

## Maleo Conservation Development by Local Communities: A Case Study of PT Pertamina Patra Niaga Fuel Terminal Poso's CSR Program in Sumara Jaya Village



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**ABSTRACT:** Maleo is one of the most interesting and unique endemic birds in Sulawesi Tengah, Indonesia. This bird is known for its exciting and unique breeding behavior. Maleo belongs to the family Megapodiidae. According to the Regulations of the Minister (PERMEN) of the Environment and Forestry of the Republic of Indonesia (KLHK), no. P.20/MENLHK/SETJEN/KUM.I/6/2018 regarding the protected species of plants and animals, the maleo bird is designated as a protected animal. The research was carried out at a Maleo bird conservation site located in Sumara Jaya village in Morowali Utara district, Province of Sulawesi Utara, Indonesia. Conservation of maleo birds is not other than one of the CSR programs of PT Pertamina Patra Niaga Fuel Terminal Poso in cooperation with BKSDA Sulawesi Tengah through the Seksi Konservasi Wilayah II Poso. The aim of this research is to find out the shape and level of participation of the local community in the conservation program of Maleo in the village of Sumara Jaya. The results of this study show that there are three people from the local community in the village of Sumara Jaya who are actively engaged as robbers in the Pertamina Bersama Maleo program. They play a role in monitoring the nest and protecting the habitat.

**KEYWORDS:** empowerment of the village community, maleo, conservation, pertamina, sumara jaya village.

### INTRODUCTION

The Indonesian Island of Sulawesi is biogeographically fascinating and its fauna is highly distinctive: 98 per cent of non-volant mammals are endemic to the island, as are 27 per cent of bird species, including an exceptional total of 12 endemic genera (Whitten et al., 1987; Coates et al., 1997). This bird is known for its very interesting and unique breeding behavior. Maleo belongs to the family Megapodiidae and is characterized by female mothers that lay their eggs in hot volcanic soil, which is then incubated by natural earth heat.

Maleos incubate their eggs in communal nesting areas warmed by solar or geothermal heat. Adult birds dig holes up to 1 m deep, where the female deposits a solitary egg. The adults provide no more parental care after the egg has been buried. Maleos forage in montane forest, often several kilometres away from the nesting grounds (Jones et al., 1995).

Medium-sized Maleo birds with striking feathers, like old brown and orange. Maleo male and female have a difference in size. Maleo male is larger than females. The main habitat of the maleo is in the primary and secondary forests in the lowland and mountainous areas of Sulawesi Tengah. Maleo birds are not uncommon to be found in coastal areas near sandy areas.

One of the interesting aspects of Maleo birds is the way they breed. Maleo Betina will be looking for volcanic soil that is hot enough to lay her eggs, which weigh almost a third of her body weight. After the egg is laid, the soil will store enough natural earth heat to lay the eggs. After hatching, Maleo's little birds have to find their own food and learn to live independently. Unfortunately, the population of Maleo birds has experienced a drastic decline as a result of hunting and the loss of their natural habitat due to the proliferation of forests.

The maleo is threatened by loss of habitat, egg predation and hunting (Dekker, 1990; Argeloo, 1994; Dekker & McGowan, 1995) and is listed as vulnerable to extinction (Collar et al., 1994; Dekker et al., in press). It is consistent with what Christy and Lentey (2002) revealed that the population of the Maleo is estimated to decrease every year due to habitat damage caused by the opening of farmland by the community and disruption of natural predators, hunting, and egg harvesting by humans. This constitutes the greatest threat to the sustainability of the Maleo. Therefore, the conservation of Maleo birds has become crucial to ensuring their survival in the wild. Various conservation efforts have been undertaken by governments and non-governmental organizations, including public awareness campaigns and protection of their natural habitats. In addition, regulations have been issued to protect

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Maleo birds from human threats, such as the regulations of the Ministry of Environment and Forestry of the Republic of Indonesia (KLHK) no. P.20/MENLHK/SETJEN/KUM.I/6/2018 about protected plants and animals.

In recent years, attention to the conservation of maleo birds has increased, and efforts to protect and restore their populations have continued. This research wants to see how maleo conservation is developed by inviting local communities to participate in it.

## METHODS

The research was carried out at a maleo bird conservation site located in Sumara Jaya village in Morowali Utara district, Sulawesi Tengah Province, Indonesia. The conservation of maleo birds is not other than one of the CSR programs PT Pertamina Patra Niaga Fuel Terminal Poso, working with BKSDA (Balai Konservasi Sumber Daya Alam) Sulawesi Tengah through the Seksi Konservasi Wilayah II Poso. The aim of this research is to find out how the shape and level of participation of the local community in the conservation program of Maleo in the village of Sumara Jaya.

The method of data collection is done with direct observations and interviews. The observation method is done to dig information about the state of the research area. The observation was made by recognising some attempts to invite local communities to participate in the Maleo conservation program.

The interview is conducted in an effort to strengthen the field observation that has been carried out. The information obtained in the field can be validated based on the statements of several sources. Several sources who provide statements related to Maleo conservation consist of community figures and Seksi Konservasi Wilayah II Poso.

## DISCUSSION

### Maleo Bird Species

From the research results, it was found that there is one type of Maleo bird present in Sumara Jaya village:

**Table 1 Maleo Bird Species in Sumara Jaya Village**

No	Indonesian Name	Scientific Name	IUCN Status
1	Maleo Senkawor	<i>Macrocephalon maleo</i>	Critically Endangered (CR)

Table 1 indicates that the type of Maleo bird found in Sumara Jaya village is the Senkawor Maleo, with the scientific name *Macrocephalon maleo*. *Macrocephalon maleo* has a remarkable appearance, including a huge body size of roughly 55–60 cm. It has a reddish-brown coat on top and a lighter brown coat on the underside. This bird's crown is distinguished by contrasting pale plumage. Maleo's beak has a characteristic shape that is large and robust, making it appropriate for its primary diet.

The maleo's breeding behavior, on the other hand, is what makes it so intriguing. The Maleo is a bird species that uses an unusual nest-hatching process. They hide their eggs in hot sand or warm volcanic soil, such as beneath hot sand resulting from volcanic activity. The natural heat from this environment serves as a substitute for the mother bird's incubation, and the eggs hatch after a few weeks.



**Picture 1 transferring Maleo eggs from the nesing ground to the hatchery**

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In the Pertamina Bersama Maleo program, all Maleo eggs are obtained from the nesting ground area located in Sumara Jaya village. These eggs are then transferred to the hatchery. This is done to ensure the Maleo eggs are safe from both natural predators and from wild hunting conducted by humans. The hatchery originally amounted to one that was built by Seksi Konservasi Wilayah II Poso. However, with the involvement of PT Pertamina Patra Niaga Fuel Terminal Poso through their CSR program, namely the Pertamina Bersama Maleo program, the number of incubation enclosures has increased to two. Not only that, through this program PT Pertamina Patra Niaga Fuel Terminal Poso with the Seksi Konservasi Wilayah II Poso also built a rearing enclosure at the same location. This is aimed at nurturing and monitoring the development of Maleo birds before releasing them into the wild. The monitoring process is carried out by local community members who have been appointed by the Seksi Konservasi Wilayah II Poso to become Maleo breeders. The monitoring of Maleo birds takes place for a duration of 4 weeks.

### Local Community Participation

In general, the residents of Sumara Jaya village have been living alongside Maleo birds for a long time. Over the years, the people of Sumara Jaya village have developed a close relationship with both the habitat and the Maleo birds. This has occurred because the community settlement is located within the Maleo conservation area, which spans an area of 14.1 hectares.



**Picture 2 the breeding community takes a photo together with the Pertamina team at the nesting ground area**

Despite some individuals in the community still engaging in illegal hunting of Maleo bird eggs, there are three local community figures in Sumara Jaya village who are actively involved as breeders in the Pertamina Bersama Maleo program. Initially, they were appointed by the Seksi Konservasi Wilayah II Poso to become Maleo breeders due to their care and experience in tracking Maleo birds. This concern arose not only because the Maleo population in their village was decreasing but also due to the annual campaigns conducted by the Seksi Konservasi Wilayah II Poso in the Sumara Jaya village community.

Now, with their active participation in the Pertamina Bersama Maleo program (since 2022), these three breeders are involved in nest monitoring, habitat protection, and searching for Maleo bird eggs. Despite facing challenges such as high rainfall leading to the unsuccessful hatching of some Maleo eggs, the presence of these breeders, who are also community figures in Sumara Jaya village, has had a positive impact on Maleo bird conservation efforts. They are at the forefront, not only advocating for Maleo protection but also contributing significantly to the conservation process.

### CONCLUSIONS

Research on the development of maleo conservation based on the local community in the village of Sumara Jaya produced some of the following conclusions:

- **Maleo Species:** There is one species of maleo that is found in the village of Sumara Jaya, Maleo Senkawor, with the scientific name *macrocephalon maleo*.
- **Local Community Role in Conservation:** There are three (3) local community figures in the village of Sumara Jaya who are actively involved as breeders in the Pertamina Bersama Maleo Program. They play a role in nest monitoring, habitat protection, and maleo bird egg searches.
- **Nesting Ground:** Human activities such as deforestation, illegal mining, and wild hunting seriously threaten the habitat and population of maleo birds. However, in the village of Sumara Jaya by the Seksi Konservasi Wilayah II Poso, the nesting ground has been established so that maleo activity and human activity do not interfere with each other.

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In conclusion, the development of local community-based maleo conservation in the village of Sumara Jaya is a positive approach to the conservation of maleo birds and their habitats. The active involvement of the local community and cooperation between the various parties are the keys to success in the conservation efforts of this species.

### RESEARCH ADVICE

The researchers hope that further research on maleo behavior, ecology, and genetics will be needed to support deeper conservation efforts. In addition, research is needed to evaluate the impact of human activities in the village of Sumara Jaya on the Maleo Habitat. This can include an analysis of activities such as forest extraction, illegal mining, and hunting for maleo eggs in the village of Sumara Jaya.

### REFERENCES

- 1) Coates, B.J., Bishop, K.D. & Gardner, D. (1997) A Guide to the Birds of Wallacea: Sulawesi, The Moluccas and Lesser Sunda islands, Indonesia. Dove Publications, Alderly, Australia.
- 2) Christy, M.J., dan Lentey. S.M, 2002. Proyek Maleo – Tahap 3 Sulawesi Utara, Indonesia, Taman Nasional Bogani Nani Wartabone, Laporan Tahun, Agustus 2001 – Juli 2002. Departemen Kehutanan (PKA) *Wildlife Conservation Society* – Indoneisa Program. Manado.
- 3) Dekker, R.W.R.J. (1990) The distribution and status of nesting grounds of the maleo *Macrocephalon maleo* int Sulawesi, Indonesia. *Biological Conservation*, 51, 139-150.
- 4) iucnredlist.org. 2021. Maleo – *Macrocephalon Maleo*. <https://www.iucnredlist.org/species/22678576/194673255>. Diakses pada 19 Agustus 2023
- 5) Jones, D.N., Dekker, R.W.R.J & Roselaar, C.S. (1995) The Megapodes: An Action Plan for their Conservation 2000-2004. IUCN, Gland, Witzerland
- 6) Pemerintah Indonesia. 2018. Peraturan Menteri Lingkungan Hidup dan Kehutanan Republik Indonesia Nomor P.20/MENLHK/SETJEN/KUM.I/6/2018 Tentang Jenis Tumbuhan dan Satwa yang Dilindungi
- 7) Whitten, A.J., Mustafa, M. & Henderson, G.S. (1987) *The Ecology of Sulawesi*. Gajah Mada University Press, Yogyakarta, Indonesia.



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