

# ECO-ETHICS AND ENVIRONMENTAL CONSERVATION: A CASE STUDY OF PT PERTAMINA PATRA NIAGA'S TELUK KABUNG INTEGRATED TERMINAL, PADANG

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## Abstract

The ecological crisis, characterized by environmental pollution, coastal ecosystem degradation, and rising carbon emissions, highlights the need for ethical approaches to industrial environmental management. This study examines the implementation of intermediate and deep environmental ethics, as conceptualized by Sonny Keraf, in the operational practices and conservation programs of PT Pertamina Patra Niaga's Teluk Kabung Integrated Terminal in Padang, Indonesia. Using a qualitative field research design, data were collected through observation, in-depth interviews, and documentation involving Health, Safety, Security, and Environment (HSSE) personnel, corporate social responsibility (CSR) teams, occupational safety officers, community groups, and other stakeholders. The findings indicate that intermediate environmental ethics is reflected in hazardous and non-hazardous waste management, environmental quality monitoring, air pollution control, and oil spill response, demonstrating the relevance of responsibility and prudence in preventing environmental harm. Deep environmental ethics is reflected in environmental education, operational-area greening, mangrove and coral reef rehabilitation, calliandra planting, galo-galo stingless bee cultivation, and community-based environmental programs. These initiatives indicate efforts to extend corporate responsibility beyond pollution control toward ecosystem conservation and community engagement. The study highlights environmental ethics as an analytical framework for assessing corporate environmental practices and promoting alignment between industrial operations and ecological sustainability.

## Abstrak

Krisis ekologis yang ditandai oleh pencemaran lingkungan, degradasi ekosistem pesisir, dan peningkatan emisi karbon menegaskan pentingnya pendekatan etis dalam pengelolaan lingkungan industri. Penelitian ini menganalisis penerapan etika lingkungan menengah dan etika lingkungan mendalam menurut Sonny Keraf dalam praktik operasional dan program konservasi lingkungan di Integrated Terminal Teluk Kabung PT Pertamina Patra Niaga, Padang. Penelitian menggunakan pendekatan kualitatif dengan metode penelitian lapangan. Data dikumpulkan melalui observasi, wawancara mendalam, dan dokumentasi yang melibatkan personel Health, Safety, Security, and Environment (HSSE), tim tanggung jawab sosial perusahaan (CSR), petugas keselamatan kerja, kelompok masyarakat, dan pihak terkait lainnya. Temuan menunjukkan bahwa etika lingkungan menengah tercermin dalam pengelolaan limbah B3 dan non-B3, pemantauan kualitas lingkungan, pengendalian pencemaran udara, dan penanganan tumpahan minyak. Praktik tersebut mencerminkan prinsip tanggung jawab dan kehati-hatian dalam mencegah kerusakan lingkungan. Sementara itu, etika lingkungan mendalam diwujudkan melalui edukasi lingkungan, penghijauan area operasional, rehabilitasi mangrove dan terumbu karang, penanaman kaliandra, budidaya lebah madu galo-galo, serta program lingkungan berbasis masyarakat. Inisiatif ini menunjukkan upaya memperluas tanggung jawab perusahaan dari pengendalian pencemaran menuju konservasi ekosistem dan pelibatan masyarakat. Penelitian ini menegaskan relevansi etika lingkungan sebagai kerangka analisis praktik lingkungan perusahaan dan penyelarasan kegiatan industri dengan keberlanjutan ekologis.

## INTRODUCTION

The global environmental crisis in this modern era cannot be separated from the rapid industrialization activities and the expansion of fossil fuel utilization, which can trigger an increase in greenhouse gas emissions, global warming, and massive climate change. In Indonesia, amidst the utilization of natural resources, there are concerning threats to ecosystem pollution, such as forest degradation, coastal area damage, and the risk of oil spills and waste from energy industry operations (Antarissubhi et al., 2023)

If we look at the data from the LIPI Oceanography Center, it shows that around 35.15% of coral reefs in Indonesia are in poor condition, while only 6.39% are in good condition. Additionally, the global warming that is occurring is triggered by the burning of coal, which produces emissions reaching 9 billion tons of CO<sub>2</sub> per year. There is also land conversion and deforestation that generate emissions of 2.53 billion tons of CO<sub>2</sub>, as well as activities and the use of energy, agriculture, and waste that contribute emissions of 451 million tons of CO<sub>2</sub> (Lolangion et al., 2021).

Academically, the root of this crisis often begins with the dominance of the anthropocentrism paradigm, which views nature as a material object for economic purposes (Hanani & Nelmaya, 2022; Messias, 2024; Rozi & Taufik, 2020). To address this hegemony, researchers use the transformation of the concept of environmental ethics. As mapped by Sonny Keraf, intermediate environmental ethic or referred to as middle ethic emphasizes the moral obligation to protect all living beings. Furthermore, there is deep environmental ethic or deep environmental ethic which views nature as having intrinsic value and demands holistic restoration (Keraf, 2010)

Amid the complexity of ecological challenges, PT Pertamina Patra Niaga Integrated Terminal Teluk Kabung, located in the Bungus Teluk Kabung area, plays a strategic and crucial role. On one hand, this facility is tasked with ensuring the national energy supply in the western part of Sumatra. However, on the other hand, the operations of receiving, storing, and distributing oil and gas can also pose a high risk of causing pollution in coastal areas. Therefore, the author conducted research to explain the empirical application of Sonny Keraf's environmental ethic concept found in the operational activities and Corporate Social Responsibility (CSR) programs of the company.

This research is a field study or field research with a qualitative research type. Qualitative research aims to understand the phenomena experienced by the research subjects, such as behavior, perception, motivation, and actions holistically, and to describe them in words and language within a scientific context (Anggito & Setiawan, 2018). There are two sources of data for this study: 1) primary data, which is data obtained from interviews. In this case, the data were obtained by the researcher through direct interviews with informants, namely the HSSE Shift Supervisor II, HSSE Supervisor I, members of the Occupational Safety and Health (K3) department, the CSR team, the Cleaning Service (CS) team, a youth farmers' group, and members of the community. 2) secondary data, which were obtained from books, journals, and documents related to the research subject.

The methods used to collect data include: 1) The observational method involves collecting data through direct observation of the specific research subjects (Sugiyono, 2019); 2) The interview method is a form of interpersonal communication that involves a direct question – and – answer process between the interviewer and the interviewee, with the aim of gathering information (Rivaldi et al., 2023); 3) Documentation complements the observation and documentation methods. Documentation techniques involve collecting data from documents, such as letters, official documents, reports, notes, and other documents.

To analyze the data in this study, we used Sonny Keraf's theoretical approach to environmental ethics, namely: first, intermediate environmental ethics, which focuses its analysis on the biocentric perspective that is, the view that all living beings possess moral value. The moral subject in this concept is not centered solely on humans (anthropocentric) but also on all living beings (plants, animals, and humans). Second, deep environmental ethics, which emphasizes that all ecological processes, biodiversity, and the balance of the biosphere possess intrinsic value as a whole (Keraf, 2010).

## ECOLOGICAL CRISIS

Globalization, which has been a frequent topic of discussion lately, is a direct result of the success of the communications technology revolution, which was preceded by two major revolutions in human culture: the agricultural revolution and the industrial revolution. In today's era of industrialization and globalization, various sectors of life are greatly influenced by technological and industrial advancements, where economic growth has become a measure of a nation's progress in the world, as well as the application of scientific technology in various forms of production and services. The Industrial Revolution swept across the globe, leading to the successful application of energy science and enabling humans to "create" the steam engine, which became the foundation for power – driven machinery. Since then, technology has been able to drive production and development at a rapid pace (Christel, 2019; Kidwell, 2020; Syamsuddin, 2017).

The Industrial Revolution began in England in the mid – 18th century. During this period, there was a significant shift from manual labor which relied on human and animal power to the use of simple machines. Important inventions, such as the steam engine by James Watt (1769), drove advancements in textile manufacturing, steam – powered transportation, and mass production. These changes led to rapid industrial growth and transformed people's lives: massive urbanization occurred as people moved to cities to work in factories. Then, in the early 19th century, the revolution began to spread to other European countries (Fajariah & Suryo, 2020; Sheehi, 2005).

The ongoing ecological crisis is also a bitter consequence of the Western worldview toward the environment, which tends to be more secular and materialistic. This is because the foundations of the modern world are built upon a scientific – empirical worldview, which has long viewed nature merely as raw material to be used and treated as an object for the sake of dubious human benefit. Furthermore, modernity supported by modern science has provided intellectual legitimacy for the commercial and industrial exploitation of nature. This is a worldview that is a direct reflection of scientism. This perspective is rooted in a partial worldview that has long been established (Amirullah, 2015; Rahmi & Zulfan Taufik, 2024).

The most dominant development model today is economic globalization. This is a system based on the belief that a global economy governed by universal regulations set by corporations and markets is inevitable. Economic freedom has become the defining value no longer democracy or efforts to protect the environment. As a result, the world is currently undergoing a massive transformation, which essentially amounts to a severe assault on various aspects of human life. In this global market, everything must be tradable even elements previously considered sacred, such as health, education, ethical codes, plant seeds, and existing natural resources (Keraf, 2010).

## THE CONCEPT OF ECO-ETHICS OR ENVIRONMENTAL ETHICS

Environmental ethics offers a new perspective or paradigm, as well as a new approach to the environment or nature, which can be seen as a solution to the ecological crisis. According to Sonny Keraf, there are two types of environmental ethics theories: Intermediate Environmental Ethics and Deep Environmental Ethics.

### Intermediate Environmental Ethic

Intermediate environmental ethics, also known as biocentrism, is a theory of environmental ethics that focuses on living beings in the universe. The core of this theory is that humans have a moral obligation toward living beings in nature (Keraf, 2010). This perspective serves as a corrective to anthropocentrism by expanding the scope of moral subjects which was originally centered solely on humans to include other living beings, such as animals and plants.

According to Taylor, to understand the theory of biocentrism, there are moral agents and moral subjects. A moral agent is a being capable of acting morally, and thus has duties and responsibilities, and can be held accountable for their actions. These capacities include reason, freedom, and will. With these capacities, a moral agent can engage in moral deliberation before acting, thereby avoiding morally wrong actions. A moral agent is also capable of discerning what is morally good and bad. Unlike a moral agent, a moral subject is a being that can be treated well or poorly, and the moral agent has duties and responsibilities toward it. These subjects can experience improvement or deterioration, including as a result of certain attitudes or behaviors on the part of the moral agent. Therefore, moral subjects are open to benefiting from or, conversely, being harmed by certain actions of the moral agent. Just as actions in this theory are likened to water in a river that must be protected because living beings inhabit it, forests in nature also need to be protected because other living beings coexist within them.

The principles of environmental ethics in intermediate environmental ethics are as follows: first, the principle of responsibility toward living beings to preserve nature in its original pristine and well – preserved state. Second, concern for the survival of other living beings and existing ecosystems. Third, the “do no harm” principle. In this regard, no action or policy should have the potential to harm or threaten the existence of nature.

### Deep Environmental Ethic

This approach emerged as a critique of “shallow environmental ethics,” which generally still stem from an anthropocentric paradigm. This paradigm places humans at the center of moral concerns, so that nature is understood merely as a means to satisfy human needs (Keraf, 2010). This theory of environmental ethics is an approach that examines the relationship between humans and nature in a profound, comprehensive, and fundamental way. This theory views all ecological processes, biodiversity, and the balance of the biosphere as possessing inherent moral value. Nature is not only valuable because it supports life; its very existence carries moral rights that must not be violated.

The scope of this theory is systematic and holistic. Its primary focus is not only the well – being of individual humans, animals, and plants, but also the preservation and sustainability of the natural ecosystem as a whole. Its moral subjects are no longer limited to individual living beings, as in the intermediate environmental ethics theory, but encompass all components of nature both biotic and abiotic such as mountains, rivers, and climates; species as a whole are considered to possess moral standing.

In the context of deep environmental ethics, nature is no longer viewed as a passive object that can be exploited without limit, but rather as part of a moral community that

possesses intrinsic value. Keraf asserts that all elements of nature both biotic and abiotic possess value in and of themselves, not merely because of their utility to humans. Thus, humans cannot claim the highest moral right over nature, as humans are merely one part of an interdependent web of life. This perspective explicitly rejects anthropocentrism and opens the door to recognizing the moral value of entire ecological systems (Ningsih, 2026; Rozi, 2019; Zahnow et al., 2025).

This theory is based on the principle of ecological holism the view that nature is a unified whole in which all elements are interconnected. Keraf explains that every element in an ecosystem has a specific role and function that cannot be separated from the system as a whole. Damage to a single component of the environment will have both direct and indirect impacts on the balance of the ecosystem as a whole (Keraf, 2014). Therefore, people are expected to demonstrate a deep ecological awareness in all their activities, particularly in the use and management of natural resources.

A profound environmental ethic also emphasizes the importance of changing human perspectives and attitudes toward nature. Environmental problems stem not only from technical errors in the management of natural resources, but more fundamentally from a moral and ethical crisis among humans. Consumerist lifestyles, excessive exploitation, and a development orientation focused solely on economic growth are clear manifestations of weak environmental ethics. Therefore, this theory encourages people to adopt a simpler, more responsible, and sustainable lifestyle as a form of respect for nature (Keraf, 2010).

Furthermore, a profound environmental ethics entails a moral imperative for humans to act justly toward nature and future generations. Keraf emphasizes that uncontrolled exploitation of nature not only harms the environment today but also threatens the right to life of future generations. Thus, a profound environmental ethics demands intergenerational responsibility in the management of natural resources. The principle of sustainability is a key aspect of this approach, as it emphasizes a balance between human needs and environmental conservation (Keraf, 2010).

The principles of Deep Ecology form a comprehensive environmental ethical framework for understanding the relationship between humans and nature. This approach asserts that the relationship between humans and the environment should be built on the foundations of harmony, balance, and sustainability, rather than on domination or exploitation. Furthermore, Deep Ecology emphasizes the importance of fundamental change both at the individual level and within broader social structures to achieve a way of life that is more in harmony with nature. Therefore, this approach makes a significant contribution to the development of a holistic, sustainable, and ecosystem – centered environmental ethics paradigm (Ningsih, 2026).

Thus, deep environmental ethics is an approach to environmental ethics that treats nature as a moral subject that must be respected and protected. This ethics not only serves as a normative guide for human behavior toward the environment but also demands a comprehensive transformation of human paradigms, values, and ecological consciousness. This approach serves as a strong conceptual foundation for efforts toward sustainable environmental conservation, particularly in the context of natural resource management by individuals and institutions, including the industrial sector and corporations.

## INTERMEDIATE ENVIRONMENTAL ETHICS IN WASTE MANAGEMENT AT PT PERTAMINA PARTA NIAGA

PT Pertamina Patra Niaga IT Teluk Kabung's waste management practices not only comply with legal obligations but also strive to minimize environmental impact from the very start of operations. According to an interview with S. F., who explained that:

"Pertamina implements the separation of hazardous (B3) and non – hazardous waste, manages liquid waste through a wastewater treatment plant (IPAL), and conducts routine waste recording and reporting. Hazardous waste is stored at a temporary storage site that meets environmental standards and is subsequently transferred to a licensed third party for further treatment. In addition, Pertamina Parta Niaga IT Teluk Kabung conducts ongoing environmental monitoring, such as wastewater testing and surveillance of potential pollution around its operational areas, particularly in coastal zones (S. F, 26 Desember 2025)."

Based on S.F.'s opinion and field findings, PT Pertamina Patra Niaga IT Teluk Kabung manages waste by sorting it by type and by testing and monitoring the waste generated from its operations. This demonstrates a commitment to environmental responsibility toward the natural conditions surrounding the company. Geographically, the company is located in a strategic area. It is situated between the coastal area and the hills where local communities live. If the company were not to act responsibly, the waste would have an impact not only on the surrounding communities but also on the living organisms in the rivers and coastal areas.

From the perspective of intermediate environmental ethics or biocentrism, this principle of responsibility should demand full awareness of the consequences of every action on the environment. The strategic location of the terminal, flanked by residential hills and the coastline, carries significant ecological consequences. Therefore, through the waste sorting and monitoring efforts implemented by PT Pertamina Parta Niaga IT Teluk Kabung, the company recognizes the significant impact of its waste, leading to the implementation of preventive measures designed to minimize the potential for pollution that could affect the community and other living organisms.

In addition to waste sorting, PT Pertamina Patra Niaga IT Teluk Kabung also implements a waste containment program to prevent negative impacts on the surrounding environment. An interview with R.D. revealed the following:

"There are several programs the company can implement to reduce non – hazardous waste: First, the Fuel Monitoring Program with OTR (Online Test Report) is an online system used at the Teluk Kabung Integrated Terminal to compare incoming and outgoing fuel against the fuel standards set by the Ministry of Energy and Mineral Resources (ESDM). With this program, the need to print paper reports is eliminated and paper usage is reduced, thereby also reducing the amount of non – hazardous waste generated. Second, the Online Meeting Attendance Program uses barcodes to track meeting attendees, both within and outside the Teluk Kabung Integrated Terminal. This program helps reduce the amount of paper that needs to be printed, thereby reducing the generation of non – hazardous waste collected at the Solid Waste Treatment unit and subsequently sent to the landfill. Third, the Santiang Livestock Sustainable Terminal Program involves feeding goats and rabbits kept at the terminal with grass clippings collected from all the gardens within the Teluk Kabung Integrated Terminal. This program can serve as a solution to reduce the generation of grass waste collected at the Solid Waste Treatment unit and subsequently sent to the landfil (R. D, 26 Desember 2025.)."

In addition to reducing non-hazardous waste, PT Pertamina Patra Niaga IT Teluk Kabung also disposes of hazardous waste. According to an interview with S.,:

Hazardous waste is stored in temporary storage facilities that meet safety and environmental protection standards. Subsequently, transportation and further treatment are carried out by licensed third parties. Pertamina does not manage hazardous waste on its own, but instead entrusts it to parties with the necessary expertise and official permits (S., 26 Desember 2025).

Industrial waste poses a significant hazard, necessitating a sense of responsibility toward nature, which must also be protected. Humans do not exist in isolation, and human interests alone should not be prioritized, as the anthropocentric view suggests. A company exists amidst the elements of life. Animals and plants coexist with human communities. Other living beings also have a moral right to protection. One aspect of PT Pertamina Patra Niaga IT Teluk Kabung's responsibility is the disposal and management of waste.

Of the two types of waste generated from the Company's operational activities, there are hazardous waste (B3) and non-hazardous waste. Hazardous waste (B3) is not managed on-site because PT Pertamina Patra Niaga IT Teluk Kabung serves as a terminal for storing fuel distributed to the public. Hazardous waste (B3) is classified as highly dangerous, requiring immediate follow-up measures to prevent pollution in both coastal areas and local waterways. Through controlled, documented, and monitored hazardous waste management, PT Pertamina Patra Niaga IT Teluk Kabung focuses not only on operational efficiency but also on preventing environmental risks. Meanwhile, non-B3 waste can be minimized by reducing and managing waste that can be recycled. In fact, all life in the universe forms a moral community in which all beings depend on one another; therefore, they should also protect and care for one another (Keraf, 2010).

In addition to implementing a systematic waste management program, PT Pertamina Patra Niaga IT Teluk Kabung has also put in place proactive measures to prevent environmental pollution. According to an interview with R. D :

"To assess air quality standards in terms of air quality levels, we need to determine whether the air is clean or not, as well as whether there are any effects or impacts from Pertamina's environmental testing operations. If CO<sub>2</sub> emissions occur, we will conduct air quality checks at the points or based on the parameters specified in the UKL-PPL of the Environmental Impact Assessment (Amdal), as aligned with the Ministry of Manpower. The purpose of this is to determine whether an area with certain pollutant levels remains within a healthy range or not. In an industrial context, if we are only assessing whether an area is environmentally healthy, a standardized certificate is not required. However, for the purposes of the study, the results must be officially recorded in the form of a certified document. For example, we conduct testing through Serfindo, where the testing is performed based on standards that have been verified by the company. The Ministry of Manpower also mandates that companies adhere to these standards" (R. D, 26 Desember 2025).

PT Pertamina Patra Niaga IT Teluk Kabung conducts air quality monitoring as part of its efforts to manage carbon emissions generated during operations. Air is not merely a resource that supports human activities; it is also an integral part of the ecosystem whose balance must be maintained. By ensuring that air quality remains clean and healthy, the company also contributes to environmental sustainability for all living things.

These practices also reflect the principle of responsibility in environmental ethics. Pertamina recognizes that oil and gas industry activities have the potential to generate emissions that can affect air quality. Therefore, the company conducts regular monitoring

to determine whether emission levels remain below established environmental quality standards, so that it can take immediate action if there are indications of pollution to prevent harm to surrounding living organisms. Humans must not hinder or restrict living organisms from living and thriving naturally. Humans must also not disrupt the balance of natural ecosystems such as by destroying forests, polluting rivers and oceans, or causing pollution that harms all living organisms, including humans. (Keraf, 2010)

PT Pertamina Parta Naiaga Integrated Teluk Kabung also plays a role in responding to oil spills, such as those caused by tanker leaks and fuel loading and unloading activities at the port. Based on an interview with S., a member of the Occupational Safety and Health (K3) team at Pertamina, he stated that:

"When responding to an oil spill at sea, the process involves using an oil boom—a floating containment barrier installed around the spill site. The oil boom serves to contain the spread of oil carried by ocean currents. Next, the collected oil is recovered using an oil skimmer, a device that separates oil from water. The recovered oil is then collected and managed as hazardous waste (B3) in accordance with environmental procedures (S, 26 Desember 2025).

In the context of waste management, companies as institutions including PT Pertamina (Persero) Integrated Terminal Teluk Kabung act as moral agents. Companies possess the technical capacity, authority, and internal policies to determine how waste is generated, managed, and disposed of. Therefore, every decision related to waste management when an oil spill occurs in the sea, it has the potential to harm wildlife and vegetation, including coral reefs. The marine environment itself is home to a wide variety of living organisms, so if not properly addressed, it will have an impact on the survival of coastal wildlife.

Humans have a moral obligation and responsibility to preserve and protect all life on Earth, including non-human life. Humans possess an understanding of moral right and wrong and therefore have moral obligations, including the duty to refrain from actions that harm nature and all its components. From the perspective of retributive justice, humans are required to rectify past mistakes that have caused harm to nature, such as pollution and environmental damage. Humans strive to restore polluted natural environments to their original condition (Keraf, 2010). In practice, this aspect of retributive justice is evident in the efforts to prevent pollution, respond to oil spills, and control pollution carried out by PT Pertamina Patra Niaga's Teluk Kabung Integrated Terminal.

## **DEEP ENVIRONMENTAL ETHICS IN ENVIRONMENTAL REFORESTATION AT PT PERTAMINA PARTA NIAGA**

PT Pertamina Parta Niaga Integrated Terminal (IT) Teluk Kabung, as one of Pertamina's operational units, has demonstrated its commitment to the principles of sustainability through various environmental management programs. In addition to implementing proper and integrated waste management to prevent pollution, PT Parta Niaga IT Teluk Kabung is also active in developing a reforestation program focused on preserving biodiversity around its operational area. This program is known as the CSR (Corporate Social Responsibility) program. The CSR program represents PT Pertamina's commitment and moral concern for the environment and the community. Based on an interview with R. K., he stated that:

"As for the greenery within the Pertamina site, there are many trees in the storage tank area, including fruit trees; in addition, there are Terminalia trees that provide

dense shade over the operational area. There is also a garden, where overgrown grass is trimmed daily to keep the area level and neat (R. K, Padang, 27 Desember 2025).

Based on R. K.'s statement above, reforestation is an effort by the company to maintain the environmental balance in its operational areas. Planting various types of trees including fruit trees and shade trees such as *Terminalia* not only serves as an aesthetic element of the environment but is also an ecological measure to improve air quality and reduce pollution in the operational areas.

In implementing this greening initiative within its operational areas, the Company strives to implement operational risk mitigation strategies within the industry. The selection of vegetation such as *Terminalia* trees and regular grass management are not merely moral expressions of preserving the balance of nature, but also serve to mitigate the urban heat island effect around the Company's fuel storage facilities and to slow the rate of soil erosion caused by rainwater runoff. It also serves as a buffer zone to contain the risk of fire or gas spread in confined areas. Thus, these ethical principles are translated into tangible, concrete actions. This ethical framework demands the establishment of ethical relationships within the natural world, which are then transformed into concrete movements or actions on the ground (Keraf, 2010).

In addition to carrying out reforestation efforts within its operational area, PT Pertamina Patra Niaga IT Teluk Kabung also conducts reforestation in the areas surrounding the company. According to an interview with R. D., who stated:

"PT Pertamina's reforestation program includes mangrove forest rehabilitation, specifically the planting of mangroves to increase their population in the relevant areas. We do not merely plant mangroves; we also carry out rehabilitation efforts to maintain the quality of these mangrove plants. Furthermore, there is a coral reef rehabilitation project in the form of an underwater garden in Teluk Kabung Selatan Village, Padang City, which involves the planting or transplantation of artificial coral reefs. The mangrove and coral reef conservation effort at Sungai Pisang Teluk Buo, which involved planting 1,000 mangrove seedlings along the Sungai Pisang coastline, was carried out on August 9, 2025. In addition, we also carried out coral reef conservation across an area of 1.5 hectares of waters on July 31, 2025" (R. D, 26 Desember 2025).

Based on R. D.'s statement, this reforestation and environmental rehabilitation program demonstrates the company's social responsibility, which focuses not only on internal operational areas but also on coastal and marine ecosystems. Mangrove and coral reef rehabilitation activities are strategic steps in maintaining the sustainability of the coastal environment. In general, although PT Pertamina Patra Niaga IT Teluk Kabung does not exploit the natural resources in its operational area, the company demonstrates a moral commitment by striving to preserve the natural beauty of the coastal environment through mangrove planting and coral reef rehabilitation programs. The development of these underwater gardens reflects a deeply ecological approach, as it focuses on the comprehensive restoration of marine ecosystems.

Large-scale fuel terminal operations in coastal areas inherently pose significant ecological risks to the marine and coastal ecosystems on which local communities depend for their livelihoods. Within the framework of environmental ethics, a mangrove rehabilitation program involving thousands of seedlings and a coral reef conservation project covering 1.5 hectares embody the fulfillment of the principle of justice, which holds that entities operating in coastal zones have a moral obligation to restore, protect, and rebalance public living spaces that are vulnerable to indirect impacts from industrial

activities. This underscores that humans are an integral part of the ecosystem and bear a moral responsibility to preserve nature for the sustainability of the entire natural ecosystem of the universe (Keraf, 2010).

In the context of deep environmental ethics, efforts to restore coral reefs reflect an ecological awareness that transcends short – term human interests. Coral reefs are viewed as a vital part of the marine ecosystem that has a right to be preserved; thus, conservation efforts are undertaken as a form of ethical responsibility toward the sustainability of marine life itself.

In addition to its mangrove and coral reef rehabilitation programs, PT Pertamina Parta Niaga IT Teluk Kabung also carries out various other environmental conservation programs. According to an interview with F., who explained that:

"In the Lubuk Hitam area, we also grow plants, primarily calliandra, which serves as a food source for galo – galo honeybees; we also raise galo – galo honeybees there. Furthermore, we have a mangrove nursery, where we plant mangroves every year on World Mangrove Day. In addition, we offer educational mangrove tour packages. Visitors can enjoy a mangrove tour by boat, navigating through the mangrove forest. As part of one of the tour packages, before they enter the mangrove park, we encourage them to plant a mangrove tree first." (F, 4 Januari 2026)

Based on F.'s opinion above, the environmental conservation program implemented by PT Pertamina demonstrates a holistic and sustainable approach. The planting of calliandra plants in the Lubuk Hitam area, integrated with the cultivation of galo – galo honeybees, not only serves as a reforestation effort but also supports biodiversity and the economic empowerment of the community. The existence of a mangrove nursery and routine planting activities on World Mangrove Day illustrate the company's long – term commitment to preserving coastal ecosystems. Furthermore, the development of mangrove ecotourism education programs that directly involve visitors in planting activities demonstrates the company's efforts to promote environmental awareness.

Currently, the Lubuk Hitam area and the surrounding sea have become popular tourist destinations for the public. Therefore, this educational program can open up new strategies so that people not only enjoy the beauty of nature but also witness concrete actions to preserve its natural beauty. The environment is not merely a subject of study but a form of wisdom, a way of life, and a model for harmonious relationships. Everything in the universe has value that deserves to be appreciated. This wisdom is reflected in the behavior and concrete actions taken to maintain and preserve the balance of nature (Keraf, 2010).

The reforestation program by PT Pertamina Parta Niaga IT Teluk Kabung involves more than just mangrove planting and coral reef conservation; there are several other programs aimed at preserving biodiversity. According to an interview with Z., a member of the youth farmers' group, who explained that:

"I also once accompanied the CSR team—it was truly extraordinary during the 2023 – 2025 period in the Bungus Timur area, specifically in Kampung Pinang, where Pertamina implemented an integrated farming system: they raised cattle, converted the manure into biogas, and used the remaining manure residue as organic fertilizer for rice. The rice was grown using organic fertilizer instead of chemical fertilizers. This is an example of how they protect the environment by using solar panels for eco – friendly electricity instead of coal" (Z, 28 Desember 2025).

From the statement above, the CSR program implemented by the company demonstrates the application of an integrated sustainability concept that combines

environmental and energy aspects. The use of cow manure to produce biogas and organic fertilizer for organic rice farming reflects efforts toward environmentally friendly resource management. The use of solar panels as an alternative energy source also demonstrates the company's commitment to reducing its reliance on fossil fuels. Amid technological advancements, using environmentally friendly products is also one of the efforts to maintain environmental quality.

This CSR program aims to reduce the community's dependence on external supplies such as chemical fertilizers and fossil – fuel – powered electricity from PLN. The company is redesigning production systems at the grassroots level to create units that are self – sufficient in energy and food. These concrete actions on the ground are crucial. Collaboration between the company and the community is essential to preserving the natural environment, which is also the source of life for the entire ecosystem.(Keraf, 2010)

As part of its various environmental conservation programs, PT Pertamina Parta Niaga Integrated Terminal Teluk Kabung also conducts public awareness campaigns on environmental issues. According to an interview with F., who stated that:

"At Pertamina, we also conduct outreach sessions twice a year at our offices regarding environmental issues, both in our operational areas and in the surrounding communities. Every year, the company implements an environmental management program, providing training to community groups on how to plant mangroves and coral reefs, as well as how to maintain, manage, monitor, and evaluate them. A dedicated team oversees these efforts, consisting of the community development and HSSE environmental teams" (F, 4 Januari 2026).

Based on the informant's statement above, the environmental conservation efforts undertaken by PT Pertamina Parta Niaga Integrated Terminal Teluk Kabung not only focus on implementing physical programs but also emphasize education and capacity building for employees and the community. These regular outreach activities, conducted both within the company and among the surrounding community, demonstrate PT Pertamina's commitment to fostering sustainable environmental awareness.

To achieve large – scale environmental conservation and sustainability, it is essential to foster ecological awareness among people who are in positions to influence policies or actions that may have positive or negative impacts. In practice, the Company does not limit itself to merely providing infrastructure or physical projects; rather, it seeks to transform mindsets regarding ecological literacy.

Environmental awareness is not merely a concept, but is internalized into concrete, sustainable action. This shift aims to rekindle moral, cultural, and political awareness regarding the unity of ecological consciousness that is inseparable from all forms of life in nature. This awareness is reflected in political and economic policies. This paradigm demands a respectful attitude toward the richness and diversity of life in the universe (Keraf, 2010).

Through its CSR program, PT Pertamina Parta Niaga IT Teluk Kabung also carries out community empowerment through activities that support the community's well – being economically, socially, and environmentally. According to an interview with Z., who explained that:

"This young farmers' group was formed by a few individuals with 150 million in funding from a CSR program. The group began by developing the idea of hydroponic melons, which resulted from discussions with 15 members of the farmers' group. Based on literature and YouTube videos, this melon cultivation appears to be a promising venture. The project was launched in late 2023. This program is Pertamina's

contribution to helping us preserve the environment, avoid indiscriminate deforestation, and give back to nature. The key point is that even though we're not using soil as our growing medium, water still serves the purpose of reforestation. Pertamina is involved in financing, providing guidance, and participating in the project as a whole. Everything has been accommodated so that we can now operate independently" (Z, 28 Desember 2025).

This principle of recognizing nature's intrinsic value is evident in the program's objectives, which focus not only on economic benefits but also on efforts to preserve the environment. A statement from an informant indicating that the program aims to ensure that communities "do not cut down forests indiscriminately and allow them to return to nature" demonstrates an awareness that nature must be respected and preserved. Hydroponic farming was chosen as an environmentally friendly alternative because it does not require clearing new land, thereby reducing potential damage to the forest ecosystem surrounding the company's operational area.

In addition to the empowerment program carried out through the hydroponic melon business, PT Pertamina Parta Niaga Integrated Terminal Teluk Kabung also conducts other activities focused on improving the community's well-being. According to an interview with A., a local resident and head of the neighborhood unit (RT) in the Teluk Kabung Tengah area, the following was stated:

"Here in the Teluk Kabung Tengah area, we recently requested a proposal from Pertamina to drill a well; we submitted the proposal, and it was approved by Pertamina. The borehole will be located near SDN 10 Koto, and the funding comes from a corporate social responsibility (CSR) program for the community. In addition, Pertamina also conducts outreach to the community, such as holding meetings with residents about rice field cultivation. In the event of an emergency, Pertamina also conducts disaster preparedness outreach; just recently, such an event was held in collaboration with the National Disaster Management Agency (BNPB)" (A, 28 Desember 2025).

Based on the above statement, PT Pertamina Parta Niaga Integrated Terminal Teluk Kabung not only focuses on economic empowerment programs through hydroponic melon cultivation but also demonstrates a genuine commitment to improving the social welfare of the community. This is reflected in the construction of boreholes to meet the community's basic need for access to clean water. Furthermore, outreach activities on preparedness and response which involve the community and are conducted in collaboration with the National Disaster Management Agency (BNPB) demonstrate the company's active role in enhancing the community's capacity and resilience. Nature and the resources it contains are not reduced to or viewed solely in terms of their economic value, but also in terms of their social, cultural, and biological value (Keraf, 2010).

One of the key principles of deep environmental ethics is the importance of fostering a harmonious relationship between humans and nature. This relationship requires a shift in humanity's perspective toward nature from one that is exploitative to one that is cooperative and mutually supportive. In the context of the oil and gas industry, the challenge of achieving this harmonious relationship is even greater due to the significant potential for environmental impacts (Keraf, 2014).

Thus, based on the various programs implemented by PT Pertamina Parta Niaga Teluk Kabung in environmental conservation and community empowerment, it is evident that every element in the universe whether humans, animals, plants, or other ecological beings exists as part of a single, integrated whole and is interdependent. All have specific roles

and functions that are inseparable from the entire system of life. When everything functions through cooperation and mutual care, the environment inhabited by all living beings will remain pristine and well – preserved.

## CONCLUSION

This study concludes that the environmental conservation practices of PT Pertamina Patra Niaga's Teluk Kabung Integrated Terminal can be analyzed through two dimensions of environmental ethics in Sonny Keraf's framework: intermediate environmental ethics and deep environmental ethics. Intermediate environmental ethics emphasizes the moral significance of living beings and the principles of responsibility, prudence, and concern for their survival. At the Teluk Kabung Integrated Terminal, this ethical orientation is reflected in the management of hazardous (B3) and non – hazardous waste, the provision of standard – compliant temporary storage for hazardous waste, environmental quality monitoring, air pollution control, and oil spill response. These practices demonstrate the relevance of environmental responsibility and preventive measures in managing the potential ecological risks of industrial operations.

Meanwhile, deep environmental ethics emphasizes the intrinsic value of ecosystems and the interdependence of biotic and abiotic components of nature. At the Teluk Kabung Integrated Terminal, this orientation is reflected in environmental education for employees and surrounding communities, greening of operational areas, mangrove and coral reef rehabilitation, calliandra planting, *galo-galo* stingless bee cultivation, and other community – based environmental initiatives. These activities indicate an effort to extend environmental management beyond pollution prevention toward ecosystem conservation, ecological awareness, and community participation.

Taken together, the findings suggest that environmental ethics provides a useful framework for understanding the relationship between industrial operations and environmental conservation. The combination of pollution control, preventive measures, ecological rehabilitation, and community engagement reflects efforts to integrate corporate environmental responsibility into operational and social programs. However, the existence of these initiatives does not by itself establish their long – term ecological effectiveness. Further assessment of environmental outcomes and program continuity is needed to determine their contribution to ecosystem resilience and sustainability. Ultimately, strengthening the integration of environmental ethics into corporate decision – making and community partnerships is essential to support more responsible industrial practices and the long – term protection of the surrounding environment.

## REFERENCES

- A. (n.d.). *Wawancara dengan Warga Teluk Kabung Tengah*.  
Amirullah. (2015). Krisis Ekologi: Problematika Sains Modern. *Lentera*, XVIII(1), 1 – 21.  
Anggito, A., & Setiawan, J. (2018). *Metodologi Penelitian Kualitatif*. CV Jejak.  
Antarissubhi, H., Serang, R., & Leda, J. (2023). *Krisis Iklim Global di Indonesia: Dampak dan Tantangan*. CV Tohar Media.  
Christel, L. G. (2019). Environmental rights and social resistances: Legal instrument as a repertoire against mining in Argentina. *Revista Austral de Ciencias Sociales*, 36, 193 – 213. <https://doi.org/10.4206/rev.austral.cienc.soc.2019.n36-10>  
F. (n.d.). *Wawancara anggota tim CSR di PT Pertamina Patra Niaga IT Teluk Kabung*.  
Fajariah, M., & Suryo, D. (2020). Sejarah Revolusi Industri di Inggris pada Tahun 1760 – 1830. *HISTORIA*, 8(1), 77 – 94.

- Hanani, S., & Nelmaya. (2022). Ecological ethics in the theological teaching of Arat Sabulungan in Mentawai Island Indonesia. *Kasetsart Journal of Social Sciences*, 43(1), 102 – 107. <https://doi.org/10.34044/j.kjss.2022.43.1.14>
- K, R. (n.d.). *Wawancara dengan Cleaning Service Di PT Pertamina Patra Niaga IT Teluk Kabung*.
- Keraf, S. (2010). *Etika Lingkungan Hidup*. PT Kompas Media Nusantara.
- Keraf, S. (2014). *Filsafat Lingkungan Hidup: Alam sebagai sebuah sistem kehidupan*. PT Kanisius.
- Kidwell, J. (2020). Mapping the field of religious environmental politics. *International Affairs*, 96(2), 343 – 363. <https://doi.org/10.1093/ia/iiz255>
- Lolangion, F., Runturambi, M. C., & Kawuwung, J. (2021). Menelaah Antroposentris Dalam Menyikapi Krisis Lingkungan Dari Perspektif Teologi Penciptaan. *Tumou Tou*, 8(1), 1 – 9. <https://doi.org/10.51667/tt.v8i1.469>
- Messias, T. (2024). From Ecotheology to Ecospirituality in Laudato si — Ecological Spirituality beyond Christian Religion. *Religions*, 15(1), 68. <https://doi.org/https://doi.org/10.3390/rel15010068>
- Ningsih, R. D. K. (2026). Deep Ecology dalam Pemikiran Arne Naess (Analisis Etika Lingkungan). *Sulesana*, 20(01), 81 – 109.
- R. D. (n.d.). *Wawancara*.
- Rahmi, A., & Zulfan Taufik. (2024). The Currents of Sufism in the Environmental Movement: Addressing the Environmental Crisis Through a Sufistic Approach. *Jurnal Ilmu Agama: Mengkaji Doktrin, Pemikiran, Dan Fenomena Agama*, 25(1), 45 – 60. <https://doi.org/10.19109/jia.v25i1.22201>
- Rivaldi, A., Feriawan, F. U., & Nur, M. (2023). Metode pengumpulan data melalui wawancara. *Sebuah Tinjauan Pustaka*, 1 – 89.
- Rozi, S. (2019). Understanding the Concept of Ecosufism: Harmony and the Relationship of God, Nature and Humans in Mystical Philosophy of Ibn Arabi. *Ulumuna*, 23(2), 242 – 265. <https://doi.org/10.20414/ujis.v23i1.354>
- Rozi, S., & Taufik, Z. (2020). Adaptation of Religion and Local Wisdom in Global Environmental Issues in Indonesia. *Religious: Jurnal Studi Agama-Agama Dan Lintas Budaya*, 4(3), 191 – 203. <https://doi.org/10.15575/rjsalb.v4i3.9593>
- S. (n.d.). *wawancara*.
- S. F. (n.d.). *Wawancara*.
- Sheehi, S. (2005). Precedence for Globalization and the Creation of Modernity. *Comparative Studies of Africa and the Middle East*, 25(2), 438. <https://muse.jhu.edu>
- Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Alfabeta.
- Syamsuddin, M. (2017). Krisis Ekologi Global dalam Perspektif Islam. *Sosiologi Reflektif*, 11(2), 84 – 105.
- Z. (n.d.). *Wawancara dengan anggota kelompok tani muda*.
- Zahnow, R., Yousefnia, A. R., Hassankhani, M., & Cheshmehzangi, A. (2025). Climate change inequalities: A systematic review of disparities in access to mitigation and adaptation measures. *Environmental Science & Policy*, 165, 104021. <https://doi.org/https://doi.org/10.1016/j.envsci.2025.104021>