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BIODIVERSITY IN PT PERTAMINA PATRA NIAGA FUEL TERMINAL SEI SIAK MOR 1 SUMBAGUT

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Abstract

The areas of Tanjung Rhu and Limbungan villages are areas that are bordered by the Siak river. The existence of the Siak River in the Pekanbaru community is one of the connecting routes with other areas, as well as the entry of goods from within and outside the Pekanbaru area. Where there is the main port of the Daku River which is still used for its function today as transportation access. This transportation access has an impact on river abrasion. This study aims to acknowledge biodiversity condition in PT Pertamina. This study uses descriptive qualitative methods with data collection techniques, documentation studies, and in-depth interviews. The results of the study show that the condition of the Siak River in recent times has not received special attention from the government. PT Pertamina Patra Niaga Fuel Terminal Sei Siak highlights environmental aspects and the sustainability of biodiversity around the company's operations in order to be maintained and sustainable by initiating an Ecotourism program by planting mangrove seedlings, planting several types of trees and plants to reduce carbon dioxide and maintaining aquatic biota ecosystems. as well as the mainland. There are also animal conservation activities, namely the Serindit Bird to maintain endemic animal ecosystems in the Semut Island Ecotourism Area.

Keywords: biodiversity; ecotourism; conservation; reforestation

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INTRODUCTION

Geographically, Pekanbaru City has a strategic position on the East Sumatran route, connected to several cities such as Medan, Padang, and Jambi with administrative areas. It is flanked by Siak Regency in the north and east while Kampar Regency in the west and south. The city is divided by the Siak River, which flows from west to east and is located at an altitude ranging from 5 - 50 meters above sea level. The city has a tropical climate with maximum air temperatures ranging from 34.1°C to 35.6°C and minimum temperatures between 20.2°C to 23.0°C.

In 2021, the Central Statistics Agency (BPS) of Riau Province will survey the people of Riau. This survey was conducted because it wanted to see the impact of the pandemic that occurred evenly throughout the country. The results of the Riau Province BPS survey on the people of Riau show that workers with salaries below 3 million are most affected by the pandemic. The poor, those vulnerable to poverty, and those who work in the informal sector are the most affected by this pandemic.

Ecotourism is the most desirable tourism product after the pandemic, especially for activities with small and active groups, such as outdoor interactions, nature education activities for families, and activities that contribute to nature conservation. It is also possible to develop a combination of natural and cultural tourism and the empowerment of MSMEs and the creative economy in their respective regions. Because after being tired of traveling to enjoy the

beauty of nature, of course, tourists will look for culinary tours and shop for souvenirs.

The Semut Island Ecotourism Program is an empowerment-based biodiversity program to create a green environment and become the center of community activities in developing potential and creativity. The expected long-term impact is forming a green area that can be used as a tourist spot for tourists from outside the region and local tourists. There are still few tourist attractions with natural concepts in Pekanbaru City. Ecotourism areas have a natural environment that is beneficial for the local community, an educational environment, and creates tourist satisfaction. Community-based ecotourism is an effort to develop villages through the tourism sector; local communities play an active role in ecotourism development so that ecotourism areas not only offer natural tourism but also contribute to environmental and cultural conservation. Offering pristine natural beauty, ecotourism can also be an educational tour for tourists by understanding the culture and history of the area so that awareness is expected to grow to participate in protecting the environment.

Sei Siak Fuel Terminal supports the development of ecotourism in the Pekanbaru environment to boost the economy of the people living in the vicinity with the initial step of creating a green environment to form a new tourist area. Located on Jalan Pengambang RT 03 RW 07, Limbungan Village, East Rumbai District, Pekanbaru City, Riau. An area on the outskirts of the Siak river. The area is still beautiful and has a small island connected by a bridge. The island which is named by the community is Ant Island. Its small shape and separation from the mainland become a unique tourist attraction that the community connects through a wooden bridge so that visitors can arrive at the island. However, materials and facilities are limited, so this area needs to be developed to become ecotourism.

This empowerment-based Diversity Program begins with planting ornamental plants, fruits, and mangroves by empowering local communities and collaborating with the Tourism Awareness Community (POKDARWIS). Then the support focuses on developing tourism-supporting facilities and infrastructure such as Saung Education, Tourism Gate, Revitalizing Bridges, Making Photobooths, and Construction of Abrasion Retaining Sheets around Ant Island.

Biodiversity includes interacting various life forms with their environment so that the earth can become a suitable place to live and provide all goods and services that benefit human life (Sutoyo, 2010). However, unfortunately, at this time, biodiversity continues to decline. Tropical forests are known to have shrunk by more than half as a source of biodiversity. In addition, habitat destruction and overexploitation of flora and fauna species will lead to species scarcity and extinction. The development of people's lives and the increasing demands of globalization and efficiency that require uniformity have resulted in a crisis of diversity in various fields. The same thing happens in biodiversity, where currently, the uniformity process occurs in almost all aspects, so there is an emphasis on the development of genetic diversity (Sutoyo, 2010).

Biodiversity that exists in nature has been threatened with extinction in various ways, including increasing agricultural area expansion by clearing forests or massive forest exploitation that threatens the sustainability of wild and local varieties that live in forests, changes in land use that cause environmental changes, rampant the activity of changing the function of agricultural land for use outside the agricultural sector causes the living flora to lose their place to grow, over-exploitation so that it threatens the life of local varieties (Anggraini, 2018).

In ISO 26000, CSR is not only intended for cooperatives but also for all organizations, both private and public. ISO 26000 provides standard guidelines on social responsibility (removing the word "corporate" so that it becomes "social responsibility"), voluntarily

covering all sectors of public or private bodies engaged in natural resources or non-SDA sectors. ISO 26000 also requires all legal entities and organizations to implement CSR, including, in this case, Limited Liability Companies, Firms, CVs, Foundations, Community Organizations, and labor unions (Rozak, 2021).

The regulation of CSR in Indonesia is still scattered in various laws and regulations that need to be rearranged by adopting the principles of CSR implementation contained in ISO 26000. The implementation of CSR for companies in Indonesia must be in line with the implementation of CSR at the international level. At the international level, guidelines and standards for the implementation of CSR have been born, which are named ISO 26000: Guidance Standard of Social Responsibility (Licandro et al., 2019). ISO 26000 is an international guide and standardization for companies in planning, implementing, monitoring, and evaluating Social Responsibility (SR) and Corporate Social Responsibility (CSR). ISO 26000 has explained the guidelines for the responsibility of an organization to implement CSR. ISO 26000 then provides 7 (seven) main issues: Community development, consumers, healthy institutional activity practices, environment, employment, human rights, and government organizations. This study will be discussed more clearly related to the main environmental issues, which are one of the cores in ISO 26000. This central issue covers the production process's environmental aspects, including pollution control in business operations, prevention and repair of environmental damage due to natural resource processing, and conservation of natural resources (Rozak, 2021).

Indonesia is an archipelagic country with various types of natural resources, one of which is sourced from the coast. Mangrove forests are natural resources with great potential for the survival of marine biota and for protecting the environment from the adverse effects of abrasion (Yudhanti et al., 2019). Mangroves are forest vegetation plants that grow between the tidal lines of seawater. Hence, the habitat of mangrove plants is in coastal areas continuously submerged in seawater, and the soil consists of mud and sand (Majid et al., 2016). However, the availability of mangrove plants is increasingly critical (Fikriyani, 2013).

The development of mangrove ecosystems as mangrove forests is the right step to maintain the diversity of biota ecosystems and reduce the impact of abrasion caused by cargo ships, tankers, and passenger ships (speed boats) that cross the Siak River every day. Crossing these large ships and speed boats causes strong waves to hit the riverbanks, including in the Semut Island area, causing abrasion. In order to be sustainable, the mangrove ecosystem needs to be managed and maintained. Mangrove forest management has two main concepts related to environmental management. First, the protection of mangrove forests is an effort to protect the mangrove forest from becoming a conservation mangrove forest area. Second, rehabilitate mangrove forests by carrying out reforestation activities. Reforestation is a mangrove nursery process, where the seeds used must be the best so that plants can grow well and have good quality in their utilization.

Flora Conservation Program Phalaenopsis amabilis (moon orchid) and Cattleya in the Sei Siak Fuel Terminal Area. Sei Siak Terminal. This program aims to cultivate Phalaenopsis amabilis (moon orchid) and Cattleya plants. This program is implemented in the Sei Siak Fuel Terminal area. Fauna Species Aves in the Sei Siak Fuel Terminal Area. This program is a program of conservation to preserve fauna by breeding 8 bird species totalling 29 birds. This program runs from January 2020; this program aims to breed bird species to be released into the wild. This innovation is an approach to SDGs Target 15.8.1, namely "Recommendations for animal and plant quarantine, as well as animal and vegetable biosafety."

METHOD

This research was conducted in the Semut Island Ecotourism Area, which is located on the outskirts of the Siak River, Pekanbaru City, Riau Province. This study uses a descriptive qualitative approach. The qualitative approach was chosen because it is flexible and provides the possibility in case of changes and more basic facts (Moleong, 2021). While the data collection techniques used in this study were carried out using primary data collection techniques, namely in-depth interviews, and secondary data collection techniques, namely library research (Sugiyono, 2015).

RESULTS AND DISCUSSION

A. Empowerment-Based Biodiversity

In carrying out the Ant Island Ecotourism program, education is delivered to add insight to groups in tourism management and suitable areas for reforestation so that many areas in Pekanbaru City are green and beautiful and become a place to visit on weekends. This education delivery is carried out at least once in the program's implementation regarding tourism management and education of mangrove nurseries in the vicinity of the program location. Program implementers carry out program presentations by involving experts in their fields. More or less, the beneficiaries have begun to understand and know about the reforestation program that will be carried out in the Semut Island area. The Greening Program Socialization activity was attended by Group Members, Limbungan Village Head, Program Implementers from the Human Initiative, representatives from PT Pertamina Patra Niaga Fuel Terminal Sei Siak, Unilak Forestry Experts, and the Chair of the Tourism Awareness Group (POKDARWIS) implementation of this program is carried out by providing education related to tourism management, sharing session from the Okura Flower Park Manager, and tree planting activities which are icons of reforestation activities as well as a form of reforestation sustainability.

350 Ketapang Kencana trees, 1,700 fruit trees, and 1,000 *Rhizophora were* planted along the riverbank. In addition to procuring seeds, it is also necessary to procure tools that support plantings, such as hoes, carts, tembilang, and boat shoes. The list and number of plant procurements that have been carried out can be seen in Table 1 below:

Table 1
List and Amount of Plant Procurement

No	Name Type of Facility	Quantity
1	Ketapang Kencana Seeds	350 stems
2	Mangrove *Rhizophora* Seeds	1000 stems
3	Matoa Tree Seeds	200 stems
4	Mahogany Tree Seeds	200 stems
5	Agarwood Tree Seeds	200 stems
6	Trembesi Tree Seeds	200 stems
7	Areca Tree Seeds	100 stems
8	Soursop Tree Seeds	200 stems
9	Jackfruit Tree Seeds	200 stems
10	Durian Tree Seeds	100 stems
11	Mangosteen Tree Seeds	100 stems
12	Geronggang Tree Seeds	200 stems

In addition to planting the Ketapang Kencana tree, 1,700 tree and fruit trees were held. Planting trees and fruit follows the site plan made by the expert. A total of 1,000 *Rhizophora* were planted on the banks of the river. This activity started on September 15, 2021, with an experiment of planting 100 stems and, on October 9, 2021, planting 900 stems involving various *stakeholders*. This area is a recommendation from the local

government as a location that can be used for the Ant Island Ecotourism Development Program to create a green environment.

B. Impact of Planting Various Types of Trees

This empowerment-based diversity program begins with planting ornamental plants, fruits, and mangroves by empowering local communities and collaborating with the Tourism Awareness Community (Pokdarwis). The tree plantings carried out include the following:

1. Mangrove Trees

The mangrove ecosystem has many benefits. These benefits are usually categorized into groups of ecological, biological, and economic benefits. For example, based on research by (Halidah et al., 2008) in East Sinjai, South Sulawesi, people are accustomed to using the wood, fruit, leaves, and roots of mangroves. Wood for building materials, tools, and fuel. The fruit is generally for food, while the leaves and roots are for medicine. In addition to direct benefits, mangroves also produce indirect benefits, namely as a barrier to abrasion and increasing fish and shrimp production. Experts and the community have known mangrove forests to have various benefits. The benefits can be felt directly from the wood, fruit, leaves, and roots of mangroves or indirectly caused by the presence and characteristics of mangrove forests. These various benefits can be grouped into ecological, biological, and economic benefits (Karuniastuti, 2013).

The ecological benefits of mangrove plants include a barrier to coastal abrasions, such as a windbreak, reducing CO2 levels in the air, and anchoring pollutants in the waters. The biological benefits of mangrove plants include a place to live for aquatic biota, both for shelter, foraging, spawning, and nurturing, a source of food for species around it, and a place to live for various animals, such as monkeys, reptiles, and birds. In comparison, the economic benefits of mangrove plants include tourism, sources of wood for building and firewood, producers of food and medicine, and increasing production of fish, shrimp, and others. The impacts of the existence of mangrove forests are:

a) The beauty of the uniqueness and coolness

The mangrove forest ecosystem has various beauty, uniqueness, and excellent values. The structure of roots, leaf stems, and fruit are unique and beautiful, as well as the presence of fauna associated with mangrove ecosystems, such as birds, monkeys, various types of reptiles, honey bees, and others. Stands of mangrove trees that grow tightly in their habitat and have high roots add to the value of beauty, coolness, and comfort.

b) Retaining river shore abrasion

The existence of mangrove forests planted tightly along the banks of the Siak River in the tourist area of Semut Island can withstand the waves and can withstand and deposit mud carried by river currents while absorbing river water pollutants. Thus, as (Suri & Purwanto, 2020) stated, river cliffs will avoid the abrasion process so that the river shoreline remains stable.

c) Absorbing CO_2

CO_2 uptake by mangroves of the Oil Mangrove (Rhizophora apiculata) species was approached using the results of (Mulia, 2014). Mulia (2014) measured the diameter growth of the Oil

Mangrove tree for 11 years (1983-1995) in the Indragiri Hilir area in preparation for the development of the PT. Sustainable Development.

Table 2
The results measured the diameter of the oil mangrove (*Rhizophora apiculata*) at various spacings in HPH PT. Bina Lestari, Riau (1983-1995)

Planting space (m)	Diameter (cm) on the certain year										
	1	2	3	4	5	6	7	8	9	10	11
2x1	0,67	0.96	1,79	2,52	3,48	4,56	5,99	6,82	7,39	8,07	8,39
2x2	0,63	1,22	2,2	2,94	3,87	4,97	7,34	8,75	10,0	11,1	11,7
3x1	0,65	0,92	1,97	2,56	3,49	4,61	6,37	7,75	8,54	9,02	9,53
3x2	0,62	1,26	1,92	2,57	3,55	4,69	7,08	8,35	9,48	10,3	11,5

Table 2 can estimate the growth development of diameter, biomass, carbon uptake, and carbon dioxide uptake of Oil Mangroves (*Rhizophora apiculata*) planted on Pulau Semut. The spacing used in Ant Island is 2 x 2 meters. Therefore, the data from the table above is data for spacing of 2 x 2 meters. The calculation of aboveground biomass for *Rhizophora apiculata* is approached using the allometric equation of Kauffman and Donato (2012), namely:

$B = 0.43\ (D)^{2.63}$ ..... (Equation 1)
Where B = aboveground biomass;
D = diameter at chest height (cm)

Then to calculate carbon absorption, the formula:
C stock = Σ biomass × CF..... (Equation 2)
Where:
C stock = total carbon in the plot (tons/ha)
Σ biomass = total mangrove forest biomass (tons/ha)
CF = Carbon Fraction (worth 0.47) (SNI 7724: 2011)

Then to calculate CO2 uptake, the formula:

$CO_2 = \frac{Mr\ CO_2}{Ar\ C} \times C$ ..... (Equation 3)
Where:
CO_2 = CO_2 absorption (Kg)
Mr CO_2 = Relative molecular weight of CO2 (44)
Ar C = Relative atomic weight of C (12)
C = Carbon stock (Kg)

Table 3
Estimation of diameter development, biomass, carbon uptake, and CO_2 uptake of Oil Mangrove plants in Semut Island tourism object

Planting space (m)	**Diameter every year (cm)**										
	1	2	3	4	5	6	7	8	9	10	11
2x2	0.63	1.22	2.2	2.94	3.87	4.97	7.34	8.75	10.07	11.19	11.75
	Biomass every year (kg)										
	1	2	3	4	5	6	7	8	9	10	11
2x2	0.13	0.73	3.42	7.33	15.11	29.17	81.33	129.11	186.83	246.54	280.33
	Carbon absorption every year (kg)										
	1	2	3	4	5	6	7	8	9	10	11
2x2	0.06	0.34	1.61	3.45	7.10	13.71	38.22	60.68	87.81	115.87	131.75
	Carbon dioxide absorption (kg)										
	1	2	3	4	5	6	7	8	9	10	11
2x2	0.22	1.25	5.89	12.64	26.03	50.26	140.16	222.49	321.96	424.87	483.10

In calculating biomass, the (Kauffman & Donato, 2012) equation are more appropriate for the growth rate of oil mangrove plants that are 5 years old upwards, where measurements of the diameter at chest height can be performed. Likewise, for the calculation of carbon uptake and carbon dioxide uptake. Although in reality, every tree planted and grown from time to time will automatically absorb and store progressively increasing carbon.

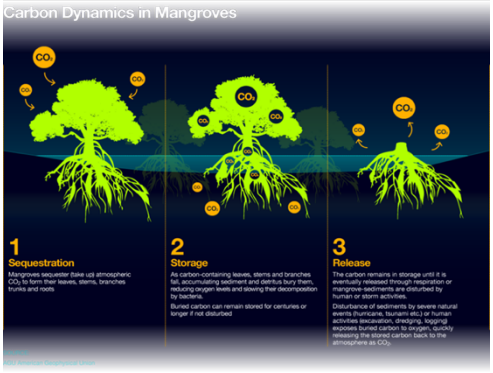

Figure 1 Carbon Dynamics in Mangrove Plants

The planting of Oil Mangroves in the Semut Island tourism object cooperates with the community, the environmentalist community, and Lancang Kuning University students. In the first stage, as a trial of the Oil Mangrove, 100 stems were planted. After observing for 3 weeks, it turns out that the plant is showing the expected growth development. Then the planting continues to the second stage with a total of 900 stems so that the total becomes 1,000 stems.

Using the data in table 2, the amount of carbon dioxide ($CO2$) uptake by 1000 stems of oil mangrove plants on Semut Island can be calculated. In the fifth year, it is estimated that the amount of carbon dioxide absorbed is 26,030 kg. The number will continue to increase until, in the eleventh year, it is estimated to reach 483,100 kg. The amount of biomass below the soil surface using the aboveground biomass ratio installed value formula: bottom biomass according to SNI 7724 (2011), which is 4:1. Thus, in the fifth year, it is estimated that the amount of carbon dioxide absorbed will be 32,538 Kg and in the eleventh year 603,875 kg. This number will increase as the age of the plant increases and if the number of plants is added again.

2. Ketapang Kencana Trees

Not only mangroves but also Ketapang Kencana trees are also planted. This tree has a horizontal canopy and a multi-layered shape like an umbrella to filter out sunlight during the day effectively. The Ketapang Kencana tree also has the benefit of absorbing pollutants. Air pollutants include solid particles or dust and greenhouse gases suspended in the air. Greenhouse gases are strongly suspected as the leading cause of global warming. Greenhouse gases include carbon dioxide (CO_2), nitrogen dioxide (N_2O), methane (CH_4), and freon (SF_6, HFC, and PFC).

To calculate the ability of the Ketapang Kencana tree to absorb greenhouse gases, specifically carbon dioxide, one can use the allometric equation formula by Chave *et al.* (2005). Based on the calculations obtained from the journal, where the specific gravity (ρ) of Ketapang Kencana is 0.65, the results are shown in Table 4.

Table 4
Biomass, Carbon Sequestration, and CO2 Uptake of Ketapang Kencana Tree

Age (years)	Diameter (cm)	Biomass (kg)	Carbon Uptake (kg)	CO2 Uptake$_2$ (kg)
2	6.5	13.90	6.53	23.95
5	15	127.37	59.86	219.50
11	25	488.80	229.74	842.36

The data in Table 2 shows that the uptake of carbon dioxide (CO_2) by the Ketapang Kencana tree species is quite significant. At the age of 2 years is estimated to be able to absorb as much as 23.95 kg. At the age of 5, as much as 219.50 kg, and at the age of 11, as much as 842.36 kg per tree. If the current number planted on Semut Island is 350 stems and 300 sticks are alive, then added to the absorption below the surface. In the second year, it is estimated that the amount of carbon dioxide absorbed is 8,982 Kg. In the fifth year, as much as 82,313 Kg, and in the eleventh year. It was estimated to be as much as 315,886 Kg. This number will increase with the age of the plant and if the number of trees is added.

3. Mahogany Trees

There is also a planting of Mahogany trees (*Swietenia macrophylla*) at the location of the Semut Island ecotourism object to increase the number of existing protective trees. When they grow big and tall, Mahogany trees usually have thick branches, leaves, and a wide canopy. The benefit of this tree is to reduce air pollution. Like mangroves, Ketapang Kencana, and other plant species, Mahogany trees can also play a role in carbon dioxide absorption and storage.

4. Fruit Trees

The types of fruit trees planted in the ecotourism location of Semut Island are Matoa (*Pometia pinnata*) and Jackfruit (*Artocarpus heterophyllus*). The primary purpose of planting this fruit tree is to produce its fruit. The Matoa tree is a type of tree that is easy and fast growing. The Minister of Agriculture of the Republic of Indonesia, through SK Number 160 of 2006, has determined the Matoa tree as a superior fruit variety recommended for cultivation. The fruit is a type of fruit that is liked by the community. Distinctive flavors such as a mixture of flavors of longan, rambutan, and durian (Faustina & Santoso, 2014). Therefore, the presence of Matoa fruit can add value to the Semut Island tourist attraction. Likewise with the Jackfruit tree. Jackfruit is one of the tree species that get priority to be developed in the Multipurpose Tree Species Development Program (JPSG). Jackfruit tree fruit tastes good and can be used for tourists who come. Jackfruit can also be processed into various products, ranging from jackfruit chips, sweets, and warm vegetables to young jackfruit rendang.

C. Biodiversity in the Company's Operational Area The

The company is committed to protecting the ecosystem around its operations. The protected fauna is Aves, and the protected flora is mangroves. The following are the absolute biodiversity activities at the Sei Siak Fuel Terminal:

Table 5
Biodiversity activities at the Sei Siak Fuel Terminal

No	Biodiversity program	Species	Unit	2018		2019		2020		2021		2022	
				Absolute	Budget (IDR Millions)	Absolute	Budget (IDR Millions)	Absolute	Budget (IDR Millions)	Absolute	Budget (IDR Millions)	Absolute	Budget (IDR Millions)
1	Study of office activities with CO2 absorbing plants	H' Floral Total		1.31	3.055.000.000	1.31	3.045.000.000	1.31	3.085.000.000	1.53	3.100.000.000	1.54	30.000.000.000
		Trembesi	Fruit	200		200		200		200		200	
		Cassia	Fruit	15		15		15		15		15	
		Pingku	Fruit	5		5		5		5		25	
		Banyan	Fruit	4		4		4		4		9	
		Matoa	Fruit	3000		300		300		300		315	
		Mahogany	Fruit	11		11		11		11		11	
		Teak	Fruit	5		5		5		5		5	
		Jackfruit	Fruit	0		0		0		0		18	
		Flamboyant	Fruit	14		14		14		14		14	
		Caqui	Fruit	8		8		8		8		8	
		Spanish Cherry	Fruit	10		10		10		10		10	
		Acacia	Fruit	12		12		12		12		12	
		Rambutan	Fruit	2		2		2		2		2	
2	Semut Island Ecotourism	H' Tree Total	Fruit	0.00		0.00		0.00		0.00		1.08	100.000.000.000
		Matoa	Fruit	0		0		0		0		315	
		Mahogany	Fruit	0		0		0		0		11	
		Jackfruit	Fruit	0		0		0		0		18	
		Rhizopora Mangrove	Fruit	0		0		0		0		738	
		Madagascar Almond	Fruit	0		0		0		0		255	
3	Fauna Conservation in TBBM area	H' Fauna Total	Tail	0.50	2.500.000.000	0.50	2.500.000.000	0.50	2.500.000.000	1.20	8.000.000.000	1.39	347.927.000.000
		Squirrel	Tail	1		1		1		0		0	
		Cassowary	Tail	4		4		4		4		4	
		Agapornis Fischeri	Tail	0		0		0		2		5	
		Melopisittacus Undulatus	Tail	0		0		0		3		3	
		Aplonis Panayensis	Tail	0		0		0		2		3	
		Pycnonotus aurigaster	Tail	0		0		0		11		1	
		Lonchura Oryzivora	Tail	0		0		0		2		1	
		Loriculus galgulus	Tail	0		0		0		14		20	

The program to return to natural ecosystems by planting trees is one manifestation of the pillars of corporate responsibility regarding nature and environmental conservation. Greening the office area is suitable for air circulation in the house and the environment around the residence. Planting trees around the office is also suitable for maintaining the availability and sustainability of water. The types of trees monitored yearly are mango, rambutan, papaya, and trembesi.

Figure 2. Greening in the Fuel Terminal Area

The Fauna Program in the Sei Siak FT Area is a community empowerment-based biodiversity protection program starting with the rescue of the Serindit Bird and providing facilities and infrastructure for the Aves fauna enclosure. Prior to innovation. PT Pertamina (Persero) FT Sei Siak is

committed to protecting protected flora and fauna, one of which is the endemic bird of Riau Province. Biodiversity is also initiated as a forum for socializing and educating the community. The company provides an information platform, namely the serindit bird education forum, for socialization with the public. This innovation arises because the public is still unfamiliar with the uniqueness of the serindit bird. Therefore, PT Pertamina (Persero) FT Sei Siak carried out an innovation program to conserve the serindit bird to preserve endemic birds typical of Riau Province. This innovation was first implemented in Pekanbaru City.

The Fauna Program in the Sei Siak FT Area has an impact on adding tools where there is a Serindit Birdcage in the company area. Conditions prior to the program: The absence of a serindit aviary and an educational forum on the conservation of aves species. Conditions after the program: There is a serindit bird cage and an educational forum for the community about aves conservation. The resulting environmental impact is an increase in the biodiversity index in 2022 by 1.39 H'

CONCLUSION

Implementing the Ant Island Ecotourism program and the protection program for flora and fauna is the application of a form of responsibility to the environment carried out by PT Pertamina Patra Niaga Fuel Terminal Sei Siak. Environmental reforestation programs such as developing mangrove forests to reduce the impact of abrasion caused by the company's operational processes are preventive and evaluative steps towards preserving the environment and aquatic biota. Planting additional crops that contribute to reducing carbon dioxide is also a form of implementing environmental conservation. The Serindit Bird Conservation is also a community empowerment-based biodiversity program that has been running according to the expectations and plans of PT Pertamina Patra Niaga Fuel Terminal Sei Siak.

In implementing the program, PT Pertamina Patra Niaga Fuel Terminal Sei Siak feels the need to pay special attention to environmental aspects and biodiversity sustainability around the company's operations. The Semut Island Ecotourism Area is several biodiversity programs and community empowerment to create a green environment and become the center of community activities in developing potential and creativity. The expected long-term impact is forming a green area that can be used as a tourist spot for tourists from outside the region and local tourists. This program focuses on increasing biodiversity and empowering communities in managing the environment around the operational area of PT Pertamina Patra Niaga Fuel Terminal Sei Siak.

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