

Conservation Yaki (*Macaca nigra*): the role of PT PGE TBK Lahendong Area on endemic wildlife conservation in North Sulawesi

Bagus Dimas Wibisono¹, Julian Petrus Lendeng^{2}, Muhammad Yogi Alfarobi², Pandhit Pringgo Harjo², and Billy Gustafianto Lolowang³*

¹PT. Pertamina Geothermal Energy Tbk

²PT. Pertamina Geothermal Energy Area Lahendong

²Tasikoki Wildlife Rescue Center

Abstract. This article discusses the role of Pertamina Geothermal Energy (PGE) Tbk. Area Lahendong in the Corporate Social Responsibility (CSR) program for the conservation of Yaki (*Macaca nigra*) in Tomohon City, North Sulawesi Province. The Yaki is endemic to North Sulawesi and is included in the Critically Endangered category on the red list of the International Union for Conservation of Nature and Natural Resources (IUCN). Every company has the obligation to carry corporate social and responsibility (CSR) in its operational area as has been regulated in the act of Corporation (PT) No. 40/2007. Throughout these years the company CSR programme often just aimed at people but often forgot that the surrounding environment also needed attention. Biodiversity conservation becomes crucial as it will give a positive impact to the sustainability of human life in the present as well as in the future. This study uses a descriptive qualitative method where data collection is carried out by observation, interviews, and documentation. The selection of informants was determined by purposive sampling. PGE Tbk. Area Lahendong is collaborating with the Yayasan Masarang and the Tasikoki Wildlife Rescue Center to carry out this conservation activity. The program will be implemented from 2020 until the release of 8 Yaki in 2023 and will continue again for the conservation of other Yaki groups. PGE Tbk. The Lahendong area has a role to accommodate activities during this program. Through this program, in addition to having an impact on increasing the Yaki population in their habitat, it can also become a media campaign for Yaki conservation to the public that Yaki are not food and must be preserved together as endemic animals to North Sulawesi.

1 Introduction

PT Pertamina Geothermal Energy Tbk. Lahendong Area (PGE LHD) is a geothermal energy company in the Lahendong Geothermal Working Area through MEMR Decree No. 2067 K/30/MEM/2012 concerning the Coordinates of the Geothermal Resources Concession Area

* Corresponding author: julian.lendeng@pertamina.com

in the Lahendong Region with an area of 106,800 Hectares. Currently, PGE LHD operates 6 units of Geothermal Power Plant (PLTP) with a capacity of 20 MegaWatt (MW) each or a total of 120 MW. PLTP Units 1-4 are located in Tomohon City and PLTP Units 5-6 are located in Minahasa Regency. With the operation of these 6 PLTP units, PGE LHD is able to support 30% of electricity needs in North Sulawesi to Gorontalo with sources from new renewable energy.

In accordance with UU PT No. 40 of 2007, every company is obliged to carry out Social and Environmental Responsibility (CSR) in its operational area. In UU No. 25 of 2007 concerning Capital Investors article 15 letter b that 'TJSL is attached to every investor company to continue to create harmonious, balanced, and appropriate relations with the environment, values, norms, and culture of the local community'.

The implementation of PGE LHD's TJSL is based on 5 pillars, which are: Education, Health, Environment, Economic Empowerment, and Infrastructure. One of PGE LHD's TJSL programs in the environmental pillar is the Conservation of *Macaca nigra* (Yaki) which is an endemic animal of North Sulawesi. Yaki is a monkey native to North Sulawesi whose natural distribution in Sulawesi is from the Minahasa region to the Bolaang Mongondow region. However, the Yaki population in the wild continues to decline, within 10 years the Yaki population in the wild has decreased by 50% (Supriatna and Andayani, 2008).

This makes the Yaki listed in Appendix II of CITIES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), with a conservation status of Critically Endangered in the IUCN (International Union for Conservation of Nature and Natural Resources) Red List, also included as a protected species in Indonesia in PP No. 7 of 1999 and included as one of the 25 priority species for conservation in Indonesia from the Ministry of Environment and Forestry in 2015.

Yaki have an important role in nature to help regenerate forests. Yaki help the growth of trees in the forest by spreading the seeds of fruits that are carried when eaten. With the presence of Yaki in nature, the forest will continue to regenerate so that it can prevent the possibility of landslides, floods, and climate change by preserving the forest.

Habitat fragmentation and loss are the main drivers of *Macaca nigra* population decline, combined with hunting for food. Habitat fragmentation will cause Yaki groups to become isolated, with no genetic exchange with other Yaki groups, resulting in a higher likelihood of inbreeding and a decrease in the genetic quality of the Yaki group. Eventually, the life span of Yaki within the group will shorten and become locally extinct.

As a measure to prevent Yaki from becoming extinct, PGE LHD collaborates with the Masarang Foundation and the Tasikoki Bitung Animal Rescue Center (PPS) in the Yaki Conservation Program. Yaki conservation is carried out on Mount Masarang, Tomohon City, which is included in the PGE LHD operating area. The program has started since 2020 with a roadmap for Yaki release in 2023.

2 Method

The study on the role of PGE LHD in endemic animal conservation efforts was conducted in Tomohon City, North Sulawesi. The specific Yaki conservation site is located at Mount Masarang, Rurukan Village, Tomohon City. Mount Masarang is a location owned by the Masarang Foundation, besides being used as a conservation location, it is also used as a study center by students who want to learn about forest vegetation and Yaki. PGE Lahendong Area has a role to form a cooperation agreement on Yaki conservation with the Masarang Foundation and PPS Tasikoki Bitung.

This research uses a qualitative descriptive method with primary data collection. According to Moleong (1999), qualitative research methods are research that aims to understand the phenomena experienced by research subjects. According to Nasir in

(Prastowo, 2016) descriptive qualitative research methods are methods used to examine the status of a human group, an object, a set of conditions, a system of thought, or a class of events in the present.

The unit of analysis is a unit of subjects in research or informants related to the research focus and is needed to maintain data reliability and data validity. This research has a unit of analysis of all those involved in the Mount Masarang Yaki Conservation Program. The informants totaled 7 people consisting of PGE LHD, Masarang Foundation, and PPS Tasikoki Bitung. The technique of determining informants was carried out by purposive sampling where the selection of informants was based on research objectives and had been determined previously.

The primary data collection method was carried out by conducting in-depth interviews with informants. The results of the interviews obtained are the main data, besides that observation, and documentation are also carried out. The research data obtained was then analyzed using 3 processes according to Miles and Haberman in (Pratowo, 2016), namely reducing, presenting, and verifying data. Data reduction of the research results was carried out by eliminating repetitive information from all informants so that there was no repetition of information. Data presentation is done by providing tables and reduced research data. Verification is made by creating conclusions from primary data and testing the truth, strength, and suitability of the data.

3 Theoretical framework

UU No. 40/2007 on Limited Liability Companies chooses to use the term Social and Environmental Responsibility to describe the regulation. The implementation of CSR is regulated in UU No. 40/2007 on Limited Liability Companies (UUPT) article 74 on CSR obligations for Limited Liability Companies (PT), which are:

1. Companies that carry out their business activities in the field of and/or related to natural resources are obliged to carry out social and environmental responsibilities.
2. Social and environmental responsibility as referred to in paragraph (1) is an obligation of the company which is budgeted and calculated as a cost of the company, the implementation of which is carried out with due regard to compliance and fairness.
3. Companies that do not perform the obligations contemplated in paragraph (1) shall be subject to sanctions in accordance with the provisions of legislative regulations.
4. Further provisions concerning social and environmental responsibility shall be regulated by government regulation.
5. CSR is a business commitment to act ethically, operate legally and contribute to improving the quality of life of employees and their families, local communities, and the wider community. The concept of CSR involves partnership responsibilities between the government, companies, and local communities that are active and dynamic (Marnelly, 2012).

John Elkington (1997) cited by Hasibuan and Sedyono (2006: 73) states that Corporate Social Responsibility is divided into three basic principle components known as Triple Bottom Lines (3P), which are:

- a. Profit: Profit is the most important element and the main goal of every business activity including companies. However, the company should not only have profits for its organization but must be able to provide economic progress for its stakeholders and what actions the company has taken to strengthen economic resilience in society.
- b. People: The company must be responsible for social advancement and welfare as well as all its stakeholders. Realizing that the community around the company is one of the important stakeholders for the company. The company can create activities to develop society and human resources.

- c. Planet: The company must maintain the state of the environment, especially around the company's environment because it is the company's obligation to care for the environment. The company must implement a clean, safe and responsible production process. With this concept, it can provide an understanding that a good company does not only hunt for economic benefits (profit), but also has concern for environmental sustainability (planet) and community welfare (people).
- This CSR theory is certainly very relevant to what is implemented and outlined by PGE LHD in its five pillars of TJSL (Education, Health, Environment, Community Empowerment and Infrastructure). PGE LHD is also a company in the field of green energy so it is very friendly to the surrounding environment.

4 Result and discussion

PGE LHD is a company engaged in the energy sector and contributes to 30% of electricity needs in North Sulawesi and Gorontalo Provinces with a total capacity of 120 Megawatts. In its operational activities, PGE LHD implements a TJSL program based on 5 pillars (environmental pillars, health pillars, education pillars, community empowerment pillars, and infrastructure pillars). This study specifically discusses PGE LHD's TJSL in the environmental sector with the Yaki Conservation Program. This program has started since 2020.

The beginning of the PGE LHD program was mapping endemic animals in North Sulawesi. Coordination was carried out with the Masarang Foundation, an organization that is concerned with environmental sustainability including rare animal conservation. Based on the common perspective of each stakeholder involved to save Yaki from extinction, the Yaki Conservation Program was realized. The following is a table of each of the stakeholder's roles:

Table 1. Role of Stakeholders

No	Stakeholder	Role	Purpose
1	PGE LHD	<i>Funding</i>	Saving Yaki from Extinction
2	Masarang Foundation	Conservation Site, Ranger	
3	PPS Tasikoki	Yaki (confiscated with North Sulawesi BKSDA), Medical Team	

The conservation site used is land owned by the Masarang Foundation, called Masarang Mountain. Masarang Mountain is located in Ruruan Village, North Tomohon District, Tomohon City. The reason for choosing this location is the similarity of climate with the prospective release site at Gunung Ambang, especially the characteristics of the forest, weather, and vegetation. Therefore, when the Yaki are released, it will not be difficult for them to adapt to the new location. Previously, Yaki conservation was carried out at PPS Tasikoki Bitung, which is located in a coastal area with hot weather. In addition, the busy traffic of vehicles and factories made this location no longer ideal for Yaki conservation so it had to be moved to Masarang Mountain.

Table 2. Roadmap program

2020	2021	2022	2023
•Construction of habituation cage facilities and transfer of 11 Yakis	•Adaptation of 11 Yaki to become a stable group	•Yaki group adaptation, 9 remaining	•Release of 8 Yaki

The Yaki Conservation Program runs from 2020 to 2023, ending with a release. 2020 began with a cooperation agreement between PGE LHD and the Masarang Foundation. The stages for 2020 were the construction of a habituation enclosure on Mount Masarang and the translocation of 11 Yaki from PPS Tasikoki (1 group). The following is the data of the translocated Yaki individuals:

Table 3. Yaki Identity

No	PPST ID	Nama Individu	Jenis Kelamin	Tanggal Masuk ke PPST	Asal Usul
1	P104	Kampus	Betina	N/A	N/A
2	P081	Uyot	Jantan	13 September 2013	Serahan masyarakat dari Kiawa, Minahasa
3	P100	Briko	Jantan	30 Mei 2014	Rescue di Tumaluntung, Minahasa Utara
4	P111	Monik	Betina	16 Juli 2015	Rescue di Tareran Minahasa Selatan
5	P146	Marke	Jantan	15 Februari 2016	Serahan masyarakat dari Kiawa, Minahasa
6	P148	Boy	Jantan	16 Februari 2016	Serahan masyarakat Kolongan, Airmadidi, Minahasa Utara
7	P165	Mochi	Jantan	09 Agustus 2016	Rescue di Teling, Manado
8	P175	Ira	Betina	14 Desember 2016	Lahit di PPST, anak dari P062 (Ireng)
9	P226	Champion	Jantan	18 Februari 2019	Lahir di PPST, anak dari P014 (Kampus)

In 2023, habituation continued. At this stage Yaki is given food twice a day in the form of vegetables and fruit. Then routine checks are carried out by the PPS Tasikoki team of doctors once a month to ensure Yaki's health. In 2021-2022 there was a reduction in

individual Yaki due to medical factors. 2 Yaki had to be returned to PPS Tasikoki because they were bullied by other individuals so they did not get enough food intake.

Continuing in 2023 is projected for release. Prior to release there are several stages that must be carried out. 8 (eight) Yaki currently in the Yaki Rehabilitation Center Mt. Masarang have been at this facility since late 2020. During their time at this location, this group of Yaki underwent a process of adaptation to environmental conditions that resembled their release location on Mt. Ambang. The stages of activities carried out in releasing Yaki are:

a. Medical Examination

This examination is conducted as the final stage to ensure the health condition of each individual Yaki to be released. The examination includes physical examination as well as examination for infectious diseases in primates such as tuberculosis, hepatitis, herpes, rabies, and parasites. This medical examination is very important to ensure that the Yaki group to be released does not carry diseases that can be transmitted in nature and endanger wild Yaki groups.

b. Survey of Release Habitat Feasibility

To ensure the location to be released on Mt. Ambang, it is necessary to conduct a survey to ensure that the location to be released is still suitable for the Yaki to be released. The last survey for Yaki release conducted by BKSDA SULUT on Mt. Ambang was conducted in 2019. This survey also aims to find a more representative location on Mt. Ambang which is different from the one already conducted by BKSDA SULUT in 2019.

c. Yaki Transfer and Release

After the health condition of the Yaki group to be released is declared fit for release and the habitat to be released on Mt. Ambang is still feasible and suitable for the group to be released, the group of Yaki to be released will be moved into transport cages. Once in the transport cages, the Yaki groups will be transported to the release site at Mt. Ambang. To get to the release site, people will be needed to carry the transport cages into the forest where the group of Yaki from the Mt. Masarang Yaki Rehabilitation Center will be released. This should be done the day before (H-1) the release.

d. Release

The ceremonial release is conducted before the Yaki group is brought into the forest area at Mt. Ambang, so that the number of people who will participate in releasing Yaki can be limited so as not to disturb the Yaki to be released. The release is carried out by removing the Yaki from the transport cages that have been transported in advance and placed at the release site. The ceremony was conducted twice in two different locations. The first was at the Mount Masarang Tomohon location, which was attended by the board of directors of PGE and PGE LHD, Director General of EBTKE, North Sulawesi BKSDA, Rurukan Village Government, and the local community. The second ceremonial location was at the PGE Kotamobagu workshop in East Bolaangmongondow.

e. Post-release monitoring

To ensure that released Yaki successfully adapt and survive, monitoring is necessary. For this reason, a monitoring team is needed in this monitoring effort, which is carried out manually by following the released Yaki group. In addition to ensuring the success of the release, the monitoring team also aims to prevent conflicts that may occur when the released Yaki groups leave the forest area and enter community plantation areas. Post-release monitoring was conducted for 2 (two) months. From the monitoring results, the home range of the released Yaki groups is around 500 meters from the release point.

All activities in 2020 - 2023 are fully supported by PGE LHD through its environmental TJSL program so that the main objectives of Yaki conservation and release can be achieved. In the course of the program PGE LHD conducts monitoring and evaluation of matters of

concern and has been outlined in a cooperation agreement so that the parties involved in this program can carry out their respective responsibilities.

5 Conclusions and recommendations

The role of PGE LHD in the TJSL Program for Yaki Conservation at Mount Masarang is as an initiator and funder who then collaborates with the Masarang Foundation and PPS Tasikoki Bitung and also the government and local communities. An overview of the program journey has been written in the previous sub-chapter, namely 2020 to 2023. The implementation of the program encountered a few issues when in the end there were 3 out of 11 Yaki that had to be returned due to declining health. This is an evaluation for all parties to be better able to supervise so that the Yaki remain intact in one group until release.

This program not only aims to release Yaki back into the wild but also provides education and awareness to the community on the importance of protecting Yaki to avoid extinction. At the beginning of the program and release, press releases were published through various online media so that information was conveyed to a wide range of readers. The frequency of publication of the Yaki Program should be increased so that people will continue to read information that can increase their knowledge and awareness of the importance of protecting Yaki in North Sulawesi.

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