

Conservation of Timor Deer (*Cervus timorensis*) in Saobi Island Nature Reserve

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ABSTRACT

The ongoing climate change and the interests of the surrounding community in the Saobi Island Nature Reserve, make the conservation of eastern deer (*cervus timorensis*) in the Saobi Island Nature Reserve **very** important to maintain the deer population on Saobi Island. This study aims to use the Participation Action Research (PAR) method as a persuasive method in maintaining the forest population and a massive approach around Saobi Island to be able to maintain the deer population around the nature reserve with stages in the form of action plans, focus group discussions (FGD), socialization, and reflection on the activities carried out in the study. The results of this study indicate a positive impact in the form of the formation of a partner community and the emergence of various additional benefits felt during the study, in the form of social and educational activities through action plans, socialization to educational institutions on Saobi Island, especially to Islamic junior high schools (MTS) in the long term, focus group discussion forums (FGD) with the natural resource conservation center, the Conservation and Natural Resources Center, and the presence of forest rangers around the Saobi Island nature reserve. Then the reflection carried out was to create a partner community around Saobi Island whose development was continuously monitored to be able to maintain the sustainability of the existing deer and maintain the deer population on Saobi Island.

How to Cite

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INTRODUCTION

Special attention is also given to the Saobi Island nature reserve, home to a variety of wildlife endemic to the Sumenep Islands. Saobi Island offers a variety of wildlife-related activities that attract visitors, so its sustainability must be maintained. Conservation encompasses various aspects and forms of protection that visitors and the community of Saobi Island should be aware of.

The inseparable role of Saobi Island as a nature reserve and the natural resources stored within it. A number of problems have arisen on Saobi Island, due to the imbalance of natural resources and suboptimal utilization of natural resources. Saobi Island is one of the Nature Reserves in East Java Province which has an area of 436,826 Ha. This island has several types of ecosystems, namely coastal forests, mangrove forests, and lowland seasonal forests. Saobi Island Nature Reserve is one of the deer habitats in the middle of the Saobi Island nature reserve area, therefore the direction of management of Saobi Island Nature Reserve is for deer protection.

Deer are protected animals in nature reserve conservation areas, in accordance with Law No. 5 of 1990 and Government Regulation No. 7 of 1999. The history of Saobi Island is marked by political freedom and strong resistance to foreign control, including the freedom for its inhabitants to choose the aspects they want. The changes in the surrounding environment have caused the people of Saobi Island to become more protective, because the proximity to deer habitat and conservation often causes friction between humans and deer.

The existence of changes in the scope of the area that continues to shrink causes the deer to roam or forage to start entering residential areas to residents' agricultural land so that residents consider the deer to have violated the conservation area or zone. Conventional Conservation can be maintained in the Saobi nature reserve area which uses traditional materials and equipment based on local wisdom and cultural elements inherent in the Community, then based on aspects of accumulated experience from the community as an element of the local community who also inhabit the Area. In this type of traditional conservation activity there are traditional equipment and material elements. Traditional equipment is a type of equipment that Simple and made by local people using materials found in the environment. Meanwhile, traditional materials are those obtained locally and based on experiences passed down through generations.

Several studies, particularly those by Muhammad Fadli (2022) in (Luhulima et al., 2024) , state that the conservation area in the Ujung Kulon Nature Reserve where deer reside can be protected by establishing partner community areas and pockets to protect wildlife in the

conservation area from extinction and improving population patterns in conservation areas close to settlements to prevent extinction. Furthermore, according to Andy Hutagalung (2023) in (Qomar et al., 2022) Speaking of conservation potential, protecting wildlife, including deer populations, and the surrounding environment, is a natural resource. Developing approaches to human- animal interactions can lead to friction and conflict, potentially leading to population loss in an area. The sociological perspective of the Saobi Island population tends to consistently exploit various aspects of the natural resources in one of their highly potential areas.

The potential for deer development on these islands is significant for preserving this unique and fascinating fauna, which is worth studying in relation to the interaction between humans and the island's native deer. With a population of only around 200, the deer on these islands are forced to continually migrate to safer and more competitive locations (safe from human threats). The forest on these islands and archipelagos covers only 5 hectares, which can support a population of around 100 surviving deer.

According to Andy Hildayanti and Machrizzandi (2023) (Hildayanti & Machrizzandi, 2022) For areas with wildlife, the PAR (*participation action research*) method can be used, including tropical islands. The rainy season occurs between July and December each year, the air temperature around Kijang Island ranges from 20.5-29.8 degrees Celsius. The condition of the waters of Kijang Island is different from what we read, before the rainy season the conditions are somewhat murky but after the big waves occur here it is very suitable for surfing and the water is no longer murky even though it is close to the plains with lots of coastal activities.

To visit Deer Island, simply take a boat from the fishermen on Bawean Island for a transit, with a travel time of approximately 60 minutes. If coming from the Karimun area, the travel time is nine hours to reach Bawean Island. Bawean Island has good opportunities and prospects for investment, especially for marine tourism. In addition to beautiful coral reefs, it also has high waves that can be used by tourists for surfing. This island is also suitable for mina-tourism activities that combine fisheries and tourism. With its tropical natural conditions, it can be an opportunity for the development of fisheries, lobster, and fishing tourism resorts. There are several government regulations that support environmental conservation. With increasing support or participation in environmental conservation and a relatively low population growth rate with a young population structure and a high labor force participation rate, with such support, tourism activities can be based on coastal ecosystems . In addition, this island can also be used as a development

area/conservation area for both education and research, as well as a development area for capture fisheries cultivation and marine tourism.

According to (Habibah et al., 2023) , that in maintaining the conservation area of nature reserves can be managed with digital technology so that every movement can be recorded and also the number of populations formed in the pockets of conservation areas that have been protected from the extinction of wild animals in the nature reserve area (Supena, 2023) m. The need for public awareness in forming a religiously educated society will have a positive impact on the management of marine conservation areas in Indonesia. Research from the local government, namely the Natural Resources Conservation Agency (BKSDA), which has conducted research on local capacity related to deer and goslings, both in terms of numbers and behavior, still requires collaboration regarding socioecological aspects and deer conservation. Positive activities carried out in the PAR action include: The community feels directly involved, thus growing a sense of ownership of the conservation program. Increased awareness of the importance of protecting Timor deer and its ecosystem. The formation of a conservation partner group that actively supports monitoring. Where deer require special attention in developing the population and developing captive breeding that can be developed around the Saobi Island nature reserve.

Field research using a community empowerment approach by Siti Hasanah (Hasanah, 2020) concluded that the PAR method can also increase the gossard bird population in the Maluku region, around nature reserves close to residential areas. The objectives of this research were: This study uses the Participatory Action Research (PAR) method as a persuasive method in maintaining forest populations and a massive approach around Saobi Island to maintain deer populations around the nature reserve with stages in the form of action plans, focus group discussions (FGD), socialization, and reflection on activities that have been carried out in the study . However, this study still needs many improvements and is far from perfect, so further research and refinement are needed from the readers.

RESEARCH METHODS

The type of method used is descriptive qualitative research, which is generally also referred to as naturalistic research because this research is conducted in natural and natural conditions which by (Hildayanti & Machrizzandi, 2022) are defined as "the process of collecting information about a very specific problem through natural aspects that occur in nature". In other words, PAR is also a collection process with purposive sampling. Respondents are selected based on criteria for involvement with deer conservation issues and interviews with the snowball sampling method,

namely initially interviews with key figures, then from them are directed to other relevant respondents, to individuals, and not free discussions without a specific topic. PAR method. Like other qualitative methods (*direct observation*, *in-depth interviews*, etc.), PAR seeks to answer the type of *how-and-why questions*, not the type of *what-and-how-many questions* commonly used in quantitative methods (surveys, etc.). the PAR method in determining respondents is selected by purposive & snowball in the form of traditional leaders, communities, officials, area managers. The audience is the local community (internal), government & conservation partners (external). The material from the Discussion Group Forum includes problem identification, continued exploration of solutions and action plans for deer conservation.

PAR and other qualitative methods are actually more appropriate than quantitative methods for research that also aims to " *produce theory and explanation* " (Qomar et al., 2022).

Table 1. Type, criteria, and number of respondent

No.	Respondent Type	Respondent criteria	Number of Respondents
1.	Local communities (fishermen, farmers, traditional hunters, traditional leaders)	Because they interact directly with the deer habitat. Can provide information about habits, threats, and conservation potential.	5 people who have hunted or lived near deer habitat.
2.	Community leaders & traditional/religious leaders	Have influence in changing community behavior. Can explain local customary rules or norms related to deer.	2 respected traditional/religious figures.
3.	Local government officials (village/sub-district, environmental services, forestry)	Know government policies, rules and support.	2 village officials and 1 sub-district representative.
4.	Nature reserve officers (Forest rangers, area supervisors, Natural Resources Conservation Agency)	Have technical data on deer populations, threats, and conservation status.	2 officers from the Natural Resources and Conservation Agency/Forest Police on duty on Saobi Island.
5.	Conservation partner groups or local NGOs	Provides perspective on conservation programs that have been or are currently being implemented	2 members of the conservation community.

Participatory Action Research is a method that makes its experimental model dynamic and flexible, including using Interview Techniques by also collecting qualitative data through open interviews with community members to understand their perspectives and experiences. *Focus Group Discussions* by holding group discussions to explore views, ideas, and solutions related to a particular problem. Visual Methods use techniques such as participatory mapping or

photography to describe problems and solutions from the community's perspective. Social Mapping by involving the community in making maps that depict resources, problems, and potentials that exist in their community. Participatory Observation, namely Researchers are directly involved in community activities to understand the context and social dynamics that exist in this case socialization to schools and educational aspects. Evaluation and Joint Reflection by Holding reflection sessions where all participants can evaluate progress, challenges, and next steps together. Preparation of Action Plans, namely formulating action plans together based on research findings, involving all stakeholders.

PAR also utilizes these techniques. PAR seeks to create an inclusive and empowering environment where all voices are heard and valued. The following is an illustration of the PAR method, a flexible and non-rigid experimental research model:

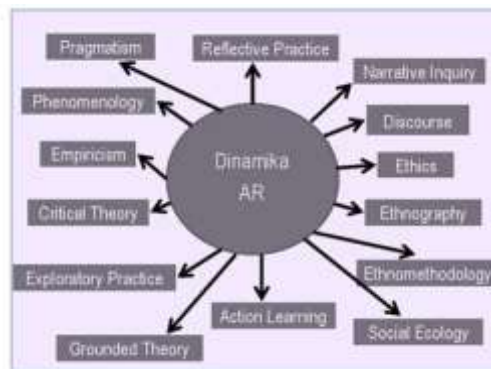


Figure 1. PAR method which is a dynamic and non-rigid experiment

Source: (Hasanah, 2020)

The Planning Stage is the most important stage in this program cycle, because the continuation to the next stage depends on the results of the initial identification and assessment. This stage needs to be managed well and maturely even though it sometimes requires special expertise. Action Stage, This stage is a stage that can involve the community to save the saobi deer which is almost extinct and is considered a pest for residents around Saobi Island and the forest conservation area, the competitive situation to survive makes humans and deer come into contact with each other to get habitat and food, this is what must be bridged in order to maintain the sustainability of the saobi deer habitat.

Program Design Stage, namely the results of the identification stage *of the discussion group forum* (FGD) are formulated into a draft proposal and a logical thinking framework design. Preparation of deliberations between stakeholders and the community. There is a dangerous interaction friction between Saobi deer and residents and the surrounding community who have

considered Saobi deer as pests that often eat residents' agricultural products on Saobi Island. Changes in the mindset of the Saobi Island community that continue to grow and the narrowing of forest areas due to the conversion of agricultural land with the Saobi deer habitat from an increasingly close distance, namely from 2007 around 300 meters and now in 2024 to only 100 meters from residents' homes and agricultural land. Technical assistance FGD (*Forum Group Discussion*) with the community and local residents in implementing the action plan to save endemic animals, namely Saobi deer using the PAR (*Participatory Action Research*) method. In the FGD aspect, the interview method can be used where this interview aspect can be used to find out the conservation aspects in the Saobi Island nature reserve.

The reflection and monitoring stages are inseparable because they work hand in hand to achieve established goals, and the function of monitoring is to determine whether the actions taken are in line with those goals. The program's focus emphasizes procedures for achieving desired outcomes from the input provided. Evaluation is also ongoing because project monitoring and evaluation activities will occur concurrently with its implementation, while assessments have time intervals.

RESEARCH RESULT

Action Plan

Deer protection efforts also include activities to protect and conserve deer populations in their habitat. This can include various types of conservation, such as hunting restrictions, habitat management, reintroduction of species to their natural habitats, and regular monitoring of human activities that may disturb deer.

Deer population sustainability can be achieved by establishing deer protected areas, typically implemented by local governments, conservation agencies, and wildlife organizations concerned with biodiversity conservation. The primary goal is to maintain a healthy and sustainable deer population and ensure they have adequate habitat for survival and reproduction. Some action plans are outlined in the table below:

Table 2. Action plans

No	Action Plan Stages	Expected results
1.	Problem Identification (Initial Diagnosis)	Conducting FGD (Focus Group Discussion) with community, figures customs, apparatus village and management reserve natural for dig problem main (poaching, habitat loss, lack of awareness, minimal regulation local). Survey population deer (estimated number, distribution, habitat conditions).

		Mapping socio-ecological: who just influential actor to sustainability deer.
2.	Joint Planning	Determine objective together: <i>"Preserving population deer east of the island Saobi in a way sustainable with involving public as habitat protector."</i> Develop a joint strategy, for example: • Education community (schools, youth groups, groups) fisherman). • Formation group public supervisor deer (community ranger). • Compilation rule local/customary support protection deer. • Alternative eye livelihood (ecotourism, crafts, agriculture) sustainable.
3.	Implementation of Action (Action)	Activity habitat conservation: reforestation, control fire forest, guarding water sources. Improvement awareness: training conservation, competition education in schools, campaign media local. Strengthening institutional local: forming regulation village or agreement customs about prohibition hunting deer. Development economy alternative: ecotourism program-based deer (educational tour, observation spot deer), making themed souvenirs deer.
4.	Reflection and Evaluation	Regular meetings with all party for evaluate: • Change population deer (periodic monitoring). • Participation rate public. • Effectiveness rule local. Identification program strengths and weaknesses → improvements step to front.
5.	Sustainability	Forming a communication forum society & government for continue action preservation. Integrating the program with policy government area (service forestry/environment life). Interesting support from Community Facility Institutions, universities high, or conservation donor.

FGD DESIGN

Participants of the Discussion Group Forum were community leaders, forest rangers, employees of the Conservation and Natural Resources Agency (BKSDA), fishermen, farmers, and local communities as well as non-governmental organizations located in the border area between the Saobi Island nature reserve conservation. The discussion regarding the current condition of the eastern deer population, whether it is threatened with extinction, stable, or declining due to poaching, habitat changes, and other factors. This is one aspect in maintaining the deer population in the Saobi Island nature reserve, which is also adjacent to residential areas. This condition is shown in the following image as the initial step in the discussion for the Discussion Group Forum which was carried out casually around.

The activity began with field observations and in-depth interviews with the community and local stakeholders. Focus group discussions (FGDs) revealed key threats to the eastern deer population, including poaching, habitat destruction due to land conversion, and low public awareness of the importance of conservation. A simple survey was also conducted at this stage to estimate the deer population and the condition of the supporting ecosystem.



Figure 2. Group Discussion Forum design
Researcher's field data sources

The deer population is decreasing day by day and placing the deer in a worrying position (exhausting), therefore it is necessary to handle the preservation of deer, the following data was obtained from the results of the interview method with residents on Saobi Island.

Table 3. Interview results with residents on Saobi Island

NO	Number of deer	Hamlet	Source
1.	2 seen in the last 3 months (meaning July 2024)	Panajessem	Statement from the initials (AG) former forest ranger in the Saobi area
2.	A deer was seen in June 2024	Songai laok	Statement from the initials (SH), former nature reserve guard on Saobi Island
3.	Only two deer were seen in early August 2024	Temor songai	Information from residents (AF) around Temor Songai which is close to the Saobi nature reserve area
4.	A deer was briefly seen in the eastern area	Panajessem	Description of the Community (SM) around Panajessem

The exposure data was then mapped on the area on the map of four hamlets around the Saobi Island nature reserve area which in this case have pros and cons in the Saobi Island nature reserve area with an area of 436,826 Ha.

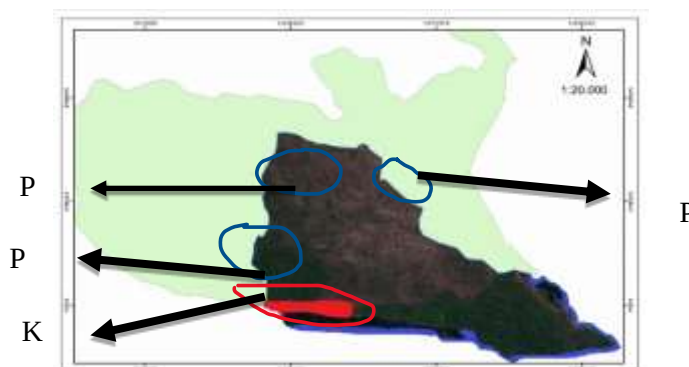


Figure 3. Map of the Advantages and Disadvantages of the Saobi Island Nature Reserve with four hamlets around the Saobi Island Nature Reserve (source: BKSDA 2022)

Description: The blue color indicates the hamlet areas that are pro (agree) to the existence of conservation areas, while the red color indicates the hamlet areas that are against (disagree) to the existence of nature reserve areas on Saobi Island, this shows that there are contradictory aspects of the community living on Saobi Island.

Interviews with the community

The relationship between pro- and anti-conservation groups among several community leaders reflects a common dilemma in areas dependent on natural resources. On the one hand, there is an awareness of the importance of preserving sustainability and ecosystems for the future, while on the other, there is an urgent need to address the economic and daily life challenges of local communities. Open dialogue and an inclusive approach are crucial to balancing short-term and long-term interests. The following table presents data from the interviews.

Table 3. Interview results

Question	Position	Answer
What do you think about conservation?	Village head/leader of Islamic boarding school	Conservation will maintain the sustainability of nature and provide opportunities for communities to develop the Saobi environment, therefore natural resources must be managed sustainably so that they can be enjoyed by future generations.
	Budi Senior Fisherman	Conservation programs often limit communities' access to the natural resources they need for daily life. He argues that conservation often benefits outsiders more than local residents.
		Description of the interview results above
		The village head firmly believes that conservation will have a positive impact, particularly in preserving nature, as it is part of a local tradition that must be upheld to

	preserve ancestral values. To this end, the village head has undertaken several activities, including village meetings and collaboration with NGOs.
	Mr. Budi feels that conservation policies are often established without involving local communities in decision-making. He believes that local communities are forced to follow village regulations without considering their conditions and needs.
	Pros and Cons Relationship
	• Long-Term vs. Short-Term Economic Dialogue : Mr. Hadi believes that developing ecotourism and conserving nature will provide long-term benefits to the community. However, Mr. Budi emphasizes that the community needs immediate solutions and feels that conservation only provides long-term impacts without providing tangible results in the present. This relationship is often a source of contention between those who prioritize sustainability and those who focus more on immediate economic needs.
	• Community Participation in Decision-Making : Mr. Hadi supports programs that involve government and NGOs in conservation implementation, while Mr. Budi feels that these policies are made without considering the aspirations of local communities. This relationship illustrates the tension between the desire to involve outside experts in conservation and the need for local communities to feel ownership of the program.
	• Communicating Conservation Benefits : Mr. Hadi believes that the benefits of conservation need to be better communicated to the community through local figures, like himself. Meanwhile, Mr. Budi feels that these benefits are not yet clear enough to fishermen and farmers, as they have not yet experienced significant changes in their daily lives.

DESCRIPTION OF INTERVIEW RESULTS

Public figure	Community leaders strongly believe that conservation will have a positive impact, particularly in preserving nature, as it is part of a local tradition that must be upheld to preserve ancestral values. In this regard, the village head has undertaken several activities, including village meetings and collaboration with NGOs.
AG/Former Forest Ranger	Mr. AG feels that conservation policies are often established without involving local communities in decision-making. He believes that local communities are forced to follow village regulations without considering their conditions and needs.

PROS AND CONS RELATIONSHIP

No	Aspect	Respondents	Argument
1	Saobi Island Economy	Public figure	Community leaders believe that by developing ecotourism and protecting nature, the community will benefit in the long term.
		AG/Former Forest Ranger	Mr. AG emphasized that the community needed immediate solutions and felt that conservation only provided long-term impacts without providing tangible results now.

DESCRIPTION OF THE PROS AND CONS RELATIONSHIP

This relationship is often a source of debate between those who prioritize sustainability and those who focus more on current economic needs.

2	Community Participation in Decision Making	Public figure	Support programs that involve government and NGOs in implementing conservation and consulting with local residents.
		AG/Former Forest Ranger	Meanwhile, Mr. AG assessed that the policy was made without considering the aspirations of the local community.

DESCRIPTION OF THE PROS AND CONS RELATIONSHIP

This relationship illustrates the tension between the desire to involve outside experts in conservation and the need for local communities to feel ownership of the program.

3	Benefits of Conservation	Public figure	Community leaders believe that the benefits of conservation need to be better communicated to the public through local figures, such as themselves.
		AG/Former Forest Ranger	Mr. AG felt that the benefits were not yet clear enough for fishermen and farmers, because they had not yet felt significant changes in their daily lives.

DESCRIPTION OF THE PROS AND CONS RELATIONSHIP

The pro-conservation relationship between these two community leaders reflects a common dilemma in regions dependent on natural resources. On the one hand, there is an awareness of the importance of preserving sustainability and ecosystems for the future, while on the other, there is an urgent need to address the economic and daily life challenges of the local community. Open dialogue and an inclusive approach are crucial to balancing short-term and long-term interests.

Deer conservation, like other wildlife conservation efforts, often generates mixed public opinion. Here are some of the pros and cons that may arise regarding deer conservation:

Pro Deer Conservation

1. Biodiversity Richness: Deer are an important part of the ecosystem. Their conservation helps maintain the balance of nature and biodiversity.
2. Ecotourism: Deer can be a tourist attraction. Deer breeding and observation can provide a source of income for local communities.
3. Environmental Education and Awareness: Deer conservation can increase public awareness about the importance of conservation and environmental protection.
4. Cultural Value: In some areas, deer have cultural and spiritual significance. Their conservation supports local traditions and heritage.

Against Deer Conservation

1. Conflict with Agriculture : Deer often damage agricultural crops, which can cause losses for farmers. This can create tension between conservation and the economic needs of communities.
2. Maintenance Costs : Deer conservation may require high costs for conservation programs, monitoring, and habitat maintenance, which can be a burden for governments or non-governmental organizations.
3. Health and Disease : Deer can carry diseases that can be transmitted to pets or humans. This can cause concern in the community.
4. Resource Use : Conservation programs often require resources that are contested by various aspects of the Saobi community's needs, such as land for agriculture or settlement.

Outreach to Local Educational Institutions

Educational institutions play a strategic role in the deer conservation program on Saobi Island. In this context, educational institutions serve not only as a platform for disseminating information but also as agents of change, mobilizing students and the community to actively participate in environmental conservation.

This socialization was carried out at the foundation in Saobi using a participatory approach, where students and teachers not only received information, but also actively involved in designing conservation efforts and implementing conservation programs. The event began with an introduction from the principal of the madrasah, followed by remarks and directions from the research team, who then socialized deer conservation efforts on Saobi Island using PAR techniques in the picture of this socialization in the field of education. This socialization also focused on the preservation of deer on Saobi Island which is an important part of the food web on Saobi Island, so that Saobi Island can be explored by researchers and in educational aspects.



Figure 4. Overview of socialization in the field of education (Researcher document sources)

Forming an Environmentally Concerned Community Organization

Deer conservation on Saobi Island cannot be effective without the active involvement of the local community. As part of the island's ecosystem, deer play a vital role in maintaining environmental balance. However, challenges such as poaching, illegal logging, and public ignorance about the importance of deer conservation have threatened the survival of this species. To address these challenges, it is necessary to establish a community organization focused on environmental conservation, including deer conservation on Saobi Island.

This organization is expected to be a key driver in maintaining overall environmental sustainability. The establishment of an environmentally conscious community organization (hereinafter referred to as the Saobi Environmental Care Organization) can be more structured, effective, and based on local needs. This organization will not only focus on deer conservation, but also on the management of natural resources (SDA) and the environment as a whole, by involving various levels of society, including educational institutions, community leaders, and local governments. This is done in collaboration with Mr. Carek Saobi. The purpose of establishing this community organization.

1. Increasing Community Awareness and Participation: Building greater awareness of the importance of deer and environmental conservation among the people of Saobi Island.
2. Encourage involvement in Conservation Actions: also facilitate communities to engage in concrete conservation actions, such as deer monitoring, habitat restoration, and campaigns against poaching.
3. Strengthening connectivity between stakeholders: Connecting local communities, educational institutions, local governments, and conservation organizations to work together to conserve the environment and deer species.
4. Ensuring the sustainability of the Conservation Program: Also building a strong institutional foundation to ensure that the conservation program is not just a temporary activity, but is sustainable in the long term.

This organization's members are from the entire Saobi Island community, especially those living near Carek Saobi, regardless of social background. Students, teachers, religious leaders, and other community groups can become members and participate in its activities. Meanwhile, in terms of community organization, only the formation of a structure and *job descriptions* (division of tasks)

has been completed. Further communication between the research team and local residents, represented in this case by Carek Saobi, is still needed.

Observation is a key step in the research process because it helps researchers understand the real-world conditions, both regarding deer populations and the social dynamics of the communities involved in conservation. The first observation made by the research team concerned the deer population and habitat conditions on Saobi Island.

Reflection

After conducting in-depth research on the deer population on Saobi Island, several important findings emerged. The increasingly threatened deer habitat will be a key focus of this research. The nature reserve forest, which should serve as a sanctuary for deer, has been degraded due to a lack of reforestation efforts and increased human activity around the forest area. Field observations indicate that deer on Saobi Island face various challenges in maintaining their population, primarily due to reduced forest cover and limited access to natural food sources. Furthermore, the role of local communities in maintaining the deer population is complex. Communities around Saobi have varying understandings of the importance of deer conservation. Some communities possess local wisdom for protecting deer, but this practice is uneven. Poaching and forest exploitation for personal needs often threaten the deer's survival. Another challenge noted is the lack of support for conservation infrastructure. Despite awareness from the government and the Conservation Agency, conservation efforts are often hampered by limited resources, both in terms of funding and technology for deer population monitoring.

This reflection also emphasizes the importance of more intensive collaboration between local governments, community stakeholders, and conservation organizations to develop more sustainable conservation programs. As a step forward, this study also recommends increasing environmental awareness through educating local communities about the importance of maintaining deer hunting behavior and protecting forest ecosystems, one way of doing this is by stopping illegal logging. Furthermore, the use of technology such as drones or camera traps can help monitor deer populations more effectively. Developing community-based conservation policies, where they participate in maintaining the sustainability of deer habitats, could also be a solution to ensure the sustainability of deer populations on Saobi Island. Overall, this study provides a clear picture of the condition of deer on Saobi Island and the challenges faced in conservation efforts. It is hoped that with concrete steps involving various parties, conservation efforts can be more effective and have a positive impact on the local ecosystem.

DISCUSSION

In addition to the data observations above, the results of discussions with the Saobi Island community related to the following matters:

Saobi Residents' Livelihoods

Saobi is a small island in Sumenep Regency, East Java Province, Indonesia. The majority of Saobi Island's residents, like many of the surrounding small islands, are engaged in fishing and agriculture. The majority of residents work as fishermen, given the island's proximity to the sea. Some also engage in farming (seasonal farming). In this agricultural sector, their main enemy is unsheltered cattle, which cause extensive damage to the residents' agricultural land.

If livestock like cattle don't damage the locals' crops, Saobi's land is ideal for growing crops like watermelons, chili peppers, melons, and green beans. Some also work in the education sector, teaching at a foundation on Saobi Island. Others work as rangers, overseeing the security of the conservation area on Saobi Island. Some also migrate to Jakarta to trade ¹.

Saobi Natural Resources

Saobi Island, located in the Sumenep Regency archipelago, faces challenges related to water resource availability, like many other small islands in Indonesia. Water resources on small islands like Saobi are generally limited and depend on several natural factors, including rainfall, topography, and the soil's ability to retain water. According to information from an informant who is a community leader, the water around his residence is categorized as safe, stating, *"Thank God, in my area, the water source is only sufficient to the east and south of my house. It seems to be lacking, especially now that it's a long dry season, so there is indeed a shortage of clean water."*²



Figure 5. Community Figures in Interviews

¹Interview with Community Leaders on August 23, 2024 at 3:27 PM WIB

²Interview with Community Leaders on August 23, 2024 at 3:27 PM WIB

Deer Conservation

The current condition of deer on Saobi Island is quite concerning, threatened by habitat loss due to minimal reforestation in the island's nature reserve. However, deer on Saobi remain part of the protected fauna, along with other animals such as monkeys. Below are some photos of deer found on Saobi Island.



**Figure 6. Deer in Saobi Island Nature Reserve
(Researcher document sources)**

Deer hunting carried out by local residents or local residents because it is directly opposite to residential areas and sometimes deer damage residents' agricultural land, so that residents become angry and start hunting deer. This is the most difficult obstacle to stop deer hunting³. Therefore, the role of Forest Police and East Java BKSDA officers on Saobi Island is quite important in reducing deer hunting on Saobi Island in addition to awareness from the village government and socialization to educational institutions or FGDs with the community and local residents regarding the best way to preserve deer on Saobi Island. This research also has a fairly effective role in reducing residents' behavior related to deer hunting because of direct communication with the community, and socialization in educational institutions, so that this research *is needed* to continue and is expected to provide a positive response from residents about community behavior in deer conservation.

Forest Conservation in Saobi

The current forest cover on Saobi Island is quite diverse, with approximately 64% remaining, mostly composed of evergreen broadleaf forests. These forests contribute significantly to the island's biodiversity and ecosystems. However, like many small island regions, maintaining the

³Interview with AG, former forest ranger in Saobi on August 23, 2024 at 4:28 PM

forest ecosystem presents challenges, particularly with human activities such as poaching, illegal logging, and pressure on other natural resources. Over the past 20 years, Saobi's forests have been damaged by illegal logging, but thankfully, the community is beginning to recognize that forest conservation positively impacts all aspects of life, including the economy, the environment, and society.⁴

CONCLUSION

The aim of this research is to conserve the eastern deer in the Saobi Island area, a Nature Reserve in Region IV of East Java. Saobi Island, part of the Sumenep Archipelago in East Java, has unique characteristics as a conservation area for the eastern deer. The eastern deer on Saobi Island are not only a local icon but also play a vital role in the island's ecosystem. However, the close interaction between the community and the deer poses several challenges, particularly related to local customs that pose a risk to the sustainability of the deer population, such as the slaughter of deer on Eid al-Adha. The relationship between the community and the deer often experiences friction, particularly due to environmental changes that cause deer to forage around residential areas and agricultural land. This is considered by residents to be a violation of the conservation zone, even though the physical distance between the conservation area and the settlement is very close, only about 300 meters. The phenomenon of deer crossing the sea to other islands also demonstrates a unique adaptation, but the reasons behind this behavior are not fully understood. One of the main issues faced in conservation efforts is the changing mindset of the local community. The Saobi Island community tends to view deer as a threat to their territory, rather than as animals that need to be protected. This indicates the need for more intensive outreach and education regarding the importance of conservation and sustainability of the ecosystem on Saobi Island.

From a conservation perspective, the biggest challenge is creating harmony between humans and deer, which frequently interact. The presence of deer around residential areas requires a more strategic approach to managing conservation areas to maintain ecosystem balance without disrupting the lives of local communities. This includes better natural resource management, including more efficient and sustainable deer conservation efforts. The lack of clean water is also a contributing factor, as the lack of natural resources forces communities to prioritize their basic needs, while wildlife conservation issues receive less attention.

⁴Interview with AG, former forest ranger in Saobi on August 23, 2024 at 4:28 PM

Community Outreach and Education: Stronger outreach efforts are needed to change the community's mindset regarding deer on Saobi Island. Conservation programs should emphasize the importance of maintaining deer populations and how to coexist with these animals. Conservation Area Management: Stricter management is needed to ensure that conservation areas are truly maintained, including ensuring that deer have adequate access to their natural habitat without having to enter residents' agricultural land. Sustainable Natural Resource Provision: The difficulty of clean water and other resources needs to be immediately addressed through government programs and non-governmental organizations to improve the quality of life of the community without sacrificing the sustainability of the ecosystem. In conclusion, the challenges on Saobi Island include ecological, social, and cultural aspects that require holistic solutions. This integrated approach that also considers the needs of the local community and the sustainability of the deer population is essential to ensure the sustainability of wildlife and environmental balance on Saobi Island.

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