

The Role of Segoro Lestari Conservation in Community Empowerment and Sea Turtle Conservation on Serang Beach, East Java

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Keywords

sea turtle conservation;
community empowerment;
serang beach.

ABSTRACT

Sea turtles play a vital ecological role in maintaining the balance of marine ecosystems; however, their populations continue to decline due to egg collection, poaching, habitat degradation, and natural threats. Community-based conservation has emerged as an effective approach to addressing these challenges while simultaneously empowering local communities. This study aimed to analyze the role of Segoro Lestari Turtle Conservation in protecting sea turtles and its contribution to empowering coastal communities in Serang Village, Blitar, East Java. The study employed a qualitative approach using in-depth interviews, field observations, and analysis of organizational documents. The findings showed that Segoro Lestari implemented four main programs—Turtle Talk, Turtle Act, Sea Turtle Release, and Turtle Hub—which served as the foundation of its community-based conservation activities. These programs not only increased community ecological knowledge and awareness but also created new economic opportunities through incentives for protecting sea turtle eggs, educational tourism, and internship and research activities involving residents as local service providers. In addition, collaboration with government agencies and external stakeholders, including BPSPL Denpasar and PLN NP UP Brantas, strengthened the sustainability of the conservation programs through facility support and technical assistance. The findings indicated that Segoro Lestari played a significant role in promoting inclusive conservation, improving community welfare, and strengthening the sustainable protection of sea turtles.

INTRODUCTION

Indonesia is an archipelagic nation with a coastline of approximately 81,000 km, equivalent to 14% of the world's coastline and the second longest after Canada (Nengsih, 2020). This geographical condition contributes to Indonesia's status as a megabiodiversity country. Sea turtles are among the ecologically important species inhabiting Indonesia's tropical waters. Their presence not only contributes to the richness of coastal ecosystems but also plays an important role in maintaining ecological balance. Sea turtles support the functioning of marine ecosystems by helping sustain productive coral reef systems and facilitating the transfer of important nutrients from the ocean to coastal areas (Harnino et al.,

2021). In addition to their ecological importance, sea turtles have historically been utilized to support the economic and cultural activities of coastal communities throughout Indonesia.

However, high rates of egg collection, sea turtle poaching, habitat degradation, and natural threats have made sea turtle populations increasingly vulnerable to decline and extinction (Herwaty et al., 2025). Indonesia is home to six of the seven sea turtle species found worldwide, all of which are included in the IUCN Red List and listed under Appendix I of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), indicating a high level of conservation concern and strict international controls on commercial trade (Hertati et al., 2025). Accordingly, the Indonesian Government established legal protections for sea turtles through Government Regulation No. 7 of 1999 on the Preservation of Plant and Animal Species and Government Regulation No. 8 of 1999 on the Utilization of Wild Plant and Animal Species. These regulations restrict the utilization and trade of protected wildlife, including sea turtles. Such measures were introduced in response to substantial population declines among sea turtle species and the increasing risk of extinction (Firliansyah et al., 2017).

Given these threats, sea turtle conservation efforts are essential and must be implemented in a planned and sustainable manner across Indonesia's coastal regions. Community-based conservation has emerged as an important approach to supporting the protection and long-term sustainability of sea turtle habitats. This approach emphasizes the active participation of local communities in conservation activities, recognizing that community livelihoods and well-being are closely connected to the condition of coastal ecosystems.

Several previous studies have examined sea turtle conservation in Indonesia. Harahap et al. (2025) analyzed the collaborative management of the Pangumbahan Turtle Conservation Area in Sukabumi Regency and found that multi-stakeholder collaboration was essential for effective conservation. Harnino et al. (2021) evaluated conservation management at the Serangan Turtle Conservation and Education Center in Denpasar, Bali, and highlighted the importance of education and ecotourism in supporting conservation efforts. Hertati et al. (2015) examined the role of stakeholders in the management of sea turtle conservation areas and emphasized the importance of integrated approaches involving government agencies, local communities, and nongovernmental organizations. Meanwhile, Firliansyah et al. (2017) analyzed the utilization and effectiveness of sea turtle hatcheries in Bali and noted that, although hatcheries could contribute to conservation, their effects on wild populations remained uncertain without adequate monitoring.

Despite these contributions, several research gaps remain. First, most previous studies have focused on conservation areas in Bali, Sukabumi, or other regions, whereas community-based sea turtle conservation in East Java, particularly in Blitar Regency, has received limited scholarly attention. Second, many studies have examined ecological conservation and community empowerment as separate dimensions rather than analyzing their integration within a single conservation organization. Third, limited research has explored how conservation programs can generate sustainable economic opportunities for coastal communities through mechanisms such as educational tourism, internships, and incentive-based participation.

The novelty of this study lies in its integrated analysis of sea turtle conservation and community empowerment within a single community-based organization, Segoro Lestari Turtle Conservation, in Serang Village, Blitar, East Java. Unlike previous studies that have generally focused separately on ecological outcomes or economic impacts, this study examines how conservation programs can simultaneously support ecological and socioeconomic objectives. Furthermore, the study provides insight into the role of external partnerships, including government agencies and private-sector organizations, in strengthening the sustainability of community-based conservation initiatives. The focus on Serang Village, which has received limited attention in previous conservation research, further strengthens the contribution of this study.

In response to these conditions, the Segoro Lestari Turtle Conservation Group was established in 2018 to support sea turtle conservation at Serang Beach. Segoro Lestari developed four main conservation programs: Turtle Talk, which focuses on education; Turtle Act, which facilitates collaboration, networking, and donations; Sea Turtle Release, which combines conservation activities with public education and participation; and Turtle Hub, which supports internships, research, observation, seminars, and educational activities. In addition, the organization developed an international volunteer program that enables foreign volunteers to participate in conservation activities. These programs are interconnected and are designed to broaden community participation in sea turtle conservation. Their implementation has also received support from the Social and Environmental Responsibility (Tanggung Jawab Sosial dan Lingkungan [TJSL]) program of PT PLN Nusantara Power UP Brantas District A, which provides facilities and resources to strengthen conservation activities.

In addition to supporting sea turtle conservation, the activities of Segoro Lestari have also influenced local economic activities in Serang Village. The organization's programs have created opportunities for community participation and encouraged the development of local economic activities associated with conservation. Therefore, this study focuses on analyzing the role of Segoro Lestari in sea turtle conservation and its contribution to the empowerment of coastal communities. The findings are expected to provide practical insights for conservation practitioners regarding the design and implementation of community-based conservation programs that balance ecological and economic objectives. For policymakers, the study provides evidence of how multi-stakeholder collaboration can strengthen conservation outcomes. For local communities, the findings highlight opportunities for developing sustainable livelihoods through conservation-related activities. For researchers, this study addresses a gap in the literature on community-based conservation in East Java and provides an analytical basis for examining the integration of conservation and community empowerment. Ultimately, this study contributes to broader efforts to develop inclusive and sustainable conservation models that benefit both biodiversity and local communities.

METHOD

This study employed a qualitative approach to obtain an in-depth understanding of the organizational structure, conservation practices, and management dynamics of Segoro Lestari Turtle Conservation in Blitar Regency, East Java. Primary data were collected through in-depth interviews and field observations. Interviews were conducted with an active volunteer of

Segoro Lestari Turtle Conservation, while observations were carried out at the conservation site on Serang Beach, where the organization's sea turtle conservation activities were implemented.

Secondary data were obtained from official organizational documents, including the Segoro Lestari Turtle Conservation profile, the management and supervisory structure for the 2022–2026 period, and the 4T Work Program document covering Turtle Talk, Turtle Act, Sea Turtle Release, and Turtle Hub. The collected data were analyzed qualitatively using descriptive and thematic procedures to organize the field findings, categorize information according to relevant themes, and interpret the results in relation to the research objectives.

RESULTS AND DISCUSSION

History of Segoro Lestari Turtle Conservation

The Segoro Lestari Turtle Conservation Group is a community focused on turtle preservation efforts, as turtles are a protected species threatened with extinction. All conservation activities are carried out in the Serang Beach tourist area, located in Serang Village, Panggungrejo Subdistrict, Blitar Regency, East Java Province. Serang Beach is one of the favorite nesting and egg-laying sites for turtles every year.

Before becoming a formal group, this conservation activity was carried out independently by the local community as a form of concern for the sustainability of the turtle population. Preservation efforts were initiated by three figures, namely Sujianto (2013), Sardianto, and Sujarwo (2015), who relocated turtle nests by incubating eggs in yards around Serang Beach. This simple step became the starting point for the turtle preservation movement in the area.



Figure 1. Segoro Lestari Turtle Conservation

Source: Segoro Lestari Turtle Conservation official document (2022)

In August 2018, Ministry of Law and Human Rights Decree Number AHU-0010192.AH.01.07 of 2018 concerning the Ratification of the Establishment of the Legal Entity of the Segoro Lestari Turtle Conservation Group Association was issued. This decree became the legal basis for the establishment of this group, with Sardianto as chairman. Since then, the group has held the status of a Village Community Institution (LKD).

Organizational Structure

Segoro Lestari Turtle Conservation is a village community institution (LKD) focused on preserving turtles in the coastal area of Serang Village, Panggungrejo Subdistrict, Blitar Regency. This conservation initiative was pioneered by Mr. Sardianto, chairman of the Segoro Lestari Turtle Conservation Group. Since 2015, Mr. Sardianto has shown his concern for the

environment by preserving the turtles found at Serang Beach, Blitar. Sardianto has a strong goal of raising community awareness to help preserve turtles through his actions in relocating nests by incubating turtle eggs to protect them from predator threats.

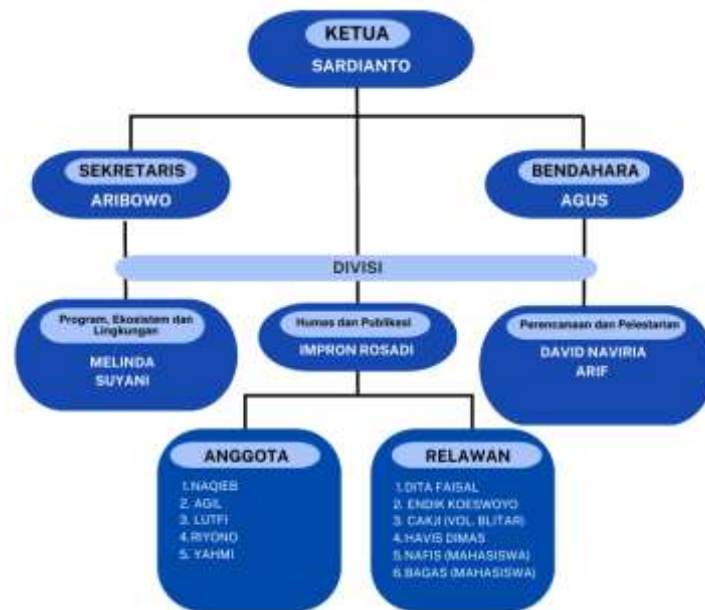


Figure 2. Structure of the Segoro Lestari Turtle Conservation management board, 2022–2026 period
Source: Segoro Lestari Turtle Conservation official document (2022)

Currently, Segoro Lestari Turtle Conservation has 19 active management members, including Mr. Sardianto as chairman of the turtle conservation. Below him are a secretary (Aribowo), a treasurer (Agus), and several functional divisions such as the Program, Ecosystem and Environment Division, the Public Relations and Publication Division, and the Ecosystem and Environment Planning and Preservation Division. In addition, there are general members and several volunteers who contribute to daily operations. Most of these members come from the surrounding community, namely Serang Village, Blitar. However, some volunteers come from other areas such as Jombang, Sidoarjo, and Wlingi. In coordinating, members of Segoro Lestari Turtle Conservation use a WhatsApp group as a medium for communication and member meetings.

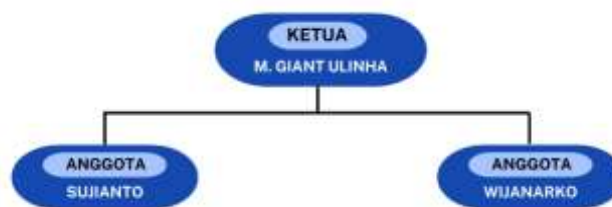


Figure 3. Structure of Segoro Lestari Turtle Conservation supervisors, 2022–2026 period
Source: Segoro Lestari Turtle Conservation official document (2022)

In addition to the core management structure, Segoro Lestari Turtle Conservation also has a supervisory structure that functions to monitor program implementation. This supervisory structure is chaired by M. Giant Ulinha, with two members, Sujianto and Wijanarko. The role of the supervisors includes monitoring program compliance with the work plan, evaluating the

effectiveness of conservation activities, and ensuring that the organization's operations run in accordance with the principles of preservation and institutional governance. With an organizational structure consisting of management, volunteers, and supervisors, Segoro Lestari Turtle Conservation strives to carry out its mandate to educate the community, involve stakeholders, and implement community-based conservation programs.

Activities and Programs of Segoro Lestari Turtle Conservation

The Segoro Lestari Turtle Conservation program consists of four pillars: Turtle Talk, Sea Turtle Release, Turtle Act, and Turtle Hub. These four programs are designed with a holistic approach that not only focuses on conservation aspects but also covers dimensions of education, community participation, multi-party collaboration, and the development of scientific research and knowledge. Through the integration of these four program pillars, Segoro Lestari Turtle Conservation seeks to create a sustainable and long-term impactful conservation ecosystem by involving various groups, from the general public, tourists, students, university students, academics, researchers, non-governmental organizations, and private institutions, to relevant government agencies.



Figure 4. Turtle Talk Program of Segoro Lestari Turtle Conservation

Source: Author's documentation during field observation (2026)

The first program, Turtle Talk, is an education program that has been running since 2023. This program is held as a preliminary activity before participants visit and release turtles. In the Turtle Talk program, participants gain comprehensive knowledge about the turtle life cycle, starting from the egg-laying season, the process of adult female turtles building nests on the beach to lay eggs, the incubation period of eggs in the sand which requires certain temperature and humidity, the hatching process, the struggle of hatchlings to reach the ocean amid various threats, and their long journey in the open sea to grow into adult turtles. The Turtle Talk program is designed with a systematic delivery method that is easy to understand for various ages and educational backgrounds, using visual media to maximize participants' understanding. This program serves as an important foundation for building ecological awareness and public knowledge about the importance of turtle conservation before participants are directly involved in release activities, so that every action taken carries strong meaning, understanding, and responsibility toward environmental sustainability.



Figure 5. Sea Turtle Release Program of Segoro Lestari Turtle Conservation
Source: Author's documentation during field observation (2026)

The second program, Sea Turtle Release, is an educational and interactive program that provides participants with a direct and meaningful experience in turtle preservation efforts through the release of hatchlings into the ocean. This hatchling release program is one of the most popular and eagerly awaited activities, as it gives participants the opportunity to contribute directly to conservation efforts while experiencing an unforgettable emotional moment. The Sea Turtle Release program only takes place during the turtle egg-laying season, which occurs every year from April to September, following the natural reproductive cycle of turtles in the area. The release process is usually carried out in the morning or evening, when the sand temperature is not too hot and the hatchlings have a greater chance of successfully reaching the ocean due to reduced predator threats.



Figure 6. Turtle Act Program of Segoro Lestari Turtle Conservation
Source: Author's documentation during field observation (2026)

The third program, Turtle Act, focuses on three main pillars: collaboration, connection, and donation, involving various parties in a broader, more massive, and sustainable conservation movement. Turtle Act is designed to ensure support and active participation from local communities living around turtle habitats, non-governmental organizations engaged in conservation, private institutions with corporate social responsibility programs, educational institutions interested in integrating conservation into their curricula, local governments with authority over natural resource management, and communities of nature and environmental enthusiasts. This program operates on the fundamental principle that the more parties involved and contributing to conservation programs, whether through labor, funding, or other resources, the greater and more effective the protection efforts that can be provided for the turtle population and its habitat. Through Turtle Act, Segoro Lestari Turtle Conservation builds a solid and sustainable cooperation network, creating synergy between various sectors to achieve the shared goal of preserving turtles as an important part of Indonesia's marine ecosystem.



Figure 7. Turtle Hub Program of Segoro Lestari Turtle Conservation

Source: Author's documentation during field observation (2026)

The fourth program, Turtle Hub, is a program that provides a dedicated space and platform for students, university students, academics, researchers, and nature enthusiasts to carry out various capacity-building activities, scientific research, and knowledge exchange related to turtle conservation and the broader marine ecosystem. This program facilitates various academic and practical activities such as field internships, scientific research for final projects or theses, direct observation of turtle behavior and habitat, and seminars and discussions on conservation. Overall, the four programs run by Segoro Lestari Turtle Conservation form an integrated and mutually reinforcing conservation system, in which each program has a specific role but contributes to the same overarching goal of preserving turtles and their habitats for present and future generations. Through a combination of education, direct experience, multi-party collaboration, and scientific knowledge development, these programs seek not only to save turtles from extinction but also to build broader environmental awareness in society, create positive behavioral change toward nature, and inspire more people to actively participate in environmental preservation efforts.

The Role of Segoro Lestari Turtle Conservation in Community Empowerment

Community empowerment is an effort to create an independent and prosperous community by strengthening knowledge, skills, and awareness in optimizing available resources (Pakpahan et al., 2024). This concept aligns with what is being done by Segoro Lestari Turtle Conservation, which not only focuses on preserving turtles as a protected species but is also actively empowering the surrounding community through capacity building and the opening of sustainable economic opportunities. The presence of the conservation program has brought transformative impact and changed the paradigm of the surrounding community regarding turtle preservation. Community capacity building is a key focus of the programs run by the conservation. Through the Turtle Talk program, the community gains comprehensive education and knowledge about the turtle life cycle. The Turtle Hub program also strengthens the capacity-building aspect by providing a dedicated space for more intensive capacity development activities through scientific research, internships, observation, seminars, and discussions. Through this program, interns are directed to eat and stay at the homes of residents near the beach, creating a multiplier effect in the form of economic opportunities for the local community in the accommodation, culinary, and transportation service sectors. This activity not only provides additional income for families around the conservation area but also builds positive social interaction between university students and the local community, creating a mutually enriching exchange of knowledge and experience. In addition to these main programs, this conservation activity also has an agenda in cooperation with PT Volpro Profesional

Nusantara, namely broader knowledge sharing by bringing foreign volunteers to nearby schools to teach English to children. This activity not only enhances local human resource capacity, particularly in mastering a foreign language, which is an important skill in the era of globalization, but also broadens the community's horizons through cross-cultural interaction.

In addition to capacity building through education, the conservation also applies an economic incentive system that changes community behavior. Through this incentive mechanism, for every turtle egg handed over by a resident to a conservation officer, a reward of Rp1,000 is given. This mechanism has successfully changed the community's paradigm from indifference to becoming individuals with conservation awareness who actively participate in turtle protection through a fair and legal economic incentive scheme. The Sea Turtle Release program, which runs from April to September every year, also opens economic opportunities for the community through educational tourism visits, where visitors who come to release hatchlings also drive the local economy by purchasing local products and dining at food stalls owned by residents. Increased knowledge and behavioral change have also encouraged the ability to recognize problems occurring in the environment and find solutions to these problems (Afriansyah et al., 2023), enabling the community to become independent and prosperous. Thus, turtle conservation not only functions as an environmental preservation effort but also serves as an empowerment instrument that strengthens independence, improves welfare, and fosters a collective sense of responsibility for the sustainability of natural resources.

Challenges and Sustainability Strategy

In carrying out turtle conservation activities at Segoro Lestari Turtle Conservation, there are a number of challenges affecting turtle preservation efforts. One environmental challenge is the presence of all-terrain vehicle (ATV) tracks that frequently pass through the coastal area of Serang Beach. ATV tracks in the coastal area erase turtle tracks, making them difficult for the conservation team to identify, thereby hindering the process of monitoring and recording turtle nesting. On the social side, however, conservation activities face no significant challenges in terms of community involvement. This indicates positive support and shared awareness that has been established within the surrounding community.

To ensure the long-term sustainability of community participation, Segoro Lestari Turtle Conservation ensures smooth communication. The group's management consistently maintains dialogue and coordination with the surrounding community to foster a sense of ownership and concern for turtle preservation. This effort not only strengthens internal solidarity among conservation members but also serves as an important step in building a sustainable conservation culture in the coastal area of Serang Beach.

Government and External Party Involvement

The involvement of the government and external parties plays an important role in supporting the sustainability of Segoro Lestari Conservation's activities. In 2023, the government, through the Denpasar Coastal and Marine Resource Management Center (BPSPL), provided facilities and infrastructure to support turtle conservation. This support strengthens preservation efforts and facilitates conservation management activities. In addition, the Livestock and Fisheries Service, together with Perhutani, also actively participated in hatchling release activities during the turtle egg-laying season as a form of support for coastal ecosystem preservation.

Furthermore, PLN NP UP Brantas – Sutami Hydropower Plant also provides support for the sustainability of this conservation, focusing on community empowerment and environmental preservation. This involvement includes group mentoring, capacity building for members, and support for conservation activities so that they can run independently and sustainably. This collaboration demonstrates the involvement of various parties, including the government and external parties, in the preservation of turtles by Segoro Lestari Turtle Conservation.

CONCLUSION

Segoro Lestari Turtle Conservation plays an important role in sea turtle conservation at Serang Beach through a structured and sustainable community-based conservation program. Through its four main programs, collectively known as the 4T programs—Turtle Talk, Sea Turtle Release, Turtle Act, and Turtle Hub—Segoro Lestari integrates environmental education, direct conservation experiences, multi-stakeholder collaboration, and support for scientific research. These efforts strengthen the protection of sea turtle habitats while increasing ecological awareness among local communities and visitors regarding the importance of conserving endangered marine species.

In addition to its ecological contributions, Segoro Lestari Conservation also makes a substantial contribution to the empowerment of coastal communities. Activities such as internship programs, educational visits, international volunteer participation, and hatchling release activities create new economic opportunities for local residents, particularly in the accommodation, culinary, and service sectors. The implementation of an egg-protection incentive system, together with active support from government agencies and external stakeholders, further strengthens the sustainability of the conservation program by integrating environmental protection with improvements in community welfare.

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