

## Empowering the Rural Community as Turtle Breeder: Case Study of Dunu Village, Gorontalo Utara Regency



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**ABSTRACT:** Turtles are marine reptiles that have existed on Earth for millions of years and have managed to survive until today. Turtles play a crucial role in the marine ecosystem, maintaining the balance of nature and contributing to marine biodiversity. The method used in this research is a qualitative approach, which includes conducting in-depth interviews, participatory observations, and analyzing relevant documents. The data obtained will be analyzed using descriptive and interpretative approaches to illustrate the process of empowering the rural community in Dunu Village.

This research aims to understand how the empowerment of the Dunu village community as turtle breeders takes place. The study was conducted for a duration of two weeks, starting from June 27, 2023, to July 11, 2023.

The research findings indicate that in Dunu village, Gorontalo Utara Regency, three types of turtles are being conserved. The turtle species involved are the green turtle (*Chelonia mydas*), hawksbill turtle (*Eretmochelys imbricata*), and olive ridley turtle (*Lepidochelys olivacea*). There are two individuals from Dunu village who are recognized as professional turtle breeders and actively participate in the protection of turtle eggs, caring for hatchlings, and conducting patrols along the beach where the turtles nest. These two breeders received training from the Balai Konservasi Sumber Daya Alam (BKSDA) Sulawesi Utara through the Seksi Konservasi Wilayah II Gorontalo.

**KEYWORDS:** empowering the rural community, turtle, conservation, Pertamina, Dunu Village,

### INTRODUCTION

Empowering rural communities is an important concept in both sustainable development and conservation. Empowering rural communities means providing opportunities for them to actively participate in decision-making, program implementation, and the management of resources within their villages. One intriguing form of empowering rural communities worth studying is turtle breeding, an initiative that can bring environmental benefits and contribute to sustainable habitat conservation.

The case study discussed in this journal focuses on Dunu Village, located in Gorontalo Utara Regency. Dunu Village possesses abundant natural resources, including coastal areas on neighboring islands that serve as natural habitats for turtles. In the past, turtle breeding in this village was not well organized and was not optimally utilized. However, in recent years, the village has experienced significant development in empowering the local community as turtle breeders.

Turtles are marine reptiles that have existed on Earth for millions of years and have managed to survive until today. Turtles play a crucial role in the marine ecosystem, maintaining the balance of nature and contributing to marine biodiversity. However, various factors have led to a drastic decline in turtle populations. This is why the presence of turtles is protected, particularly in Indonesia. All species of sea turtles in Indonesia are protected by various regulations, including Government Regulation (PP) No. 7 of 1999 concerning the Conservation of Plant and Animal Species, and Law No. 5 of 1990 concerning the Conservation of Biological Natural Resources and Ecosystems. Additionally, international conservation organizations like the International Union for Conservation of Nature (IUCN) Red List of Threatened Species classify several turtle species found in Indonesia as critically endangered. One such species is the hawksbill turtle, while the green turtle, olive ridley turtle, and loggerhead turtle are listed as endangered species.

One of the greatest threats to turtles is habitat destruction. Mangrove deforestation, coastal development, and coral reef destruction diminish safe nesting grounds for turtles. Additionally, turtles fall victim to human activities that are irresponsible. Practices such as turtle hunting and the illegal trade of turtle meat, eggs, and shells have led to the uncontrolled hunting of turtles. On the other hand, plastic pollution in the oceans also poses a threat to turtles, as they often mistake plastic debris for food, putting their lives at risk.

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Turtles can spend their entire lives in the ocean, but adult females will return to land to find suitable nesting sites when it's time to lay their eggs (Mansula and Romadhon, 2020).

To preserve turtle populations, many countries and environmental organizations have been working diligently to protect them. Turtle conservation programs have been launched in various locations that serve as turtle habitats, including marine parks, nature reserves, and important nesting beaches. Conservation efforts include habitat protection, patrol monitoring, safeguarding turtle eggs, and educating communities about the importance of maintaining the sustainability of marine ecosystems.

In some cases, turtle conservation efforts also involve the participation of local communities. Through their involvement, communities can become agents of change and actively contribute to turtle conservation. This approach includes training and enhancing understanding of the importance of marine conservation and turtle habitats. By empowering local communities, they can play a vital role in safeguarding the oceans and protecting turtle populations.

The objective of this journal is to explore and analyze the efforts to empower the village community in Dunu Village as turtle breeders. In this context, it is important to investigate how the local community is involved in turtle breeding activities, their participation in decision-making regarding turtle breeding, and the social and environmental impacts of this empowerment initiative

### **SUBJECTS AND METHODS**

The research methodology used in this study is a qualitative approach, employing in-depth interviews, participatory observations, and the analysis of relevant documents. The data obtained will be analyzed using descriptive and interpretative approaches to illustrate the process of empowering the village community in Dunu Village. The research participants include members of the village community involved in turtle breeding activities as well as relevant stakeholders such as the village government and the Seksi Konservasi Wilayah II Gorontalo, BKSDA Sulawesi Utara. The aim of this research is to understand how the community in Dunu Village is empowered as turtle breeders through training provided by the Seksi Konservasi Wilayah II Gorontalo.

This research is expected to contribute to the understanding of empowering rural communities as turtle breeders, with a specific focus on the case study of Dunu Village, particularly in Molosipat hamlet, Gorontalo Utara Regency. The study was conducted for a duration of two weeks, from June 27, 2023, to July 11, 2023.

### **DISCUSSION**

#### **The Types of Turtles Conserved in Dunu Village**

The research findings indicate that in Dunu Village, North Gorontalo Regency, there are three types of turtles that are being conserved. The mentioned turtle species include the green turtle (*Chelonia mydas*), the hawksbill turtle (*Eretmochelys imbricata*), and the olive ridley turtle (*Lepidochelys olivacea*). These turtles receive special attention in efforts to protect and conserve them.

Every year, during the nesting season, the neighboring islands of Popaya, Mas, and Raja become home to the nesting activities of the three turtle species. These islands are chosen by the turtles due to their favorable vegetation and lighting conditions. Vegetation provides protection for the turtle nests from predators, making it an important factor for the successful hatching of turtle eggs into hatchlings (Turkozan et al., 2011). The eggs from these three neighboring islands of Dunu Village are then collected and brought to a conservation center located in Dunu Village. This is done to increase the hatching success rate of turtle eggs and ensure the successful return of the hatchlings to the sea.

The relocation of turtle eggs from their original nests is an important protective measure in conservation efforts to ensure the survival of turtle species. Green turtles (*Chelonia mydas*), hawksbill turtles (*Eretmochelys imbricata*), and olive ridley turtles (*Lepidochelys olivacea*) have complex life cycles and face threats from various predators when their eggs are buried on the beach. Turtle eggs serve as a food source for many animals, including coastal mammals and other reptiles.

#### **Community Participation in Turtle Breeding Activities**

The research findings indicate that the Balai Konservasi Sumber Daya Alam (BKSDA) Sulawesi Utara through the Seksi Konservasi Wilayah II Gorontalo has successfully engaged in empowering the village community in Dunu Village in turtle breeding activities. The local community actively participates in the protection of turtle eggs, caring for hatchlings, and conducting patrols along the beach where the turtles nest. Additionally, specific members of the village community are assigned to manage turtle breeding activities, including scheduling patrols, documenting eggs, and overseeing the breeding process. These efforts are tangible actions to optimize the conservation of turtle populations. According to Dermawan (2009), providing protection status alone is not sufficient to restore or at least maintain turtle populations in Indonesia. It requires a genuine attitude and concrete actions to implement comprehensive, systematic, and organized turtle conservation management.



**Picture 1. One of the breeders conducts routine checks**

Initially, the community of Dunu Village faced significant challenges, such as a lack of knowledge on how to care for turtles, manage breeding, and locate nesting sites. However, with the support of the Seksi Konservasi Wilayah II Gorontalo and the village government, the community has experienced an increase in knowledge about turtles and the environment. This aligns with the statement made by Prihanta (2006) that one of the efforts to save sea turtles in Indonesia, specifically, is to raise awareness among the community about turtle conservation. In this context, the community has successfully combined traditional knowledge with new knowledge acquired through socialization and training. Currently, there are two individuals from Dunu Village recognized as professional turtle breeders who are involved in the protection of turtle eggs, caring for hatchlings, and conducting patrols along the beach where the turtles nest. These two breeders received training from the Balai Konservasi Sumber Daya Alam (BKSDA) Sulawesi Utara through the Seksi Konservasi Wilayah II Gorontalo. Other members of the village community have also gained knowledge about turtle conservation and the environment through socialization efforts conducted by the Conservation Section of Region II Gorontalo to change their attitudes toward turtles and the surrounding environment. Attitude represents a belief that drives action, so forming a caring attitude toward the environment is necessary for participation (Sugandi, 2013). This has led to a decrease in the number of illegal turtle egg hunting activities believed to have been carried out by the local community.

In general, the community of Dunu Village has been living alongside the turtle population for a long time. They are aware of the threats faced by turtles, as they observe a decrease in the number of nesting turtles and nests each year. However, many of them did not pay much attention to this issue and considered it normal.

Knowledge and concern about turtles have increased with the approach and socialization efforts conducted by the Balai Konservasi Sumber Daya Alam (BKSDA) through the Conservation Seksi Konserwasi Wilayah II Gorontalo.

In recent years, the breeders from Dunu Village have successfully hatched and released thousands of hatchlings into the sea, providing hope for the sustainability of the turtle population. This achievement is also attributed to the community's awareness of the importance of preserving the entire marine ecosystem. The residents of Dunu Village, especially the trained breeders by the Seksi Konservasi Wilayah II Gorontalo, actively engage in patrols to protect turtle nests and address threats such as illegal hunting and habitat destruction.



**Picture 2. The turtle conserved by the Dunu community**

The research findings also indicate that there are other efforts to optimize turtle conservation besides involving the local community as breeders. One of these efforts is to engage in collaboration with external parties. The mentioned external party is PT Pertamina Patra Niaga Fuel Terminal Gorontalo, which is a state-owned enterprise (BUMN).

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PT Pertamina Patra Niaga Fuel Terminal Gorontalo, as an energy company responsible for environmental conservation, recognizes the importance of biodiversity preservation and is committed to contributing to environmental protection. In commemoration of World Environment Day in 2023, PT Pertamina Patra Niaga Fuel Terminal Gorontalo collaborated with the Seksi Konservasi Wilayah II Gorontalo and the Dunu Village community to conduct a turtle release and coastal cleanup event on the village's beach. This initiative was undertaken as part of environmental and turtle conservation campaigns. Data regarding the number of released turtles, turtle species, and release locations were recorded for research purposes. This information will provide valuable insights into understanding turtle population dynamics and the success of conservation efforts.



Picture 3. The activities of coastal cleanup and turtle release in 2023

This activity not only serves as a celebration to commemorate World Environment Day but also as a concrete step in preserving turtles and coastal ecosystems. Collaborations like this serve as an inspiring example of how the industrial sector can play an active role in environmental conservation efforts and contribute to achieving global sustainability goals.

### CONCLUSIONS

Through the community empowerment program as turtle breeders, two villagers have been involved in every stage of turtle breeding, from monitoring nests and protecting eggs to releasing hatchlings into the sea. This has increased the overall awareness of the community about the importance of preserving turtle habitats and providing protection for endangered species.

In addition, training and education on turtle conservation and good breeding practices have been provided during the empowerment process. This has significantly enhanced their understanding and skills for effectively and sustainably carrying out tasks related to turtle breeding.

Certainly, the journey of empowerment has not been easy and will continue to face various challenges in the future. However, the success of Dunu Village in preserving turtles and promoting community empowerment has become an inspiration for other villages and a tangible example that active and sustainable community involvement is key to achieving environmental conservation.

### RESEARCH ADVICE

Human resource development can be further enhanced through benchmarking visits to other turtle conservation sites in different areas. Sharing experiences with other breeders can optimize conservation activities.

In future research, it is expected that studies will be conducted to explore the tourism and economic potential of Dunu Village related to the presence of turtle conservation in the village.

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