

Stakeholders Mapping in Traditional Zone Forest Management in the Lore Lindu National Park Area Kapiroe Village, Palolo District, Sigi Regency, Central Sulawesi

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Abstract

Forest management in traditional areas of Lore Lindu National Park (TNLL) has distinctive social, cultural and ecological characteristics. Kapiroe Village is one of the buffer villages directly adjacent to the national park area and still applies traditional forest utilization. This study aims to map the stakeholders involved in traditional zone forest management in the Lore Lindu National Park area, especially in Kapiroe Village, Palolo District, Sigi Regency, Central Sulawesi. Sampling was conducted through a purposive sampling approach. Stakeholders involved in the management of traditional zones in TNLL include national park managers, indigenous and local communities, local governments, and other related institutions or agencies. The stakeholder interest analysis is built by combining the power (x-axis) and (y-axis) elements into the power and interest quadrants.

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Based on the mapping results, the most influential stakeholder in traditional zone forest management is the Lore Lindu National Park Authority (TNLL) with a high level of importance and influence in traditional zone forest management in Kapiroe Village.

Keywords: Stakeholders Mapping, Lore Lindu National Park

INTRODUCTION

Lore Lindu National Park (TNLL) in Central Sulawesi, Indonesia, was established by the central government in 1993. Starting in 2001, the Lore Lindu National Park (TNLL) authorities initiated a joint management approach known as a 'community conservation agreement' between Lore Lindu National Park and the communities of the Lore Lindu National Park Area (Golar, 2019). The existence of a national park is always linked to the presence of communities, as there will always be interaction between the national park and the community (Hapid & Massriri, 2021).

According to (Cahyono, 2013), strict conservation policies have created tension between efforts to protect forest areas and the needs of communities that depend on forests for their livelihoods. The existence of customary law communities is expected to enable them to act as supervisors and enforcers of mutually agreed rules. As for the stakeholders in the study of traditional forest zones in the Lore Lindu National Park (TNLL) area, they have significant roles, interests, and influence on the management, conservation, and utilization of forest resources (Hidayat & Tanudirjo, 2024)

However, tenure conflicts involving communities, both those related to government agencies and those between communities and forest concession holders (forest utilization permits and plantation permits), are exacerbated by land ownership claims, issues of "inability" of land occupation by communities, and former forest concession areas that have an impact on open access areas. This shows the high dependence of communities on forest land and the lack of concern of local governments regarding utilization regulations in state-owned forest areas (Golar, 2021).

However, the management of traditional areas in TNLL faces many obstacles, namely differences in interests, unequal power, and a lack of cooperation between the parties involved. Unclear mapping of roles and responsibilities among stakeholders can lead to overlapping policies, conflicts of interest, and inefficient management (Sentanu et al., 2024).

Against this backdrop, this study aims to map stakeholders involved in the management of traditional forest areas in Kapiroe Village and analyze the relationships and dynamics between the



parties involved, in order to support the creation of more effective, equitable, and sustainable forest governance in the TNLL area. Through this mapping, it is also hoped that more effective solutions can be found in managing forest areas, not only to preserve the forest but also to accommodate the interests and needs of the surrounding community.

RESEARCH METHODS

Research Location

This research was conducted in Kapiroe Village, Palolo District, Sigi Regency, Central Sulawesi. The people of Kapiroe Village are actively involved in the utilization and management of traditional zone forest resources, both for economic, cultural, and spiritual purposes. In Kapiroe Village there are various stakeholders involved in traditional zone forest management, such as forest farmer groups, Bobo Village Resort, Village Government, NGOs, and TNLL. This diversity is ideal for stakeholder mapping studies as it allows for a comprehensive analysis of social, institutional and forest governance dynamics.

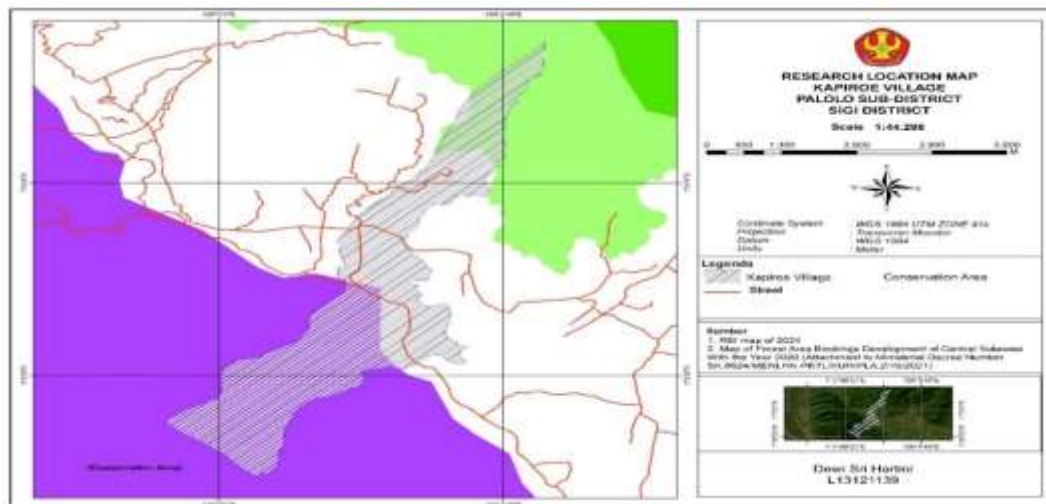


Figure 1. Research Location Map

Research Procedures

Sampling was conducted through purposive sampling and snowball sampling approaches (Ariyanti, 2024). The instruments used in this research include questionnaires and recording devices. Data collection was conducted through various methods, including surveys, in-depth interviews, field observations, and collection of data relevant to the research objectives (Ahdasabila, 2025). The focus on views of community needs was done through participatory mapping of existing problems in implementation (Rahman et al., 2018).

DATA ANALYSIST

The 4Rs analysis plays a central role in research on traditional zone forest management in Kapiroe Village. Through an in-depth understanding of the rights, obligations, benefits, and relationships between stakeholders, this analysis enables the identification of impacts, sustainability, alignment, and collaborative planning that are essential in achieving the goal of sustainable traditional zone forest management (Rahman et al., 2024). The indicators in this analysis are stakeholder power, stakeholder eligibility, compensation received, personality, and institutional strength of each stakeholder. The results of determining the score for the level of influence and importance of each stakeholder are grouped based on the type of indicator, then juxtaposed to form coordinates (Maiwa et al., 2025). The measurement of the level of influence and importance covering several aspects can be seen in Table 2. :

Table 2. Qualitative Measures of Stakeholders' Level of Influence and Importance

No.	Value Score	Criteria	Description
		Stakeholders' interests	
1.	0-5	Low	Does not support Kapiroe Village Traditional Zone Forest Management.
2.	6-10	Less High	Less Supportive of Kapiroe Village Traditional Zone Forest Management
3.	11-15	High Enough	Moderately Supportive of Kapiroe Village Traditional Zone Forest Management.
4.	16-20	High	Supporting Kapiroe Village Traditional Zone Forest Management.
5.	21-25	Very High	Strongly Support Kapiroe Village Traditional Zone Forest Management.
		Stakeholders' influence	
1.	0-5	Low	Does not affect Kapiroe Village Traditional Zone Forest Management.
2.	6-10	Less High	No Influence on Kapiroe Village Traditional Zone Forest Management. Less Influential on Kapiroe Village Traditional Zone Forest Management.
3.	11 – 15	High Enough	Moderate Influence on Kapiroe Village Traditional Zone Forest Management.
4.	16-20	High	Influencing Kapiroe Village Traditional Zone



			Forest Management
5.	21-25	Very High	Strongly Influencing Kapiroe Village Traditional Zone Forest Management.

RESULTS AND DISCUSSION

Stakeholder's Mapping Based on Influence and Interest Analysis

Stakeholders mapping is a structured procedure to collect and qualitatively assess information so that traditional zone forest management can be carried out in a more community-engaged and sustainable manner (Adiansyah et al., 2024). The stakeholder analysis is built by combining the elements of power (x-axis) and (y-axis) into the power and interest quadrants according to each level of support and interest of the stakeholders in policy determination, for more details can be seen in Figure. 2 :

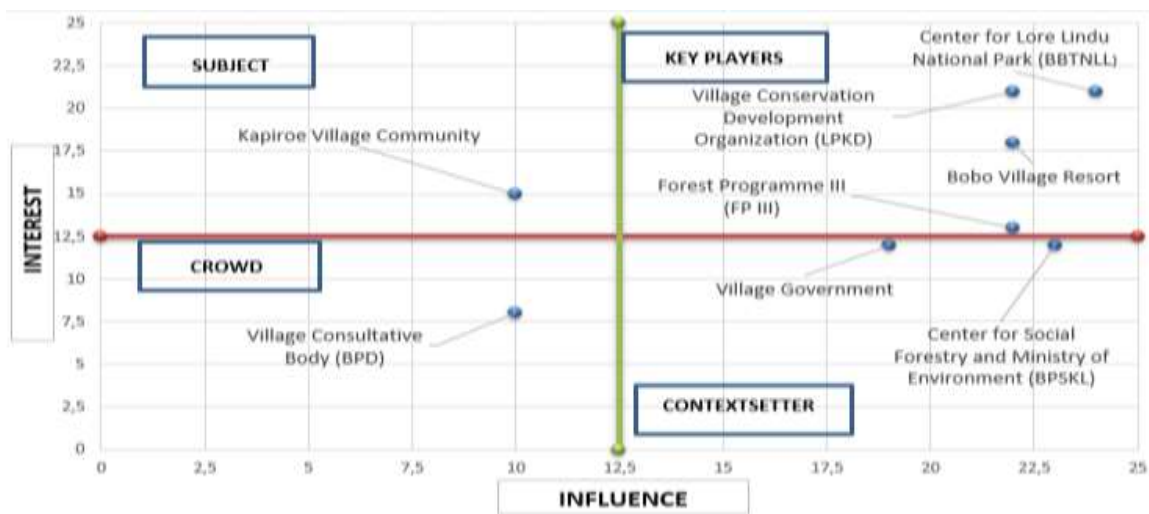


Figure 2. Influence and Interest Diagram

Key Stakeholders (Key Player)

Key stakeholders or key players are parties that have a large interest and also have a significant influence (Ratnasari et al., 2024). Based on the category analysis above, it is known that there are 4 (four) Key Stakeholders or Key Players in quadrant 1 in Traditional Zone Forest Management in the TNLL Area, the Lore Lindu National Park Office is the most influential stakeholder and also has a high level of importance in traditional zone forest management in Kapiroe Village. According to (Kirana, 2022) this is because TNLL is a technical implementation unit operating under the Ministry of Environment and Forestry (KLHK) which is responsible for managing the TNLL area, including traditional areas. TNLL has official authority in all matters

related to the management, protection and use of the national park area, and is given the right to issue permits and monitor community activities.

There are 3 (three) stakeholders contained in the key players, including Bobo Village Resort, Forest Program III (FP III), and the Village Conservation Development Institute. Bobo Village Resort has a high level of influence and interest in traditional zone forest management because Bobo Village Resort is part of the TNLL Center that operates directly, in this case including Kapiroe Village (S. Azizah et al., 2024). This resort is the implementation of the national park management policy in Kapiroe Village. Meanwhile, Forest Programme III (FP III) collaborates directly with the Ministry of Environment and Forestry (MoEF) and TNLL, making them an integral part of decision-making and strategic planning. Their participation increases the capacity of local and national institutions to manage conservation areas (Mondolu et al., 2023). The Village Conservation Development Agency (LPKD) is a local institution rooted in the village community and established through a participatory process. Its purpose is to act as the manager, implementer and supervisor of the conservation agreement between the community and the national park. This institution also plays a role in facilitating cooperation between the community, village government, and TNLL (Saputra et al., 2023).

Subject

Subjects are stakeholders who have high importance but low influence (Kusuma et al., 2022). Based on the category analysis above, it is known that only 1 (one) stakeholder is categorized as a subject that is included in quadrant 2 (two) in traditional zone forest management in the Kapiroe Village TNLL area. The stakeholder categorized as a subject is the Kapiroe Village community. According to (Faust et al., 2003) the Kapiroe village community has a high importance because their lives indirectly depend on forest resources which are directly related to their economic, social and cultural. Then the Kapiroe Village community has low influence because the community has no formal authority in determining policies, regulations, and decision making, where the main decision remains in the hands of TNLL.

Context Setter

Context Setter is a stakeholders that has a large influence but little importance (Ardiansyah, 2021). Based on the category analysis in Figure 2 above, it is known that there are 2 (two) stakeholders categorized as Context Setter in quadrant 3 (three) in traditional zone forest management in the Kapiroe Village TNLL area. The stakeholder categorized as Context Setter is the Social Forestry and Environmental Partnership (BPSKL), this is because BPSKL is authorized in the Social Forestry Program, BPSKL has direct authority to design, approve, and implement the Social Forestry program (Siburian & Nurhidayah, 2019). And BPSKL has low importance because BPSKL has no direct interest or direct dependence on Forest Resources in Kapiroe Village.



The next stakeholders is the Kapiroe Village Government which has a large influence but has a low importance. This is because the Kapiroe Village Government has an important role because of its position as an official party that can authorize conservation initiatives and regulate the community. However, their interest in forest sustainability in the traditional zone is not so high, as they are not fully dependent on forest resources for their daily lives (Rusmana et al., 2018).

Crowd

Crowd is a stakeholders that has low influence and low importance as well (Selvia et al., 2024), Based on the category analysis in figure.2 above, it is known that there are 1 (two) stakeholders categorized as Crowd who are included in quadrant 4 (four) in traditional zone forest management in the Kapiroe Village TNLL area. The stakeholder categorized as Crowd is the Kapiroe Village Consultative Body (BPD Kapiroe Village), according to the Kapiroe Village BPD has no authority in operations, they are not directly dependent on forest resources and are rarely actively involved in conservation or area management issues. Their role is more as a supporter in village administrative processes and a deliberative body that accommodates community aspirations.

Identification of Stakeholder Roles

The involvement of various parties is needed to support adaptive and sustainable traditional zone forest management (Nikoyan & Flamin, 2024). The parties involved in the management of traditional zones in TNLL include national park managers, indigenous and local communities, academics, local governments, and other related institutions or agencies can be seen in Table 3 :

Table 3. Role of Stakeholders in Traditional Zone Forest Management in Kapiroe Village

No.	Stakeholders	Role
1.	Center for Lore Lindu National Park (BBTNLL)	Preserving biodiversity within the Traditional Zone area, providing assistance and guidance to the community, preventing and overcoming legal activities, educating and socializing the community, protecting forest areas.
2.	Bobo Village Resort	Development of conservation programs with community coordination and supervision of natural resources, empowerment and community assistance, monitoring and reporting to the Lore Lindu National Park Office, collaboration with other institutions or parties, protection of forest areas.



3.	Center for Social Forestry and Ministry of Environment (BPSKL)	Facilitating cooperation between the community and BBTNLL, Supervision and monitoring of forest management, Helping to resolve disputes related to forest management rights both between the community and the national park management and between the community and outside parties, Strengthening institutional capacity.
4.	Forest Programme III	Facilitation of forestry partnerships, empowerment and strengthening of institutional capacity, improvement of community social and economic welfare.
5.	Village Conservation Development Organization (LPKD)	Forest management and protection, community socialization and education, community welfare improvement through forest utilization, forest management monitoring and supervision, collaboration with other parties.
6.	Kapiroe Village Government	Mediator between the community and the TNLL Center, encouraging community participation in natural resource management, community empowerment, conflict resolution.
7.	Village Consultative Body (BPD)	Encouraging community participation in village management (BPD) mediating conflicts between communities and related parties, supporting village community rights, forest protection.
8.	Kapiroe Village Community	Involvement in forest management, role in forest rehabilitation and restoration, sustainable utilization of natural resources and involvement in forest protection.

Source: Primary data after processing, 2025

Multi-stakeholders participation focusing on the traditional forest zone is a key driver leading conservation programs in the region. BBTNLL's main priority is to conserve biodiversity, especially in traditional forest zones that are still inhabited and used by local communities. According to (Anggiani & Hikmawan, 2022), BBTNLL does not only focus on forest protection, but is also actively involved in providing education, socialization, and guidance and support to the community. Preventing illegal activities is an important part of their efforts to preserve the area.



The involvement of Forest Programme III brings a new dimension to conservation efforts, emphasizing forestry partnerships, institutional economic strengthening, and institutional capacity building. FP III provides favorable social and economic effects for the surrounding communities. The presence of LPKD in Kapiroe Village shows how local communities can play a direct role in forest management. LPKD functions to protect and utilize the forest sustainably, while continuing to provide education and monitoring with the community. Cooperation with external parties is one strategy to strengthen their position in managing natural resources.

The Kapiroe Village Government and the Village Consultative Body (BPD) have increased community engagement, resolved conflicts, and ensured that community rights are safeguarded, especially in terms of access to and use of forest resources, especially in traditional zones in Kapiroe Village. Communities living around the area have a very significant role. As the people who live in and utilize the forest, their participation in the process of rehabilitation, restoration and protection of the forest greatly influences the success of management. The awareness to create a balance between economic and environmental interests is a major asset in producing sustainable forest management.

Stakeholder Analysis

The 4Rs analysis aims to assess stakeholders with the goal of understanding the position, influence, and interests of each stakeholder. Through this analysis, it is possible to obtain an overview of stakeholders who have greater potential to actively participate in various activities among many other stakeholders (Bakri et al., 2024). Through the active involvement of various parties, especially indigenous and local communities, a consensus is created in maintaining the sustainability and conservation of forest functions, while respecting the cultural values that have long been embedded in the area (Wulandari, 2024). Stakeholders with high interests and low influence need to be empowered, while those with high influence and low interests need to be encouraged to support fair and sustainable policies. See Table 4 :

Table 4. Stakeholder analysis using the 4Rs approach

<i>Stakeholders</i>	<i>Right</i>	<i>Responsibilities</i>	<i>Revenues</i>
Lore Lindu National Park (TNLL)	Licensing of activities around the National Park area, Forestry Partnerships and	Maintaining biodiversity and ecosystem functions in the BBTNL area, Sustainable	Active participation of communities in forest area management, economic welfare of local communities, contributing



	Local Community Collaboration, Education and counseling, Preparation of forest area management plans.	management of natural resources, Counseling and education of indigenous and local communities, Monitoring and law enforcement, Monitoring and evaluation.	to nature conservation, Reduction of forest degradation.
Bobo Village Resort	Natural resource management, community empowerment, utilization, as well as counseling and education.	Patrols, conducting social visits to the community to find out what problems the community is concerned about, Counseling.	Create better relationships between natural resource managers and communities, improve community understanding of the importance of sustainable natural resources, and create more equitable welfare through empowerment and extension.
Social Forestry and Ministry of Environment (BPSKL)	Forming partnerships with communities, Supervising and monitoring, Carrying out Forest Rehabilitation and Restoration.	Ensure that social forestry and partnerships established with local communities do not damage the area, Supervision and monitoring of activities, Develop and implement social forestry programs that enable communities to access and use social forestry. sustainable forest management.	Empowerment of local communities living around national park areas through social forestry programs, Helps improve the economic welfare of local communities, the ability to encourage local communities in encouraging sustainable forest management.

Forest Programme III (FP III)	Formulating relevant policies and programs, encouraging forestry partnerships, community assistance and guidance, monitoring and evaluating institutional performance, obtaining budget support and resources, establishing cooperation with other parties.	Empowering local communities, Developing and managing Social Forestry programs, Ensuring that forest management in traditional zones is sustainable and does not damage the ecosystem, Coordinating with various parties, Conducting supervision and monitoring.	Creating ecosystem sustainability, community welfare, and better cooperation between various stakeholders, creating ecosystem sustainability, community welfare, and better cooperation between various stakeholders.
Village Conservation Development Organization (LPKD)	Engaging communities in Forest Management, Developing and managing conservation programs that aim to engage village communities in nature conservation activities, developing programs that integrate conservation with community economic	Protecting forest areas, routinely conducting visits to the community, providing counseling to the community.	Improved economic welfare of the community, increased access to partnerships between other partners, protection and restoration of forest areas



	empowerment.		
Kapiroe Village Government	Supervise the management of forest areas, encourage community participation, resolve conflicts that occur in the community.	Preserve the forest area, take part in counseling and education to the community, build partnerships with various parties, participate in forest patrols.	Community economic empowerment, environmental conservation, sustainable natural resource management, and conflict reduction in forest utilization, increasing community capacity in managing forests wisely, and strengthening cooperation between communities and related institutions.
Village Consultative Body (BPD)	Encouraging community participation in natural resource management, Mediating conflicts that occur between communities and related parties, Supporting the rights of village communities.	Representing the community in decision-making, Supporting forest management policies, ensuring that all relevant parties including the government, communities, and conservation agencies, can work together in forest management, ensuring program sustainability.	Increasing public awareness about the importance of forest conservation and sustainable use of natural resources, Encouraging the community's economy, preserving forest ecosystems that are beneficial for social and environmental sustainability.
Kapiroe Village Community	Involvement in forest management, sustainable utilization of natural resources, involvement in	Forest Area Maintenance, as well as participating in forest protection.	Increase community income, access to sustainable natural resources, protection of forest areas.



	forest protection and restoration.		
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Source: Primary data after processing, 2025

The Lore Lindu National Park (TNLL) functions as the main regulator and supervisor, focusing on designing management plans, issuing permits, and providing counseling to the community. Through monitoring, law enforcement and education activities (Siska, 2023). At the village level, Bobo Village resort plays a direct role in the field, bobo resort not only conducts supervision, but also establishes communication with the community to receive aspirations and issues that arise (Susanto et al., 2024).

Meanwhile, the Social Forestry and Environmental Partnership (BPSKL) acts as a bridge between social forestry programs and community empowerment. BPSKL carries out supervision, monitoring, and forest rehabilitation tasks. With the social forestry program, communities are given access to manage traditional zone forests, so that they not only conserve forests, but also gain economic benefits from these resources. Forest Program III (FP III) is more focused on policy making, community development, and building inter-institutional cooperation. By combining conservation and social programs, FP III works to strengthen ecosystem synergy and sustainability through a multi-sectoral approach. The policy and resource support provided also plays an important role in driving success for conservation programs at the local level.

On the other hand, village conservation development organizations (LPKDs) function significantly in linking conservation efforts with the community economy. By directly engaging the community, it implements extension and visitation programs that are efficient in fostering a sense of ownership over the forest (Hole & Mayarni, 2025). This initiative successfully promotes the conservation of the area and creates opportunities to improve the community's economy through a community-based conservation approach. No less important is the Village Government as the driver of collaboration at the kapiroe village level. The Kapiroe village government has a responsibility to resolve conflicts, build cooperation, and participate in patrol and education activities. This involvement has a good impact in strengthening the bond between the community and the institutions involved in the collaboration.

Meanwhile, the Village Council (BPD) functions as a representative body that supports community rights, resolves disputes and encourages decision-making that involves all parties. By representing the interests of the community, the BPD contributes to ensuring that all conservation programs are implemented fairly and sustainably. The people of Kapiroe Village who live around the forest are instrumental in this process. By participating in forest conservation and rehabilitation, they not only express their concern for the forest, especially in Kapiroe Village, but also directly benefit from increased income and access to sustainably managed resources. This analysis provides a thorough understanding of the rights, obligations, benefits and relationships between stakeholders in the context of forest management in traditional zones (Triwanto, 2024).



The results of this analysis reveal that there are various actors with varying degrees of importance and influence on the sustainability of forest management (Silaban, 2024).

CONCLUSION

Based on the results of the analysis of the research on the unclear mapping of the roles and responsibilities of each stakeholder involved in the management of traditional zone forests in Kapiroe Village, then in accordance with the results of the research can answer the complexity of the problems that occur, where the mapping of the roles and responsibilities of each stakeholder can be seen in table. 3 and table. 4, using the 4Rs Analysis. Then it can be concluded from the results of the analysis of the Level of Influence and Interest of each stakeholder by combining the elements of strength (x-axis) and (y-axis) into the power and interest quadrants according to each level of support and interest of the stakeholders can be seen in Figure 2.

The diagram of influence and interest, it can be concluded that stakeholders who are key players in the management of the traditional zone forest of Kapiroe Village are the Lore Lindu National Park Bear Hall, Bobo Village Resort, Kapiroe Village LPKD, and FP III. Then the stakeholders categorized as subject are the Kapiroe Village Community, this is because the Kapiroe village community has a high interest because their lives indirectly depend on forest resources which are directly related to their economy, social and culture. The stakeholders categorized as context setters are BPSKL, and the Village Government.

The stakeholder categorized as Crowd is BPD Dea Kapiroe because BPD Kapiroe Village has no authority in operations, they are not directly dependent on forest resources and are rarely actively involved in conservation or area management issues. Based on the results of stakeholder mapping, there are 4 (four) key stakeholders or Key Players in quadrant 1 in Traditional Zone Forest Management in the TNLL Area, the Lore Lindu National Park Center is the most influential stakeholder and also has a high level of importance in Traditional Zone Forest Management in Kapiroe Village.

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