Stakeholder Mapping in the Management in Lingga Isaq Hunting Park Protected Area, Aceh Tengah

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Article Info	ABSTRACT
	Stakeholder mapping is an important step in managing conservation areas to understand and involve interested parties in decision making. Bur Lingga Isaq Park in Central Aceh is a conservation area that has high biodiversity and is important to preserve. This research aims to carry out stakeholder mapping in the management of Bur Lingga Isaq Park, identify the interests and roles of each stakeholder, and evaluate their level of involvement in decision making regarding conservation areas. The research methods used include document analysis, interviews, and participant observation. The collected data was analyzed descriptively and using stakeholder analysis tools such as interest and power matrices. The research results show that there are several stakeholders involved in the management of Bur Lingga Isaq Park, including local government, local communities, non-government organizations, and educational institutions. Their interests include economic, social, cultural and conservation aspects. The level of stakeholder involvement varies, with some stakeholders having a more dominant role in decision making. These findings provide valuable insights for conservation area managers in strengthening collaboration with stakeholders and ensuring continued participation in decision making. In the context of Bur Lingga Isaq Park, an inclusive and sustainable framework is needed to ensure successful management of conservation areas. This research also provides a basis for further studies in identifying more effective and sustainable management strategies by involving diverse stakeholders and interests in the management of conservation areas. *This is an open access article under the <u>CC BY-SA</u> license.*

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1. INTRODUCTION

The principle of hunting park management is to utilize the potential of game animals for regular hunting tourism activities, nature tourism, research, science, education and increasing awareness of nature conservation, providing germplasm for cultivation activities, and efforts are made not to reduce the area and change the function of the area. Regular and sustainable hunting tourism can be achieved through measurable management planning in terms of data, information, capacity of management institutions, support from the community and other stakeholders.

According to Sharma the long-term success of conservation areas requires a shift in management philosophy that combines resource management with a sensitive understanding of the social and economic needs of local communities [1]. The TBLI area is between production forest areas, protected forest areas and other use

areas. These various functions are strategic patterns in specific management, starting from preserving biodiversity ecosystems and conservation, protecting water system functions and utilizing forest product production functions (non-timber forest products and environmental services and involving many parties (multistakeholders).

Area management that is not yet optimal with limited human resources and budget resources means that the TBLI area cannot provide conservation services according to its function and cannot contribute to the community and local government. TBLI management has not been integrated either functionally or programmatically, its management has not become an integral part of overall regional development. Coordination, integration and synergy in area management have not been effective and have not been integrated into a broad landscape, so that functionally the relevant sectors have not been integrated in providing support for TBLI management.

TBLI management has not been effective where TBLI management is still at the area protection stage (security approach). The main approach required to obtain effective management is (1) how to optimize TBLI management to increase ecological, economic and social values, and (2) what is the role of stakeholders in supporting sustainable TBLI management.

Stakeholders are parties who can influence or receive the impact of decisions taken by Fedora and Hudiyono [3]. According to Qodriyatun, stakeholders who have an interest in conservation areas are the people who live and reside in or around the area, people who benefit economically and from resources, the government which has responsibility for preserving the area, NGOs, and scientists to the need for scientific development [3]. Systematic stakeholder analysis can be used to develop future activities related to ecosystem services, including new policies or instruments, stakeholder engagement activities, and decision-making processes (Raum [4].

According to Prasetyo, the concept of landscape management is the first step to capture various problems and development potential at the site level which can be supported by good governance that can accommodate the needs of the parties [5]. The concept of landscape management is multi-functional and multi-stakeholder so management must be carried out in collaboration and participation. It is hoped that an approach through a participative process will develop spatial planning and governance that is a compromise of various interests supported by all parties who play a role in the TBLI landscape.

This research aims to map the stakeholders involved in managing conservation areas in the TBLI landscape of Central Aceh Regency, Aceh Province

2.   **THEORETICAL BASIS**

A.   Conservation Area Management

Management of conservation areas involves efforts to protect, restore and maintain biodiversity and the ecosystems within them. Management of conservation areas includes aspects of protection, monitoring, education, community participation and supervision.

B.   Stakeholder

Stakeholders are individuals or groups who have an interest, influence, and/or are affected by decisions and activities related to conservation areas. Stakeholders in the context of conservation area management can include the government, local communities, non-governmental organizations, educational institutions, companies, and so on.

C.   Pemetane Stakeholder

Stakeholder mapping is the process of identifying and analyzing relevant stakeholders in the context of conservation area management. Stakeholder mapping helps in understanding the interests, strengths and involvement of each stakeholder in decision making related to conservation area management.

D. Stakeholder Involvement

Stakeholder involvement includes their participation in the decision-making process, policy implementation, and evaluation of conservation area management results. Effective and sustainable stakeholder involvement can increase awareness, support and sustainability of conservation area management.
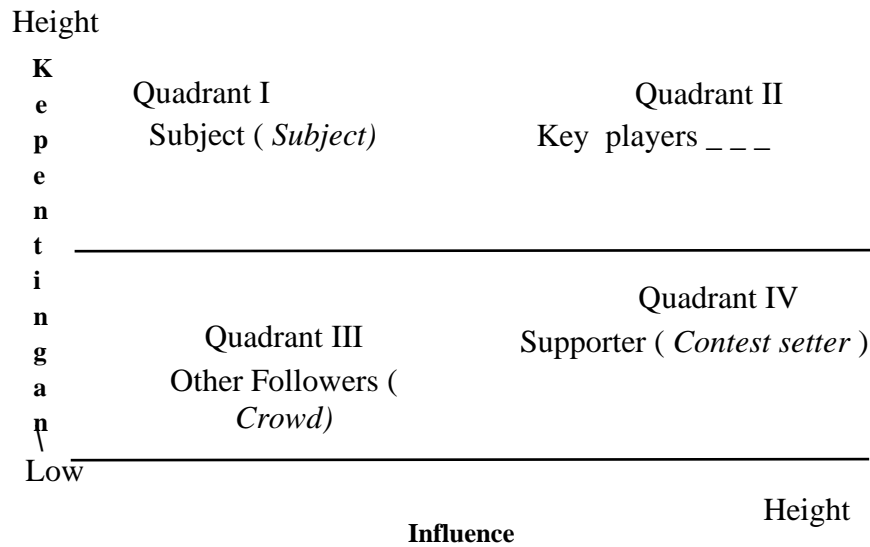
3. RESEARCH METHODOLOGY

The analysis used adopts the stakeholder analysis model developed [6]. Qualitative stakeholder analysis is used to explain the stakeholders involved in managing TBLI, the interests and influence (power) of each stakeholder and to explain the role of stakeholders in supporting TBLI management objectives. According to Reed stakeholder analysis is carried out by : 1) identifying stakeholders and their interests; 2) grouping and categorizing stakeholders and 3) investigating the relationships between stakeholders [6].

The results of the analysis are presented in the form of a stakeholder matrix which is arranged based on the importance and influence of the statement description expressed in quantitative terms (scores) and then grouped according to the criteria for the level of influence and importance of stakeholders (Table 1). Quantitative levels of importance and influence use an interval assessment of very low to very high in a score of 1 – 5. The scores obtained are then added up and the values are mapped in the form of an importance and influence matrix (Figure 1).

Table 1 Quantitative measures of importance and influence

Score	Criteria	Information
		Level of Importance
5	Very high	Has an interest in 5 elements in management, including management involvement, authority, programs, benefits and level of dependency
4	Height	Have interests to 4 from 5 element in management
3	Enough	Have interests to 3 from 5 element in management
2	Low	Have interests to 2 from 5 element in management
1	very low	Have interests to 1 from 5 element in management
		Level of Influence
5	Very high	Has 5 instruments of influence including information capability, facility contribution, institutional capacity, budget support and ability to implement management
4	Height	Has 4 of these instruments of influence in carry out management
3	Enough	Have 3 of these instruments of influence in carrying out management
2	Low	Has 2 of these instruments of influence in carry out management
1	Very low	Have 1 of these instruments of influence in carrying out management

Figure 1 Matrix of stakeholder influence and interests (Reed *et al* . 2009)

Height

K **e** **p** **e** **n** **t**	Quadrant I Subject (*Subject)*	Quadrant II Key players _ _ _
i **n** **g** **a** **n**	Quadrant III Other Followers (*Crowd)*	Quadrant IV Supporter (*Contest setter*)

Low

Influence   Height

Stakeholder analysis continues by interpreting the high and low levels of interest and influence of stakeholders in the matrix with the help of Microsoft Excel. The importance and influence scores   will form coordinate points indicating the quadrant position of each stakeholder in the matrix. Quadrant positions can indicate the categories and roles played by each stakeholder in TBLI management. The categories used are as follows [6].

Key Players are active stakeholders because they have a high interest and influence on the development of a program. Context setters have high influence but little importance, therefore they can be a significant risk to monitor. Subjects are stakeholders who have high interest but low influence and although they support activities, their capacity for impact may not be there, but can be influential if they form alliances with other stakeholders. The crowd is a stakeholder who has little interest and influence on the desired outcome and this is a development to include them in decision making.

Then the stakeholder analysis continues by investigating the relationships between stakeholders descriptively described in actor-linkage. The relationships formed between stakeholders are potential for conflict, mutual complementarity and cooperation [6]. The analysis continues by identifying the role of each party related to the collaboration process carried out in supporting TBLI management. In this analysis, the scope of cooperation activities includes (a) institutional strengthening; (b) area protection; (c) preservation of flora and fauna; (d) ecosystem restoration; (e) development of natural tourism and (f) community empowerment. Referring to Minister of Forestry Regulation Number P.85/Menhut-II/2014.

4.   **RESULTS AND DISCUSSION**

Identify stakeholders

Stakeholders are human resources (HR) which are significant for a system [7]. Each Stakeholder has a role and interest in the resources found in the TBLI landscape. The identification results show that there are eight stakeholder groups consisting of government, regional government and non-government institutions. The results of Stakeholder identification are presented in Table 2.

Table 2 Stakeholders in TBLI area management

No	Group		Institution
1.	Central government	a.	Aceh Natural Resources Conservation Center (BKSDA).
		b.	Conservation Forest Management Unit (KPHK) Linga Isaq
		c.	Forest Area Stabilization Center (BPKH) Region XVIII
		d.	Krueng Aceh River Basin Management Center (BPDAS).
2.	Local government	a.	BAPPEDA Central Aceh Regency
		b.	Provincial Forestry Service
		c.	KPH
3.	LSM/NGO	a.	TFCA-Sumatera
		b.	KEL Central Buffer Consortium
4.	Business/private institutions, BUMD	a.	PT. Perum Perhutani
		b.	PT. Tusam Reader
		c.	BUMD
5.	Professional organizations		Improve
6.	Traditional communities/institutions	a.	Mukim Institution
		b.	Communities around the area
7.	College		Banda Aceh College of Forestry Science
8.	TNI/POLRI	a.	Koramil Lingga Isaq sub-district
		b.	Lingga Isaq District Police

Source: Research results (2017)

Based on the research results, it shows that each stakeholder has influence and interest in the TBLI landscape. The level of interest and influence of each stakeholder is presented in Table 3.

Table 3 Value of importance and influence *of stakeholders* in managing TBLI

No	Institution	Mark	
		Importance	influence
1	BKSDA	25	15
2	KPHK	18	13
3	BPDAS	12	10
4	BPKH	16	12
5	LOCAL GOVERNMENT	14	10
6	Central Buffer Consortium KEL/TFCA	14	20
7	Private business institutions and BUMD	15	5
8	Traditional Institutions	11	8
9	Improve	15	6
10	College	11	10
11	National Police	6	13
12	Public	14	12

Table 3 shows that the BKSDA institution has a very high interest in management compared to other stakeholders. This institution is an institution that is given full authority to manage conservation areas (TBLI) so that every policy and program of this institution greatly influences the sustainability of TBLI. Sources of influence can be regulations, money, opinions, information, masses, leadership and so on. Judging from the organizational structure of the Ministry of Forestry and Environment, in its implementation, BKSDA has an interest in preserving the function of the area and the welfare of the community [9]. Meanwhile, the KEL/TFCA Consortium has high influence. The Consortium (Central Buffer of the Leuser Ecosystem Area (PTKEL)) has a high influence because it plays a role in regional rehabilitation and restoration programs, supports management policies, strengthens community institutions, and protects the area through financial support from the Sumatra Tropical Forest Conservation Action (TFCA) program. The high numbers in the assessment of the level of importance and influence are due to the two stakeholders having programs that are directly related to TBLI management.

Grouping and categorizing *stakeholders*

Stakeholder groupings are assessed based on influence and interest values which refer to Reed namely stakeholders as subjects, key players, crowd (other followers), and context setters (supporters). The high or low level of influence and interest of stakeholders in the TBLI area is differentiated in quadrants (Figure 2).
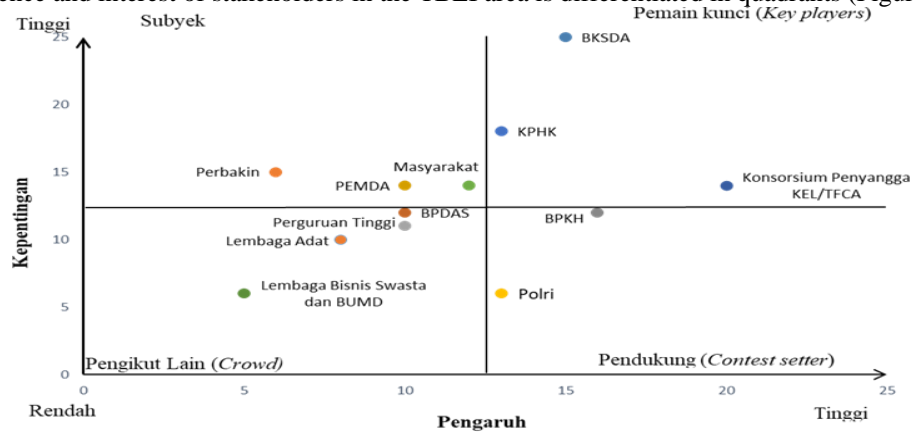

Figure 2 Stakeholder influence and interest matrix

The Stakeholder Influence and Interest Matrix shows that the community, the Regional Government and Perbakin are stakeholders in quadrant I as subjects. The subjects category are stakeholders who are very interested in area management but have a low level of influence. The low level of influence is due to the lack of involvement of these stakeholders in determining TBLI management policies. People use hunting animals or other natural resources as a source of income. This shows that the community is very dependent on utilizing resources in the TBLI area. Until now, most of the local people make their living as farmers and planters. This is in accordance with research by Kusumedi [9] that the community is categorized as a subject who has a high interest in the area.

The stakeholders in quadrant II who are referred to as key players in the management of the TBLI area are BKSDA, KPHK and PT KEL / TFCA. BKSDA has an interest because it has legal authority and responsibility and has the power to carry out work programs according to its main duties and functions. Managers who gain power legally always occupy the position of main stakeholders. BKSDA has influence and role in making policies in planning and implementing wild animal hunting activity programs and takes the initiative to implement protection, conservation and utilization programs with other stakeholders. To realize this program, BKSDA collaborates and partners with stakeholders who have the same program . KPHK is an institution that is directly under BKSDA as a manager at site level. The PT KEL / TFCA Consortium is a private institution that has high influence and interest in every program that will be implemented related to protection, preservation and utilization. The program from the PT KEL/TFCA Consortium also has the same program as BSKDA. The PT KEI/TFCA Consortium programs that really support TBLI management are:

1. Support and encourage management policies through facilities for preparing the TBLI Long Term

Management Plan (2013-2023) and the TBLI Block Management Plan

2. Empowering communities around the area through assistance and providing capital in the utilization and marketing of Non-Timber Forest Products (NTFPs).
3. Restoration of degraded ecosystems through restoration and rehabilitation activities in the TBLI area and surrounding buffer areas.
4. Increasing community capacity through training on the use of NTFPs.
5. Compile rural regulations in the protection of Kehati.

Universities, business/private institutions and BUMDs as well as traditional institutions are stakeholders in quadrant IV, indicating that stakeholders have low interest and influence on the TBLI area. The three stakeholders have an interest in providing attention to management, but their activities only cover certain areas and are temporary. Higher education institutions such as the College of Forestry Sciences only have interests in the fields of education and research. Business/private institutions and BUMD, in this case Perhutani, PT TUsam Lestari and several regionally owned enterprises (BUMD) only have an interest in utilizing NTFPs in the area, namely the utilization of pine resin around the TBLI area (production forest). The traditional institutions representing the six villages in the TBLI area only regulate customs, disputes between residents and community cultural values, do not regulate the use of natural resources around the area.

Meanwhile, the supporting stakeholders (Context Center) in managing the TBLI area are BPKH and Polri. Supporting stakeholders are parties who have a high influence on the TBLI area while their interests are low. BPKH is a body that plays a role in preparing preconditions for forest areas, providing forest area boundaries, providing clear legal status of boundaries and area as well as proposals for area determination. Without legal certainty and legitimacy over boundaries and areas with the correct process, it can lead to conflict [10], forest destruction [11], inequality and unfair control [12], as well as unclear ownership rights (property rights) [13]. Meanwhile, the National Police has high influence because the use of weapons in animal hunting activities cannot be carried out without permission from the National Police. Both BPKH and Polri are the keys to implementing TBLI management.

Universities, private business institutions and BUMDs and traditional institutions are stakeholders in quadrant IV, indicating that stakeholders have low interest and influence on the TBLI area. The Forestry Science College (STIK) educational institution only has interests in the fields of education and research. Private business institutions and BUMD, in this case Perhutani, only have an interest in utilizing NTFPs (pine resin) around the area (production forest). Traditional institutions representing the six villages in the TBLI area only have an interest in resolving community disputes, customs and social relations. This institution does not regulate the use of natural resources.

Meanwhile, in the category of supporting stakeholders (Context Center) in managing the TBLI area are the Forest Area Confirmation Agency (BPKH) and the National Police. Supporting stakeholders are parties who have high influence on the TBLI area while their importance is low. BPKH is a body that plays a role in preparing preconditions for forest areas, providing forest area boundaries, providing clear legal status of boundaries and area as well as proposals for area determination. Without legal certainty and legitimacy over boundaries and area with the correct process, it can lead to conflict [10] forest destruction [11], inequality and unfair control [12], unclear property rights. right) [13]. Meanwhile, the National Police has high influence because the use of weapons in animal hunting activities cannot be carried out without permission from the National Police. Both BPKH and Polri are the keys to implementing TBLI management.

Stakeholder influence and interest matrices can change over time and the impact of such changes needs to be considered. The results of the stakeholder mapping can be used for policy making by the authorities in managing the tama buru area .

Relationship between stakeholders

Stakeholders in TBLI management have a relationship of potential conflict, mutual complementarity and cooperation. The management function of the Buru Park area is as an area that can exploit its potential for regular hunting of game animals, protection of life support systems, and preservation of the diversity of plant, animal and natural unique species. So that management always adheres to the principle of balancing ecological, economic and social dimensions. Meanwhile, on the other hand , for example, the community and local government see more economic interests for community welfare and development. TBLI is a strategic area for the Regency in supporting the life support system (water catchment area), ecological interests and protection should be in the interests of all stakeholders. The detailed relationship between stakeholders is shown in Table 4.

Table 4 Relationship matrix between stakeholders

	A	B	C	D	E	F	G	H
A	2 and 3	1,3	2,3	1,3	3	1,3	3	3
B	3	2,3	3	3	3	3	3	3
C	2 and 3	3	3	3	3	3	3	3
D	3	3	1,3	1,3	3	3	-	-
E	1	3	3	3	3	3	3	3
F	3	3	3	3	3	3	3	3
G	3	3	3	-	3	3	3	3
H	3	3	3	-	3	3	3	3
I	3	3	3	-	3	3	3	3

Information :
1 = potential for conflict, 2 = potential for complementarity, 3 = potential for cooperation
A = Central government institution B = Regional government institution C = NGO/NGO
D = Private business institutions/BUMD
E = Traditional Institution F = Community
G = PERBAKIN Organization H = Higher Education
I = Police

BKSDA Aceh requires cooperation and forming partnerships with stakeholders who have an interest and influence in the TBLI landscape. Government institutions that also take part in the TBLI management program are BPKH and BPDAS. Stakeholders who have areas directly adjacent to TBLI can be involved in managing TBLI for the sake of preserving and sustaining the area. Meanwhile, in regional protection and security, BKSDA can partner with the National Police which consists of the Lingga Isaq District Koramil and the Lingga Isaq District Police for regional security stability. The involvement of the National Police also influences hunting animal utilization activities at TBLI, considering that hunting weapon permits are issued by the police.

The regional institution that has an interest in the landscape of the TBLI area is BAPPEDA Aceh Regency. BAPPEDA has an interest in regional development, infrastructure development, protecting life guard systems and ensuring the welfare of people living in the area. Meanwhile, around the TBLI area there are ±30 villages that border the TBL area

Non-governmental institutions that have taken part in managing TBLI are Non-Governmental Organizations (NGOs) that have long been involved in managing TBLI, namely TFCA-Sumatra and the Central Peyangga Consortium for the Leuser Ecosystem (PT KEL). This institution has a program that focuses on protecting and utilizing the TBLI area. Apart from that, there are private business institutions and BUMD, namely Perum Perhutani. Perum Perhutani is a BUMD which operates in the field of utilizing NTFPs. Even though it is not directly related to the TBLI area, Perhutani plays a role in empowering communities around the area so that the TBLI area is protected from intervention by the surrounding community. Meanwhile Perbakin is a group of people who have the same hobby who are members of an organization to hunt animals sustainably.

Sustainable management of the TBLI area requires a form of emphasis on participatory cooperation or partnership from various parties between government institutions, non-government institutions and the community , both individually and in groups. The community can act as a subject in the management strategy, while the government at the district/city level and the private sector are active parties because they have a high interest and influence on area management. The provincial and central governments are parties that have high influence but have low interests, but can be a risk so they need to be monitored because the authority they have can influence the sustainability of the development of TBLI area management. Meanwhile, NGOs and research institutions (universities) are parties that have little interest and influence, but are very necessary and a consideration for including them in decision making.

5.   CONCLUSION

The stakeholders who are players are BKSDA Aceh and KPHK Linggas Isaq as well as non-goernmental institutions (PT KEL/TFCA consortium. Stakeholders in the context setter category are BPKH and Polri. On the other hand, the subject categories are Regional Government, Perbakin and Community,   while the crowd category is Universities high level institutions, business/private institutions and BUMDs as well as traditional institutions. The interests and influence of these stakeholders have a real impact on the policy of protecting this conservation area. Cross-sectoral collaboration needs to be carried out, in order to create an optimal regional development strategy. Apart from that, this can also be done community empowerment through community-based tourism development such as entrepreneur training, development of home stays, restaurants, souvenir sales, and others.

6.   CLOSURE

In this research, stakeholder mapping in the management of the Bur Lingga Isaq Park Conservation Area in Central Aceh was carried out. Through stakeholder mapping, we succeeded in identifying the parties who have an interest in managing this conservation area. Stakeholders involved include regional governments, local communities, non-governmental organizations and educational institutions.

The results of this stakeholder mapping provide a better understanding of the interests and roles of each stakeholder in the management of Bur Lingga Isaq Park. By knowing the interests and strengths of each stakeholder, conservation area managers can develop more effective and sustainable strategies.

In addition, stakeholder mapping also makes it possible to evaluate the level of stakeholder involvement in decision making regarding conservation areas. With ongoing stakeholder involvement, conservation area managers can ensure success in maintaining biodiversity and the ecosystems within them.

This research provides a strong basis for the development of an inclusive and sustainable framework for managing conservation areas. Through collaboration with diverse and interested stakeholders, conservation area managers can strengthen community participation and increase awareness and support for the importance of preserving Bur Lingga Isaq Park.

This study also contributes to knowledge and understanding of stakeholder mapping in conservation area management. The results of this research can be a reference for further research in identifying more effective and sustainable management strategies in efforts to preserve conservation areas.

In closing, stakeholder mapping in the management of Bur Lingga Isaq Park is an important step in ensuring the success of conservation area conservation. Through a better understanding of stakeholders and their involvement, it is hoped that Bur Lingga Isaq Park can continue to be preserved and provide long-term benefits for biodiversity and local communities.

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