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Model of Environmental Information Literacy Strengthening Strategy Based on Community Reading Parks: Study on Mangrove Ecotourism Areas in Pangandaran Regency West Java Province

Model Strategi Penguatan Literasi Informasi Lingkungan Berbasis Taman Bacaan Masyarakat: Studi pada Kawasan Ekowisata Mangrove di Kabupaten Pangandaran Provinsi Jawa Barat

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Abstract

Background of the study: Tourism remains one of the key sectors for every country, including Indonesia. This is because tourism not only contributes to national foreign exchange earnings but also drives other productive sectors. One type of tourism currently being promoted is environmental tourism, commonly known as ecotourism. The specific type of ecotourism examined in this study is mangrove ecotourism.

Purpose: This research aims to develop a model for strengthening environmental literacy strategies based on community reading gardens. This process involves several stages, including analyzing the role of community reading gardens (TBM) in enhancing environmental literacy, identifying the needs and challenges of ecological literacy in society, and developing a strategy model to strengthen environmental information literacy.

Method: This study employs a mixed-methods approach with a sequential transformative design strategy. Data collection techniques include questionnaires, interviews, field observations, and document analysis.

Findings: The results of this research yield a model for enhancing environmental information literacy strategies through community reading gardens. The implementation of this strategy model is carried out in the ecotourism areas of Pangandaran Regency, including the Nusawiru mangrove ecotourism area, Babakan, and the Bojongsalawe ecotourism area, by establishing a "mangrove reading corner" in these three ecotourism locations.

Conclusion: Strengthening environmental information literacy through community reading parks or reading corners in mangrove ecotourism areas has a strategic role in increasing environmental awareness, supporting ecosystem conservation, and strengthening the educational value of ecotourism.

Keywords: mangrove; ecotourism; community reading gardens; information literacy; environmental literacy.

Abstract in Indonesia

Latar Belakang Penelitian: Pariwisata sampai saat ini masih menjadi salah satu sektor andalan bagi setiap negara termasuk di Indonesia. Hal ini dikarenakan pariwisata selain mampu meningkatkan devisa negara juga menjadi sektor yang mampu menggerakkan sektor-sektor produktif lainnya. Salah satu jenis pariwisata yang sedang digalakkan saat ini adalah pariwisata lingkungan atau dikenal dengan ekowisata. Adapun jenis ekowisata yang menjadi objek penelitian penulis yaitu ekowisata mangrove.

Tujuan: Tujuan dari penelitian ini adalah untuk mengembangkan model strategi penguatan literasi lingkungan yang berbasis taman bacaan masyarakat yang meliputi beberapa tahapan seperti menganalisis peran TBM dalam meningkatkan literasi lingkungan, mengidentifikasi kebutuhan dan tantangan literasi lingkungan di masyarakat, serta merancang model strategi penguatan literasi informasi lingkungan

Metode: Metode yang digunakan dalam penelitian menggunakan metode campuran dengan desain strategi transformatif sekuensial. Untuk teknik pengumpulan data melalui angket, wawancara, observasi lapangan serta melalui analisis dokumen

Temuan: Dari hasil penelitian ini dapat dihasilkan sebuah model strategi penguatan literasi informasi lingkungan yang berbasis taman bacaan masyarakat. Adapun untuk penerapan model strategi ini dilakukan pada ekowisata yang ada di Kabupaten Pangandaran yang meliputi kawasan ekowisata mangrove Nusawiru, babakan dan kawasan ekowisata Bojongsalawe, dengan merintis "sudut baca mangrove" pada tiga (3) kawasan ekowisata tersebut.

Simpulan: Penguatan literasi informasi lingkungan melalui taman bacaan masyarakat atau sudut baca di kawasan ekowisata mangrove memiliki peran strategis dalam meningkatkan kesadaran lingkungan, mendukung konservasi ekosistem, dan memperkuat nilai edukasi eko-wisata.

Kata Kunci: mangrove; ekowisata; taman bacaan masyarakat; literasi informasi; literasi lingkungan.

Introduction

The tourism industry in Indonesia has become a key sector, contributing significantly to the country's economy and generating substantial foreign exchange. Additionally, the tourism industry is a sector that can stimulate and drive growth in other productive sectors. One type of tourism that is being promoted today is environmental tourism, also known as ecotourism. Ecotourism is a type of tourism that involves visiting an environment, both natural and artificial, as well as the existing cultures, which are informative and participatory, aiming to preserve both nature and the existing socio-cultural aspects. Ecotourism focuses on three main aspects: the sustainability of nature or ecology, providing economic benefits, and being socially acceptable in the community. In other words, ecotourism activities provide full access to the broader community, enabling them to experience, understand, and appreciate the natural, intellectual, and cultural aspects of local communities. Among the various types of ecotourism, one that has garnered the attention of researchers is mangrove ecotourism (Mulyadi et al., 2019; Prihadi et al., 2018).

Speaking further about mangroves, they are a plant community or individual plant species that form the community in tidal areas. Mangrove forests, often referred to as mangroves, are a distinct part of the coastal ecosystem that possesses a unique character and exhibits significant biological diversity. (Wijayanti, 2016). A mangrove ecosystem is a complex system comprising both biotic and abiotic environments that interact within a mangrove habitat. (Wijayanti, 2016). Mangrove vegetation grows only on beaches that are protected from wave movements. If the beach is not protected, the seeds are unable to grow optimally and drop their roots (Wardhani, 2011). For coastal areas, this ecosystem, especially as a green belt along the coast or river mouth, is very important for marine life, including fish and shrimp, as well as maintaining the quality of fisheries ecosystems, agriculture, and settlements that are dependent on it, from the disturbance of abrasion, intrusion, and strong sea breezes. The utilization of mangrove ecosystems for ecotourism aligns with the shift in tourist interest from traditional tourism, which focuses on leisure activities without educational or conservation elements, to *new tourism*. These tourists come to engage in tourism that incorporates elements of education and conservation. Therefore, serious efforts are needed to manage and search for ecotourism destinations that are specifically natural and rich in biodiversity and can preserve the

environment (Rutana, 2011; Umam et al., 2019). The existence of ecotourism activities can increase income for nature conservation, which is utilized as an ecotourism tourist attraction and generates economic benefits for the local population (Nugroho, 2019; Subadra, 2008). Additionally, it serves as an educational tool for tourists, providing insight into the natural environment and knowledge about the flora and fauna in the mangrove ecotourism area.

Still, regarding mangrove ecosystems and environmental issues, the results of the UN Climate Change Summit in Paris have produced an agreement involving 196 countries working together to address the problem of climate change. According to the agreement, one approach to addressing the climate crisis is to maximize the potential of blue carbon. Blue carbon refers to carbon stored or produced by marine and coastal ecosystems. This type of carbon is called 'blue' because it is formed underwater. The ecosystems that produce and store blue carbon include mangroves, peat swamps, seagrass beds, reefs, corals, and phytoplankton.

Indonesia as an archipelago has several mangrove ecotourism areas including in West Java Province such as the Karangsong Mangrove ecotourism area in Indramayu Regency, mangrove ecotourism tourism area on bird island, Subang Regency and mangrove ecotourism area in Nusawiru Pangandaran Regency, (Indrayanti et al., 2015; Handiani et al., 2017; Purwanti et al., 2015; Rahmatika et al., 2022; Sembiring et al., 2020). However, in its development, mangrove ecotourism in several regions, especially those in West Java, faces many problems, as an illustration in Subang Regency over 15 years, the area of mangrove forests in Legonkulon District has decreased by 32% towards shoreline changes as far as 350.18 meters, where the furthest average shoreline retreat is in Legon wetan village as far as 526.96 meters. In addition, the effect of the decline in mangrove forest ecosystems on shoreline changes in the Blanakan sub-district was 41% and 59%, which contributed to shoreline changes. While in Legokkulon, the influence of the decline in the extent of mangrove forest ecosystems on shoreline changes reached 68% (Soraya et al., 2018; Dwi Indrayanti et al., 2015; Handiani et al., 2017). The occurrence of various environmental damage in the mangrove forest tourism area is one of them. Human activities, such as the expansion of fish ponds by surrounding communities, invade mangrove forests.

To overcome this, it is essential to raise awareness about the importance of protecting and preserving the environment, thereby fostering environmental information literacy within the community. Environmental information literacy refers to the ability of individuals or groups to access, understand, evaluate, and utilize information related to the environment effectively, thereby supporting informed decision-making and sustainable environmental actions. This literacy encompasses an understanding of various environmental issues, including climate change, natural resource conservation, waste management, and environmental policies and regulations. Various ways to enhance environmental information literacy among community members and ecotourism visitors. One of the strategies is the provision of information sources and various activities that promote awareness about the importance of protecting and preserving the environment, particularly mangrove plants, in several mangrove ecotourism areas in Pangandaran Regency. The strategy for strengthening environmental information literacy involves the collaboration between community reading parks and the creation of reading corners in each mangrove ecotourism area. Through this activity, it aims to provide various sources of reading materials, such as books, journals, and educational materials about the environment, in community reading parks. Additionally, it seeks to establish unique reading corners that contain information on ecology and nature conservation.

Mangrove forest ecotourism places in the Pangandaran Regency area are great for more than just seeing the sights; they can also teach kids a lot about environmental protection and how to take care of the planet. Thus, the mangrove forest area of Pangandaran Beach not only draws in general tourists but also students from various levels of education, including SLTP and SLTA, from kindergartens to secondary schools.

The mangrove forest tourist area provides a variety of services, including track trails,

resting spots, observation towers, and waiting rooms. From the observations of researchers during a visit to the Karangsong mangrove forest, it was noted that the ecotourism site lacks information about the flora, fauna, and the concept of ecotourism itself, as well as details about the mangrove forest itself. Therefore, researchers are interested in designing a “reading corner” that contains books and reading materials about the environment, flora, fauna, and information related to nature conservation. Several factors encourage researchers to design a “book corner” at this ecotourism site in Pangandaran Regency, including the presence of several restrooms and waiting rooms in the mangrove forest area. Additionally, the time tourists spend waiting for their boat pick-up is generally quite long. If a “reading corner” were available in the waiting room, it could be utilized by tourists while they wait.

The provision of community reading parks, or ‘reading corners,’ at mangrove forest ecotourism sites in the Pangandaran Regency tourist area is a concept that is considered suitable to offer, aiming to encourage this tourist area to also play a role in educational tourism. The selection of the word “reading corner” is intended to avoid the impression of activities if the management of books and services is formal. The purpose of pioneering a reading park or “reading corner” is to complement information about flora, fauna, nature, and environmental conservation. For the technical implementation of the reading park or “reading corner” pioneering plan, researchers will collaborate with several volunteers managing the Nusawiru mangrove ecotourism area, Babakan and Bojongsalawe Ecotourism in Pangandaran Regency, TBM managers in the Pangandaran area and other related agencies such as the Pangandaran Regency Library and Archives Office and the Pangandaran Regency Tourism and Environmental Services Office.

As stated above, the purpose of this research is to develop a strategy model for strengthening environmental information literacy in mangrove ecotourism areas. One of the strategies implemented is to pioneer community reading parks or establish reading corners in mangrove tourism areas. In connection with this, the specific objectives of this study are as follows: (1) to analyze the condition of environmental information literacy in mangrove ecotourism areas, (2) examining the role and effectiveness of community reading parks in environmental information literacy, and (3) design and develop a strategy model for strengthening environmental information literacy through TBMs.

Method

The research method employed a mixed-methods approach, as described by Creswell (2010) and Hesse-Biber (2019). According to these authors, mixed-methods research is a research approach that combines or integrates qualitative and quantitative forms. Furthermore, Creswell also noted that this approach is more complex than simply collecting and analyzing two types of data; it also involves integrating these two research approaches as a whole, which is greater than the sum of qualitative and quantitative research. A similar opinion is also expressed by Andrew and Halcomb in Putra and Hendarman (2013), as well as Neuman (2019) and Wildemuth (2009), which states that *mixed methods are* not just a combination of quantitative and qualitative data. However, it is a combination of the two studies in all stages. Since the planning stage, in the form of problem formulation, the two studies have been combined. Thus, the problem in mixed research is different from the formulation of problems in quantitative and qualitative research. In *mixed-methods research*, the problem simultaneously aims to explain and explore, and likewise, at the level of data analysis and data validity checks.

Still about mixed method research, Putra and Hendarman (2013); (Kothari, 2004; Neuman, 2019) state that mixed research (*mix method*) is a combination or combination of quantitative and qualitative research starting from the stages of collecting and analyzing data, research design to the stages of the approach are in a single study. The *simultaneous* triangulation design method is an approach used in *mixed methods research* to combine qualitative and

quantitative data simultaneously and integrate them in the analysis. This method enables researchers to gain a more comprehensive understanding of a problem or phenomenon by employing a mixed-methods approach.

Then, regarding the mixed research design, a sequential transformative design model is used. The sequential transformative design model is one approach in mixed methods research that combines qualitative and quantitative research in sequential stages. This model falls within the transformative paradigm, which means that research is oriented towards social change and is often used to empower marginalized groups or address complex social issues. With a sequential approach that combines qualitative and quantitative methods, this model enables a deeper understanding of the issue and yields findings that can be directly applied in community empowerment policies or programs.

Still, about mixed methods research, Hendarman (2013), Bungin (2020), and Cresswell and Clerk (2018) mention several important points in the concurrent triangulation design, namely: (1) data collection. In this design, researchers collect qualitative and quantitative data simultaneously, often through various techniques such as interviews, observations, surveys, and document analysis; (2) Data processing. Qualitative and quantitative data were analyzed separately using methods tailored to the respective types of data. Qualitative data analysis usually involves coding, theme, or narrative analysis, while quantitative data is analyzed using relevant statistical methods; (3) data integration. The results of qualitative and quantitative analysis are compared and integrated to gain a deeper understanding of the phenomenon under study. This can be achieved by identifying convergences (similarities in findings), contradictions (differences in findings), or further explorations based on findings from either type of data; and (4) validity and reliability: The concurrent triangulation design aims to increase the validity (accuracy of findings) and reliability (steadiness of findings) of the research. By using two different types of data, researchers can ensure that their findings are more reliable

Result and Discussion

The concept of environmental information literacy

Literacy refers to a person's ability to identify, understand, interpret, create, communicate, and apply their knowledge in various contexts (OECD, 2015). If the context studied is the environment, then the competency becomes environmental literacy. Meanwhile, regarding the concept of environmental literacy when referring to the opinion of Orr (1992), which states that "*Environmental literacy is the 'knowledge necessary to comprehend relatedness, and an attitude of care or stewardship'*". From this definition, it becomes clear that environmental literacy encompasses the knowledge necessary to understand relatedness and fosters an attitude of care. Based on this limitation, it has also emphasized that environmental literacy is related to how human interactions with each other and with nature influence sustainability education, aiming to instill a specific understanding of the environment through knowledge and beliefs. Another perspective on environmental literacy suggests that it is the ability to comprehend and interpret healthy relationships within environmental systems and take action to maintain, improve, and develop these systems. The concept of environmental literacy contains several things, namely, environmental literacy related to 1) complete knowledge of environmental issues, 2) having empathy for the environment, 3) knowledge in action, and 4) environmental responsibility. Knowledge in action; 4) environmental responsibility for beliefs, values, and attitudes; 5) willingness to involve themselves in overcoming environmental problems; and 6) activeness in finding solutions to overcome environmental problems.

Environmental information literacy is the ability of an individual or group to access, understand, evaluate, and utilize information about the environment effectively, enabling them to make informed decisions about preserving the natural world. This literacy encompasses an understanding of environmental issues, including climate change, pollution, biodiversity, and environmentally friendly practices that can be applied in everyday life. There are several

components in environmental literacy, namely, access to information, understanding of information, evaluating the credibility of information, and the use and application of information. Thus, it can be said that environmental information literacy is a crucial skill in addressing modern ecological challenges. With this ability, people can be wiser in managing natural resources, support sustainable policies, and play an active role in maintaining ecosystem balance for future generations.

Mangroves in an Ecotourism Perspective

Mangroves, as a component of coastal ecosystems, play a crucial role in ecology, specifically in maintaining aquatic productivity and supporting the economic livelihood of the surrounding population. For coastal areas, this ecosystem, especially as a green belt along the coast or river mouth, is very important for marine life, including fish and shrimp, and maintains the quality of fisheries, agriculture, and residential ecosystems that depend on it, protecting them from the disturbance of abrasion, intrusion, and strong sea winds. Mangrove ecosystems are fertile, as the degradation of mangrove litter supplies nutrients to the environment. The nutrients are then utilized by plankton through photosynthesis, resulting in high productivity in the waters.

Mangrove forest ecotourism is a general term used to describe a variety of tropical coastal communities dominated by several species of trees or shrubs that are adapted to grow in salty waters (Nybakken, 1992). A wide variety of environmental products and services can be produced from mangrove forest ecosystems. One of the environmental services that has the potential to be developed without harming the mangrove forest ecosystem is ecotourism. Ecotourism activities can be utilized if humans make improvements. Ecotourism is a travel package that allows you to enjoy the beauty of the environment without harming the existing forest ecosystem.

The potential of mangrove ecosystems for ecotourism activities Subadra (2008), states that mangrove ecosystems have enormous potential for ecotourism development activities in the form of cultural and environmental tourism attractions or attractions that can be enjoyed as follows: a. Mangrove forest exploration (Trecking) Travel (trecking) is done on foot along the mangrove forest with muddy soil conditions and during the trip can enjoy the fresh air, get to know the types of mangroves and wildlife around the mangrove forest area. b. Maritime Tourism: The area surrounding the mangrove forest offers a range of maritime tourism activities, including snorkeling, swimming, and fishing. c. Bird-watching can be done along the way at the ecotourism site, as the mangrove forest serves as a habitat and nesting and feeding ground, especially for fish-eating birds. d. Education and research The value of ecotourism that can be enjoyed around the mangrove forest is snorkeling, swimming, and fishing. Education and research are the key values of ecotourism that have the potential to be developed. The value of endemism (authenticity) is exceptionally high and can be utilized for introductory environmental education and conservation activities through outbound activities for school children.

The implementation stage of mixed method research

As mentioned in the research design, mixed methods research combines qualitative and quantitative methods in a sequential approach to produce social change or empower specific groups. In the research context, the process begins by determining the paradigm and focus of the research, explicitly identifying the paradigm of social change and a research focus on strategies to enhance environmental information literacy through community reading parks, also known as “reading corners.”

The next step in this mixed research is to collect data using a qualitative approach, including interviews and observations, and then strengthen it through a quantitative approach using a questionnaire in a survey. After obtaining an overview through qualitative and quantitative approaches regarding environmental information literacy in mangrove ecotourism

areas, a design is made using action research by pioneering a community reading park or making a “reading corner” design.

To determine the indicators of success regarding environmental information literacy about the pioneering of reading parks or “reading corners”, it is necessary to measure using a quantitative approach and strengthened by a qualitative approach, so that the strategy of strengthening environmental information literacy through the organization of community reading parks or “reading corners” can be measured properly. In connection with these steps, after collecting qualitative and quantitative data, the researchers decided to design a “reading corner” that would later become part of the ecotourism facility in the Pangandaran district. Then, for the use of action research, several steps are carried out, namely

1. Planning Stage

The subsequent step was to prepare for action research after acquiring a comprehensive understanding of mangrove forest ecotourism in Pangandaran tourist areas, including Nusawiru, Babakan, and Bojongsalawe, as well as addressing a variety of issues related to the provision of information sources on flora, fauna, nature, and environmental conservation.

Planning comprised the initial phase of the investigation. The following are the measures we take during the planning stage of pioneering this “reading corner”: (a) Arranging permits to the Pangandaran Regency Kesbang Sospol office related to research plans at mangrove forest ecotourism sites in the Pangandaran Regency area; (b) engaging in ecotourism by contacting the Nusawiru, Babakan, and Bojongsalawe mangrove forest park managers. We outlined the goals, early concepts, and rationale for this study project, as well as the potential advantages to the local community, ecotourists, and tourists in the mangrove forest ecotourism area, in this activity; (c) during this discussion, we also went over who would be responsible for running the “reading nook” and making sure books and other reading materials were always in stock; (d) exploring the Pangandaran Regency Library and Archives as well as meeting with several TBM managers in the region. At this conference, we aimed to inform TBM managers about the upcoming research and extend an invitation to join the “reading corner” for some innovative projects.

In order to enhance the preparation and planning of this research, the meeting with the manager of the mangrove forest tourism park, the manager of the TBM, and the library and archives office of the Pangandaran Regency. Furthermore, the tour manager and TBM engaged in a conversation regarding the initial phase of the research, which included the allocation of service time, the officers who will be responsible for serving, and the source of the book storage box and reading materials. The meeting concluded with the consensus that the research team was accountable for the provision of reading materials and boxes. Nevertheless, the sustainability of reading materials and the provision of funding sources for their maintenance will be addressed as the “reading corner” at the Karangsong mangrove forest ecotourism site evolves in the future.

2. Action Phase

After the planning is complete, the next step is to assign people to be in charge of the reading nook, provide them with reading materials, and set up time to serve. The next stage is to implement the action plan. The following are some of the duties performed in connection with this action's execution: a) The research team and mangrove ecotourism managers collaborated to provide book boxes. It was mutually agreed that the tourism managers would be responsible for the manufacturing of book cities, while the research team would be responsible for the cost of materials and other expenses; b) the following agreements will be made in order to implement the “book corner” service in the outdoors or at the mangrove forest ecotourism site: (1) in the initial phases, the research team was accountable for the selection, procurement, and provision of books and reading materials for the “reading corner” collection. Following this, the tour manager or volunteers were responsible for the reading corner and received the volumes; (2) volunteers or mangrove ecotourism supervisors will be responsible for the regular exchange of

books/reading materials, sending books, and checking books at the book corner; (3) officers or volunteers at tourist locations in mangrove forests will be responsible for serving and organizing reading materials; and (4) in order to conduct an additional assessment, the research team, in collaboration with the manager of the TBM or "reading corner," conducted visits to observe the evolution of the "reading corner" at specific intervals. c) The provision of book storage cities and other reading materials is adjusted to accommodate the capacity of the place or waiting room, as determined by the outcomes of meetings with the managers of ecotourism areas in Pangandaran Regency. It is effortless to relocate or store in a secure location. There are numerous alternatives for shelving or storing reading materials, including the following:

Figure 1: Book Storage Boxes/Racks (Alternative 1)



Source: <https://images.app.goo.gl/18Z63S7E89nj3mBEA>

Figure 2: Shelves/Books (Alternative 2)



Source: <https://images.app.goo.gl/LbZh2nS5P5JV1kjQ8>

Choosing books and reading materials to establish reading corners at mangrove forest ecotourism sites in Pangandaran Regency, like Babakan, Bojongsalawe, and Nusawiru Ecotourism Area, is the next step in the implementation process. The primary goal of this research is to compile reading materials on plants, animals, the environment, and conservation efforts in the mangrove forests of Pangandaran Regency so that ecotourism sites in these areas can better educate and inform visitors. Consequently, we used these steps in our search for reading materials while selecting books and other reading materials: (1) Looking for a

bibliography of books and articles about plants and animals, mangrove forests, environmental protection, and conservation of natural resources through various online bookshops, such as Palasari, the website of the Ministry of

Environment, etc. As a consequence of the book hunt, the mangrove forest ecotourism site now has a number of books that will serve as "reading corners" dedicated to various plants and animals; (2) regarding the list of reading books prepared as a reading corner collection, including.

Table 1. Book Collection for Environmental Education in Mangrove Forest Reading Corners In Pangandaran Regency, West java Province

No	Book Title	Autor	Publisher
1	Uca Crabs in Indonesia's Mangrove Forests	Dewi Citra Murniati	Yayasan Obor Indonesia
2	Getting to know the Mangrove forest	Elen Tjandra	PT. Suka Buku
3	Mangrove Forest Management	Asing Kustanti	Yayasan Obor Indonesia
4	Mangrove Forest	Arifin Arief	Canisius
5	188 Must-Know Flora and Fauna	Astri Lestari	Buku Kita

Source: Collection Community Reading Parks in Pangandaran Regency West Java Province

The above list of books was generated by searching and selecting from numerous internet bookstores. In addition, our research team chose and obtained books on flora and fauna after examining a variety of relevant sources. Aside from the list of books stated above, other books are being prepared to create a collection of reading corners at ecotourism locations in Pangandaran Regency, as shown by the title below:

Figure 3: Sample Book for Reading Corner



Source: <https://images.app.goo.gl/mGGg8S9fJqvUdoeW6>

Figure 3 shows examples of book covers selected as part of the reading corner collection. These books were chosen based on their relevance to environmental education, particularly topics related to flora, fauna, and mangrove ecosystems in Pangandaran Regency. They serve as visual references for the types of materials included in the reading corner initiative.

3. Observation Stage

Through the pioneering initiatives of the "reading alcove" at the Karangsong mangrove

forest ecotourism site, this phase signifies the commencement of transformations. The study employed a variety of indicators to evaluate the effectiveness of the implementation at the Karangsong mangrove forest ecotourism site in Indramayu Regency both prior to and following the establishment of the reading corner.

Table 2: Indicators of Success of Reading Corner Pioneering Activities

No.	Indicator	Baseline (before activity)	Achievement (after the activity)
1.	Reading Corner/Community Reading Garden (TBM)	There is no reading corner in the mangrove ecotourism area in Pangandaran Regency.	Reading corner available
2.	Collection on flora and fauna, Blue Carbon	There is no reading material available at mangrove ecotourism sites in the Pangandaran Regency.	Reading materials about the flora and fauna of the ecotourism site are available for reference.
3	Community Response About Reading Corner	No response yet about the reading corner	Visitor response to the reading corner is positive
4	Cooperation of community reading park (TBM)/reading corner managers	There is no cooperation in providing a reading corner	There is cooperation between the management and other related institutions.

Source: Research Result

When paying attention to specific indicators of the success of the Reading Corner pioneering program at mangrove forest ecotourism sites in the Pangandaran Regency tourist area, it generally shows a positive change, supporting Nusawiru, Babakan, and Bojongsalawe mangrove ecotourism as both an entertainment and educational tourism destination. At this location, in addition to being able to observe the state of the mangrove forest, visitors can also gain additional knowledge from several books and other reading materials provided at reading corners located at waiting and resting points within the ecotourism site.

4. Reflection Stage

Then, the reflection stage is a stage that involves evaluating the implementation of research activities carried out. Based on the facts and data in the process of implementing the pioneering of community reading parks or "reading corners" carried out at mangrove forest ecotourism locations such as the Nusawiru ecotourism area, Babakan and Bojongsalawe ecotourism areas, the results of analysis and reflection can be obtained as follows:

- The process of pioneering a "reading space" at the mangrove forest ecotourism site in Pangandaran Regency has shown significant development. There were some initial challenges in coordinating the study team with the ecotourism manager. However, by clarifying the aim and objectives of the research activities we will do, people will be able to better comprehend and support the research team's efforts. Several options for the construction of reading spots were discussed during the second round of coordination with ecotourism managers and other interested parties. In addition, we divide labor responsibilities between technical aspects of field operations and supplying reading materials and infrastructure for reading corners.
- During the first phase, there is a lack of direction for the management of information sources and reading materials, which is particularly problematic for reading corners run by volunteers

or managers of mangrove ecotourism. However, they started to understand how to perform requirements assessments, selection, procurement, and library material servicing when we taught them how to handle information sources.

- c) During the second cycle, the officials responsible for providing reading materials at the mangrove forest ecotourism site and the TBM manager started to take visitor feedback into account when deciding what reading materials would be most useful. While on this second cycle, the TBM manager and the research team looked into potential donors or groups concerned with environmental issues surrounding reading material provision as a means of ensuring a steady supply.

Conclusion

Strengthening environmental information literacy through community reading parks or reading corners in mangrove ecotourism areas has a strategic role in increasing environmental awareness, supporting ecosystem conservation, and strengthening the educational value of ecotourism. Based on the study's results, it is evident that the environmental information literacy condition in several mangrove areas of Pangandaran Regency still requires improvement. Therefore, the pioneering of community reading parks or reading corners is one of the strategic models in strengthening environmental literacy.

Furthermore, based on the facts, data, and findings in the field during the pioneering process until the realization of "reading corners" at mangrove forest ecotourism sites in several ecotourism areas in Pangandaran Regency, both cycle I and cycle II, it can be concluded as follows:

- a) With the availability of reading materials or books in the "reading corner," which will be placed in several mangrove ecotourism areas within the Pangandaran Regency tourism area, visitors can gain additional knowledge related to flora, fauna, and environmental conservation issues. This is because in the Nusawiru mangrove ecotourism tourist sites, babakan and Bojongsalawe ecotourism areas there are no special officers who guide and explain to tourists about mangrove forests, flora, fauna, etc., so that the availability of reading materials is expected to help visitors in understanding the collection of flora, fauna that exist in these tourist sites;
- b) With the availability of community reading parks or "reading corners" in several mangrove forest ecotourism locations in Pangandaran Regency, it can become one of the educational tourism destinations highlighting flora, fauna, nature conservation, and environmental awareness, which is a source of pride for the Pangandaran Regency community.
- c) The strategy model for strengthening environmental information literacy, through the development of community reading parks or reading corners in mangrove ecotourism areas, has shown potential as a sustainable approach. It contributes to enhancing environmental literacy and can be replicated in other similar ecotourism areas to further promote sustainable practices and ecological education.

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