

UNLOCKING THE POTENTIAL OF JUNIOR RANGERS: STRENGTHENING CAPACITIES FOR EFFECTIVE FOREST BIODIVERSITY CONSERVATION AND NATURE-BASED COMMUNICATION

Huda Farhana Mohamad Muslim¹, Norliyana Adnan¹ & Mohd Parid Mamat¹

¹ Social Forestry Programme,
Forest Research Institute Malaysia, 52109 Kepong, Selangor

*Corresponding author E-mail: hudafarhana@frim.gov.my

Received 24th April 2024; Accepted 28th Nov 2024

Available online: 31st December 2024

Doi: <https://doi.org/10.51200/bsj.v45i2.6009>

ABSTRACT. *Forests are vital for our well-being, providing shelter, livelihoods, water, and food, while also promoting environmental stability, conserving biodiversity, and enhancing quality of life. Effective management of tropical rainforests is crucial for maximizing benefits to local communities, which depends significantly on their socio-economic conditions. In Asia, many forested areas operate under informal customary tenure systems, leading to increased pressure to formalize these arrangements in response to growing demands for secure forest management. Community forestry, or social forestry as it is known in Malaysia, has demonstrated that local communities can sustainably manage forests and reap significant benefits when enabled. An exemplary initiative is the Sahabat Alam Tampik Janda Baik Association in Pahang, which established the Tampik Junior Rangers, a program that empowers youth as nature guides and promotes conservation. Additionally, community-based ecotourism (CBET) balances local needs with environmental preservation and enhances the quality of life for hosts. By fostering early experiences in nature, particularly through programs like the Junior Rangers, children develop a stronger connection to their environment, which is essential for future conservation efforts. This research focuses on educating and empowering rural school children in natural resource conservation through hands-on training and community engagement, enriching their skills and knowledge in forest survival and responsible stewardship.*

KEYWORDS. Human-nature interactions, junior rangers, local community, community-based ecotourism, extinction of experience.

INTRODUCTION

Forests play a crucial role in providing shelter, livelihoods, water, and food, significantly contributing to our overall well-being both directly and indirectly. Their indirect functions include ensuring environmental stability and quality, safeguarding soil and water resources, preserving biodiversity, and enhancing the quality of life for individuals. Effective management of tropical rainforests is vital to maximize benefits for local communities and rural populations, as their socio-economic conditions heavily influence sustainable forest management outcomes. In Asia, large forested regions are mainly governed by informal customary tenure systems, widely accepted in local contexts. The rising demand for secure and reliable management of forests and traditional lands has intensified calls for many countries to formalize these informal tenures within legal frameworks. Community forestry, often referred to as social forestry in Malaysia, has yielded valuable insights, demonstrating that local communities can sustainably manage forests and reap significant rewards when given the right conditions. Increasing attention is being given to the role of local communities in forest conservation, as forests and their resources remain essential for sustaining livelihoods (Mukul et al., 2016), serving not only those who inhabit them but also individuals living in surrounding areas. Various initiatives have been developed to combat habitat destruction in forest ecosystems, including empowering community participation.

The ecotourism and travel sector must adopt more environmentally sustainable practices, such as protecting tropical rainforests, preserving cultural heritage at travel destinations, and actively fostering the economic growth of local communities. These initiatives can create a balanced relationship between tourism and the environment, ensuring the long-term health of both. Community-based ecotourism (CBET) presents a groundbreaking approach that reduces the environmental impact of tourism while aligning the interests of local populations with those of nature. Involving young children in the benefits of CBET is crucial, as community engagement is closely linked to conservation efforts. A significant example in Malaysia is the Sahabat Alam Tampik Janda Baik Association in Pahang, which has initiated the Tampik Junior Rangers, a group of young nature guides committed to conservation in their area. This project illustrates the positive results that can arise when local communities are empowered to participate in sustainable forest management.

Regrettably, many individuals, especially children, are increasingly losing their connection with nature, a trend termed "the extinction of experience." For many in today's world, traditional outdoor activities are being replaced by virtual options (Clements, 2004; Pergams & Zaradic, 2006; Hofferth, 2009; Ballouard et al., 2011). The primary cause of this disconnect is the decline in opportunities for authentic nature experiences (Soga et al., 2016; Sun et al., 2023). Early encounters

with nature play a crucial role in shaping environmental perceptions and directing people towards conservation initiatives. In light of the potential risks associated with detachment from the natural world, the Tampik Junior Rangers program at Ulu Tampik Waterfall effectively promotes strong, enduring bonds between local communities and their protected environments. This study aims to (i) educate and empower the public—particularly rural school children—to actively engage in natural resource conservation and (ii) elevate public awareness and participation in conservation efforts through initiatives like the Tampik Junior Rangers (TJR).

MATERIALS AND METHODS

This research was conducted at Ulu Tampik Waterfall (UTW), located in Compartment 51 of the Lentang Forest Reserve in Malaysia, with active involvement from children aged seven to fourteen who reside in or near the protected area (Figure 1). UTW and its surroundings constitute a conserved region, being one of the protected forests in Peninsular Malaysia. This area is home to a key species of local endemic trees, which are vital for the ecosystem's floral and faunal diversity, as well as for various bird species that depend on it. The environment offers a unique and exciting recreational space, highlighted by the distinctive features of the waterfall and its pristine waters (Amirnodin, 2020). The UTW and its vicinity are popular leisure destinations for residents of Janda Baik, as well as visitors and tourists from other regions and countries.

Ecotourism is a conservation strategy that can be employed to sustainably protect the diversity of biological resources; it aims to minimize its environmental impact and is ecologically responsible, avoiding the detrimental effects associated with large-scale tourism developments. The junior rangers program actively engages young children aged seven to fourteen living in or near the protected area. Research teams carried out a rapid rural appraisal (RRA), conducted focus group discussions with scientists and experts to develop an appropriate module, and implemented hands-on capacity building through short courses in environmental interpretation. Additionally, they provided on-site training in nature communication and arranged study tours to other protected or ecotourism areas.

As of April 2020, this area was within the Use Permit area, operated by the local society, an association known as Persatuan Sahabat Alam Tampik Janda Baik (SATJB). The society was the official registered society under The Registry of Societies Malaysia (ROS), managed by the local communities, and the land was a protected water catchment area. The SATJB initiated the establishment of TJR to enhance the support for the environmental conservation of UTW.

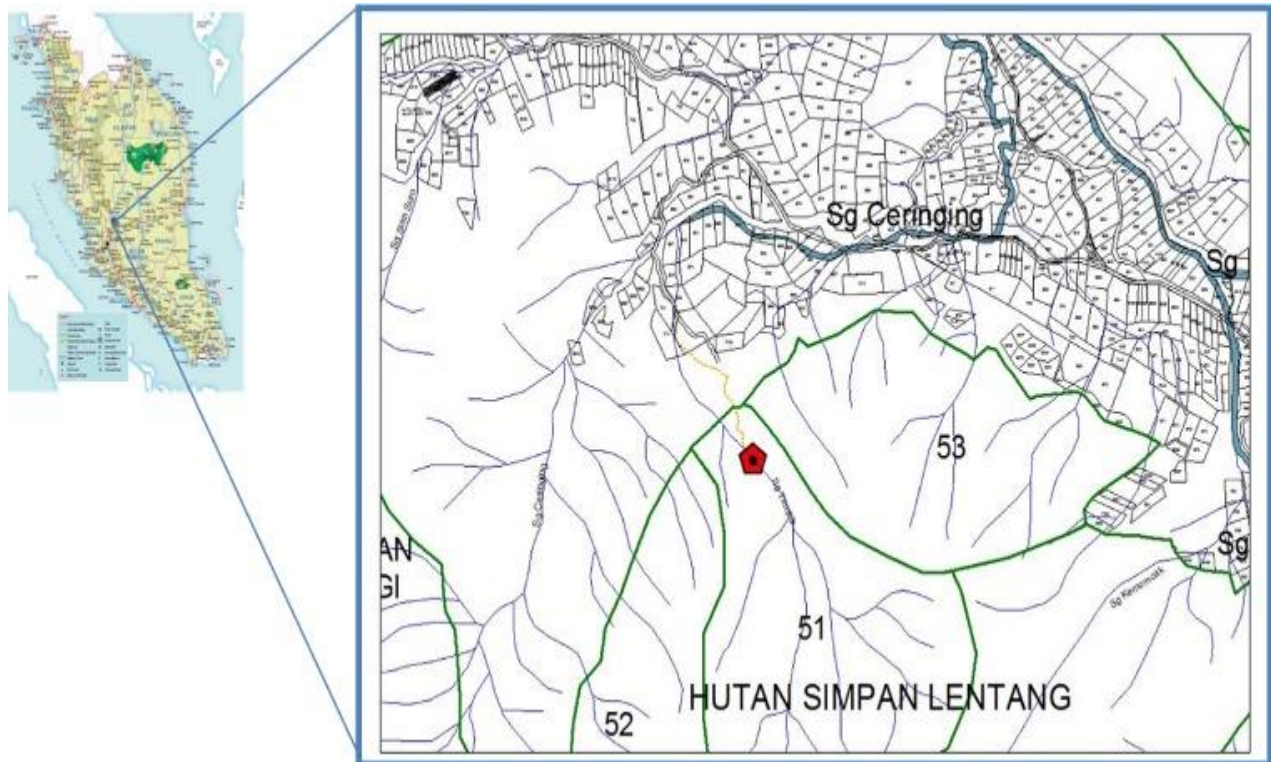


Figure 1. Map of Ulu Tampik Waterfall (UTW) indicating the project's site location.

RESULTS AND DISCUSSION

Junior rangers have been trained and gained experience as skilled young nature guides and environmental interpreters. This initiative has familiarized these young participants with the importance of preserving natural resources. The program is available to schoolchildren and operates on a voluntary basis. They underwent training on-site as local nature guides, fostering connections with their communities while learning new skills, as well as gaining knowledge in risk management and emergency procedures, all of which contributed to their understanding of forest survival. The training and capacity-building module consisted of three distinct series, each with a specific focus. Figure 2 illustrates the capacity-building series that involved children aged seven to fourteen living in or near the protected area. By 2023, the program had reached a total of twenty-five (25) junior members (see Figure 3).

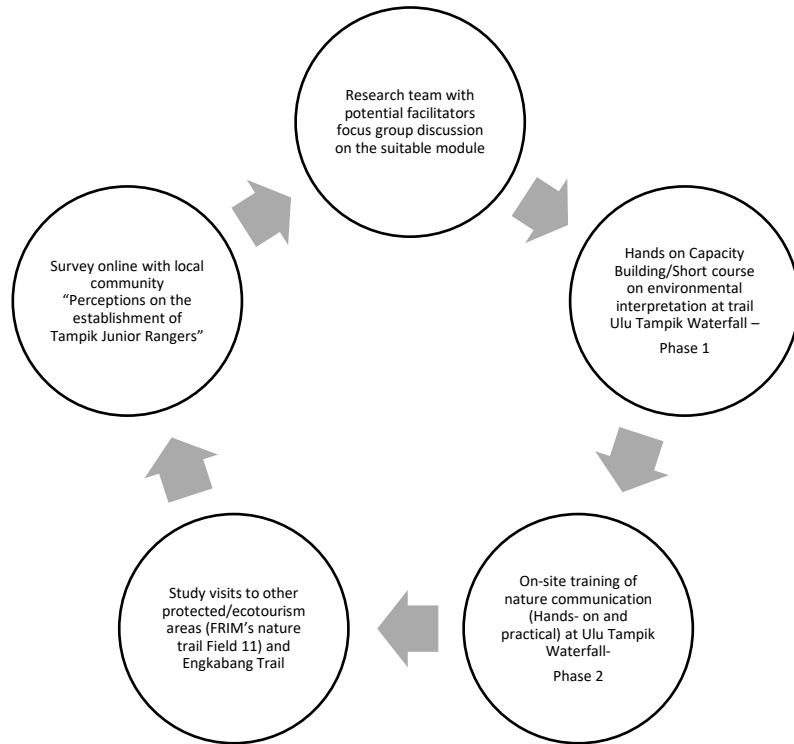


Figure 2: The community development via the Tampik Junior Rangers (TJR) from 2022 to 2023.

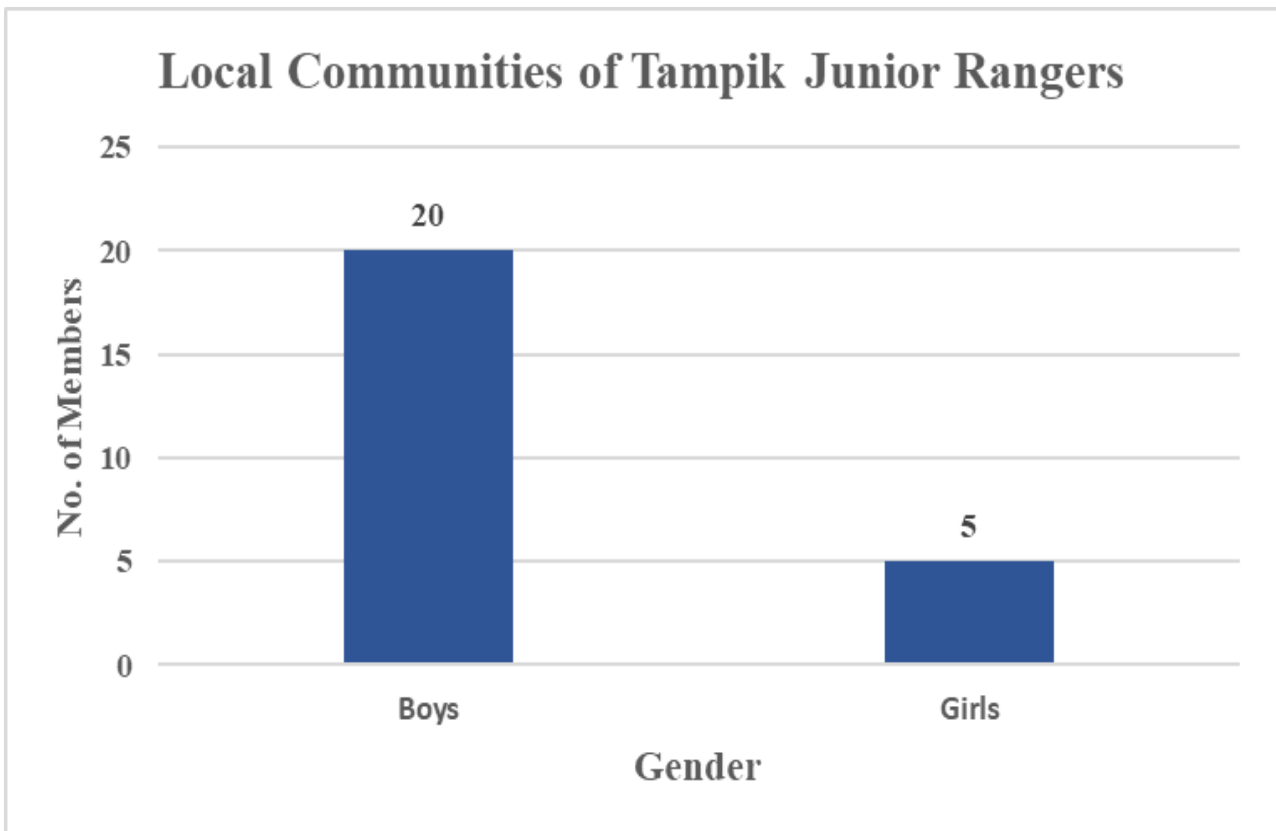


Figure 3: Number of members in the Tampik Junior Ranger for 2023.

The initial series consisted of a workshop aimed at training the TJR in environmental interpretation. This workshop took place from August 6 to 7, 2022, in Kampung Janda Baik and was organized in collaboration with the local community and the SATJB- Tampik Janda Baik Friends of Nature Association. During this first series, the junior rangers were given group tasks aligned with four different storytelling themes. In the "Oh My Trees!" activity, participants planted five trees, which were subsequently monitored according to the guidelines in the Tree Planting Eco Kit. Each junior ranger was also assigned specific practical tasks tailored to hands-on training in the field. This practical session was conducted along the Ulu Tampik Waterfall trail in the Lentang Forest Reserve. Instructors and facilitators provided participants with information about selected forest trees, including bamboo, as they trekked to the peak of the waterfall at Tier Five. Utilizing the knowledge gained, particularly about five specific species of forest trees, the junior rangers interpreted and presented their findings during the closing session in the "Let's Hear My Stories" segment.

The community development program "Oh My Forests" (Series 2), held on December 3, 2023, introduced junior rangers to two key components. The first component focused on educating the junior rangers about the ethics of being a tourist nature guide. The second element was the "What and Who is the Trees" segment, which trained the junior rangers to identify tree species such as Meranti Bukit, Perah, and Pulai, as well as various types of bamboo. Their understanding and skills were assessed through a presentation at the end of the series themed "Listen to...Trees, Nature, and Us."

Series 3 of community development included a learning visit to the FRIM campus on March 7, 2023, where participants explored attractions like the Keruing trail, crown shyness, and Field 11. This series featured 13 junior rangers and two FRIM nature guides, providing an opportunity for knowledge exchange regarding the dos and don'ts of being a nature guide and the ethical responsibilities that come with it. The visits also offered insights into forest tree species along the Engkabang trail and crown shyness, which are among FRIM's main attractions.

The efforts of TJR have been gathered and published in a module centred on forest conservation. This module is specifically tailored to engage and educate young participants through a variety of interactive and informative sections. It comprises six main modules, starting with Module 1, titled "Who Am I," which serves as an interactive game for introductions and ice-breaking among participants. Next, "Storytelling on the Forest and Local Traditions of My Villages" delves into the rich heritage and ecological significance of forests. Module 2 introduces a quiz and an environmental game called "Magic Bag, What Is That..." to make learning enjoyable and engaging. In Module 3, "Let's Story," themed "Story with Nature," participants are encouraged to creatively express themselves while gaining a deeper appreciation of natural ecosystems. Module 4 centres around

practical activities at the UTW trail, titled "Woody Walk and Hunt," which includes field-based storytelling activities and environmental interpretation concerning trees, natural resources, and their relationship with the local community. Module 5 focuses on training junior rangers to become nature guides for trail activities, which involves practical instruction and interactive information sharing with visitors. This segment includes jungle trekking to the UTW, allowing junior rangers to learn about key tree species and flora habitats along the trails. Finally, Module 6, "Oh My Trees," emphasizes tree planting strategies, highlighting the significance of reforestation and hands-on conservation efforts.

CONCLUSION

Tampik Junior Rangers (TJR) is a volunteer-based program designed for young schoolchildren. Founded as part of a local community initiative in Kampung Janda Baik, Bentong, Pahang, this guide group operates under the mentorship of FRIM researchers to involve the local community in preserving and conserving forest resources. The formation of the TJR initiative aims to bolster support for environmental conservation at UTW and to educate juniors and schoolchildren about the importance of safeguarding natural resources.

With ongoing backing from the Forest Research Institute Malaysia (FRIM) as a technical advisor for the community-based ecotourism project (CBET), a variety of activities have been organized. This exposure is intended to positively influence young schoolchildren's attitudes toward nature conservation and help them develop engaging conservation messages that connect them with local ecosystems.

The establishment of the junior rangers has enhanced their communication skills regarding forests and natural resources through a series of three distinct community development programs. The training journey of the junior rangers—as well as their capacity building and site visits—has been compiled into published guideline materials. This initiative represents a best practice for merging science and forestry to promote sustainability. The guidelines offer an updated framework and measurable steps for establishing junior ranger groups in other forests and protected areas. Participating in the program gives participants a sense of purpose, highlighting their role and the impact of their actions on their environment.

Additionally, it facilitates the development of strong interpersonal skills, which are valuable in various aspects of life, including education, recreation, business, and community relations. Overall, the junior rangers' program serves to close the communication gap between scientists and the public, particularly within forest communities, contributing to a more sustainable future.

ACKNOWLEDGEMENTS

The research discussed in this paper received funding from The Habitat Foundation of Sustainable Tourism Grants (Grant No. STG-20220525/23). The first author would like to express heartfelt gratitude to the local community of Kampung Janda Baik, particularly the members of Sahabat Alam Tampik Janda Baik (SATJB), as well as the scientists, researchers, and support staff including Faten Naseha Tuan Hussain, Muhammad Al Amin, and Ridzuan A Rahman; the Social Forestry Program (SFP) team members Nik Azyyati Abdul Kadir, Azahari Mohd Yusof, Naimah Che Long, and Siti Suhaila Abd Rahman; and the Environmental Education Branch at FRIM for their invaluable assistance and support throughout the fieldwork for this study.

REFERENCES

- Amirnordin. (2020, October 2021). *Sahabat Alam Tampik pelopor pelancongan komuniti*. Retrieved from <https://sahih.com.my/sahabat-alam-tampik-pelopor-pelancongan-komuniti/>. accessed on 10th October 2023.
- Ballouard, J. M., Brischoux, F., & Bonnet, X. (2011). Children prioritize virtual exotic biodiversity over local biodiversity. *PloS one*, 6(8), e23152.
- Clements, R. (2004). An investigation of the status of outdoor play. *Contemporary issues in early childhood*, 5(1), 68-80.
- Hofferth, S. L. (2009). Changes in American children's time—1997 to 2003. *Electronic international journal of time use research*, 6(1), 26.
- Mukul, S. A., Rashid, A. M., Uddin, M. B., & Khan, N. A. (2016). Role of non-timber forest products in sustaining forest-based livelihoods and rural households' resilience capacity in and around protected area: a Bangladesh study. *Journal of Environmental Planning and Management*, 59(4), 628-642.
- Pergams, O. R., & Zaradic, P. A. (2006). Is love of nature in the US becoming love of electronic media? 16-year downtrend in national park visits explained by watching movies, playing video games, internet use, and oil prices. *Journal of environmental Management*, 80(4), 387-393.

- Soga, M., Gaston, K. J., Yamaura, Y., Kurisu, K., & Hanaki, K. (2016). Both direct and vicarious experiences of nature affect children's willingness to conserve biodiversity. *International journal of environmental research and public health*, 13(6), 529.
- Sun, Y., Lu, X., Cui, J., Du, K., & Xie, S. (2024). Effects of vicarious experiences of nature, environmental beliefs, and attitudes on adolescents' environmental behavior. *Environmental Education Research*, 30(6), 926-940.