

Institutional Capacity and Sustainability of Customary Forests: Customary Forest Management in Rantau Kermas Village

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ABSTRACT

The urgency of managing natural resources, especially customary forests, is increasing along with climate change and environmental degradation, which threaten the sustainability of the global ecosystem. This research aims to investigate the role of customary forest management in maintaining environmental sustainability and the welfare of local communities while identifying institutional capacity to achieve these goals. This research involves an in-depth case study of the Customary Forest Management Group (KPHA) in Rantau Kermas Village. Data sources were obtained through interviews, documentation and observation. This study also utilized the Nvivo 12 Plus analysis tool to assist with data coding. This research reveals that effective customary forest management can maintain a balanced ecosystem, protect biodiversity, and provide economic benefits to local communities. Strengthening institutional capacity through community participation, strong regulations, and collaboration with various related parties is the key to achieving this goal. This research implies the importance of supporting and developing sustainable customary forest management practices and strengthening institutional capacity to ensure environmental sustainability and the welfare of local communities in the future.

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INTRODUCTION

Customary forests have a vital role in preserving the current global ecosystem. As forests are owned, managed and governed by indigenous communities based on local knowledge and traditions passed down through generations, customary forests provide habitat for biodiversity and act as significant carbon sinks. In addition, customary forest management based on local wisdom values is often more sustainable and environmentally friendly, promoting practices such as agroforestry and wise use of natural resources (Leo et al., 2022; Mutia et al., 2021). Therefore, preserving customary forests and recognizing the rights of indigenous peoples to customary forests is an essential step in global efforts to maintain ecosystem balance.

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Forest management is a critical aspect in preserving the global environment and ecosystem (Abatzoglou et al., 2021; Ghorbanzadeh et al., 2019; Wu, 2008). Forests function as carbon sinks, maintain biodiversity, and protect water sources, while also providing wood and non-timber resources that support the economy and human life (Ibrahim et al., 2023; McIntyre & Schultz, 2020; Wu, 2008). The importance of sustainable forest management lies in its ability to maintain ecological balance, empower local communities, and overcome the challenges of climate change, all of which come together in an effort to preserve forests for future generations (Gutierrez Garzon et al., 2022). This provides an important picture so that forest management can be optimized, at least avoiding cases of forest destruction. Forest destruction is a serious problem that has significant ecological, social and economic impacts. Forest destruction occurs when forests are excessively logged, burned, converted to agricultural land, or experience ecosystem degradation (Austin et al., 2017; Tan-Soo et al., 2016). This is also common in Indonesia, especially in Jambi Province (Rosyani et al., 2017; Stolle et al., 2003).

In the last 20 years, 60% of forests in Jambi Province have experienced damage (REPUBLIKA.CO.ID, 2021), as can be seen from the decline in the distribution of protected forest areas, which in 2017 saw a reduction in forest area of 4,249,288 hectares to 179,588 hectares. In 2019 (Badan Pusat Statistik Provinsi Jambi, 2020). Many factors cause forest destruction, such as changes in forest function, illegal logging, illegal mining, land occupation, forest and land fires, illegal drilling, and unauthorized gold mining (PETI). Forest destruction is not only experienced by Jambi Province but occurs in almost all regions of Indonesia. To overcome the problem of forest destruction, one alternative from the government is to form a Forest Management Unit (KPH) whose function is to manage forests effectively and efficiently according to their primary function and purpose while maintaining forest sustainability.

The regulatory basis that supports the establishment of KPHs in customary forests can be found in various laws and regulations in Indonesia. For example, Law Number 41 of 1999 concerning Forestry states that forest management must involve community participation, including indigenous communities, and promote sustainable forest management. In addition, Government Regulation Number 6 of 2007 concerning Forest Area Management states that KPHs can be established in various forest areas, including customary forest areas, to increase the efficiency of forest management and involve local communities directly. There is also a Minister of Environment and Forestry Regulation Number P.6/Menlhk-II/2009 concerning Guidelines for the Formation of Forest Management Units.

In implementing forestry, the government divides forest areas into state forest areas and customary forests. Currently, customary forests are one of the forest areas that is a priority for government attention (Galudra et al., 2014; Harada et al., 2022). Despite this fact, the government has yet to be able to provide much protection for indigenous communities and their rights in forest management if they conflict with companies or the government (Madonna, 2019). Rantau Kermas Village, Jangkat District, Jambi province, has a customary forest covering an area of 130 hectares, which is managed by the Depati Karo Jayo Tuo Customary Forest Management Group (KPHA).

Rantau Kermas village is one of the villages that is still strong in its customs and culture. Customary forest management should be able to provide welfare for the

community. Alternative strategies commonly used in customary forest management are enhancing customary values and strengthening customary institutions as the basis for customary forest management. Innovation can be successful if it can birth to customary forest management, conflict resolution, social order and environmental sustainability (Wibowo et al., 2021).

The priority in customary forest management is empowering forest area communities, optimizing economic benefits and expanding cooperation networks. Therefore, there needs to be synergy between related stakeholders (Azwar et al., 2021). The parties involved in forest management are the government, academics and non-governmental organizations. However, there are still many areas for improvement in this level of cooperation, such as a lack of institutional significance and weak customary forest management institutions. Stakeholders tend to increase the interests of their groups so that the programs created do not support each other or synergize; plus, there needs to be more vital public awareness of the importance of customary forest management organizations (Pratiwi et al., 2019).

So far, customary forest management programs have not been able to improve community welfare; institutions have become one of the inhibiting factors in forest management (Salaka et al., 2020). In contrast to the results of previous research, KPHA Depati Karo Jayo Tuo succeeded in managing customary forests and received awards related to customary forest management. The achievements obtained include: in 2016, he received the Kalpataru award from the governor of Jambi as an environmental saviour; in 2019, he received the Kalpataru award from the Ministry of Environment and Forestry (KLHK) in the category of customary forest management, providing assistance to village communities in need, scholarships for school children, and producing a Micro Power Plant Hydro (PLTMH).

KPH is considered to be an essential part of forest management so that customary forests can be of maximum benefit to the community. With a cooperative system, traditional community institutions can solve public problems by providing financial aid, stimulus, and program assistance (Nurasa, 2017). Institutional discussions contain rules, codes of ethics, behaviour, laws, norms and other binding factors between organisation members. Everything is to support and produce security in controlling natural resources, supported by regulations and intensive law enforcement (Fatimah, 2019).

Institutional characteristics can be seen from three aspects: individual, organization, and system. Individuals assess the knowledge, competencies and skills possessed by the group. Organizations look at vertical and horizontal relationships, cooperative relationships, and organizational structure. Systems discuss norms, rules, policies, program plans, instruments and cultural values used in organizations (Domorenok et al., 2021). To support institutional functions, institutional development is needed from a series of improvements in the capabilities of all elements of the organization, including human, economic, cultural, social, environmental, and structural resources, in the institutional systems used (Buchari et al., 2017). On the other hand, social networks and norms significantly influence institutional capacity (Sari et al., 2020).

After the ratification of customary forests from the Ministry of Environment and Forestry, KPHA needs to receive technical training and guidance on forest management, management, administration and finance guidance, development of potential forest

products, and community participation (Salaka et al., 2020). Therefore, researchers want to know the institutional capacity of the Depati Karo Jayo Tuo customary forest management group (KPHA) to manage customary forests optimally. The initial hypothesis is that KPHA Depati Karo Jayo Tuo has quite good institutional capacity and full support from the village and district governments in institutional development so that it can manage customary forests effectively, efficiently and sustainably. This research aims to find out how to form forest management institutions to make maximum use of forests based on local wisdom values.

There are several previous studies in the context of customary forest management with various institutional approaches, including institutional analysis in East Nusa Tenggara (Budiman et al., 2021), evaluation of the effectiveness of local institutions with a participatory approach (Chahyana et al., 2024), analysis with an educational approach (Hidayat et al., 2021), understanding the role of culture in The Gambia through an ethnographic approach (Madge, 1995), analyzing the regulatory framework using a legal and policy approach (Sopaheluwakan et al., 2023), and evaluating customary forest management by focusing on approaches to ecological value (Mutia et al., 2021; Ungirwalu et al., 2021).

Even though many studies have studied forest management using various approaches, there have been few research results that specifically and simultaneously relate it to the case of customary forests in the area. Research focusing on customary forest management, especially in an institutional context, is still limited, while customary forests have an essential role in maintaining ecosystems and the welfare of local communities. Therefore, there is an urgent need to fill this knowledge gap with more detailed research on how institutions such as the Depati Karo Jayo Tuo Customary Forest Management Group (KPHA) in Rantau Kermas Village can help utilize forests sustainably while taking local wisdom values into account. Moreover, the challenges faced.

The aim of this research is to bridge the gap in previous research by considering cases related to customary forest management in a institutional context. The big question in this research is how individual KPHA capacity, KPHA organizational capacity, KPHA system capacity can contribute to sustainable customary forest management. Answers to these questions will provide a comprehensive view of how capacity aspects within KPHas interact and contribute to sustainable customary forest management, with the potential to guide better policies and practices in the conservation of natural resources and the well-being of local communities.

METHOD

The type of research used in this research is qualitative research using a case study approach. The choice of using a case study approach is to provide an in-depth understanding of the dynamics and complexity of the specific KPHA institution. Data was collected by conducting interviews with several people who were considered to understand forest management in Rantau Kermas village. The informants for this research consisted of several parties, including the traditional community of Rantau Kermas Village, the village government, traditional elders, KPHA members, and related parties such as non-governmental organizations and related government agencies.

They were chosen because they have relevant knowledge and experience in managing customary forests and the struggle to obtain formal recognition for these

customary forests. Apart from interviews, collecting documents from related policies, meeting notes, news, and others are also considered. Researchers also made direct observations to see how KPHA activities manage customary forests.

The data successfully obtained was then transferred to the NVivo 12 Plus analysis tool. In research using the NVivo 12 Plus analysis tool, researchers can gain significant benefits in managing and analyzing qualitative data. NVivo 12 Plus makes it easy for researchers to import, organize, and categorize data, such as interviews, transcripts, or text documents, efficiently identifying themes and patterns (Salahudin et al., 2020). This research used analysis to answer research questions through features such as creating nodes or categories. Using NVivo 12 Plus in qualitative research with a case study approach, researchers can manage and analyze data more structured, identify essential patterns and findings, and visualize the relationships between relevant concepts (Alam, 2021). With its features that include search, categorization, and data visualization, NVivo helps researchers systematically understand complex dynamics in the context of case studies.

RESULTS AND DISCUSSION

The indigenous people of Rantau Kermas Village have gone through a long journey to fight for their rights to their customary forests. Since 1998, they have actively sought to secure their customary forests through various initiatives, such as the List of Proposed Development Plans (DUPR) in the TNKS ICD project and the 1997 Narrative Village Conservation Agreement (KKD). Through close collaboration between the Village Government, LKKMD/ LMD, KK ICDP-TNKS, and Village Sharia officials, in 2000, customary forests were successfully established. During their journey, the people of Rantau Kermas Village also fought for legitimacy from the Merangin Regency Government, which they finally obtained in 2015. However, their efforts continued, and they fought to gain official recognition from the state. In 2016, their 130-hectare customary forest was finally recognized and confirmed by the Ministry of Environment and Forestry through a Decree, through Decree Number 6745/MENLHK-PSKL/KUM-1/12/2016. This illustrates their perseverance and commitment to protecting their customary forests and preventing land clearing that damages the ecosystem.

Customary forests in Rantau Kermas Village have existed for a long time, regulated and recognized in their customary regulations. However, with changes in the government system, village regulations, and the dynamics of social change in society, they decided to seek formal legal recognition from the state. The designation of customary forests was triggered by concerns about uncontrolled forest land clearing practices, ignoring the severe impact on the function of forests as guardians of the water system and the community's source of life. This forest area also plays a vital role in maintaining the ecosystem, preventing flooding and soil erosion, and protecting flora and fauna, which are a source of germplasm and traditional medicinal ingredients. This customary forest also has potential for tourism, research and scientific development. Therefore, establishing customary forests is a crucial step in maintaining the ecosystem and welfare of the people of Rantau Kermas Village.

Once a customary forest is established, the community is responsible for maintaining and protecting this area. They are prohibited from clearing land or cutting down trees in customary forests except to take forest products such as rattan, honey,

jernang, medicinal plants and plant seeds. This is an essential step in ensuring that customary forests can continue to function as a buffer for the Kerinci Seblat National Park Area (TNKS), maintaining the availability of water sources and protecting valuable flora and fauna. With their struggle, the people of Rantau Kermas Village have demonstrated their commitment to preserving natural resources and local wisdom values and maintaining a balance between human needs and environmental preservation.

This shows that the efforts of the Rantau Kermas Village community to fight for their rights to their customary forest require institutional solid capacity. This study has outlined how institutions, such as the Depati Karo Jayo Tuo Customary Forest Management Group (KPHA), play an essential role in sustainable customary forest management. The importance of adequate institutional capacity in customary forest management in Rantau Kermas Village shows how formal recognition and strong organizations can help conserve natural resources and safeguard valuable ecosystems. With adequate institutional capacity, communities can ensure that their customary forests are maintained, natural resources are utilized wisely, and local wisdom values are respected in ongoing environmental conservation efforts.

KPHA Individual Capacity

The quality of institutional capacity can be seen from the capacity of each member within it (Ganguly et al., 2019; Kumar et al., 2021). To present a good institution, of course, qualified individuals are needed. Each member must have competence according to their respective duties and functions. Individual character can be seen from several perspectives, such as competence, skills, expertise, skill and self-motivation possessed by members of the institution. The individual capacity that KPHA must master is, of course, related to how customary forests are managed so that they can be of maximum benefit to village communities.

Organizational capacity will only run effectively if the individual capacity meets the required capacity. Conversely, individual capacity will not run effectively if it is not supported by organizational capacity (Prakitri & Damayanti, 2016). In this case, KPHA members were recruited from the original community of Rantau Kermas Village who were committed and aware of the importance of preserving customary forests. They were selected based on active participation in local activities, knowledge of the environment, and skills in forest management. Although individual backgrounds and skills may vary, they all share the same vision and goals in realizing sustainable forest management for society's welfare and ecosystem preservation.

The capabilities of individuals in the Depati Karo Jayo Tuo Customary Forest Management Group (KPHA) have been improved through various training programs. Training includes photography skills for documentation, use of GPS devices in marking necessary coordinates and protected trees, business development, collaboration with various parties, and administration required in managing customary forests. Participation from the government sector, including district governments and ministries, and collaboration with NGOs is essential to organizing this training. Photography training allows KPHA to document every step and activity they take in maintaining and developing customary forests, producing valuable information about forest conditions. Meanwhile, training on using GPS, although still in development, aims to make it easier to mark important points and protection zones in the forest. However, the importance of

continuing education and additional training continues to emerge as an urgent need to ensure that all KPHA members can operate GPS properly.

Apart from that, business development in managing the Depat Karo Jayo Tuo traditional forest is also carried out by creating a foster tree business and developing agrotourism. The foster tree business was initiated by the Indonesian Warsi Confession Community (KKI Warsi); KPHA has been guided and assisted until now. KPHA also receives administrative training from the government and NGOs, such as bookkeeping, making work plans, reports, etc. Training to increase individual capacity is carried out periodically but needs improvement. For example, when restructuring the institution, KPHA must retrain all members because some members involved are new people who have not previously received training or need to gain the competence to manage customary forests. Many competencies still need to be developed in the available human resources, and dependence on other institutions must still be considered relatively high, such as carrying out collaborative networks and promoting business units.

KPHA Organizational Capacity

The organizational capacity of KPHA Depati Karo Jayo Tuo is closely related to several aspects, including regulations and institutions, administrative culture, and patterns of interaction and collaboration between individuals and organizations. The KPHA organizational structure includes management positions such as Chairman, Secretary, and Treasurer, as well as several sections that have their respective roles in managing customary forests. The importance of involving the indigenous people of Rantau Kermas Village in the management structure shows a commitment to maintaining cultural values and local wisdom in customary forest management.

Traditional elders also play an essential role in decision-making and determining the management structure, reflecting respect for the traditional solid traditions in the Rantau Kermas Village community. The determination of the management structure by traditional elders shows respect for traditions and local wisdom in the Rantau Kermas Village community. Although this can be seen as a form of modernization in organizational management by integrating traditional values into the formal structure, it also reflects the patriarchal aspect of the organization, where decisions and central authority are still determined by traditional elders who are generally male figures. Therefore, while this strengthens local cultural identity and sustainability, it must be recognized that it can also lead to gender inequality and decision-making that is not always democratically inclusive.

Apart from that, the involvement of various agencies, such as BP Geopark Merangin and BB TNKS as supervisors, as well as BPD, LAD and LPM as guardians, also illustrates the complexity of the relationships that must be regulated in customary forest management. However, too many agencies sometimes slow the decision-making process and hinder influential contributions. Some institutions tend to be ego-sectoral, which can hinder KPHA initiatives. Although many agencies are involved, only a few play an intense role in customary forest management, such as BB TNKS, which supports developing tourism and maintaining regional security.

Collaboration with NGOs such as KKI Warsi helps in outreach, training, and mentoring, increasing community awareness about the importance of customary forest management. The foster tree program and other assistance from this NGO create

sustainable economic benefits for the people of Rantau Kermas Village. This collaboration also expands the network supporting customary forest management's sustainability. Overall, the established organizational capacity of KPHA Depati Karo Jayo Tuo is a critical factor in sustainable customary forest management in Rantau Kermas Village. A clear organizational structure, the involvement of traditional elders, and collaboration with various institutions and NGOs all ensure that customary forest management is based on cultural values and a sustainable environment.

Collaboration with NGOs such as KKI Warsi is essential in increasing community awareness about the importance of customary forest management in Rantau Kermas Village. Through outreach, training and mentoring programs, this NGO helps educate the community about sustainable practices in forest management. The foster tree program and other economic assistance create sustainable economic benefits for communities, while this collaboration also expands the support network for customary forest sustainability. In this collaboration, NGOs act as facilitators and resource providers, while KPHA and the Rantau Kermas Village community act as implementers and beneficiaries. Traditional elders also have an essential role in ensuring that collaborative activities are based on cultural values and a sustainable environment, so customary forest management is based on sustainable cooperation and considers all parties' interests.

KPHA System Capacity

Institutional capacity in customary forest management in Rantau Kermas Village is reflected through a system of instruments, procedures and policies that have been formed and implemented consistently from the formulation to evaluation stages. The people of Rantau Kermas Village have inherited awareness from generation to generation about the importance of protecting and preserving their traditional forests. They understand that the topography of the village, located in a valley with steep slopes, has the potential for landslides and flooding if the environment is not maintained correctly. This awareness is passed down from generation to generation to ensure that customary forests are well maintained. Customary spatial planning systems, such as "Tanah ulu aek" for the protection of water sources, "Tanah arai" for areas with steep slopes, and "Tanah ajumrah" for settlements and agriculture, are an essential basis for customary forest management. The Tanah Ulu Aek and Tanah Arai areas have been designated customary forest areas, where people are prohibited from clearing land or cutting down trees. This way, the traditional spatial planning system helps maintain the forest ecosystem.

Apart from the spatial planning system, the Serampas Traditional Institution also imposes sanctions in the form of fines for violations in customary forests. This fine applies to village residents and outsiders who violate the regulations in Rantau Kermas Village. These fines include rice, goats and money as compensation for violations of customary forests. This rule initially came from customary regulations and was later formalized in village regulations regarding the prohibition of felling trees. In its implementation, reporting violations is carried out by the community or KPHA to traditional elders, who then decide the type of sanctions given to violators with supervision from village government officials. With this system, the Rantau Kermas Village institution ensures compliance with regulations and maintains the sustainability of its customary forests.

Although hereditary traditions have played an important role in maintaining and preserving customary forests in Rantau Kermas Village, institutional research is still

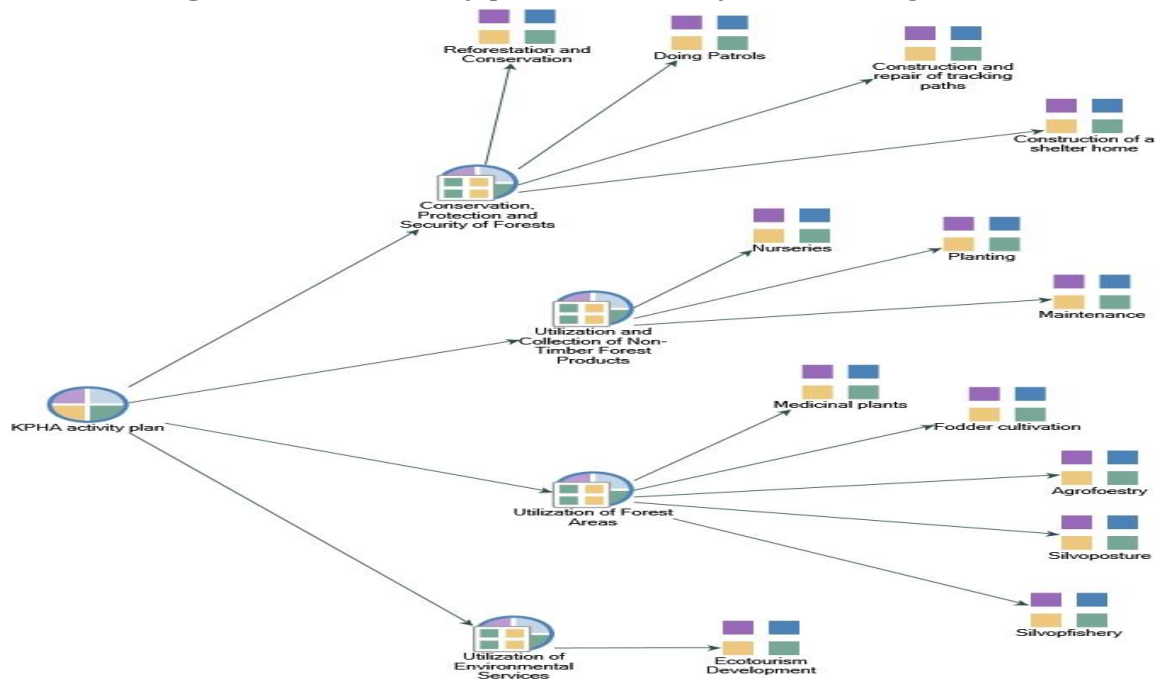
essential for several reasons. First, institutional research can help identify strengths and weaknesses in existing structures and procedures, allowing for further. Second, with a deeper understanding of how institutions work, we can ensure that effective practices are maintained and strengthened while potential problems or obstacles can be overcome. Third, institutional research can also strengthen the legitimacy and official recognition of customary forest management, both at local and national levels, thereby providing a more substantial basis for supporting the sustainability of these practices in the future. Thus, although local traditions can provide a strong basis, institutional research remains essential to ensure that customary forest management can continue effectively and sustainably.

Based on the trends above, institutional capacity in the Depati Karo Jayo Tuo Customary Forest Management Group (KPHA) in Rantau Kermas Village reflects a strong link between individual capacity, organizational capacity, and institutional systems. In managing customary forests, the ability of each KPHA member in terms of competence, skills and motivation is essential. The training provided to KPHA members by various parties, including the government, non-governmental organizations, and NGOs, significantly contributes to increasing individual capacity. However, there is still a need for further development, especially in the face of organizational restructuring or the presence of new members.

On the other hand, KPHA's organizational capacity is reflected in a clear organizational structure, various roles carried out by members, and the involvement of various related parties such as government agencies and village traditional institutions. However, too many parties involved in customary forest management sometimes slow decision-making and give rise to ego sectoral aspects that hinder KPHA initiatives. Therefore, KPHA needs to balance traditional and modern regulations and strengthen internal decision-making capacity so that the customary forest management process remains efficient and sustainable. In this case, collaboration with NGOs such as KKI Warsi has helped spread awareness, increase member capacity, and create sustainable economic benefits through programs such as fostering trees. These efforts reflect the importance of integrating individual capacity, organizations, and institutional systems in the sustainable management of customary forests.

The KPHA's activity plans which are compiled in its annual work plan are seen as follows:

Figure 1. KPHA activity plan in customary forest management



Source: Processed by researchers using Nvivo 12 Plus, 2023

Forest conservation, protection, and monitoring efforts have an integral role in maintaining the sustainability of forest ecosystems. Reforestation, by replanting felled trees, helps restore ecological balance and reduce the impacts of climate change. Routine patrols to protect forests from illegal logging and other destructive activities not only prevent ecosystem damage but also provide a deterrent effect on perpetrators who want to destroy forests. Securing forests is a critical step in maintaining the integrity of the natural environment. Regularly taking photos of foster trees allows for monitoring of forest development over time.

Meanwhile, the creation and rehabilitation of tracking roads can facilitate responsible access to forests, if they are done with due regard for their environmental impact. Also, creating shelter houses in traditional forest areas supports ecotourism but must be balanced with attention to environmental sustainability and local culture. All these steps work together to maintain the sustainability of forests and ensure their benefits for future generations.

Utilization and collection of non-timber forest products, such as seeding, planting and maintaining non-timber forest plants, are important steps in sustainable natural resource management. Through careful breeding, we can create a stock of strong, healthy plants, which is the primary foundation for maintaining productive forests. Planting non-timber forest plants, such as fruit or medicinal plants, can provide a sustainable source of income for local communities, while also maintaining the balance of the forest ecosystem. Good maintenance, including plant care and protection against pests and diseases, ensures optimal growth and maximum yield of these non-woody plants, creating sustainable economic and ecological benefits. Thus, the utilization and collection of non-timber forest products is an important step in supporting the sustainability of forest resources and improving the welfare of local communities.

Utilizing forest areas through practices such as medicinal plants, green cultivation of animal feed, agroforestry, silvopasture, and silvofishery supports the sustainability of natural resources and provides diverse economic benefits. Medicinal plants that grow in forests can be used in traditional medicine and the pharmaceutical industry while maintaining the sustainability of these plants (Campos & Albuquerque, 2021; Jan et al., 2020). Green cultivation of animal feed in forests also enables the production of high-quality feed resources and supports sustainable animal husbandry (Hayek MN et al., 2020; Narayanan et al., 2015). Agroforestry combines forest crops with agriculture, increasing land productivity and offering additional income through non-timber forest products (Gasparinetti et al., 2022). Silvopasture combines forest plants with livestock grazing, creating an environment that supports healthy plant growth and animal feed (Stewart et al., 2020). Meanwhile, silvofishery combines fish farming with forests, creating a sustainable system that produces necessary protein sources while maintaining aquatic ecosystems (Harlin & Pinchot, 1974). Using forest areas sustainably with this approach can maintain natural sustainability while providing various economic benefits to local communities.

Apart from these activities, utilizing environmental services through ecotourism development is also essential in maintaining environmental sustainability while creating economic and educational benefits. In this context, ecotourism connects society with the natural environment through responsible and sustainable tourism activities (Stewart et al., 2020; Yekani Motlagh et al., 2020). Visitors can enjoy natural beauty, understand the ecosystem, and experience the importance of conservation. Ecotourism also creates employment and income opportunities for local communities, encouraging the preservation of the environment and local culture. Through these efforts, ecotourism development allows communities and visitors to jointly protect natural resources, positively impact the environment, and create a sustainable relationship between humans and nature.

Natural activity and balance are two essential aspects that are interrelated in maintaining the survival and welfare of this planet (Nurkaidah et al., 2024; Wedayanti et al., 2023). Human activities, such as industrialization, intensive agriculture, and urbanization, often disrupt the natural balance through pollution, deforestation, and climate change (Malik et al., 2023; Rifaid et al., 2023). To maintain harmony between human activities and nature, awareness of the importance of treating natural resources sustainably, protecting biodiversity and reducing the ecological footprint must be maintained. Through conservation actions and educating the public about the importance of maintaining the balance of nature, we can create a healthy and sustainable environment for future generations. The KPHA activities previously explained in the direct management of customary forests also support maintaining natural balance with conservation practices and sustainable management of natural resources.

In addition to the series of work plans that have been mentioned, the Customary Forest Management Community (KPHA) has been active in efforts to utilize customary forests that have an economic impact through the foster tree program, which is directly accompanied by the Indonesian Warsi Conservation Group (KKI Warsi). This program began with the active participation of the community, which identified more than 1000 trees with a diameter of 60 cm or more, which would later become capital for the foster tree program. The foster tree concept emphasizes the financial contribution of tree

caretakers, with donation amounts starting from IDR 200,000 per tree per year as support to communities who maintain and manage customary forests. The donation size may vary depending on the size of the tree trunk and the rarity of the species. Proceeds from donations from foster trees are shared with a proportion of 40% for KPHA management, which includes operations, purchasing tools and materials for tagging foster trees, customary forest patrols and checking trees that have been fostered. Meanwhile, the remaining 60% is allocated to the Village-Owned Enterprise (BUM Desa) Alam Depati Payung, Rantau Kermas Village, which is then used for social activities such as assistance to orphans, single parents, educational scholarships for those in need, as well as economic programs and resource development—humans in society.

Strengthening institutional capacity in managing the Depati Karo Jayo Tuo Customary Forest in Rantau Kermas Village has significant implications for maintaining the sustainability of the forest ecosystem and the welfare of local communities. With trained and knowledgeable members, a strong organization, and efficient systems, KPHA can protect their customary forests more effectively, manage natural resources sustainably, and allocate resources appropriately. It also allows them to implement social and economic programs that support local communities, such as social assistance, educational scholarships, and economic improvement efforts. Thus, strengthening institutional capacity not only supports environmental sustainability but has a significant positive impact on the welfare and development of local communities (Nurdin & Baharuddin, 2023).

CONCLUSION

The findings of this research illustrate that the struggle of the Rantau Kermas Village community in fighting for their rights to their customary forest reflects their perseverance and strong commitment to protecting the environment and ecosystem. This official recognition of customary forests is essential in balancing human needs and environmental conservation. With adequate institutional capacity in terms of individual and organizational capacity, communities can ensure that their customary forests are well maintained, natural resources are utilized wisely, and local wisdom values are respected in ongoing environmental conservation efforts.

Furthermore, these findings show that strengthening the institutional capacity of the Depati Karo Jayo Tuo Traditional Forest Management Group (KPHA) is critical in maintaining the forest ecosystem's sustainability and improving local communities' welfare. Through cooperation between various parties, periodic training, and efficient systems, KPHA can protect customary forests effectively, manage natural resources sustainably, and implement social and economic programs that support community development. This conclusion emphasizes the importance of integrating individual, organizational and system capacities in sustainable customary forest management, which has the potential to guide better policies and practices in natural resource conservation and the well-being of local communities.

Limitations of this study include methods and data coverage. Qualitative methods in this research may limit the ability to investigate cause-and-effect relationships or understand the complex dynamics of customary forest management more deeply. In addition, limitations in the number of informants can also limit the generalization of findings. Future recommendations include using more inclusive research approaches,

such as combined qualitative-quantitative research, to gain more comprehensive insight into the dynamics of customary forest management. In addition, further research needs to involve more involvement from local communities and related stakeholders to identify further challenges in customary forest management and formulate more effective and sustainable solutions.

REFERENCES

- Abatzoglou, J. T., Battisti, D. S., Williams, A. P., Hansen, W. D., Harvey, B. J., & Kolden, C. A. (2021). Projected increases in western US forest fire despite growing fuel constraints. *Communications Earth and Environment*, 2(1). <https://doi.org/10.1038/s43247-021-00299-0>
- Alam, M. K. (2021). A systematic qualitative case study: questions, data collection, NVivo analysis and saturation. *Qualitative Research in Organizations and Management: An International Journal*, 16(1), 1–31. <https://doi.org/10.1108/QR0M-09-2019-1825>
- Austin, K. G., Mosnier, A., Pirker, J., McCallum, I., Fritz, S., & Kasibhatla, P. S. (2017). Shifting patterns of oil palm driven deforestation in Indonesia and implications for zero-deforestation commitments. *Land Use Policy*, 69, 41–48. <https://doi.org/10.1016/j.landusepol.2017.08.036>
- Azwar, B., Roza, D., Thamrin, H., & Elfiandri, E. (2021). Strategi keberlanjutan pengelolaan hutan larangan adat Kenegerian Rumbio Kabupaten Kampar Propinsi Riau. *Dinamika Lingkungan Indonesia*, 8(1), 57. <https://doi.org/10.31258/dli.8.1.p.57-64>
- Badan Pusat Statistik Provinsi Jambi. (2020). *Luas Kawasan Hutan (Hektar), 2017-2019*. <https://doi.org/10.1055/s-2008-1040325>
- Buchari, A., Santoso, M. B., & Marlina, N. (2017). Jurnal Analisis dan Kebijakan Publik. *Jurnal Analisis Dan Kebijakan Publik*, 3(1), 49–62.
- Budiman, I., Fujiwara, T., Harada, K., & Sato, N. (2021). Customary forest managements and its challenges in East Nusa Tenggara, Indonesia: An implication of constitutional court decision 2012. *Jurnal Manajemen Hutan Tropika*, 27(1), 69–79. <https://doi.org/10.7226/jtfm.27.2.69>
- Campos, J. L. A., & Albuquerque, U. P. (2021). Indicators of conservation priorities for medicinal plants from seasonal dry forests of northeastern Brazil. *Ecological Indicators*, 121, 106993. <https://doi.org/10.1016/j.ecolind.2020.106993>
- Chahyana, I., Hutomo, P., Hernawan, E., & Titisari, P. (2024). The role of indigenous people to the viability of traditional forest management: A case study from Imbo Putui Customary Forest. *IOP Conference Series: Earth and Environmental Science*, 1297(1), 012091. <https://doi.org/10.1088/1755-1315/1297/1/012091>
- Domorenok, E., Graziano, P., & Polverari, L. (2021). Introduction: policy integration and institutional capacity: theoretical, conceptual and empirical challenges. *Policy and Society*, 40(1), 1–18. <https://doi.org/10.1080/14494035.2021.1902058>
- Fatimah, A. S. (2019). Kapasitas Kelembagaan Dinas Pengendalian Penduduk, Keluarga Berencana, Pemberdayaan Perempuan Dan Perlindungan Anak Kota Tasikmalaya. *Jurnal Administrasi Dan Kebijakan Publik*, 4(1), 1–11. <https://doi.org/10.25077/jakp.4.1.1-11.2019>
- Galudra, G., van Noordwijk, M., Agung, P., Suyanto, S., & Pradhan, U. (2014). Migrants, land markets and carbon emissions in Jambi, Indonesia: Land tenure change and the prospect of emission reduction. *Mitigation and Adaptation Strategies for Global*

- Change*, 19(6), 715–731. <https://doi.org/10.1007/s11027-013-9512-9>
- Ganguly, A., Talukdar, A., & Chatterjee, D. (2019). Evaluating the role of social capital, tacit knowledge sharing, knowledge quality and reciprocity in determining innovation capability of an organization. *Journal of Knowledge Management*, 23(6). <https://doi.org/10.1108/JKM-03-2018-0190>
- Gasparinetti, P., Brandão, D. O., Maningo, E. V., Khan, A., Cabanillas, F., Farfan, J., Román-Dañobeytia, F., Bahri, A. D., Ponlork, D., Lentini, M., Alexandre, N., & Araújo, V. da S. (2022). Economic Feasibility of Tropical Forest Restoration Models Based on Non-Timber Forest Products in Brazil, Cambodia, Indonesia, and Peru. *Forests*, 13(11), 1878. <https://doi.org/10.3390/f13111878>
- Ghorbanzadeh, O., Blaschke, T., Gholamnia, K., & Aryal, J. (2019). Forest fire susceptibility and risk mapping using social/infrastructural vulnerability and environmental variables. *Fire*, 2(3), 1–27. <https://doi.org/10.3390/fire2030050>
- Gutierrez Garzon, A. R., Bettinger, P., Abrams, J., Siry, J. P., & Mei, B. (2022). Forest Sustainability in State Forest Management Plans: A Content Analysis. *Journal of Sustainable Forestry*, 41(1), 92–113. <https://doi.org/10.1080/10549811.2021.1884575>
- Harada, K., Habib, M., Sakata, Y., & Maryudi, A. (2022). The role of NGOs in recognition and sustainable maintenance of customary forests within indigenous communities: The case of Kerinci, Indonesia. *Land Use Policy*, 113, 105865. <https://doi.org/10.1016/j.landusepol.2021.105865>
- Harlin, M. M., & Pinchot, G. B. (1974). Ecological Aquaculture. *BioScience*, 24, (9). <https://doi.org/10.2307/1296879>
- Hayek MN, Harwatt H, Ripple WJ, & Mueller ND. (2020). The carbon opportunity cost of animal-sourced food production on land. *Nature Sustainability*, 10–13. https://ideas.repec.org/a/nat/natsus/v4y2021i1d10.1038_s41893-020-00603-4.html
- Hidayat, D. C., Surati, Sylviani, Sakuntaladewi, N., Ariawan, K., & Ekawati, S. (2021). Customary Forest Utilization: The Determinants of Indigenous (Adat) Community's Economic Welfare. *IOP Conference Series: Earth and Environmental Science*, 940(1), 12094. <https://doi.org/10.1088/1755-1315/940/1/012094>
- Ibrahim, A. H. H., Baharuddin, T., & Wance, M. (2023). Developing a Forest City in a New Capital City: A Thematic Analysis of the Indonesian Government's Plans. *Jurnal Bina Praja*, 15(1), 1–13. <https://doi.org/10.21787/jbp.15.2023.1-13>
- Jan, H. A., Jan, S., Bussmann, R. W., Wali, S., Sisto, F., & Ahmad, L. (2020). Complementary and alternative medicine research, prospects and limitations in Pakistan: A literature review. *Acta Ecologica Sinica*, 40(6), 451–463. <https://doi.org/10.1016/J.CHNAES.2019.12.005>
- Kumar, A., Kalhor, M. R., Kumar, R., Bhutto, N. A., & Shaikh, R. (2021). Environmental quality: examining role of financial development, institutional capacity, and corruption. *Environmental Science and Pollution Research*, 28(38), 53781–53792. <https://doi.org/10.1007/s11356-021-14430-3>
- Leo, S., Supriatna, J., Mizuno, K., & Margules, C. (2022). Indigenous Dayak Iban customary perspective on sustainable forest management, West Kalimantan, Indonesia. *Biodiversitas*, 23(1), 424–435. <https://doi.org/10.13057/biodiv/d230144>

- Madge, C. (1995). Ethnography and agroforestry research: a case study from the Gambia. *Agroforestry Systems*, 32(2), 127–146. <https://doi.org/10.1007/BF00711569>
- Madonna, E. A. (2019). Penerapan hak masyarakat hukum adat dalam pengelolaan hutan di Indonesia. *Bina Hukum Lingkungan*, 3(2), 264–278. <https://doi.org/10.24970/jbhl.v3n2.19>
- Malik, I., Prianto, A. L., Roni, N. I., Yama, A., & Baharuddin, T. (2023). Multi-level Governance and Digitalization in Climate Change: A Bibliometric Analysis. In S. Motahhir & B. Bossoufi (Eds.), *International Conference on Digital Technologies and Applications* (pp. 95–104). Springer, Cham.
- McIntyre, K. B., & Schultz, C. A. (2020). Facilitating collaboration in forest management: Assessing the benefits of collaborative policy innovations. *Land Use Policy*, 96, 104683. <https://doi.org/10.1016/j.landusepol.2020.104683>
- Mutia, T., Sumarmi, Bachri, S., & Subhani, A. (2021). Ecological value of soil organic matter (mandala customary forests with awiq-awiq management). *IOP Conference Series: Earth and Environmental Science*, 683(1), 12007. <https://doi.org/10.1088/1755-1315/683/1/012007>
- Narayanan, M. A., Haddad, T. M., Smer, A., Ayan, M., & Mooss, A. (2015). Cocaine Toxicity Presenting As Acute Reversible Pulmonary Hypertension and Right Heart Failure. *Journal of the American College of Cardiology*, 65(10), A645. [https://doi.org/10.1016/s0735-1097\(15\)60645-3](https://doi.org/10.1016/s0735-1097(15)60645-3)
- Nurasa, H. (2017). Analisis Program Pengembangan Kapasitas Kelembagaan Masyarakat Desa: Suatu Studi Pada Program Pengembangan Masyarakat Miskin di Perdesaan. *CosmoGov*, 2(1), 23-38. <https://doi.org/10.24198/cosmogov.v2i1.11849>
- Nurdin, M., & Baharuddin, T. (2023). Capacity Building Challenges and Strategies in the Development of New Capital City of Indonesia. *Jurnal Bina Praja*, 15(2), 221–232. <https://doi.org/10.21787/jbp.15.2023.221-232>
- Nurkaidah, Anas, A., & Baharuddin, T. (2024). Implementation of environmental policies on the development of a new capital city in Indonesia. *Cogent Social Sciences*, 10(1), 2297764. <https://doi.org/10.1080/23311886.2023.2297764>
- Prafitri, G. R., & Damayanti, M. (2016). Kapasitas Kelembagaan Dalam Pengembangan Desa Wisata (Studi Kasus: Desa Wisata Ketenger, Banyumas). *Jurnal Pengembangan Kota*, 4(1), 76. <https://doi.org/10.14710/jpk.4.1.76-86>
- Pratiwi, R., Nitibaskara, T. U., & Salampessy, M. L. (2019). Kelembagaan Masyarakat Dalam Pengelolaan Hutan Adat (Studi Kasus di Kasepuhan Pasir Eurih , Desa Sindanglaya, Kecamatan Sobang, Kabupaten Lebak , Provinsi Banten). *Jurnal Belantara [JBL]*, 2(1), 62–69. <https://doi.org/10.29303/jbl.v2i1.131>
- REPUBLIKA.CO.ID. (2021). *Miris, 60 Persen Hutan di Jambi Sudah Rusak _ Republika Online*. <https://news.republika.co.id/berita/rcqln2330/miris-60-persen-hutan-di-jambi-sudah-rusak?>
- Rifaid, Rachman, M. T., Baharuddin, T., & Gohwong, S. (2023). Public Trust : Indonesian Policy in Developing a New Capital City (IKN). *Journal of Governance and Public Policy*, 10(3), 263–273. <https://doi.org/10.18196/jgpp.v10i3.17681>
- Rosyani, I., Soetarto, E., & Faust, H. (2017). fostering landscape transformation in Jambi Province, Sumatra, Indonesia. *Forest Policy and Economics*, 81(5), 1–9. <http://dx.doi.org/10.1016/j.forpol.2017.04.005>

- Salahudin, S., Nurmandi, A., & Loilatu, M. J. (2020). How to Design Qualitative Research with NVivo 12 Plus for Local Government Corruption Issues in Indonesia? *Jurnal Studi Pemerintahan*, 11(3), 369–398. <https://doi.org/10.18196/jgp.113124>
- Salaka, F., Alviya, I., Y Suryandari, E., Nurfatriani, F., & Zahrul Muttaqin, M. (2020). the Effectiveness of Local Institutional Arrangement for Community Plantation Forest. *Jurnal Analisis Kebijakan Kehutanan*, 17(1), 75–92. <https://doi.org/10.20886/jakk.2020.17.1.75-92>
- Sari, R. R., Siahainenia, R. R., & Hadiwijoyo, S. S. (2020). Penguatan Kapasitas Kelembagaan dalam Pembangunan Kelurahan Berkelanjutan Berbasis Agrowisata di Kumpulrejo, Kota Salatiga. *Jurnal Wilayah Dan Lingkungan*, 8(2), 187–201. <https://doi.org/10.14710/jwl.8.2.187-201>
- Sopaheluwakan, W. R. I., Fatem, S. M., Kutanegara, P. M., & Maryudi, A. (2023). Two-decade decentralization and recognition of customary forest rights: Cases from special autonomy policy in West Papua, Indonesia. *Forest Policy and Economics*, 151, 102951. <https://doi.org/10.1016/j.forpol.2023.102951>
- Stewart, A., Coble, A., Contosta, A. R., Orefice, J. N., Smith, R. G., & Asbjornsen, H. (2020). Forest conversion to silvopasture and open pasture: effects on soil hydraulic properties. *Agroforestry Systems*, 94(3), 869–879. <https://doi.org/10.1007/s10457-019-00454-9>
- Stolle, F., Chomitz, K. M., Lambin, E. F., & Tomich, T. P. (2003). Land use and vegetation fires in Jambi Province, Sumatra, Indonesia. *Forest Ecology and Management*, 179(1–3), 277–292. [https://doi.org/10.1016/S0378-1127\(02\)00547-9](https://doi.org/10.1016/S0378-1127(02)00547-9)
- Tan-Soo, J. S., Adnan, N., Ahmad, I., Pattanayak, S. K., & Vincent, J. R. (2016). Econometric Evidence on Forest Ecosystem Services: Deforestation and Flooding in Malaysia. *Environmental and Resource Economics*, 63(1), 25–44. <https://doi.org/10.1007/s10640-014-9834-4>
- Ungirwalu, A., Awang, S. A., Runtuboi, Y. Y., Peday, M. Y., Marwa, J., Maitar, B., Murdjoko, A., & Fatem, S. M. (2021). Customary forests in west papua: Contestation of desires or needs? *Forest and Society*, 5(2), 365–375. <https://doi.org/10.24259/FS.V5I2.13350>
- Wedayanti, M. D., Santri, S. H., Rustam, A., Baharuddin, T., Yogia, M. A., & Pulungan, B. I. (2023). CSR and Sustainability of the Palm Oil Industry in Riau Province. *Aspirasi: Jurnal Masalah-Masalah Sosial*, 14(2), 197–211. <https://doi.org/10.46807/aspirasi.v14i2.4128>
- Wibowo, A., Palijama, M. L., Kutanegara, P. M., Cahyono, E., & Tillah, M. (2021). The Grassroots Innovation of Customary Forest Management: A Case Study of Kulawi-Marena Community in Sigi Regency, Central Sulawesi. *Sodality: Jurnal Sosiologi Pedesaan*, 9(3). <https://doi.org/10.22500/9202135204>
- Wu, J. J. (2008). Toward a Landscape Ecology of Cities: Beyond Buildings, Trees, and Urban Forests. *Ecology, Planning, and Management of Urban Forests* (10–28). Springer, New York. https://doi.org/10.1007/978-0-387-71425-7_2
- Yekani Motlagh, E., Hajjarian, M., Hossein Zadeh, O., & Alijanpour, A. (2020). The difference of expert opinion on the forest-based ecotourism development in developed countries and Iran. *Land Use Policy*, 94, <https://doi.org/10.1016/j.landusepol.2020.104549>