PUBLIC PERCEPTION OF MANGROVE PLANTING ACTIVITIES: A CASE STUDY OF SEPATIN VILLAGE IN THE MAHAKAM DELTA

PERSEPSI MASYARAKAT TERHADAP KEGIATAN PENANAMAN MANGROVE: STUDI KASUS DI DESA SEPATIN DELTA MAHAKAM

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Abstract

Public perception plays an important role in the success of mangrove planting activities. The community interacts directly with the mangrove ecosystem, so their perceptions will influence whether or not they will support and participate in planting activities. This study aims to determine the community's perceptions of mangrove planting activities in Sepatin Village, Mahakam Delta. The main data in this study were obtained through interviews. Interviews were conducted with 50 respondents who were selected purposively based on their involvement in mangrove planting activities. The research aspects consisted of four categories, namely knowledge, perception, participation, and future expectations. The data in this study were analyzed using descriptive statistics and presented in the form of diagrams and percentages. The results of the study show that 98% of respondents are aware of the mangrove planting activities carried out in Sepatin Village. The community has a very positive response to the planting activities, with 68% strongly agreeing and 32% agreeing with the activities. Mangrove planting activities have a positive impact on increasing fish catches and improving environmental quality. Several things need to be improved in mangrove planting activities, namely the need to involve the community in the planning and implementation of activities and to raise public awareness of the importance of mangrove ecosystems. Another thing that needs to be improved is the expectation that the government will provide adequate facilities and training for the community to support and enrich their knowledge on how to manage and utilize mangroves sustainably.

Keywords: Perception, mangrove, planting, delta

Abstrak

Persepsi masyarakat memainkan peran penting dalam keberhasilan kegiatan penanaman mangrove. Masyarakat adalah pihak yang berinteraksi langsung dengan ekosistem mangrove sehingga persepsi akan mempengaruhi bagaimana masyarakat akan mendukung dan terlibat dengan kegiatan penanaman atau tidak. Penelitian ini bertujuan untuk mengetahui persepsi

masyarakat terhadap kegiatan penanaman mangrove di Desa Sepatin, Delta Mahakam. Data utama dalam penelitian ini diperoleh melalui wawancara. Wawancara dilakukan terhadap 50 responden yang dipilih secara purposif berdasarkan keterlibatan mereka dalam kegiatan penanaman mangrove. Adapun aspek penelitian terdiri dari empat kategori yaitu pengetahuan, persepsi, partisipasi, dan harapan masa depan. Data pada penelitian ini dianalisis menggunakan statistik deskriptif dan data penelitian disajikan dalam bentuk diagram dan persentase. Hasil penelitian menunjukkan bahwa 98% responden mengetahui adanya kegiatan penanaman mangrove yang dilakukan di Desa Sepatin. Masyarakat memiliki respon yang sangat positif terhadap kegiatan penanaman dimana 68% sangat setuju dan 32% setuju dengan kegiatan tersebut. Kegiatan penanaman mangrove memiliki dampak positif dalam meningkatkan hasil tangkapan ikan dan meningkatkan kualitas lingkungan. Adapun beberapa hal yang perlu ditingkatkan dalam kegiatan penanaman mangrove adalah perlu adanya pelibatan masyarakat dalam perencanaan dan pelaksanaan kegiatan serta peningkatan kesadaran masyarakat akan pentingnya ekosistem mangrove. Hal lain yang perlu diperbaiki adalah diharapkan pemerintah dapat menyediakan fasilitas dan pelatihan yang memadai bagi masyarakat untuk mendukung dan memperkaya pengetahuan masyarakat tentang cara mengelola dan memanfaatkan mangrove secara berkelanjutan.

Kata kunci: Persepsi, mangrove, penanaman, delta

INTRODUCTION

Mangrove ecosystems play an important role in supporting the lives of living creatures. Mangroves provide various services and functions, such as habitat for wildlife and local plants (Akram et al., 2023). Mangrove forests are a source of food and shelter for various types of biota, such as fish, shrimp, crabs (Aslamiah & Sari, 2025) and 80% of global fish catches depend on mangroves (Sandilyan & Kathiresan, 2012). Mangrove ecosystems serve as nursery ground, feeding ground, and spawning ground for various marine fish species (Mhatre, 2024).

Mangroves also play an important role in environmental engineering and sustainable ecosystem practices, including providing protection for coastal areas (K et al., 2024). Mangrove ecosystems can capture, convert, and store CO2 in the atmosphere in coastal sediments over long periods of time, transferring organic carbon from coastal zones to offshore areas and the ocean (Choudhary et al., 2024). Mangroves also act as a natural barrier against various environmental risks such as storms, tsunamis, waves, and coastal erosion by serving as the first line of defense in protecting the coastline (Asari et al., 2021).

The Mahakam Delta in East Kalimantan is one of the coastal areas with a very important mangrove environment, both ecologically and economically. The Mahakam Delta has a mangrove ecosystem covering an area of 149,732 hectares or 16.95% of the total mangrove area in East Kalimantan (Dianawati et al., 2014). Sepatin Village, located in Anggana Subdistrict, is one of the coastal villages in the Mahakam

Delta region with an area of 625 km2 (BPS-Kukar, 2020).

In recent decades, mangrove forests in the Mahakam Delta have experienced a decline in area due to mangrove destruction(Putri et al., 2023). Mangrove forest conversion to residential areas, fish ponds, and other development projects is thought to have contributed to some of the damages (Hardi et al., 2023). Research conducted by the Regional Research and Development Agency (BPPD) of Kutai Kartanegara Regency in 2018 stated that the level of mangrove destruction in the Mahakam Delta had reached 59,979 ha (47.8%), with 5.6% classified as damaged and 42.2% as severely damaged, where the largest land use is for fish ponds covering 54,865 hectares (43.7%).

The mangrove's role is so significant, both ecologically and economically, that planting activities are essential. Mangrove planting is still considered one of the most effective ways to combat mangrove degradation (Bibin & Ardian, 2020). Planting mangroves helps to mitigate climate change, conserve biodiversity, and promote sustainable development by offering higher ecosystem functions than unvegetated tidal flats (Su et al., 2021). Planting activities can also improve livelihoods for coastal communities through fishing, timber, and ecotourism.

Planting activities will not be successful without the support of the community around the mangrove area. Perception is the impression, image or response that a person has after the person absorbs several things (objects) or information through the five senses (Sabarini et al., 2021). The process of perception involves the identification, arrangement, and interpretation of data from the five senses, which affects how people perceive and engage with their surroundings (Nisa et al., 2023). Community perception is crucial to the success of mangrove planting as it directly influences their support and participation in conservation efforts.

Several researchers have conducted research on public perception. Research by (Intan & Kusumaningtyas, 2025) reports that public perception of tree planting in urban areas is influenced by several factors, such as life experience, age, and environmental knowledge. While the public is aware that trees significantly improve the quality of life in urban areas, limited land and maintenance costs still pose challenges to successful tree planting. Another study by Darmansyah & Erwiantono (2018) stated that 50% of respondents in Muara Pantuan Village were aware of the existence and function of mangrove forests, but 45% were unaware of any regulations regarding mangrove forests, and 43% of respondents were unaware of any sanctions for mangrove forest use that does not comply with regulations. However, no recent research has been found regarding community perceptions of mangrove planting activities, especially in Sepatin Village. Therefore, this study is important to conduct with the aim of understanding community perceptions of mangrove planting activities in Sepatin Village, Mahakam Delta.

METHODS

This study was conducted in Sepatin Village, Anggana Subdistrict, Kutai Kartanegara Regency, East Kalimantan. The study was conducted in March 2025. There were 50 respondents in this study, who were selected purposively (purposive sampling) based on their involvement in mangrove planting activities. The main data in this study was obtained through interviews. The interview guidelines are shown in Table 1. In addition, observations were also conducted to ensure the validity and reliability of the interview result.

Table 1. Interview Guidelines

No	Research Aspects	Research points
1	Profile	• Gender • Age • Education • Job
2	Knowledge	• Knowledge about Mangroves and Their Functions • Knowledge of the Benefit of Mangroves for Waterways and Coasts • The Role of Mangroves in Protectic the Environment
3	Perception	• Knowledge of Mangrove Planting Activities • Opinions on Mangrove Planting Activities • Benefits of Mangrove Planting Activities for Fishermen • Benefits of Mangrove Planting in Increasing Fish Catches • Impact of Mangrove Planting Activities
4	Participation	• Involvement in Mangrove Planting Activities • Reasons for Participating
5	Expectation	• Hopes for the Sustainability of Mangrove Planting in the Future • Things That Need to be Improved in Mangrove Planting Activities

Research data was analyzed using descriptive statistics. Descriptive statistics is the process of collecting and organizing data, calculating various statistical measures, and creating diagrams or graphs to illustrate information with the main purpose of presenting data in a form that is easier to read and understand (Fernanda & Kunci, 2025). With descriptive statistics, the data in this study will be presented in the form of diagrams and percentages.

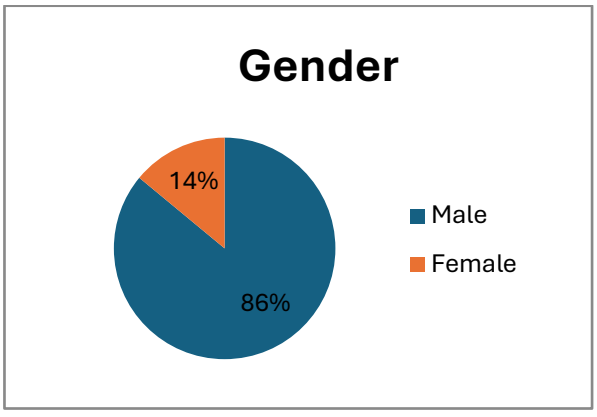
RESULTS AND DISCUSSION

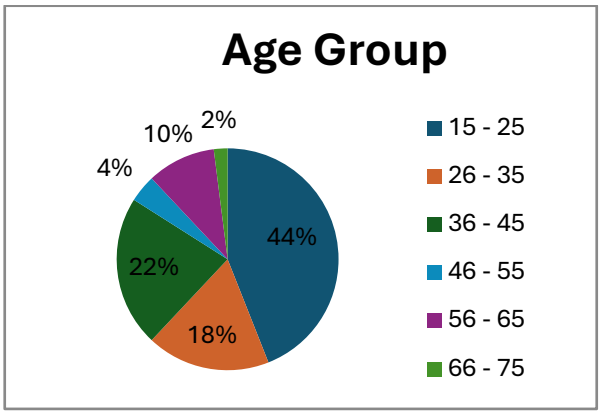
1. Respondent Profile

The profile of the study respondents is presented in Figure 1. The majority of respondents were male (86%), and 14% were female. In terms of age, 44% of respondents were in the 15-25 age group, 22% were in the 36-45 age group, 18% were in the 26-35 age group, 10% were in the 56-65 age group, 4% were in the 46-55 age group, and 2% were in the 66-75 age group. This indicates that the majority of respondents in this study were of productive age.

44% of research respondents had an elementary school education background. Meanwhile, the others had a junior high school and senior high school education background with percentages of 38% and 18%. This indicates that the level of education among most respondents in this study is still relatively low. According to (Marwansyah, 2025), low family income, the urgent need to help parents with work, and a lack of encouragement and support from the local community create obstacles for teenagers in continuing their education.

In terms of occupation, 44% of respondents worked as fishermen. Others worked as farmers (20%), mangrove planters (16%), housewives (12%), entrepreneurs (4%), village officials (2%), and civil defense personnel (2%). This is in line with research by (Putri et al., 2023) and (Pelu & Christianty., 2022), which states that most coastal communities work as fishermen.





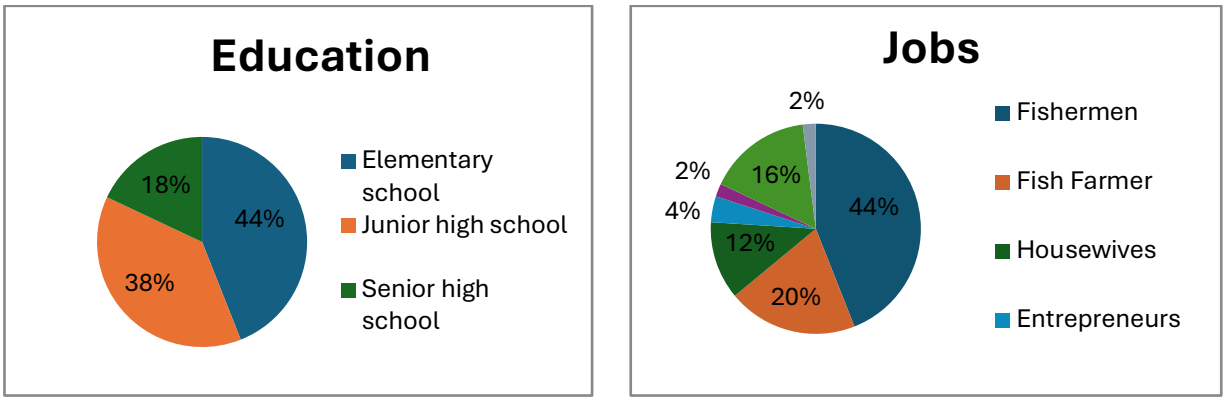


Figure 1. Respondents' Profile Based on Gender, Age Group, Education, and Jobs

2. Result and Discussion

The results of the study on respondents' knowledge of mangroves and their functions are presented in Figure 2. Most respondents in the study (96%) had knowledge of mangrove ecosystems, and 92% understood that mangroves are beneficial to aquatic and coastal ecosystems. This is in line with another question about the benefits of mangroves, where 68% of respondents answered that mangroves play a role in reducing coastal erosion, maintaining water quality, and providing habitat for fish. Meanwhile, others only knew that mangroves had one benefit, with 18% only knowing that mangroves played a role in providing habitat for fish, 12% only knowing that mangroves played a role in reducing coastal erosion, and 2% only knowing that mangroves played a role in maintaining water quality.

The results of the study show that most people in Sepatin Village already have knowledge about mangroves and understand how mangroves are beneficial for the community and the surrounding environment. Knowledge greatly influences how communities engage in activities. (Nijamdeen et al., 2023) stated that communities with higher knowledge of mangroves showed lower levels of utilization and paid more attention to increasing mangrove cover. (Rozainah & Halim., 2024) also stated that the knowledge possessed by communities can serve as a basis for improving mangrove forest conservation practices among communities.

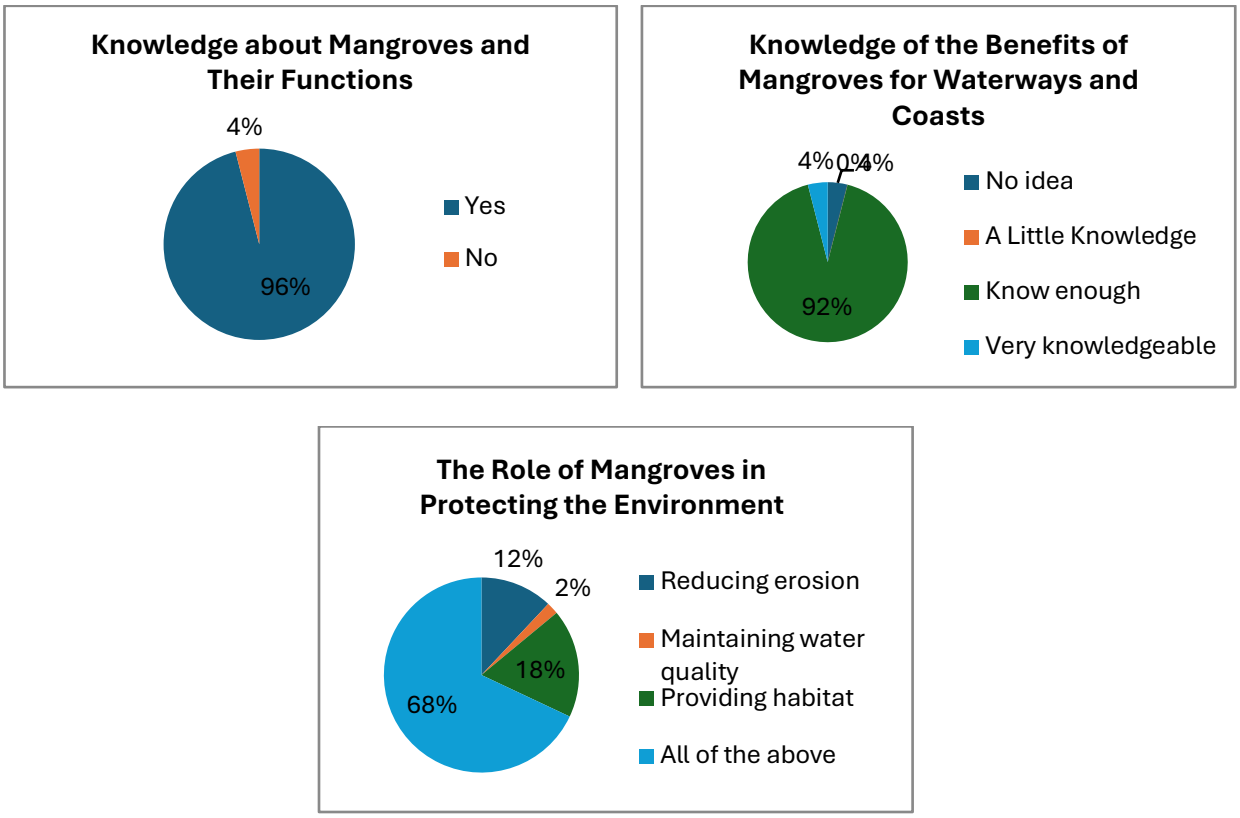


Figure 2. Respondents' Knowledge About Mangroves and Their Role

Figure 3 shows respondents' perceptions of mangrove planting activities. The majority of respondents (98%) were aware of mangrove planting activities carried out in Sepatin Village, with 68% strongly agreeing and 32% agreeing with these activities. In addition, Figure 3 also shows that 82% of respondents consider planting activities to be very beneficial for fishermen, with 78% of respondents believing that mangrove planting plays an important role in increasing fish catches. Mangrove planting activities also have a positive impact in terms of increasing fish catches (56%) and improving environmental quality (36%).

Based on the above results, it is evident that the community's response to the planting activity is very positive, with 68% strongly agreeing and 32% agreeing with these activities. The various benefits felt by the community after the planting was carried out are one of the reasons why the community strongly supports these activities. It is known that planting activities have a positive impact on increasing fish catches and improving environmental quality. In addition, good knowledge about the functions and benefits of mangroves (Figure 2) also indirectly became one of the reasons why the community responded positively to the planting activities.

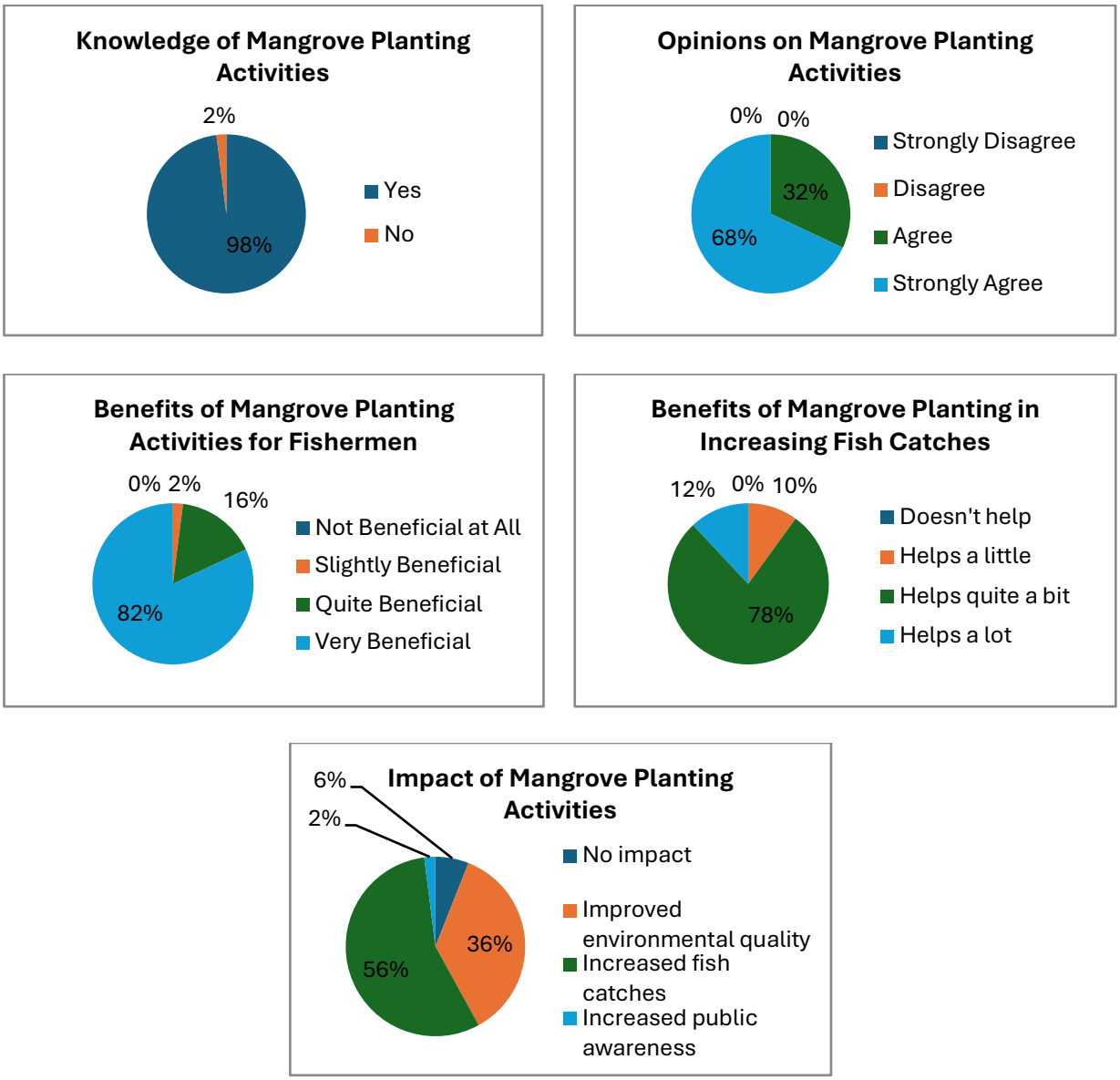


Figure 3. Respondents' Perceptions of Mangrove Planting Activities

(Iskandar, 2023) states that community participation in mangrove forest management is a key factor in ensuring the long-term sustainability of activities. Figure 4 shows that all respondents in this study were directly involved in mangrove planting activities in Sepatin Village. Respondents' participation in planting activities was based on three factors, namely the existence of incentives or support from the government or organizations (22%), the desire to protect the environment (24%), and because planting activities were related to respondents' livelihoods (54%).

This shows that the benefits received by the community (incentives) and individual awareness to protect the environment, as well as the link to livelihoods, are factors in the respondents' involvement in mangrove

planting activities. (Valenzuela et al., 2020) states that the benefits gained by the community from their participation in mangrove restoration activities motivate the community to participate more effectively and sustainably in the project.

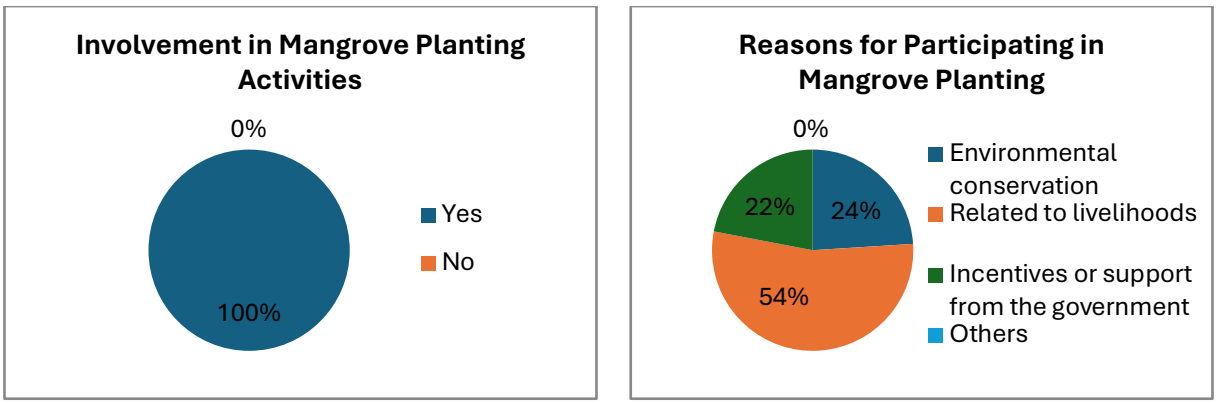


Figure 4. Respondents' Participation in Mangrove Planting Activities

Figure 5 shows respondents' expectations and suggestions regarding future planting activities. A total of 82% of respondents hoped that planting activities could be carried out by planting more mangroves, while others hoped that planting activities could be expanded to other areas in need (8%) and that there would be an increase in training programs for the community, especially fishermen (8%). This shows that the community feels the benefits of mangrove planting activities, so most respondents hope that planting activities can be carried out by planting more mangroves, while others hope that planting activities can be expanded to other areas in need.

One aspect that needs to be improved in future mangrove planting activities is the provision of facilities and training for the community, with 46% of respondents choosing this option. This shows that currently there are no adequate facilities available and that there is a need to improve training for the community. The availability of facilities and training is important in order to support and enrich the community's knowledge of how to manage and utilize mangroves sustainably. Training can also raise community awareness of the importance of mangrove ecosystems for both the environment and the community itself.

Another aspect that needs to be improved is community involvement in the planning and implementation of activities, with 34% of respondents choosing this option. Community involvement in the planning and implementation of activities is also very important because the community is the party that interacts directly with the mangrove ecosystem. Local communities are at the forefront of mangrove management, where they need mangroves to be preserved so that they can meet their daily needs (Berutu et al., 2024).

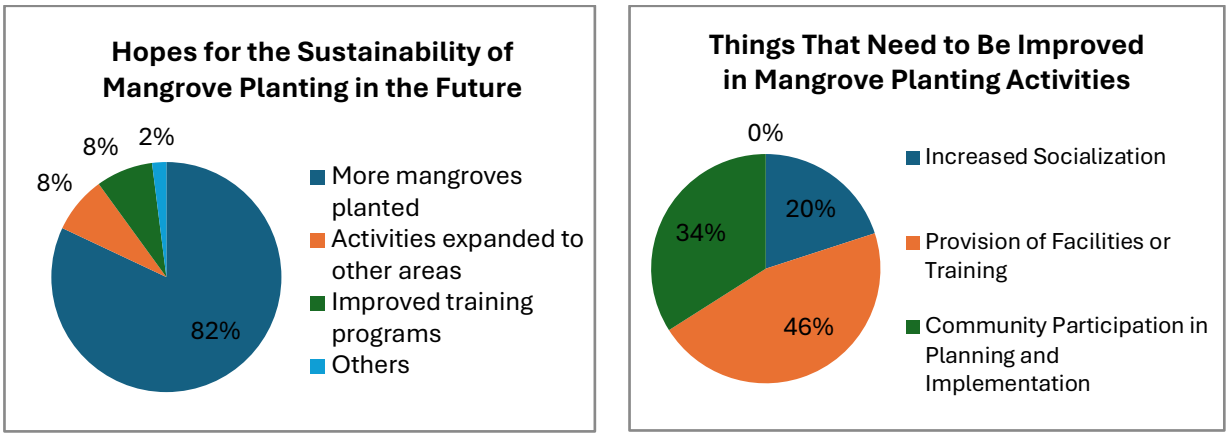


Figure 5. Respondents' Expectations and Suggestions for Future Mangrove Planting Activities

CONCLUSIONS

Based on the results of the above study, it is known that 96% of respondents in this study have good knowledge about mangroves. The community understands that mangroves play a very important role in protecting waters and coasts. The majority of respondents (98%) are also aware of mangrove planting activities in Sepatin Village, where 68% strongly agree and 32% agree with this activity. This shows that the community responds very positively to planting activities. The various benefits felt by the community after planting is one of the reasons why the community strongly supports this activity. The benefits felt by the community after mangrove planting activities include increased fish catches and improved environmental quality. In addition, good knowledge about the functions and benefits of mangroves is also one of the reasons why the community responds positively to planting activities.

All respondents in this study were involved in mangrove planting activities. Respondent participation in planting activities was based on three factors, namely the existence of incentives or support from the government or organizations (22%), the desire to protect the environment (24%), and because planting activities were related to the respondents' livelihoods (54%). The hope for future planting activities is that more mangroves will be planted and that planting activities can be carried out in other areas that need them. Meanwhile, things that need to be improved for future planting activities are the need to increase the provision of facilities and training for the community and the need for community involvement in the planning and implementation of activities.

Based on this, it is hoped that the government can provide adequate facilities and training to the community. The availability of facilities and training is very important to support and enrich the community's knowledge on how to manage and utilize mangrove forests sustainably. In addition, this study was only conducted on communities involved in planting activities and only discussed the benefits of mangrove planting in terms of increasing fish catches and environmental quality. Future research is

expected to be conducted on communities that are not involved in planting activities so that a comparison can be made between the two, and it is hoped that the benefits of planting activities will also be linked to other aspects such as education and other related fields.

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