allow forest users to directly influence forests and use forests. Furthermore, access and control over forest resources are often associated with the extent to which users can benefit from resources [48]. Therefore, safe and control access is the main key to

empowerment. Having effective ownership rights over the forest, users can exclude others, utilize resources and allocate access [49]. Institutional arrangements designed to regulate behavior in facilitating cooperation can increase compliance with rules. This is because clear social boundaries, monitoring and implementing sanctions will increase public trust to cooperate, which is important for a more effective collaboration mechanism. Thus, justice created by institutional arrangements results in equality of benefits which also plays an important role for actors to accept and comply [50].

In the context of resource policy, conflict itself is not a problem, but the problem is how to manage the conflict. Conflicts can be caused by different interpretations of information or a different set of information, from differences that underlie social values, or different perceptions of who wins and who loses. Based on the factors that cause conflict, a formulation of how the approach taken to minimize the possibility of conflict in mangrove management in FMU region 3 of Aceh Province can be made. Steps that need to be taken in handling conflicts: (1) conflicts rarely involve one issue. Many of the conflicts are a byproduct of increasing competition for land. In the process of clarification of ownership, consultation must be conducted with the community,

after being identified, must be recognized, respected, and included in the broader land use plan. If needed, participatory mapping with the community can be done to reduce conflict of claims over land; (2) there needs to be a professional conflict mediator. Information about this it can be accessed by the public; (3) the conflict is expensive and there are no winners, therefore it needs to be handled adequately and with the right time; (4) synergizing FMU programs with community livelihood patterns in mangrove management; and (5) management training in an effort to increase the role of community institutions as partners in mangrove management.

4. CONCLUSION

Conflict in mangrove management in FMU region 3 of Aceh Province is basically related to the problem of how the conflicting conflict will access to certain resources with control over the policy process and the ability to represent their constituents. When resources can be distributed equitably, there is recognition of community rights, and weak parties can persuade strong parties that they are interdependent, that is by increasing their ability to represent and mobilize their constituents. When the collaboration process is established, it starts by setting the right basic rules on how the parties will interact and decisions are made with an institutional approach. Through institutions can be understood as formal rules and informal norms will be obeyed by related parties. Conflict makes people more aware of their rights to land and the steps that need to be taken to protect their rights. Meanwhile, FMU plays a role by establishing a harmony and trust relationship with local institutions to reduce the negative impact of the conflict with appropriate treatment. Thus, conflict management can be maintained at a low level so that they can benefit.

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