

Strengthening Pentahelix Actors' Literacy in Sustainable Tourism Development in Central Aceh Regency

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Abstrak

The development of sustainable tourism requires effective cross-sector collaboration through a pentahelix approach, which involves the collaboration of government, academia, business, community, and media stakeholders. However, the low literacy of pentahelix actors—meaning their understanding of sustainable tourism concepts and practices—often hinders the realisation of sustainable tourism, especially in areas with natural and cultural tourism potential, such as Central Aceh Regency. This community service activity aims to strengthen the literacy of Pentahelix actors in sustainable tourism development through a Community-Based Participatory Research (CBPR) approach. The implementation methods include mapping the initial literacy conditions, participatory identification of needs, designing a collaborative literacy programme, implementing training and discussions, as well as evaluating and formulating sustainability recommendations. The outputs of the activity include increased literacy among pentahelix actors, as reflected in changes in their level of understanding (pre-post), increased participation and collaborative commitment, the development of contextual literacy programmes, and recommendations for the sustainable development of regional tourism. The impact of the activity shows the strengthening of the capacity of pentahelix actors, the formation of a cross-sector dialogue space, and increased awareness of the importance of integrating sustainability principles into tourism practices and policies. This activity confirms that strengthening participation-based literacy is a strategic foundation in promoting pentahelix collaboration and sustainable tourism development in Central Aceh Regency.

Abstract

The development of sustainable tourism requires effective cross-sector collaboration through a pentahelix approach that engages government, academia, business, community, and media stakeholders. However, the low literacy of pentahelix actors, meaning their understanding of sustainable tourism concepts and practices, often hinders the realization of sustainable tourism, especially in areas with natural and cultural tourism potential, such as Central Aceh Regency. This community service activity aims to strengthen the literacy of Pentahelix actors in sustainable tourism development through a Community-Based Participatory Research (CBPR) approach. The implementation methods include mapping initial literacy conditions, participatory identification of needs, designing a collaborative literacy program, implementing training and discussions, and evaluating and formulating sustainability recommendations. The outputs of the activity include increased literacy among pentahelix actors, as reflected in changes in their level of understanding (pre-post), increased participation and collaborative commitment, the development of contextual literacy programs, and recommendations for the sustainable development of regional tourism. The impact of the activity demonstrates strengthened capacity among pentahelix actors, the formation of a cross-sector dialogue space, and increased awareness of the importance of integrating sustainability principles into tourism practices and policies. This activity confirms that strengthening participation-based literacy is a strategic foundation in promoting pentahelix collaboration and sustainable tourism development in Central Aceh Regency.



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INTRODUCTION

The tourism sector was initially considered an industry that did not cause pollution. This view arose because tourism does not directly produce visible factory emissions or large-scale industrial waste, unlike other heavy industrial sectors. However, since the 1970s, this assumption has been questioned because various tourism activities and their derivatives have significant negative impacts on the physical environment, archaeological heritage, and culture, both tangible and intangible (Sulityawati *et al.*, 2018). The development of tourism support infrastructure often ignores environmental carrying capacity, triggering ecosystem and natural environment degradation, such as ecosystem damage due to uncontrolled tourism infrastructure development, land use change, and excessive exploitation of natural resources (Sjaifuddin, 2020). Tourism also contributes to increased environmental pollution, including water, soil, and air pollution. Solid and liquid waste generated from tourist activities and tourism facilities is often not managed properly, polluting rivers, lakes, and coastal areas. The use of motor vehicles and tourist transportation activities also increases greenhouse gas emissions, which impact air quality and climate change (Nofriya *et al.*, 2019). A surge in tourist numbers that exceeds the environmental capacity can lead to a decline in the quality of tourist destinations, a scarcity of clean water, and increased energy consumption. In the long term, this condition not only damages the environment but also threatens the sustainability of the tourist destination itself (Nasution *et al.*, 2023). The following data presents the development of tourist visits to Central Aceh based on data from the Ministry of Tourism of Central Aceh Regency.

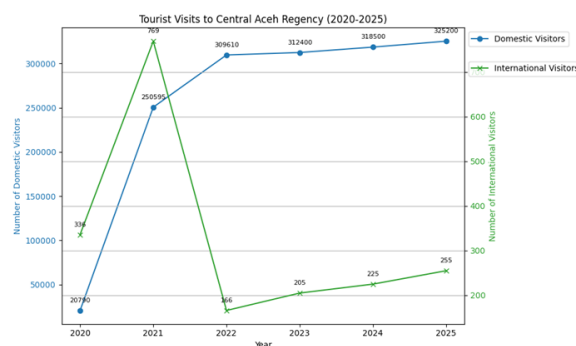


Figure 1. Development of Tourist Visits to Central Aceh from 2020 to 2025.

This graph shows how many domestic and international tourists visited Central Aceh Regency from 2020 to 2025. Domestic tourist visits rose from 250,595 in 2021 to 325,200 in 2025. International visits grew from 166 in 2022 to 255 in 2025. More tourists, especially locals, have harmed the ecosystem, causing forest loss, erosion, water pollution, and waste at tourist sites. As these impacts intensify, a coordinated response becomes essential. The pressure on local ecosystems is reflected in the Environmental Quality Index (IKLH). The following shows the development of the IKLH in Central Aceh Regency based on data published by the Aceh Provincial Government:

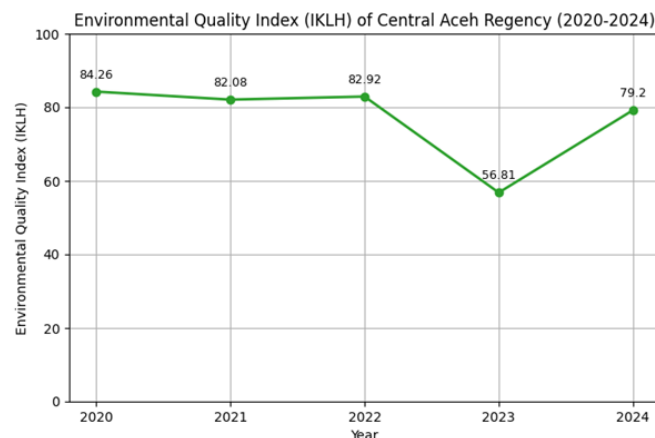


Figure 2. Environmental Quality Index of Central Aceh Regency from 2020 to 2024.

This graph displays the Environmental Quality Index (IKLH) of Central Aceh Regency for the period 2020–2024. It can be seen that the IKLH value was relatively stable in the range of 82–84 in 2020–2022, but experienced a significant decline in 2023 to 56.81 before improving slightly to 79.2 in 2024. This sharp decline reflects increasing environmental pressures, which can be attributed to tourism activities that have not yet been fully managed sustainably, such as the construction of tourist facilities, an increase in the number of visitors, waste accumulation, and the degradation of local ecosystems. This phenomenon emphasises and demonstrates the need to improve the literacy and awareness of pentahelix actors: government, academics, community, business, and media, in order to design environmentally friendly tourism strategies. With the right understanding, actors can reduce the negative impact of tourism activities on the ecosystem, maintain the quality of the environment, and ensure that local economic growth remains in line with the principles of sustainability. Another problem caused by tourism activities is their impact on the preservation of local social culture. The commercialisation of culture as a tourism commodity often causes sacred values to shift into mere spectacles that are valued for money, even eroding the authenticity of the culture itself as it is modified to suit the tastes of tourists (Mulia, 2021). Furthermore, interactions between tourists and local residents can gradually erode existing traditional and cultural values, triggering acculturation that makes it difficult for local communities to preserve their ancestral heritage (Haryati & Hidayat, 2019). The socio-cultural changes occurring in communities surrounding tourist attractions are a consequence of tourism development. The tourism sector also appears suboptimal in supporting the community's economy, as indicated by economic slowdown in several regions, development disparities, and low environmental quality around tourist attractions (Harefa, 2020). In Central Aceh, this manifests as most tourists being only temporary visitors or not staying overnight. The short average length of overnight stays and low interest in revisiting Central Aceh are primarily due to tourist dissatisfaction, which is linked to the limited and unvaried destinations available. Addressing these issues is essential for the tourism sector to more effectively contribute to the local economy and community. On the other hand, the tourism sector contributes to the economic growth of a region, including Central Aceh Regency. In 2022, the economic growth of Central Aceh Regency reached 4.9%, the second-highest in Aceh Province after Banda Aceh City. This rate is above Aceh Province's overall economic growth of 4.21%. The sector with the highest growth rate is the accommodation sector, which serves tourists by providing lodging, dining, and leisure services. Its 34.58% growth aligns with increases in lodgings, restaurants, or cafes, and the large number of tourists (BPS Aceh Tengah, 2023). Tourism is a double-edged sword because, in addition to providing benefits, it also causes problems and impacts on the environment and socio-culture, including ecosystem degradation as a result of exploitation for tourism development (Koh *et al.*, 2020). The implementation of tourism development often faces challenges related to environmental conservation and land conversion (Julianti & Pinpak, 2024), so that tourism development often becomes a dilemma between economic development and cultural and environmental conservation. Tourism development still requires strict regulations to balance economic growth with sustainable environmental and cultural protection (Hastuti, 2023). One effort to balance economic benefits with environmental and cultural protection is through the concept of sustainable tourism development, which refers to tourism practices that are mutually beneficial to ecological and environmental needs, local communities, tourism businesses, and tourists for the present and the future. Although Aceh Tengah Regency has significant natural and cultural tourism potential, current development efforts prioritize economic growth and promotion over environmental sustainability, community empowerment, and collaboration. The core issue is not simply about resource availability, but about the limited capacity and insufficient understanding of sustainable tourism principles among key actors. Sustainable tourism can be achieved by involving various stakeholders, including businesses, governments, NGOs, academics, and communities. No individual actor can single-handedly provide solutions to realise sustainable tourism. Strong partnership mechanisms will help realise sustainable tourism (Eweje *et al.*, 2021). One collaboration strategy that can be implemented is adopting the pentahelix model. The pentahelix is a socio-economic development model that promotes a knowledge-based economy to pursue innovation and entrepreneurship through beneficial collaboration and partnerships between academics, government, industry, business, and communities (Mašek Tonković *et al.*, 2015). Pugra *et al.*, (2021), in their article, introduce sustainable tourism development collaboration with a pentahelix model design that shows there are five elements that must collaborate

in realising sustainable tourism development, namely: government, academics, business actors, media, and the community. Cooperation between the pentahelix actors is essential in realising sustainable tourism (Dodds *et al.*, 2001). Thus, the effectiveness of pentahelix collaboration greatly depends on the actors' literacy level regarding the concept of sustainability and the roles of each party. Low literacy can cause collaboration to be carried out formally without producing real results in tourism development practices. Efforts to boost pentahelix literacy are key to strong, lasting collaboration. This activity uses the Community-Based Participatory Research (CBPR) approach, stressing active participation, shared learning, and local empowerment. Here, literacy building goes beyond knowledge transfer; it's a joint process that builds pentahelix capacity and promotes sustainable tourism in Central Aceh Regency.

METHOD

This community service uses the Community-Based Participatory Research (CBPR) method. CBPR is a model where communities and higher education institutions collaborate. It is action-oriented and supports service learning that advances social justice. In CBPR, lecturers and community organisations work together on research to achieve common goals. The aim is to address real research issues and problems faced by the community. CBPR focuses on meeting needs defined by the community. The results aim to provide solutions or contribute to resolving real community problems (Saputro *et al.*, 2023). The CBPR approach was used with consideration of the community service activities that would be carried out to address the issues currently faced by the community related to tourism development, which has consequences for the environmental and socio-cultural aspects of the local community that need to be resolved, namely the implementation of sustainable tourism that can harmonise economic benefits and environmental and socio-cultural consequences for the community in Central Aceh. The CBPR approach in this community service adopts the CBPR Conceptual Model introduced by Wallerstein *et al.*, as shown in the following figure:

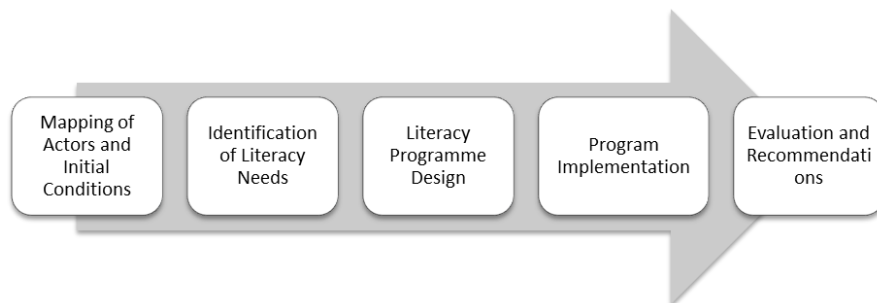


Figure 3. Stages of Service Implementation.

The implementation stages of the community service activity can be explained as follows :

1. Mapping of Actors and Initial Conditions
The community service team identified the main actors and checked the starting level of tourism literacy in Central Aceh through observation and early talks.
2. Identification of Literacy Needs
The community service team identified the literacy needs of Pentahelix actors through group discussions and interviews. This process led to a shared understanding of the issues and capacity-building needs based on Central Aceh's local context.
3. Literacy Programme Design
Based on the needs assessment, the community service team and Pentahelix actors designed a literacy program together. This stage included preparing materials, deciding on methods, and dividing roles.
4. Program Implementation

The implementation stage was carried out through training and thematic discussions involving pentahelix actors. These activities aimed to increase knowledge, enhance understanding, and improve participants' ability to contribute to sustainable tourism development in Central Aceh.

5. Evaluation and Recommendations

The last stage uses group check-ins and feedback to see how well the program worked for the main actors. The team talks with participants and collects feedback. The results are used to make suggestions for better teamwork and long-term success of the program.

The community service activities use media suited to each activity stage. During the phase of mapping participants and finding out their literacy needs, discussion guides and worksheets help guide the talk and solve problems together. These tools help Pentahelix actors get involved in exploring needs and setting programme focus. In the design and implementation stages of the literacy programme, main materials are shared through presentations and modules about sustainable tourism. In the evaluation stage, records and simple assessment tools are used to track progress and see how Pentahelix actors' literacy has grown. Using these tools supports CBPR, which values participation, learning together, and reflection.

RESULTS AND DISCUSSION

Results

The initial phase of the activity was carried out on 3 October 2024, resulting in a mapping of the pentahelix actors involved in sustainable tourism development in Central Aceh Regency, including the local government (Tourism Office, Environment Office, and Bappeda), academics (Sharia Tourism Lecturers at IAIN Takengon), tourism business actors (tourism destination managers and owners of tourism support businesses), local communities (traditional leaders and members of the Customary Council and environmental NGOs), and the media (RRI and online print media). The forms of involvement of each stakeholder are :

- 1) Government (Tourism Office, Environment Office, Bappeda). As the authorised regulator responsible for issuing regulations on sustainable tourism to preserve the natural environment, the government encourages the development of tourist destinations to create job opportunities for the community. The government also encourages the development of tourist destinations to preserve the cultural diversity of the community and provides tourists with extensive access to new and unique experiences at tourist destinations.
- 2) Academics (Sharia Tourism Study Programme at IAIN Takengon). Academics must work together with the community on ways to preserve the natural environment, develop the local workforce so that it is competitive in the tourism sector, contribute to providing information on the impact of tourism destination development, and contribute to research related to tourist satisfaction when visiting tourism destinations.
- 3) Tourism business actors. Tourism business actors contribute to preserving the natural environment. Tourism business actors also play a role in prioritising local workers when recruiting. Tourism actors respect the uniqueness of local culture in order to increase tourist visits to tourist destinations, and tourism actors encourage tourists to be directly involved in community cultural activities.
- 4) Local communities (traditional leaders and members of the Customary Council and environmental NGOs). Community support for environmental conservation efforts, the community recognises that the development of sustainable tourism can improve family economics, the community recognises that the development of tourist destinations can increase awareness of preserving local culture, and tourists gain new experiences regarding the implementation of sustainable tourism at tourist destinations.
- 5) Media (RRI and online print media). The media promotes ways to preserve the natural environment, promotes the existence of tourist destinations to increase tourist visits, promotes the existence of local culture to increase tourist visits to tourist destinations, and publishes tourist experiences at tourist destinations.

Initial observations of the pentahelix actors were conducted on 8–9 October 2024. The initial observation results indicated variations in literacy levels among the pentahelix actors. In general, the understanding of the economic aspects of tourism was relatively more dominant than the understanding of environmental and social sustainability principles, as well as the importance of cross-sector collaboration. A summary of the pentahelix actor literacy mapping results is presented in the following table :

Table I. Summary of the Results of Mapping the Literacy of Pentahelix Actors in the Development of Sustainable.

Pentahelix Actors	Primary Role	Initial Literacy Level	Key Findings
Local Government	Policy formulation and destination management	Moderate	Strong understanding of regulatory and economic aspects, but integration of sustainability principles and collaboration is still limited
Academics	Research, education, and mentoring	Moderate-High	Mastery of sustainability concepts, but involvement in collaborative practices still needs to be strengthened
Tourism Business Operators	Tourism service and product providers	Low-Moderate	Economy and service oriented, with limited understanding of environmental and social sustainability
Local Communities	Managers and those affected	Low	Possess local knowledge based on experience, but do not yet understand the concept of sustainability systematically
Media	Promotion and dissemination of information	Low-Moderate	Focuses on destination promotion, not yet optimal in raising the issue of sustainable tourism

The mapping results show that all stakeholders—including government, local communities, businesses, academics, and media—have played distinct roles in tourism development. However, their involvement remains sectoral and not yet integrated into a sustainable pentahelix collaboration framework. Furthermore, the literacy level of Pentahelix actors varies; while economic aspects are relatively well understood, there is less awareness of environmental sustainability, social aspects, and the importance of cross-sector collaboration. Based on the mapping results, participatory literacy needs were identified through focus group discussions (FGDs). The FGD took place on Monday, 14 October 2024, at the Mabit Hotel, Aceh Tengah. Participants represented the five pentahelix groups: government (officials from tourism, environment, and development planning); academics (lecturers from the Sharia Tourism Study Programme at IAIN Takengon); business (tourism destination and support industry managers); media (journalists from Aceh News, Tribun Gayo, and RRI Takengon); and community (NGOs focused on conservation, traditional leaders, and Sharia Tourism students).



Figure 4. Conducting the Focus Group Discussion.

The identification results indicate that :

- 1) Local government requires strengthened literacy in integrating sustainability principles into tourism policies,
- 2) Academics need to strengthen their role in mentoring and knowledge transfer,
- 3) Business actors need an understanding of sustainable tourism business practices,
- 4) Local communities need to strengthen their basic literacy regarding their strategic role, and
- 5) The media needs to improve its literacy in conveying sustainability-oriented tourism information.

The results of mapping and identifying literacy needs form the foundation for collaborative literacy programme design. The programme is developed in a participatory way, tailored to each pentahelix actor's needs and roles, addressing :

- 1) Sustainable tourism development;
- 2) Cross-sector collaboration;
- 3) Sustainability practices at the local level.

The programme takes shape through training sessions and participatory discussions, laying the groundwork for literacy activities in the implementation phase. The literacy programme is implemented through training and participatory discussions involving pentahelix actors in Central Aceh Regency. The training and participatory discussions were held on 28-29 October 2024 from 08:30 WIB until completion at the Mabit Hotel, Takengon. This activity was attended by all participants who took part in the FGD, plus five other participants who are owners and managers of tourist destinations in Central Aceh Regency.



Figure 5. Implementation of Training and Participatory Discussion.

The results of the activity showed an increase in the understanding and awareness of actors regarding the principles of sustainable tourism development and the importance of cross-sector collaboration. In addition, this activity strengthened communication and interaction among pentahelix actors as a basis for capacity building and collaboration in sustainable tourism development in Central Aceh.

Table II. Summary of the Improvement in Literacy of Pentahelix Actors in Sustainable Tourism Development in Central Aceh.

Pentahelix Actors	Initial Literacy (Pre)	Final Literacy (Post)	Success Indicators (Qualitative)
Local Government	Moderate	High	Active participation in discussions; emergence of commitment to integrating sustainability principles into planning; existence of policy follow-up plans
Academics	Moderate-High	High	Active involvement as a facilitator; contribution to discussions and programme design; commitment to ongoing assistance
Tourism Business Operators	Low-Moderate	Moderate-High	Increased participation in activities; change in views on sustainable business practices; intention to implement environmentally friendly practices
Local Community	Low	Medium	Increased participation in discussions; understanding of strategic roles in tourism; willingness to be involved in destination management
Media	Low-Moderate	Moderate	Participation in activities; increased understanding of sustainability narratives; commitment to communicating sustainability-oriented tourism information

Participatory evaluation confirms the literacy strengthening programme is relevant and effective for increasing pentahelix actors' understanding of sustainable tourism in Central Aceh Regency. This approach engages participants, improves cross-sector communication, and sparks initial commitment to sustainable collaboration. The evaluation calls for immediate action: strengthen coordination, provide ongoing support, and include sustainability literacy in regional tourism practices and policies.

Table III. Sustainability Recommendations for Strengthening the Literacy of Pentahelix Actors.

Pentahelix Actors	Follow-up Recommendations
Local Government	Integrate sustainable tourism principles into local policies and planning and strengthen the coordinating role of pentahelix collaboration
Academics	Continuing to provide guidance, applied research, and capacity building for local actors on an ongoing basis
Tourism Business Operators	Implementing sustainable tourism business practices and actively participating in cross-sector collaboration
Local Communities	Actively participating in the management and conservation of community-based tourism destinations
Media	Strengthening their educational role by consistently disseminating narratives on sustainable tourism

Discussion

The application of the Community-Based Participatory Research (CBPR) approach has proven effective in improving the literacy of pentahelix actors in sustainable tourism development in Central Aceh Regency through participatory learning

and cross-sector dialogue. The improvement in literacy reflected in the pre-post assessment results shows that the active involvement of actors from the planning to evaluation stages can encourage changes in understanding, participation, and initial commitment to sustainability. These findings reinforce the argument that CBPR not only functions as an empowerment method, but also as a strategy for collective capacity building in the context of community-based development (Wallerstein *et al.*, 2018). This is in line with the view of Wallerstein *et al.*, who emphasise that CBPR is not only oriented towards knowledge transfer, but also towards a collaborative learning process that results in changes in capacity and more equitable power relations between academics and communities (Wallerstein *et al.*, 2018). This collaborative approach has also been proven to increase environmental awareness and community participation in conservation efforts (Farihin, 2023). The increase in literacy among local government actors and academics to a high level shows that strengthening conceptual knowledge, accompanied by participatory dialogue spaces, can encourage more sustainable policy orientation and assistance. However, these findings also indicate structural challenges, where increased literacy does not automatically guarantee the realisation of cross-sectoral policy integration. Further efforts are needed to align the objectives and working mechanisms between actors within the pentahelix framework so that the potential for collaboration can be optimally realised, especially in addressing cross-sectoral issues. The pentahelix model of collaboration has proven to be important, with local government and creative communities as the main pillars, but it still requires the active involvement of academics and the media (Aritenang *et al.*, 2025). Among tourism businesses and local communities, the increase in literacy from low to medium to high reflects the effectiveness of the CBPR approach in empowering local actors as subjects of development. However, this increase in literacy is still at the stage of awareness and intention, and has not been fully tested in terms of consistent change in sustainable practices. One significant challenge in sustainable tourism development is ensuring the active participation of local communities in decision-making, which is crucial for preserving the environment and culture while providing sustainable economic benefits. Therefore, massive efforts are needed to raise public awareness about various environmental aspects, including the positive and negative impacts of sustainable tourism development (Martono *et al.*, 2022). Sustainable tourism must actively involve local communities in the entire development process, from identifying tourism potential to destination management, in order to ensure fair distribution of benefits and minimise any negative impacts that may arise (Wibowo *et al.*, 2023). Meanwhile, the improvement in media actors' literacy, which is still in the moderate category, indicates the limitations of the media's role in mainstreaming sustainability issues. The media tends to focus on promoting destinations rather than its educational function. In fact, within the pentahelix framework, the media has a strategic role in influencing how the public understands information and forms public opinion, as well as voicing opinions as a form of reaction to sustainable tourism development (Abelia *et al.*, 2025). In addition, mass media, which now includes print, electronic, and digital media, functions as a channel for policy socialisation and an essential link between the government and the public in promoting tourism potential (Maturbongs *et al.*, 2020). Therefore, strengthening media literacy needs to be directed not only at understanding concepts but also at sustainable tourism communication strategies. Critically, these findings emphasise that literacy is a foundational starting point but is insufficient to guarantee the sustainability of pentahelix collaboration. Strengthening literacy needs to be followed by institutional mechanisms, policy commitments, and sustainable follow-up programmes. Thus, the CBPR approach in this service contributes significantly to the initial stage of capacity building for pentahelix actors, but the sustainability of its impact is highly dependent on the consistency of collaboration and structural support at the local level.

CONCLUSION

This community service activity demonstrates that strengthening the literacy of pentahelix actors through a CBPR approach can improve their understanding, participation, and initial commitment to sustainable tourism development in Central Aceh Regency. All pentahelix actors—government, academics, business, community, and media—experienced improvements in literacy, though the extent varied. For example, government and business actors showed substantial gains in technical knowledge, while community and media actors improved in raising awareness and promoting best practices.

While literacy forms an important foundation for collaboration, sustainable tourism development ultimately depends on ongoing policy and institutional support. Ensuring such support is critical to translating literacy gains into long-term, sustainable outcomes.

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REFERENCES

- Abelia, N., Farah, K. J., Wibisono, D., & Mahmud, I. (2025). Dampak Framing Tagar # Kaburajadulu Terhadap Opini Publik dan Kebijakan Sosial di Indonesia. *Filosofi: Publikasi Ilmu KOMunikasi, Desain, Seni Budaya*, 2(2), 71–77. <https://doi.org/10.62383/filosofi.v2i2.577>
- Aritenang, A. F., & Nathania, F. (2025). Pentahelix in The Creative City: The Case of Fine Arts Development in South Jakarta, Indonesia. *Creativity Studies*, 18(2), 433–452. <https://journals.vilniustech.lt/index.php/CS/article/view/18113>
- Dodds, R., & Joppe, M. (2001). Promoting urban green tourism: The development of the other map of Toronto. *Journal of Vacation Marketing*, 7(3), 261–267. <https://doi.org/10.1177/135676670100700306>
- Eweje, G., Sajjad, A., Nath, S. D., & Kobayashi, K. (2021). Multi-Stakeholder Partnerships: A Catalyst to Achieve Sustainable Development Goals. *Marketing Intelligence and Planning*, 39(2), 186–212. <https://doi.org/10.1108/MIP-04-2020-0135>
- Farihin, A. U. (2023). Meningkatkan Kesadaran Lingkungan melalui Edukasi dan Partisipasi Masyarakat. *MUJAHADA: Jurnal Pengabdian Masyarakat*, 01(1), 21–32. <https://doi.org/10.54396/mjd.v1i1.967>
- Harefa, M. (2020). Dampak Sektor Pariwisata terhadap Penerimaan Daerah di Kabupaten Belitung. *Jurnal Ekonomi & Kebijakan Publik*, 11(1), 65–77. <https://doi.org/10.22212/jekp.v11i1.1487>
- Haryati, T., & Hidayat, A. G. (2019). Konsep Wisata dari Perspektif Ekonomi Masyarakat. *Jurnal Pendidikan IPS*, 9(2), 113–122. <https://doi.org/10.37630/jpi.v9i2.170>
- Hastuti, H. (2023). Merajut Masa Depan Pariwisata Indonesia di Tengah Ancaman Krisis Global. *Geomedia: Majalah Ilmiah Dan Informasi Kegeografian*, 21(2), 78–86. <https://doi.org/10.21831/gm.v21i2.64938>
- Julianti, L., & Pinpak, A. (2024). The Digitalization of Investment Developing Tourism Industry Impact on Developing Tourism Industry. *Journal of Human Rights, Culture and Legal System*, 4(3), 655–681. <https://www.jhcls.org/index.php/JHCLS/article/view/289>
- Koh, E., & Fakfare, P. (2020). Overcoming over-tourism: the closure of Maya Bay. *International Journal of Tourism Cities*, 6(2), 279–296. <https://doi.org/10.1108/IJTC-02-2019-0023>
- Martono, H. G., Azhari, A., & Mustofa, K. (2022). An Extended Approach of Weight Collective Influence Graph for Detection Influence Actor. *International Journal of Advances in Intelligent Informatics*, 8(1), 1–11. <https://ijain.org/index.php/IJAIN/article/view/800>
- Mašek Tonković, A., Veckie, E., & Walter Veckie, V. (2015). Applications of Penta Helix Model in Economic Development. *RePEc: Research Papers in Economics*, 4, 385–393. <http://croatianfraternalunion.org/>

- Maturbongs, E. E., & Lekatompessy, R. L. (2020). Kolaborasi Pentahelix dalam Pengembangan Pariwisata Berbasis Kearifan Lokal di Kabupaten Merauke. *Transparansi: Jurnal Ilmiah Ilmu Administrasi*, 3(1), 55–63. <https://doi.org/10.31334/transparansi.v3i1.866>
- Mulia, V. B. (2021). Memahami dan Mengelola Dampak Pariwisata. *Jurnal Kepariwisata*, 20(1), 75–85. <https://doi.org/10.52352/jpar.v20i1.439>
- Nasution, A. P., Lestari, F., Karenina, A., Medtry, & Haryonugroho, B. (2023). Delineasi Kawasan Perencanaan, Studi Kasus: Rencana Detil Tata Ruang Geopark Ngarai Sianok Maninjau. *Ruang*, 10(1), 75–92. <https://doi.org/10.24843/JRS.2023.v10.i01.p06>
- Nofriya, Arbain, A., & Lenggogeni, S. (2019). Dampak Lingkungan Akibat Kegiatan Pariwisata di Kota Bukittinggi. *Dampak: Jurnal Teknik Lingkungan Universitas Andalas*, 2(16), 86–94. <https://doi.org/10.25077/dampak.16.2.86-94.2019>
- Saputro, P. H., Zalmi, W. F., Komansilan, R., & Ratulangi, U. S. (2023). Pengembangan E-Raport untuk Meningkatkan Pelayanan Pelaporan Nilai Siswa Kelompok Kerja Raudhatul Athfal (KKRA) Kab Minahasa. 4(4), 3338–3343. <https://doi.org/10.31949/jb.v4i4.6518>
- Sjaifuddin, S. (2020). Sustainable Management of Freshwater Swamp Forest as An Ecotourism Destination in Indonesia: A System Dynamics Modeling. *Entrepreneurship and Sustainability Issues*, 8(2), 64–85. <https://ideas.repec.org/a/ssi/jouesi/v8y2020i2p64-85.html>
- Sulityawati, A. S., Putri, I. A. T. E., Suarka, F. M., & Pertiwi, P. R. (2018). Pelibatan Masyarakat Lokal dalam Penyediaan Penginapan Lokal (Homestay) di Desa Wisata Tista, Kabupaten Tabanan. *Buletin Udayana Mengabdi*, 17(03), 103–113. <https://doi.org/10.24843/BUM.2018.v17.i03.p19>
- Wibowo, M. S., & Belia, L. A. (2023). Partisipasi Masyarakat dalam Pengembangan Pariwisata Berkelanjutan. *Jurnal Manajemen Perhotelan Dan Pariwisata*, 6(1), 25–32. <https://doi.org/10.23887/jmpp.v6i1.58108>