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Stakeholder Analysis on Sungai Wain Protected Forest Management in Balikpapan City, East Kalimantan Province

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ABSTRACT

Sungai Wain Protected Forest is one of the conservation areas in Balikpapan City which has an essential role in supporting the life of the city's people. Currently, its existence is threatened due to the various activities and overlapping interests of stakeholders involved in managing the forest. Therefore, forest management that is supported by these stakeholders is urgently needed. This study aimed to identify the stakeholders involved and explain their influences, interests, and roles in Sungai Wain Protected Forest management. Data were collected through observation, interviews, and questionnaires. The respondents were selected using the purposive sampling method, and stakeholder mapping was used to analyze it. The results showed that the stakeholders classified as key players include the Balikpapan Protected Forest Management Unit (KPHL Balikpapan), the East Kalimantan Provincial Forestry Office, Pertamina UP V Balikpapan, and the NGO Foundation Pro Natura. Multi-stakeholder management could be an alternative model for managing the Sungai Wain Protected Forest to synchronize stakeholders' interests. The KPHL Balikpapan could act as a leading player and become a driving force in the Sungai Wain Protected Forest's management efforts due to their appropriate main duties and functions. Hence, the coordination, communication, and cooperation between stakeholders could be well-formed to achieve the management objectives.

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1. Introduction

Protected forest management in Indonesia has not yet been able to achieve sustainability and provide justice for the people around it. The condition of protected forests in Indonesia has been very critical. From 1997 to 2002, the amount of damaged area reduction in the protected forests was two times higher than that of production forests (Ginoga et al. 2005). The failure of protected forest management is allegedly because the community is considered a threat to sustainability by the government. The dependence of the community on the protected forests is considered a negative thing by the administrator.

Protected forest management is an activity of forest management, formulating forest management plans, forest rehabilitation and reclamation, and protection and conservation of forest resources. Managing protected forests with various benefits for humankind and the environment

requires various parties' involvement, such as the community, non-governmental organizations, local and provincial governments, and the central government. This involvement can provide space for the parties according to their interests in the integrated utilization of protected forest areas.

Stakeholder analysis is fundamental to find out who is involved in protected forest management. According to [Wakka \(2014\)](#), stakeholder analysis can provide an overview of each stakeholder's interests by having a positive or negative impact on forest management, which stakeholders influence decision-making and their roles in overcoming and preventing future damage to the forest areas. Stakeholder analysis can also provide an overview of available resources and help understand the problems of using existing land resources ([Mushove and Vogel 2005](#); [Rastogi et al. 2010](#)).

The Balikpapan Protected Forest Management Unit (KPHL Balikpapan), based on the Governor of East Kalimantan Regulation Number 101 of 2016, was given the authority to manage two protected forests in Balikpapan City, one of which is the Sungai Wain Protected Forest (HLSW) which is directly adjacent to the residential area and state company area. This resulted in many parties taking advantage of the HLSW, and sometimes the utilization activities conflicted with the management objectives of the HLSW. The activities include encroachment of forest areas to become gardens and burning to clear land, cutting down trees in the forest areas for agarwood or timber, and herding livestock in forest areas. The forest companies and coal mining companies that carry out their activities directly adjacent to the buffer zone of the HLSW area also potentially impact the protected forests. In addition, there is the construction of the Balikpapan Botanical Garden in the HLSW area by the Balikpapan City Government. These activities could cause changes in the ecosystem and even damage to the HLSW ecosystem. The impact of this damage will not only be perceived by the KPHL Balikpapan as the manager of the HLSW but also by the community around HLSW and other parties related to the HLSW.

One of the damage causes to protected forest areas is the absence of weak parties or their very low involvement. Besides that, it was also caused by a forest management system that is still not integrated ([Dewi et al. 2012](#)). Every stakeholder has different interests, desires, and points of view, and these must be appropriately managed so those common goals can be achieved ([Friedman and Miles 2006](#)). Therefore, a management model is needed to accommodate each stakeholder's interests by considering its potential and roles. Multi-stakeholder management is an alternative management model that can accommodate stakeholders' interests, potentials, and roles ([Tadjudin 2000](#); [Wakka et al. 2013](#)). Consequently, this study is fundamental to identifying and mapping the stakeholders' involvement in the HLSW management and explaining the stakeholders' interests, influences, and roles. The results of this study are expected to provide information for the administrators to integrate stakeholder interests and implement sustainable HLSW management.

2. Materials and Methods

The study was conducted from March to August 2019 in the Sungai Wain Protected Forest (HLSW) area, Balikpapan City. The area was selected as the research location due to these considerations: 1) in the HLSW area involved the community activities; 2) the community around the HLSW utilizes the water resources from the protected forest as their daily needs and the water needs of PT Pertamina UP V Balikpapan.

Data were collected through semi-structured interview techniques and expert opinion ([Reed et al. 2009](#)). Determination of key informants was carried out using purposive sampling

(deliberately) based on their importance to HLSW, the role of actors who have interests and influence. The key informants in this study were the Head of the KPHL Balikpapan and one community leader around HLSW. Furthermore, based on the data and information from these key informants, this study could determine other stakeholders who are considered to provide more complete data. These stakeholders were the East Kalimantan Provincial Forestry Service, the East Kalimantan Provincial Regional Development Planning Agency, the Watershed and Protected Forest Management Agency (BPDASHL) Mahakam Berau, the Forest Area Designation Agency (BPKH) Region IV Samarinda, the Balikpapan City Environmental Office (DLH), the Balikpapan Youth Sports and Tourism Office, Karangjoang Village, Kariangau Village, Pertamina UP V Balikpapan, PT. Inhutani I Unit Batu Ampar Mentawir, PT. Singlurus Pratama Samboja, NGO Pro Natura Foundation, NGO Kawal Borneo Community Foundation (KBCF), Faculty of Forestry, University of Mulawarman Samarinda. One respondent represented each stakeholder for the interview. Data collecting in the field was conducted by interviews the stakeholders and providing a questionnaire to complete.

The stakeholder analysis was conducted to interpret the interests, influences, and linkages between stakeholders by identifying, classifying, and categorizing stakeholders' influences and interests (Reed et al. 2009). The influence (power) and interest were analyzed using the stakeholder analysis model introduced by Reed et al. (2009). The stakeholders' interests and influence were described in a matrix form using the Microsoft Excel program. The matrix was compiled based on stakeholders' information and then transformed into a quantitative measure (score) and grouped according to the criteria. Grouping based on the level of important criteria is presented in **Table 1**.

Table 1. Stakeholder level of interest assessment criteria

No.	Element	Sub-element
1.	Stakeholder involvement in the HLSW management	a. Planning b. Organizing c. Implementation d. Supervision e. Evaluation
2.	Benefits of HLSW management for stakeholders	a. Source of acceptance b. Creating jobs c. Open access d. Promotion e. Encouraging regional development
3.	Stakeholders' authority in managing HLSW	a. Protection and security b. Development of facilities and infrastructure c. Providing licensing services d. Community empowerment e. Providing data and information
4.	Stakeholder work program related to the HLSW management	a. > 20% in duties and functions b. 16-20% in duties and functions c. 11-15% in duties and functions d. 6-10% in duties and functions e. < 5% in duties and functions
5.	Stakeholders' dependence level in the HLSW management	a. 81-100% of the HLSW area as a source of income b. 61-80% of the HLSW area as a source of income c. 41-60% of the HLSW area as a source of income d. 21-40% of the HLSW area as a source of income e. < 21% of the HLSW area as a source of income

Notes: value 4-5 = high; values 2-3 = moderate; value 0-1 = low.

Stakeholder grouping in HLSW management based on the level of influence criteria is shown in **Table 2**. The stakeholders' position was determined based on their interests and influence, so this study was used a measurement scale of 1, 3, and 5 to 5 questions for importance and strength. Each question of strength and importance has 5 sub-elements, score 1 if a respondent has 1 or no choice in each sub-element, score 3 if a respondent has 2-3 choices, and score 5 if a respondent has > 4 choices. The next step was to calculate the number of scores given by the stakeholders in the interest and strength groups to determine each stakeholder's position through the stakeholder grid. Stakeholder interests and influence were made in a matrix divided into four quadrants to describe the stakeholders' position. Each stakeholder's position consists of 4 quadrants, namely key player, context setter, subject, and crowd, as illustrated in **Fig. 1**. This scoring method modified the method for measuring stakeholders' level of interest and influence developed by [Abbas \(2005\)](#).

Table 2. Stakeholder influence level assessment criteria

No.	Element	Sub-element
1.	The power condition of stakeholders in managing HLSW	a. Opinions b. Culture c. Education d. Promotion/advertising e. Rules / Supervision
2.	Eligibility conditions for stakeholders in HLSW management	a. Administrative sanctions b. Financial sanctions c. Legal sanctions d. Moral sanctions e. Other sanctions
3.	Stakeholder compensation power related to the HLSW management	a. Giving salary/wages b. Granting of a plot of land c. Providing assistance/activities d. Awards e. Others
4.	The personality strength of stakeholders related to the HLSW management	a. The charisma of a person b. Physical strength c. Mental intelligence d. Wealth/funding e. Others
5.	The organizational strength of stakeholders related to the HLSW management	a. Budget strength (> 30%) b. HR strength c. Functional area suitability d. Ability to collaborate / network e. Permit granting

Notes: value 4-5= high; values 2-3= moderate; value 0-1= low.

The stakeholders' position in the quadrant illustrates the level of importance and influence in the management of HLSW. Based on [Reed et al. \(2009\)](#), the stakeholders are classified as follows:

1. Key players: stakeholders who have high interest and influence. These stakeholders are active.
2. Context setters: stakeholders who have high influence but low interest. These stakeholders can have significant influence and therefore need to be monitored.

3. Subjects: stakeholders who have high interest but low influence. Even though these stakeholders support activities but the capacity for impact may be very small. They can have a big influence if they make alliances with other stakeholders.
4. Crowds: stakeholders who have low interest and influence on achieving the desired goals but are still considered in making decisions.

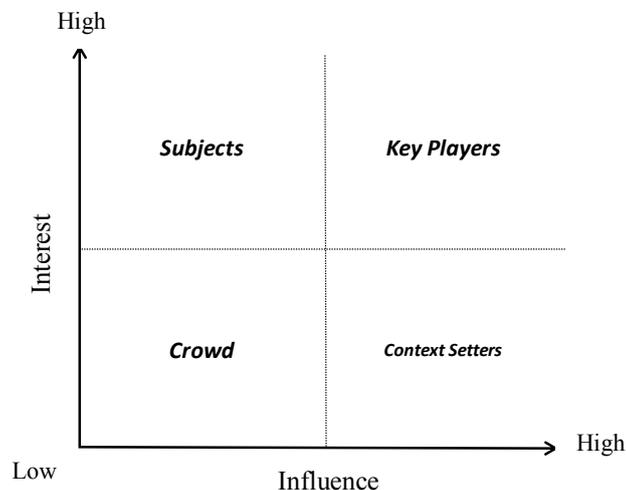


Fig. 1. Matrix of the influence and interest (Reed et al. 2009).

3. Results and Discussion

3.1. Stakeholders in the Management of Sungai Wain Protected Forest

The HLSW was established by the Sultan of Kutai in 1934 through a decree of the Kingdom of Kutai No.: 48/23-ZB-1934 as Hutan Tutupan. Then, in 1983 through the Decree of the Minister of Agriculture No.: 24/Kpts/Um/I/1983, approximately 3,295 ha of the forest cover were included as part of the Balikpapan protected forest group, and approximately 6,100 ha were included in the convertible production forest group. Furthermore, the Ministry of Forestry designated it as a protected forest by Decree of the Minister of Forestry No.: 118/Kpts-VII/1998 about “The formation of the HLSW group covering an area of \pm 6,100 ha located in the Municipality of Balikpapan City, East Kalimantan Province to Become Protected Forest”. The total area of the HLSW has increased to 10,025 ha with the inclusion of the Bugis River Watershed into the HLSW area of 3,925 ha (KPHL Balikpapan 2017).

The period before the issuance of Law of the Republic of Indonesia number: 32 of 2004 about Regional Government, the management of the HLSW area was carried out by the East Kalimantan Provincial Government under the authority of the Balikpapan Forest Service Branch with an HLSW area of 9,782.80 ha (Kubah et al. 2018). The reduction of protected forest areas is due to the release of forest areas that have been encroached on by the community. With the issuance of this law, the authority of protected forest management is given to the city/regency government. In this case, the management of HLSW is handed over to the Balikpapan City Government and then managed under the authority of the HLSW Management Agency (BP-HLSW), which is directly responsible to the Mayor of Balikpapan City (Purwanto and Koesoetjahjo 2017). This management lasted until the issuance of Republic of Indonesia Law number 23 of 2014 concerning Regional Government. It was revised by Law Number 9 of 2015, which stated that government affairs in the forestry sector are divided between the central and

provincial governments. Therefore, the management of the protected forest has returned to the provincial government. Since then, the management of HLSW has been under the East Kalimantan Provincial Government, carried out by the East Kalimantan Provincial Forestry Office through the UPTD KPHL Balikpapan until now. Then, based on the Forest Area Determination Map of East Kalimantan and North Kalimantan Provinces (Attachment to the Decree of the Minister of Forestry No.: SK.718/Menhut-II/2014 dated 29 August 2014), the area of HLSW Area is $\pm 11,245.95$ ha (KPHL Balikpapan 2017).

The HLSW is administratively located in Balikpapan, East Kalimantan Province, with an area of 11,245.95 ha. As a protection function based on Law Number 41/1999, HLSW works as a life support system to regulate water systems, prevent flood and erosion hazards, maintain soil fertility, protect germplasm sources and prevent seawater intrusion. For humans, protected forests provide an important value for their survival in fulfilling their daily needs such as food, shelter, and clothing. The community's food needs as interaction with protected forests are food derived from agriculture when the community uses the forest area for gardens/fields, forest tubers, fruits, honey, drinking water needs, and other non-timber forest products. The housing needs include firewood, carpentry wood, nipa palm leaves for housing, while the clothing needs obtained from forests include bark used for clothing and dyes used for traditional and industrial weaving (Dako et al. 2019).

Human interactions with forests to fulfill the necessities of life have positive values, but there are also negative consequences resulting from these interactions, such as degradation and deforestation. Anthropogenic activities that cause deforestation resulting from community interactions with forests include forest encroachment, illegal logging, shifting cultivation, and illegal grazing (Dako et al. 2019). The interaction of communities with forests in forest land management can also lead to changes in the extent and function of forest land use (Erwin et al. 2017; Wulandari et al. 2018). Protected forest areas adjacent to cities indirectly cause forest areas to experience high enough pressure, which can lead to the degradation of existing resources and disrupt the hydrological function of protected forests (Salampessy et al. 2012).

This can lead to the extinction of flora and fauna, fragmentation of forest areas, drying up of springs and rivers, loss of soil fertility, and global warming. This phenomenon shows that the protected forest function as protection has been transformed into a forest area for the battle of interests of many parties at the level of individuals, communities, companies, and the state. This battle of interests illustrates that the protected forests provide various natural resources that humans can utilize at various levels. Therefore protection forest management is needed to accommodate the various interests of stakeholders while maintaining forest sustainability.

Stakeholders are defined as groups or individuals who can influence and or be influenced by achieving certain goals (Mitchell et al. 1997). Fletcher et al. (2003) briefly defined a stakeholder as a person with an interest or concern for a problem. These stakeholders are often identified with particular considerations, namely their strength and relative importance to the issue or the important positions and influence they have. Thus, stakeholders can generally be grouped into several groups, namely primary stakeholders, secondary (supporting) stakeholders, and key stakeholders. Key stakeholders have a direct interest in or benefit from and are directly affected by a policy, program, and project. Supporting stakeholders do not have a direct interest in a policy, program, and project but have concerns and influence on community attitudes and government legal decisions. Meanwhile, key stakeholders have legal authority in terms of decision-making (Sundawati and Sanudin 2009).

Fauziyah et al. (2014) explained that every activity carried out by stakeholders in forest management and policy implementation was a form of actualizing their role. The stakeholders' interests will influence and can even make the basic changes in the management and implementation of policies. The stakeholders involved can be formal, non-formal, or individual institutions. Furthermore, these stakeholders can be divided into key stakeholders, main stakeholders, and supporting stakeholders. This group's division is based on the main duties, functions, and role in forest management. Based on this explanation, the stakeholders related to the management of HLSW are described in **Table 3**.

Table 3. HLSW management stakeholder classification matrix

Stakeholders	Interest
Key stakeholders	
- The Balikpapan Protected Forest Management Unit (KPHL Balikpapan)	As an HLSW administrator has an interest in the preservation of protected forests and their surroundings.
- The East Kalimantan Provincial Forestry Office	Has an interest in the success of forest management in East Kalimantan Province.
- Pertamina UP V Balikpapan	Has an interest in the management and utilization of water sourced from the HLSW area in fulfilling water needs for the industry, housing, and CSR to residents around HLSW.
- NGO Pro Natura Foundation	Has an interest as a partner of the KPHL Balikpapan to manage HLSW in activities of protecting, overcoming forest and land fires, monitoring and researching biodiversity, developing ecotourism, and environmental education in HLSW.
Main stakeholders	
- Communities around HLSW	Has an interest in the use of natural resources in HLSW to fulfill their daily needs, land needs for gardening, farming, or raising livestock.
Supporting stakeholders	
- The Balikpapan City Food Agricultural and Fisheries Office	Has an interest in improving the welfare of farmers through increased production of agricultural and plantation products and an influence on the sustainability of the HLSW area.
- Karangjoang and Kariangau village	Has an interest in improving the community's welfare around HLSW and supporting HLSW managers in providing human resources for forest security and protection.
- The Watershed and Protected Forest Management Agency Mahakam Berau	Has an interest in managing watersheds and protected forests in the area of East Kalimantan Province. This stakeholder conducts various activities such as forest and land rehabilitation activities in the HLSW area.
- The Forest Area Designation Agency Region IV Samarinda	Has an interest in demarcating forest areas in East Kalimantan. The stakeholder is not directly involved in the management of HLSW but can have a positive effect by determining the certainty of forest area boundaries, forest area size, and the availability of data and information on the biophysical and vegetation potential.

Stakeholders	Interest
- The Balikpapan City Environmental Office	Has an interest in the use and management of HLSW. The Balikpapan City Environmental Office uses part of the HLSW area for the management of the Balikpapan Botanical Gardens.
- The Balikpapan City Food Agricultural and Fisheries Office	Has an interest in improving the welfare of farmers around HLSW by increasing the production of agricultural products and influencing the sustainability of the HLSW area.
- The Balikpapan City Youth Sports and Tourism Office	Has an interest in promoting and at the same time utilizing the tourism services contained in HLSW.
- PT. Inhutani I Unit Batuampar	This stakeholder directly influences the management of HLSW because the location of the area is directly adjacent to the HLSW area. The preservation of the Inhutani I forest area will have an impact on the preservation of HLSW.
- PT. Singlurus Pratama Samboja.	The mining area of this stakeholder is directly adjacent to the HLSW area; hence, it will directly influence HLSW.
- NGO Kawal Borneo Community Foundation	Has an interest in programs related to social forestry. This NGO helps HKm farmer groups around HLSW to get support from KPHL.
- Faculty of Forestry, University of Mulawarman Samarinda	Has an interest in utilizing the HLSW area for educational activities. This stakeholder is not directly involved in the management of HLSW but can have a positive influence through the provision of competent human resources in their fields, especially those related to HLSW management.
- The East Kalimantan Provincial Regional Development Planning Agency	This stakeholder is not directly involved in the management of HLSW but can affect HLSW management's sustainability. The involvement of the East Kalimantan Provincial Regional Development Planning Agency in the management of HLSW is to provide budget assistance to the KPHL Balikpapan and the East Kalimantan Provincial Forestry Office and coordinate the implementation of programs and activities.

Stakeholders generally have different interests, but to restore ecosystem conditions and preserve HLSW, all stakeholders must have the same management objectives. The KPHL Balikpapan as the area manager, must be able to manage these stakeholders to achieve the management objectives of HLSW. [Syahputra et al. \(2018\)](#) stated that the concept of stakeholder management was how to manage stakeholders effectively to realize organizational goals. Several dynamics occur concerning the relationship between parties in delivering responses to ensure the robustness of the strategy with respect to these objectives so that stakeholders who support or oppose and have the potential to disrupt the future of the organization, can be identified.

3.2. Stakeholder Mapping

The key stakeholders in the management of HLSW generally have a high level of importance and a high degree of influence. The main stakeholders (community) have a high level of interest but a low level of influence. Meanwhile, supporting stakeholders generally have low to moderate interest and influence as shown in **Table 4**.

Table 4. Stakeholder analysis matrix in the HLSW management

Stakeholders	Interest	Influence
Key Stakeholders		
- The Balikpapan Protected Forest Management Unit (KPHL Balikpapan)	High	High
- The East Kalimantan Provincial Forestry Office	High	High
- Pertamina UP V Balikpapan	High	High
- NGO Pro Natura Foundation	High	High
Main Stakeholders		
- The community around HLSW	High	Low
Supporting Stakeholders		
- The Balikpapan City Food Agricultural and Fisheries Office	Low	Low
- Karangjoang and Kariangau Village	Low	Low
- The Watershed and Protected Forest Management Agency Mahakam Berau	Low	High
- The Forest Area Designation Agency Region IV Samarinda	Low	Low
- The Balikpapan City Environmental Office	High	Low
- The Balikpapan City Food Agricultural and Fisheries Office	Low	Low
- The Balikpapan City Youth Sports and Tourism Office	Low	Low
- PT. Inhutani I Unit Batuampar	Low	Low
- PT. Singlurus Pratama Samboja.	Low	Low
- NGO Kawal Borneo Community Foundation	Low	Low
- Faculty of Forestry, University of Mulawarman Samarinda	Low	Low
- East Kalimantan Provincial Regional Development Planning Agency	High	Low

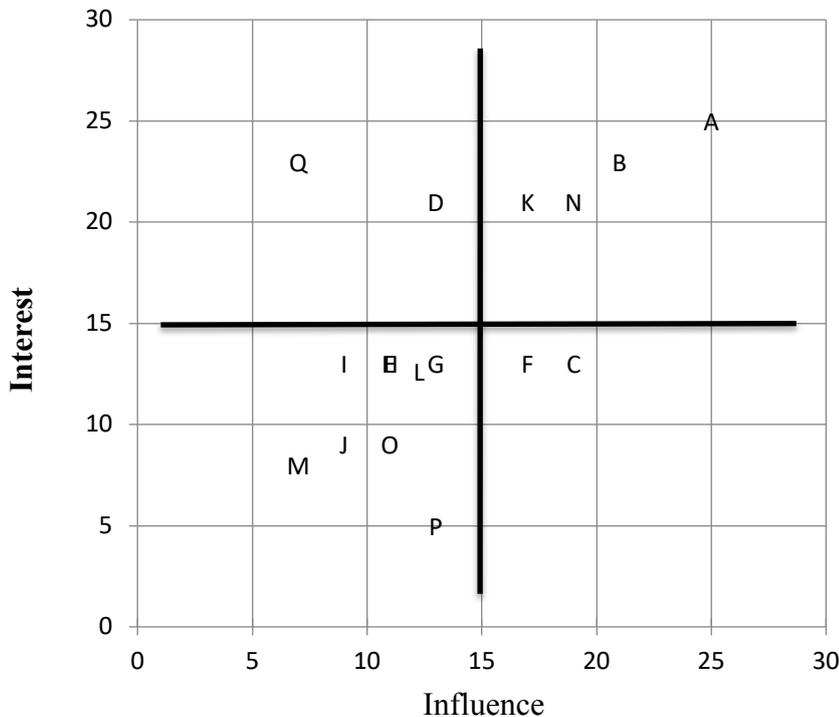
The involvement of stakeholders by managers in achieving goals will be facilitated by mapping the stakeholders (Reed et al. 2009). Therefore, each stakeholder's interests and influences in the HLSW management need to be clearly mapped first. The results of stakeholder mapping based on each stakeholder's importance and influence in the management of HLSW are presented in Fig. 2. Based on the results of the HLSW stakeholder mapping, it can be seen that each stakeholder is in their respective quadrants, namely subjects, key players, context setter, and crowd.

3.2.1. Quadrant of subjects

Subjects are stakeholders with a high level of importance but have low influence. These stakeholders have a low capacity to achieve goals but can become influential by forming alliances with other stakeholders (Reed et al. 2009). These stakeholders can often be very helpful so that the relationship with these stakeholders must be maintained properly (Thompson 2011) and as far as possible can contribute according to the interests/benefits obtained.

Stakeholders classified as subjects in this study are the communities around HLSW and the Watershed and Protected Forest Management Agency Mahakam Berau. Communities around the HLSW have a role as beneficiaries of the implementation of program activities of the regional and central government. The communities around HLSW have a high level of interest in the economic, social, and environmental aspects of the protected forest resources. The community expects that the HLSW management policy can positively impact fulfilling the needs of the people around HLSW. The Community Forest management program implemented by a small part of the community around HLSW is a program that the community wants to develop because it provides opportunities for them to have alternative income (Purwanto and Koesoetjahjo 2017). In general,

those who occupy this quadrant are marginal and often empowered (Ilham et al. 2016). Most of the communities around the HLSW still have a high dependence on the resources in the protected forest, including farming, gardening, hunting, raising livestock in the area, collecting agarwood, timber needs, or fulfilling water needs. Meanwhile, the Watershed and Protected Forest Management Agency Mahakam Berau can provide contributions such as policy support and related programs, technical assistance. However, it must be approved by the management, the KPHL Balikpapan.



Notes:

- A. The KPHL Balikpapan
- B. The East Kalimantan Provincial Forestry Office
- C. The East Kalimantan Provincial Regional Development Planning Agency
- D. The Watershed and Protected Forest Management Agency Mahakam Berau
- E. Forest Area Designation Agency Region IV Samarinda
- F. The Balikpapan City Environmental Office
- G. The Balikpapan City Food Agricultural and Fisheries Office
- H. The Balikpapan City Youth Sports and Tourism Office
- I. Karangjoang Village
- J. Kariangau Village
- K. Pertamina UP V Balikpapan
- L. PT. Inhutani I Unit Batu Ampar Mentawir
- M. PT. Singlurus Pratama Samboja
- N. NGO Pro Natura Foundation
- O. NGO Kawal Borneo Community Foundation
- P. Faculty of Forestry, University of Mulawarman Samarinda
- Q. The community around HLSW

Fig. 2. Stakeholder mapping based on interests and power in HLSW management.

Alviya et al. (2016) stated that these stakeholders have high interests but do not have the authority, ability, and influence. This could be caused by not having the resources (human or financial), not included in the main tasks, or the low capacity of the existing resources. Besides that, it can also collaborate with other related institutions. Stakeholders in this quadrant need to be represented in the program because they have high interests and could influence stronger stakeholders (Mustika et al. 2017).

3.2.2. Quadrant of key players

Key players are the organization of great importance and power. Stakeholders in this quadrant are the most critical group because they have high importance and influence on the success of the management (Widodo et al. 2018). Key players can also be called the main players in HLSW management activities. Stakeholders classified as key players in this study were the KPHL Balikpapan, the East Kalimantan Provincial Forestry Office, Pertamina UP V Balikpapan, and the NGO Foundation Pro Natura. These stakeholders have a strong influence, one of which is through regulation. They also have significant influence sources such as institutional capacity, human resource quality, budget policies, and networks (Ilham et al. 2016).

Stakeholders who are key players (Fig. 2) have a high level of interest and influence in the HLSW management. This is because these institutions are policymakers, implementers, providers of facilities, and those who carry out evaluations so that they have a strong influence on the realization of HLSW management policies. Key players can influence the formulation of management policies from existing capital resources through budgeting that supports good management, the authority to formulate related program activities, and the use of environmental services. These institutions' main duties and functions make the level of knowledge of the key players wider than that of other stakeholders. Meanwhile, the level of importance of the KPHL Balikpapan and the East Kalimantan Provincial Forestry Office as key players in HLSW management includes economic, social, and environmental interests. The KPHL Balikpapan and the East Kalimantan Provincial Forestry Office have an interest in obtaining revenue from the resources in HLSW for the improvement and management of protected forests so that they can benefit the surrounding communities and maintain the function of the forest ecosystem.

The KPHL Balikpapan and the East Kalimantan Provincial Forestry Office roles as organizations oversee the HLSW management. Their authorities contribute greatly to the implementation of HLSW management in terms of planning, implementation, evaluation, human resources, finance, facilities and infrastructure, as well as programs and activities in HLSW. The interest of this party is very high because it is a government and local government agency that has the responsibility according to the constitutional mandate to carry out forest management (Ilham et al. 2016). With great influence and importance in the HLSW management, it encourages the KPHL Balikpapan and the East Kalimantan Provincial Forestry Office to be actively involved in planning, implementing, monitoring, and evaluating activities and programs. As the forest resources manager in Balikpapan City, the KPHL Balikpapan has full authority to manage HLSW. This was confirmed by Sembiring et al. (2010) and Maguire et al. (2012), stating that the manager who gets legal power always occupies a position as the main stakeholder in natural resource management.

Pertamina UP V Balikpapan is a stakeholder who has a high interest in HLSW to utilize water in the Wain Reservoir. Pertamina UP V Balikpapan is responsible for managing the Wain Reservoir, whose water comes from rivers in the HLSW area. Water from the reservoir is pumped and flowed through pipes to Pertamina's WTP (Water Treatment Process) to be processed into raw water and then flowed to the industry and Pertamina's housing estates. The Pertamina UP V Balikpapan CSR program at HLSW is focused on building facilities, nurseries, seeding fruit plants, and planting in border areas. In addition, efforts were made to patrol forests by providing supporting facilities such as motorbikes by involving the community.

The Pro Natura Foundation is a stakeholder with a very high interest in the conditions of HLSW. The foundation's inception was to provide ongoing assistance to various educational and animal programs at the sun bear education center in East Kalimantan, Indonesia. The Pro Natura Foundation chose the HLSW area as the location for the release of sun bears. Forest conditions suitable for sun bears are needed so that these stakeholders need good forest conditions for the sun bear release program to be successful.

3.2.3. *The crowd quadrant*

Stakeholders with low levels of interest and influence are classified as the crowd. Therefore it is necessary to consider a little more to engage these stakeholders as their interests and influence usually change over time (Reed et al. 2009). The crowd is the stakeholders who are only used to support HLSW management activities, but the communication with these stakeholders must be maintained. The stakeholders classified as a crowd in this study are the Forest Area Designation Agency Region IV Samarinda, the Balikpapan City Food Agricultural and Fisheries Office, the Balikpapan City Youth Sports and Tourism Office, Karangjoang Village, Kariangau, PT. Inhutani I Unit Batu Ampar Mentawir, Singlurus Pratama Samboja, NGO Kawal Borneo Community Foundation, and Faculty of Forestry of Mulawarman University.

One of the stakeholders included in this category is the NGO Kawal Borneo Community Foundation because this NGO has a role as a facilitator to achieve community empowerment around HLSW and assist forest farmer group communities to complete the requirements for applying Community Forestry (HKm) in the HLSW area so that the special interests of this NGO is relatively lower towards HLSW management policies compared to other stakeholders.

Further involvement of these stakeholders requires a minor consideration because their interests and influence can usually change over time, so they must always be monitored (Wakka 2014). In this crowd position, the stakeholders do not need to be taken into too much detail in managing HLSW, but they can impact future management. These stakeholders only have a role as supporters to achieve HLSW management objectives in general. The special interest in this management is lower than other stakeholders. This condition can be due to the fact that in this quadrant, some stakeholders have little value of interest and influence, only to the extent of carrying out existing tasks and orders.

3.2.4. *The quadrant context setter*

Stakeholders with a low level of importance but strong influence are classified as context setters. Stakeholders classified as context setters in this study are the East Kalimantan Provincial Regional Development Planning Agency and the Department of Environmental Service of Balikpapan City. These stakeholders' interests in natural resource management are not the main priority but have the ability to influence other stakeholders (Alviya et al. 2016).

The East Kalimantan Provincial Regional Development Planning Agency has a strong influence with low importance on HLSW management. This strong influence is obtained from the role of this agency as a regulator, namely providing technical considerations in determining program activities as well as facilitating and evaluating the performance of the KPHL Balikpapan and the East Kalimantan Provincial Forestry Office. Meanwhile, this agency's level of importance is lower than that of key players in the formulation of HLSW management policies. From the interviews with speakers from the Balikpapan City Environmental Office, this government agency

emphasizes the aspects of importance of maintaining the ecological and social functions of HLSW for the community than other interests.

The existence of these stakeholders needs to be continuously monitored and properly managed because it can come with risks (Reed et al. 2009). These stakeholders can turn into key players because of an event (Gardner et al. 1989). Good relations and communication with these stakeholders must be fostered. They must be provided with the necessary information so that they can continue to play an active role in achieving their goals (Thompson 2012).

3.3. *Towards Multi-stakeholder Management in HLSW*

Each stakeholder has different interests, influences, needs, and points of view and must be managed properly in order to work together and achieve the goals (Friedman and Miles 2006). Therefore, to accommodate all of these interests, a form of management that considers the strengths and roles that each stakeholder can play in managing HLSW is needed. The existence of stakeholders with all of their roles and potential is a separate asset for area administrators (Wakka 2014). Multi-stakeholder management with these stakeholders can be the key to success in overcoming forest management problems. Limitations owned by administrators, such as limited funds, facilities and infrastructure, and human resource capabilities, can be overcome.

Each stakeholder can contribute to the management of HLSW in accordance with the main duties of the function and role to fulfill their respective objectives through multi-stakeholder management. This multi-stakeholder management places more emphasis on resource capacity, objectives, and how to achieve these goals. Referring to (Tadjudin 2000), forest management in the HLSW area has conditions that allow for the application of multi-stakeholder forms of management. HLSW has an important role in people's lives, both directly and indirectly. One of the vital state companies, namely PT. Pertamina UP V Balikpapan has a high dependence on water resources in HLSW. The Balikpapan City Government is very interested in HLSW because the Balikpapan Botanical Gardens area is inside the HLSW area and the water needs for the community in the future. International wildlife conservation organizations need HLSW preservation for the release of sun bears. With the high dependence of many parties on HLSW, the preparation of management plans and decision-making must involve all of these parties to not cause controversy or conflict.

HLSW management is part of the KPHL Balikpapan task. The KPHL Balikpapan realizes its weaknesses in managing forests so far and continues to evaluate every program that has been implemented. A social forestry policy in the form of Community Forestry (HKm) for communities around HLSW was issued to reduce forest encroachment rate. This policy was greeted enthusiastically and positively by the community and local government as well as local NGOs. These NGOs contribute to community organizing, forming HKm farmer groups in each group, forming farmer group coordination forums, and coordinating institutions between farmer groups. The role of NGOs is very significant in the social preparation of the community.

Collaborative management of HLSW with multi-stakeholders through a community forestry scheme (HKm) can benefit various parties involved based on their interests and influence. At present, the KPHL Balikpapan has implemented a forest management strategy with the HKm scheme. However, it is limited to communities around the forest and has not involved all parties interested in collaborative forest management. For this reason, the scope of HLSW management through HKm is expanded by involving parties such as the surrounding community to fulfill their

daily needs, Pertamina to ensure continuous and sustainable water availability, NGOs and government agencies for community empowerment and forest sustainability activities through program intervention in accordance with the management plan HLSW. Communities living in and around protected forests are very concerned about protecting the protected forest because of its various benefits for human welfare and ecosystem sustainability (Dako et al. 2018). The spirit of collaboration in protected forest management will be able to answer the interests of various parties, with the main domains being forest sustainability, community welfare, and environmental services provided by HLSW.

Forest utilization is generally carried out by three parties: the government, businessmen, and the community, with different interests and motives. The government's motives usually cannot be separated from the principles of environmental preservation. The motives of entrepreneurs generally focus on obtaining commercial profits, while the community's motive, especially the community around the forest, is to fulfill their daily needs (Tadjudin 2000). Natural and environmental management benefits that involve multi-stakeholders in various regions can be perceived, especially concerning policy implementation (Innes and Booher 2003). Therefore, multi-stakeholder management in the future management of HLSW must be implemented immediately, and the role of a facilitator is needed. Facilitators do not have to come from NGOs but can come from anywhere that commits to save HLSW. It can be from the private sector, universities, or the forestry sector itself. This facilitator will play a role in assisting the community for empowerment, connecting stakeholders for coordination, sharing ideas, contributing resources, and developing networks.

In terms of available resources, several government agencies, such as the Watershed and Protected Forest Management Agency Mahakam Berau and the East Kalimantan Provincial Forestry Office, assist forestry plant seeds and fruit tree seeds for the development of HKm. The Department of Agricultural Food and Fisheries of Balikpapan City assists seasonal crop seeds, goat, cow, or fish seeds to farmer groups. Financial assistance was also contributed from multi-stakeholders by several donors such as Pertamina UP V Balikpapan and PT. Singlurus Pratama through its CSR program, and PT Inhutani I with its Forest Village Community Empowerment (PMDH) program.

Stakeholders basically have different interests, but in this multi-stakeholder management effort, all stakeholders must have a common goal. For this multi-stakeholder management to work, it requires good coordination among the key stakeholders who are the determinants and driving force of the entire process (Sundawati and Sanudin 2009).

This multi-stakeholder management process should not be seen as an end in itself but as a first step to learn from each other towards change, understand each other, and respect existing differences. In other words, a multi-stakeholder management solution is better to implement because it can unite all stakeholders's interests, the results of the agreement are stronger, strengthen relationships between stakeholders, and can contribute to improving the welfare of the community.

4. Conclusions

HLSW makes a major contribution to the stakeholders in fulfilling the needs of the community and other parties through the interests of the protected area and obtaining benefits from the existence of HLSW. Fulfilling humankind's needs as a foundation in forest management

requires the HLSW management to be carried out in collaboration with various stakeholders. HLSW management with the HKm scheme is an example of collaborative multi-stakeholder management that can provide added value to various parties in utilizing forest areas, environmental services, and ecotourism. Multi-stakeholder forest management, synchronization of activity programs, and synergy among stakeholders are necessary to improve coordination, communication, and cooperation with all parties to achieve the objectives of HLSW management with the KPHL Balikpapan as the leading sector.

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