



Full Length Research Article

Delivering Benefits from State Forest: Lesson from Partnership of Nature-Based Tourism Development in KPH Yogyakarta

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ARTICLE HISTORY:

Received: 2 February 2021

Peer review completed: 22 March 2021

Received in revised form: 23 March 2021

Accepted: 9 April 2021

KEYWORDS:

Forest Management Unit
Nature-based tourism
Social forestry

ABSTRACT

While many studies have examined Forest Management Unit or *Kesatuan Pengelolaan Hutan* (KPH) management in Indonesia, studies that focused on specific partnership policies in developing nature-based tourism in KPH remain understudied. This study offered a case of partnership in nature-based tourism development in the Mangunan area, KPH Yogyakarta, Indonesia. To understand to what degree the partnership benefits locals and forest areas, a triangulation approach includes secondary data collection, interviews, and field observations were employed. In the case considered, it is evident that the deliberative policies of KPH Yogyakarta foster social innovations in nature-based tourism development and serve the pathway in delivering simultaneous benefits for locals and forest areas. In drawing its conclusion, the study highlights that the nature-based tourism development in the Mangunan area has fostered locals' roles in managing state-forest areas by which they generate numerous benefits. Furthermore, this study provides valuable insights that would allow us to better grasp the positive impacts of innovative policies in managing KPH.

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1. Introduction

The sustainability of forest resources and ecosystems has become a global concern. In Indonesia, Forest Management Unit or *Kesatuan Pengelolaan Hutan* (KPH) have been the core of the forest management policy system (Setyarso et al. 2014). Indonesian forest constitutions mandate that the KPH system is imperative for sustainable forest management (SFM). It is beyond the doubt that to be considered sustainably managed, forests should have an essential role in producing timber, conserving biodiversity, and providing sustainable livelihoods for locals. Also, earlier studies concurred that a successful collaborative natural resources management system is generally contingent upon a set of reliable institutions and multilevel support (Cox et al. 2010; Erbaugh 2019; Julijanti et al. 2015).

Over the years, there has been growing attention that the implementation of forestry partnership in KPH would support SFM (Julijanti et al. 2015; Kim et al. 2016; Tajuddin et al. 2019). It may be influenced by the notion of the decentralization of power from state authority to locals as well as private stakeholders at different levels of governance is required (Howlett et al. 2009). At this point, KPHs are expected to play a significant role in reforming the domestic forestry

sector to be more effective, equitable, and sustainable by assisting collaboration among government, local communities, and private sectors. KPHs are also mandated to be self-financial sustained and generate diverse income streams for the state while benefits adjacent local communities. The transformative roles of KPH in reshaping relations with neighboring local communities and external stakeholders are consequential (Kim et al. 2016). However, effective control over SFM in KPH has been curtailed by the highly complex and ever-changing policies/regulations over the years (Julijanti et al. 2015; Tajuddin et al. 2019). Given these circumstances, KPHs are encouraged to find innovative approaches for carrying out their management objectives (Julijanti et al. 2015; Setyarso et al. 2014). Specifically, regardless of the existing forest management paradigm, Tajuddin et al. (2019) recommend implementing a specific form of forestry partnership schemes should be promoted to support the self-sustained KPH's management.

A pool of studies has indeed been dedicated to explaining the dynamic of KPH implementation in Indonesia, but most of them focus on the dynamic process at the national level, specifically on the changing policy-socio-political landscapes (Julijanti et al. 2015; Kim et al. 2016; Sahide et al. 2016; Tajuddin et al. 2019). Scholars have also described the existing forestry partnership schemes in the KPH context. For instance, Septiana (2020) demonstrated how locals in two villages in central Java have benefited from the profit-sharing of partnership scheme teak (*Tectona grandis*) forest management in a state-owned forestry company, Perhutani. Also, Sahide et al. (2020) testified how locals in some areas of Java and Sulawesi islands perceived their economic benefits from their tree plantation forest in KPH. Despite the fact that the aforementioned studies offer valuable insights and explanations of KPH management in Indonesia, they do not provide sufficient answers on how forest areas and their adjacent local communities benefit from the forestry partnership scheme, particularly in nature-based tourism development, in KPH. Limited attention has also been given to the prospective of specific forestry partnership schemes (i.e., nature-based tourism development) implementation. More importantly, a matter of how locals' power is strengthened through the partnership policies, which eventually generate benefits for both locals and forest areas in the context of KPH in Indonesia, remains underexplored.

Using the case of the Manganan area of KPH Yogyakarta, the pilot of the KPH system in Indonesia, this study attempts to elucidate the forestry-partnership scheme's local dynamic, specifically in nature-based tourism destinations development initiative, in KPH. To what degree does forestry partnership in the Manganan area of KPH Yogyakarta reflect the increasing implementation of a sustainable forest management orientation through simultaneous institutional changes and social innovations. This study focused on finding the empirical evidence of the strengthening role of adjacent local communities in managing the state-forest area through nature-based tourism development and understanding the extent to which this scheme benefits locals, local government, and forest areas. The study will serve a better picture of plausible forestry partnership scheme options over KPH in Indonesia. Ultimately, this provides an essential initial step towards evaluating this partnership scheme's effectiveness in achieving economic, environmental, and social goals. To explain that, this study borrows the concept of institutional changes and social innovations as the theoretical framework of the study. These have been intensively used in research that focuses on understanding the governance of social innovation in forestry sectors and marginalized rural areas (Ludvig et al. 2020; Lukesch et al. 2020; Polman et al. 2017).

2. Materials and Methods

The research was conducted in the Mangunan area, KPH Yogyakarta. Administratively, KPH Yogyakarta is managed under the Environment and Forestry Agency of Yogyakarta province. Due to its forest management achievement, KPH-Yogyakarta has been acknowledged as a pilot in Indonesian KPH (Nurjaman et al. 2019). The forest areas of the Mangunan are about 570.7 Ha are dedicated to protection forest, and it is directly adjacent to three villages with a total population is more than 16,000 people.

The current research constitutes a part of our more extensive study of nature-tourism destinations development in the KPH Yogyakarta. With regard to forest management practices, the link between institutional changes and social innovation in sustainably managing forest areas has received increasing attention (Klůvankova et al. 2018; Ludvig et al. 2021; Lukesch et al. 2020; Nijnik et al. 2019). It is mainly to address complex environmental, social, and economic problems. For instance, Luo et al. (2016) demonstrated how institutional changes through changes in policies and political directions play an essential role in providing space for China’s nature-based tourism development. For this study, institutional changes were defined as policies or political frameworks that can provide enabling environments and create social innovations (Lukesch et al. 2020), which eventually derive outputs. At this point, this study hypothesizes that shifting policies from land-based activities to nature-based tourism development in the Mangunan area will generate simultaneous economic, socio-cultural, and environmental results for locals and forest areas. Indeed, nature-based tourism development is fostered to serve more sustainable livelihoods for locals while maintaining forest conservation efforts (Chung et al. 2018; Lee and Jan 2019; Luo and Deng 2008). Therefore, evaluating the extent to which nature-based tourism initiatives benefit locals and forest areas is crucial.

The present study employed a triangulation approach as secondary data collection (reports review), interviews, and field observations. Data collection was conducted in 2018 (May – September) and at the end of 2019. In total, 14 key informants were interviewed. Those consisted of the Koperasi Notowono (KNW) head and secretary, three informants of KPH Yogyakarta’s representatives, and nine tourism site operators throughout the Mangunan area. A descriptive statistic was used to explain the implementation of a forestry-partnership scheme in nature-based tourism destination development. Likewise, to what extent locals and forest areas were benefited from the scheme was also elucidated descriptively.

As mentioned earlier, the concept of institutional changes and social innovation was used as the theoretical framework of the study. The current study on the theoretical framework is built on actors-centered institutional theory (Ostrom 2011), which posits that institutions are governed by norms and rules as well as actors and groups of actors. Following the non-hierarchical governance-processes approaches, scholars have concurred that the formulation of public policies is generated from collective actions (e.g., participation, negotiation) of various stakeholders (e.g., private sectors, civil society) (Ludvig et al. 2020; Lukesch et al. 2020). Additionally, Polman et al. (2017) defined social innovation as “the reconfiguring of social practices, in response to societal challenges, which seeks to enhance outcomes on societal well-being and necessarily includes the engagement of civil society actors”. Those mentioned conceptual backgrounds implied that particular institutional arrangements and policy initiatives might foster or hinder social innovations, vice versa. This study also explored how the role of locals was strengthened in managing the state-forest area through nature-based tourism development facilitated by KPH

Yogyakarta. In addition, social innovation theory was used to explore the locals' social, economic, and ecological practices through nature-based tourism destinations development in the Mangunan area to deliver simultaneous benefits for both forest and locals.

3. Results and Discussion

3.1. Overview of Partnership Scheme in Mangunan KPH Yogyakarta

KPH Yogyakarta is predominantly dedicated to production forests or *Kesatuan Pengelolaan Hutan Produksi* (KPHP), the Mangunan area, located in the hilly area, is mainly covered by Pine forests. Thus, they eventually play an essential role in the life-supporting system for their neighboring communities (i.e., forest-based ecosystem services) and limit their ability to produce timber. On the other hand, the areas are directly adjacent to three villages, which can subsequently be considered forest-dependent communities (Nurjaman et al. 2019; Riyanto et al. 2020). Indeed, most of the neighboring locals had long been involved in forest management, mainly through pine-tapping activities and agroforestry. However, the institutional changes of KPH Yogyakarta have restricted their access to conduct land-based activities, including pine-tapping (Riyanto et al. 2020). While generating incomes from land-based activities was forbidden in the Mangunan area, KPH Yogyakarta seeks to provide a mutually beneficial scheme for locals and forest areas. Given these scenarios, the partnership scheme between KPH and locals in developing nature-based destinations in the Mangunan area is believed as a plausible option in addressing social, economic, and environmental concerns (Nurjaman et al. 2019).

Over the years, KPH Yogyakarta has faced complex challenges to maintain their forest areas are sustainably managed. Nurjaman et al. (2019) indicated that land encroachment and adjacent locals' poverty were prominent issues. The present study found that instead of being more coercive in managing forest areas, the institutional bureaucracy of KPH Yogyakarta has been shifted toward more using a cooperative forest management approach. Moreover, optimizing forest-based ecosystem services through nature-based tourism developments is becoming more prominent (Alhafi 2020). Our results also indicate that how KPH Yogyakarta generates social innovation to govern forest areas through partnership schemes with promising incentives is fundamental in engaging locals in developing nature-based tourism destinations in the Mangunan area. These findings corroborated by earlier studies suggest that simultaneous institutional changes and social innovation are prerequisites to tackle persistent forest management problems, e.g., social conflicts (Klůvanková et al. 2018; Kurniasih et al. 2021; Nijnik et al. 2019).

Regarding Indonesian national policies, KPHs are responsible for managing forests sustainably while also mandated to be self-financial sustained by diversifying their business units (Nurjaman et al. 2019; Setyarso et al. 2014). These circumstances forced KPH Yogyakarta to be agile institutions in adapting to dynamic environments. At this point, KPH Yogyakarta's orientation has been shifted from land-based activities toward more optimizing forest-based ecosystem services, i.e., nature-based tourism (Kaharuddin et al. 2020a, 2020b; Wiyono et al. 2020). Concerning the Mangunan area, they faced problems with old pine forest areas with low pine-sap productivity. On the other hand, Pine-forest areas are located in the hilly area, which is eventually critical for maintaining the watershed's ecological functions. Therefore, harvesting the old pine forests in the Mangunan area may trigger environmental issues such as water scarcity and erosion (Nurjaman et al. 2019). Accordingly, nature-based tourism development is believed a viable option to diversify KPH's business unit by providing a more sustainable livelihood for

adjacent locals while maintaining the forest areas. Although KPH Yogyakarta initiated nature-based tourism destinations development in the Mangunan area in 2014 (Nurjaman et al. 2019; Riyanto et al. 2020), it just subsequently officially undertaken by the signing memorandum of understanding (MoU) between the Environment and Forestry Agency of Yogyakarta province and Koperasi Notowono (KNW) in 2017. KNW is a community-based cooperative (CBC) consisting of previous members of forest-user groups and local communities adjacent to the Mangunan area. In total, 6,633 locals were being a member of KNW. Fig. 1 shows the institutional structures in managing nature-based tourism destinations.

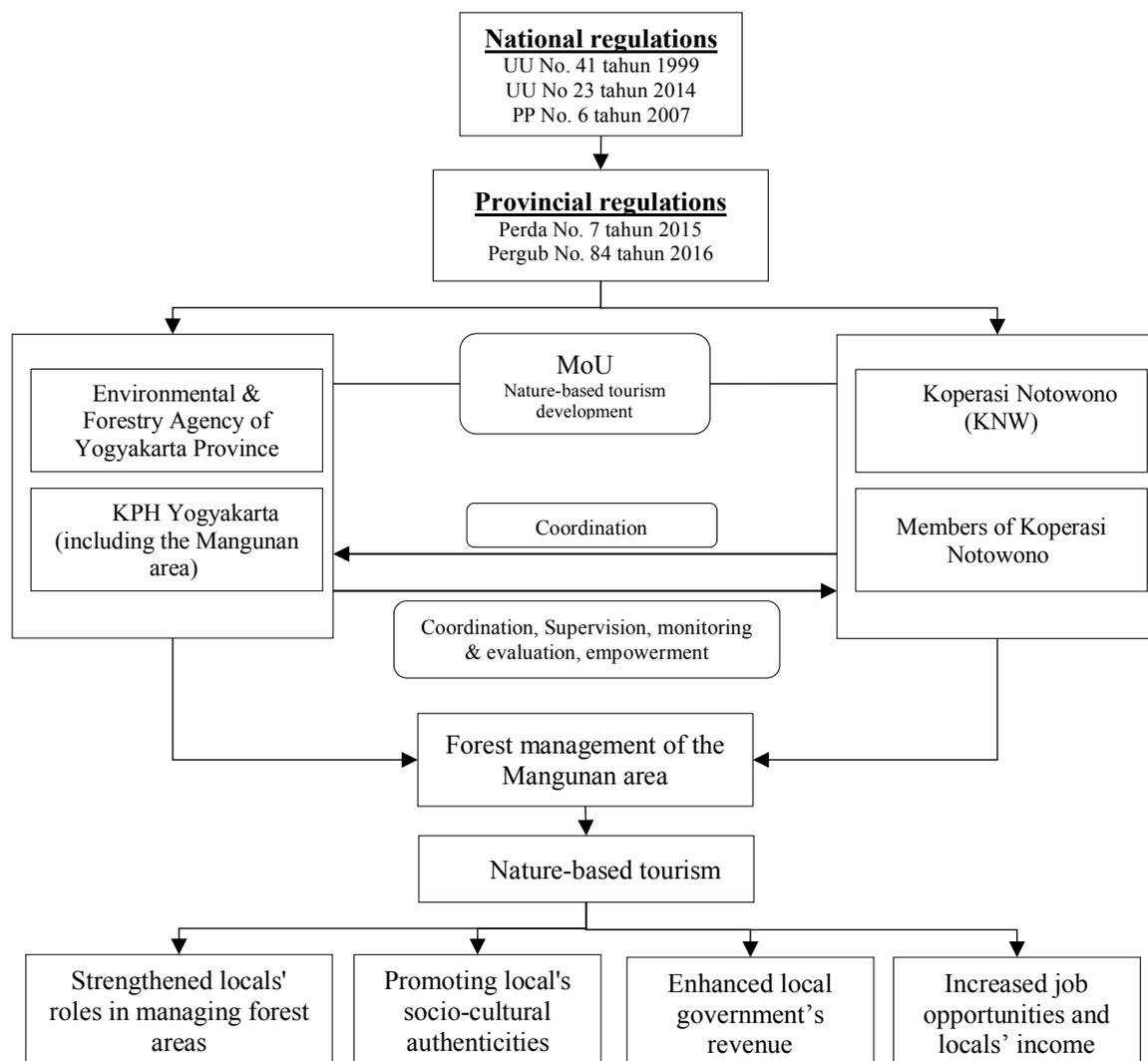


Fig. 1. Institutional structures in managing nature-based tourism destinations in the Mangunan area.

3.2. Outputs of the Partnership Scheme

Cases of nature-based tourism development managed by the community worldwide have taught that tourism development potentially generates simultaneous economic, socio-cultural, and environmental benefits (Lee 2013; Nugroho and Numata 2020; Nunkoo and Gursoy 2012; Rasoolimanesh et al. 2017; Sharpley 2020). Outputs of the partnership scheme in developing nature-based tourism in the Mangunan area are discussed below.

3.2.1. Strengthened locals' roles in managing forest areas

A bulk of scientific publications has indicated the importance of partnership in supporting sustainable forest management, particularly to address economic, social, and environmental problems between forest areas and forest-dependent communities (Erbaugh 2019; Kurniasih et al. 2021; Putraditama et al. 2019; Sahide et al. 2020; Wong et al. 2020). This study found that the partnership scheme for nature-based tourism development in the Mangunan area provides a channel for locals to regain access to and benefits from forest areas. The partnership simultaneously strengthened local institutions and adjacent locals in managing forest areas.

However, prior to its establishment, the Mangunan area mainly produced pine-sap from their Pine forest areas. Those locals joining the forest user group (KTH, Kelompok Tani Hutan in Indonesian) were used to conduct land-based activities, including temporal agricultural cropping under the forest canopy and pine-tapping. Hence, they generally had no or limited experience in tourism. These eventually had led to forest users' barriers to adapt to KPH's forest management system changes, which have shifted toward developing nature-based tourism (Riyanto et al. 2020).

Concerning partnership in tourism development policies in the Mangunan area, a community-based cooperative (CBC) as a community's legal representation is required. Kurniasih et al. (2021) indicated that the CBC had the potential for stronger roots in rural livelihood economic activities. However, it was found that those previously belong to several forest user groups scattered in the Mangunan area have subsequently merged into a single community-based cooperative, Koperasi Notowono (KNW). By joining into a single community-based cooperative, KNW has become a more reliable local organization. They have a more robust legal standing, stable structures, and structured internal regulations. Indeed, reliable CBC would play a significant role in addressing locals' key barriers (e.g., lack of knowledge, managerial, entrepreneurship, external relations, communication) and creating a pathway to empower local communities (Kurniasih et al. 2021). In addition to former forest user group members, the younger generation of adjacent locals has also joined the KNW. Indeed, scholars have concurred that younger locals are usually more agile, interested in developing tourism, and eventually generating benefits. Given this scenario, this study observed that KNW plays significant roles in enhancing locals' capacities to overcome barriers in developing nature-based destinations. KNW managed to organize sharing, discussion, and training sessions periodically to strengthen knowledge and skills in managing tourist destinations. More importantly, KNW has a decisive role in mediating the coordination and mutually benefiting relations among local government (i.e., Environment and forestry agency of Yogyakarta province), KPH Yogyakarta, and external stakeholders.

This study also indicated that the local government, KPH, and KNW share roles in nature-based tourism destination development in the Mangunan area through the partnership. It was found that the roles of locals in forest governance in the Mangunan area are strengthened. By joining KNW, locals would have higher opportunities to be actively involved in proposing, planning, decision-making, and managing tourist destinations. Under KPH officials' supervision, KNW is enabled to propose, plan, build, and manage tourism attractions and facilities at the nature-based tourist sites in the Mangunan area. Nevertheless, the partnership scheme also obligates KNW to support the conservation efforts of forest areas fully. These also supported the notion that by enabling the locals' participation in forest management and adjust development intentions, sustainable forest management is secured (Erbaugh 2019; Friedman et al. 2020). Ultimately, those strategies have also been increasingly conclusive that building locals' institutional capacity to play

an active role in forest governance is pivotal (Akamani et al. 2015; Friedman et al. 2020; Putraditama et al. 2019; Rakatama and Pandit 2020; Santika et al. 2017).

3.2.2. Increased job opportunities and locals' income

Compared to other social forestry schemes, nature-based tourism development in the Mangunan area's partnership offers tantalizing economic benefits for KWN and its members. Since the first establishment, KWN has now managed nine tourist sites across the Mangunan area. Once tourism becomes trickle down in the Mangunan area, numerous job opportunities for KWN's members and locals are offers; they include parking staff, tour guide, shopkeepers, homestay, selling souvenirs, traditional food, and beverages. These eventually generated incomes for KWN. **Table 1** demonstrates the revenues generated by tourism in 2017–2019. **Table 1** also describes how tourism revenue from tourism increased every year. By the end of 2019, KWN earned a total of IDR 9,644,541,019.

Tabel 1. Nature-based tourism revenue in the Mangunan area in 2017 - 2019

No.	Sites	Revenue (IDR) per year		
		2017	2018	2019
1	Gunung Pengger	1,084,721,000	1,926,755,000	2,897,688,000
2	Puncak Becici	1,417,840,000	1,963,266,000	2,041,645,000
3	Bukit Lintang Sewu	240,390,000	355,857,000	222,709,500
4	Pinus Asri	466,301,000	429,000,000	351,229,000
5	Pinus Sari	2,976,909,500	2,547,625,000	2,505,901,000
6	Seribu Batu	1,228,491,000	1,348,408,000	1,158,746,500
7	Bukit Mojo	133,677,000	301,481,000	399,402,000
8	Bukit Panguk	269,403,000	47,832,000	12,037,500
9	Lembah Ndahromo	33,592,000	122,189,000	55,180,500
	Total (100%)	7,851,324,500	9,042,413,000	9,644,539,000
Sharing	KNW (75%)	5,888,493,375	6,781,809,750	7,233,404,250
	Local government (25%)	1,962,831,125	2,260,603,250	2,411,134,750

Interestingly, this study found that the proportion of tourism revenue sharing is more significant for KWN and its members than for the government. More importantly, it was found that the partnership offers higher benefits sharing than other social forestry schemes throughout Indonesia's forest management system. Concerning the legal partnership agreement, 75% of tourism revenue goes to KWN, and 25% remaining for the local government's revenue. Moreover, through their comparative studies on social forestry schemes across Indonesia, Sahide et al. (2020) described that various social forestry schemes implementation offer roughly 25–70% benefits sharing for locals. Likewise, scholars have also indicated that under the collaborative forest management scheme in Perhutani, a state-owned forestry company, the forest user group received less than 75% of the benefits sharing of forest production (Bratamihardja et al. 2005; Septiana 2020; Yokota et al. 2014). Those finding was supported by Riyanto et al. (2020) findings that before tourist destination development, those locals joining forest user groups of the Mangunan area only received the wage from tapping the pine-sap and small amounts of money from cropping. They also described that joining nature-based tourism increased locals' income by 135%. Therefore, those explanations as mentioned above have confirmed that partnership in managing

nature-based tourist destinations in the Mangunan area offers meaningful economic benefits for locals and local government.

3.2.3. *Enhanced local government's revenue*

Instead of only fostering locals' incomes, nature-based tourism development in the Mangunan area by KPH Yogyakarta has supplemented the local government's incomes, i.e., Yogyakarta province. As mentioned earlier, 25% of the total tourism revenue goes to local government income (*Pendapatan Asli Daerah/PAD*). For instance, a substantial amount of money, i.e., IDR 2,411,135,255, has been earned by the local government from tourism in the Mangunan area by 2019. Detailed benefit sharings of tourism between 2017–2019 can be seen in **Table 1**.

Surprisingly, it was noticed that the partnership of nature-based tourism destinations in the Mangunan area has a novel approach in managing tourism revenue from the government's forest areas. Both locals and local government earned portions of tourism economic benefits. In contrast, existing studies have described that a portion of tourism revenue in Indonesian national parks directly goes to the central government through non-tax government income (PNBP, *Pendapatan Negara Bukan Pajak* in Indonesian) (Istiqomah et al. 2019; Rakhmah and Handayani 2019; Yuniarsih et al. 2014). Also, the implementation of social forestry schemes across Indonesia has taught us that they usually focus on distributing benefits for locals and the central government. The local government may usually be ruled out from economic benefit-sharing policies (Sahide et al. 2020; Septiana 2020). Accordingly, those benefit-sharing practices in the Mangunan area may potentially strengthen local government relationships and weaken the potential conflict of interest.

3.2.4. *Enhanced environmental conservation efforts*

Nature-based tourism has become a rapidly growing segment of the tourism sector worldwide (Chung et al. 2018; Kim et al. 2019). One of the primary reasons is that it positively influences ecological awareness (Amornwitthawat and Phongkhieo 2019; Clifton 2013; Lee and Jan 2019; Sharma and Gupta 2020; Walpole and Goodwin 2001). Our study found that tourism development in the Mangunan area has increased locals' awareness on how properly manage forest areas, which eventually generate meaningful ecosystem services. Whilst obtaining benefits from tourism, the agreement obligates KNW and its members to engage in forest conservation efforts (Alhafi 2020). KNW subsequently manages this by conducting forest patrol, forest fire prevention, and alleviating illegal logging. Moreover, KNW has also collaborated with KPH, local government, and related stakeholders in establishing attractive programs for its members and adjacent locals to conserve the forest area by planting the trees. They allocate a portion of tourism revenue for environmentally sound activities. Since its first establishment in 2017, KNW has planted more than 22,437 trees. **Table 2** demonstrates the number of trees planted between 2017–2019 across the sites.

3.2.5. *Promoting local's socio-cultural authenticity*

Historically, Mangunan forest areas have long been holding a strong cultural link to Mataram and Yogyakarta empires. Therefore, the local's socio-cultural authenticity (e.g., local wisdom, local's culture) is considered as the basis of the nature-based tourism destinations development in the Mangunan area. Tourism development orientation is for obtaining economic benefits and

strengthening locals' cultures while also ensuring forest sustainability. At the beginning of tourist site establishment, KNW has explored how locals manage relationships with the forest areas traditionally, included how the culture is locally rooted in the communities. Those locally rooted cultures eventually manifested in numerous tourist attractions such as photo spots, traditional dance, festivals, parades, traditional markets, local's food and beverages, souvenirs, homestay, and village excursions. As a result, the partnership between KNW and KPH Yogyakarta has strengthened the integration of authentic cultures and locally rooted wisdom in managing forest areas.

Table 2. Number of trees planted in 2017-2018

No.	Site	Number of seedlings planted per year		
		2017	2018	2019
1	Gunung Pengger	320	250	500
2	Puncak Becici	2,570	840	685
3	Bukit Lintang Sewu	140	238	100
4	Pinus Asri	105	150	100
5	Pinus Sari	5,486	1,131	1,000
6	Seribu Batu	227	330	255
7	Bukit Mojo	116	-	250
8	Bukit Panguk	280	1,028	31
9	Lembah Ndahromo	214	27	10
Total		11,475	6,012	4,950

4. Conclusions

The present research concludes that partnerships in managing tourism destinations in the Mangunan area have primarily strengthened locals' roles in managing forest areas. Evidence has also been indicated that nature-based tourism development also provides job opportunities and locals' income, supplements the local government's revenue, promotes the local's socio-cultural authenticity, and supports forest conservation efforts. Ultimately, this research offers insight that deliberative policy instruments and promising incentives play an essential role as the catalyst for enhancing forest management to maintain sustainability and provide sustainable livelihoods for locals.

Acknowledgments

The authors would like to express appreciation to the KPH Yogyakarta and Koperasi Notowono staff to support this research. We are also thankful to the reviewers for their valuable comments on the manuscript.

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