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**PROGRAM REPORT
COMMUNITY EDUCATION and CONSERVATION PROGRAM (CECP) V
JANUARY to DECEMBER 2024**

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**and
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PREFACE

First and foremost, we would like to express our gratitude to Allah SWT, whose blessings have enabled us to complete this project activity report successfully. This report has been prepared as documentation and accountability for the activities carried out as part of the project we undertook.

The goal of this program is to empower local communities by improving their ability to manage natural resources sustainably and enhance their quality of life. It also focuses on mitigating conflicts between communities and wildlife by fostering understanding and collaboration, ensuring both human safety and wildlife protection. The tree planting initiative aims to restore ecosystems, reduce soil erosion, and contribute to climate change mitigation. Additionally, the program seeks to raise environmental awareness through early age education, encouraging individuals to take action in preserving the environment and promoting sustainability in their daily lives.

We acknowledge that this report may still have some shortcomings, and we welcome constructive feedback and suggestions for future improvements. It is our hope that this report provides a clear overview of the activities carried out and can serve as a useful reference for similar projects in the future.

We would also like to express our sincere appreciation to all parties who have supported us, through their ideas, efforts, and resources, ensuring the successful completion of this project.

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Activity Report of Community Education And Conservation Program (CECP) V January to December 2024

1. Executive Summary

In 2024, SHL is implementing four sub-programs in the villages of Lau Damak, Batu Jongjong, and Ujung Bandar in Bahorok District, Langkat Regency, North Sumatra Province. These programs include Sustainable Livelihood Development, which focuses on improving the community's economic well-being through sustainable practices; Conflict Mitigation, aimed at preventing and resolving conflicts within the communities; and Environmental Education, which raises awareness about the importance of conserving natural resources and practicing sustainable agricultural and forestry methods. Together, these initiatives aim to enhance livelihoods, foster peace, and promote environmental sustainability in the region.

The Sustainable Livelihood Development sub-program activities include assisting 25 horticulture and rice farmers, 6 cocoa farmers, and 7 pepper farmers in producing and applying liquid organic fertilizer. Additionally, 7 farmers are producing solid organic fertilizer using cow and goat manure, which is used for oil palm crops. A total of 118 households are utilizing their yards to grow vegetables using fertilizer made from household waste. Furthermore, we are still exploring and developing the potential of natural resources in the village as environmentally friendly small business alternatives, such as odot grass cultivation.

Of all the problems faced by farmers, there was something interesting we learned this year from Mr. Toto, a chili farmer in Ujung Bandar Village. He explained that he still uses chemical fertilizers due to the numerous pests and diseases affecting his chili plants. However, he also applies liquid organic fertilizer, especially amino acids, which he makes himself. As a result, his chili harvest this year has been more abundant than the previous year, and the harvest period (plant age) has been extended.

The benefits of solid organic fertilizer made from goat manure are also truly felt by Mr. Harapan Ginting. Previously, he used chemical fertilizers such as TSP, NPK, KCL, and dolomite for his oil palm plants. However, with the organic fertilizer he produces himself, he stopped using NPK in the third quarter and TSP in the fourth quarter. Now, he only applies KCL and dolomite once every four months. He uses organic fertilizer for his 25 oil palm trees, averaging 7 liters per tree. Similarly, Mr. Malam Ukur has reduced his use of KCL chemical fertilizer from the usual 2-2.5 kg to only 1 kg. By using organic fertilizer, his oil palm fruit bunches are heavier, and the leaves are healthier. He now uses organic fertilizer for his 32 oil palm trees, with an average of 5 liters per tree.

To continue improving the capacity of farmers in managing their farmlands, SHL continues to assist farmers in the practice of making liquid organic fertilizer. We also provided 21 farmers with 50 and 160 liter barrels and EM4 according to their land needs. We also continue to provide trainings such as making Micro Local Organisms (MOL), how to multiply Trichoderma and making vegetable pesticides, to help farmers control pests and diseases in plants.

In addition, we also assisted 118 households, consisting of 13 houses in Lau Damak Village, 35 houses in Batu Jongjong Village, and 70 houses in Ujung Bandar Village, in utilizing their yards to grow vegetables organically. This year, the lowest average side income earned from the harvest per day was IDR 1,661, while the highest was IDR 2,646. For the mothers who have just joined, we continue to provide support with nets, vegetable seeds, and two 25-liter buckets with faucets to be used as containers for fertilizer made from kitchen waste.

Currently, 6 cocoa fields have begun to flower, and two fields owned by Mr. Metahsah and Mrs. Puji in Lau Damak Village have already borne fruit. Meanwhile, the 7 pepper fields are generally bearing fruit. One of those who has sold their harvest is Mrs. Misnar and Mr. Misnan in Ujung Bandar Village, with the current selling price of pepper at IDR 100,000 per kilogram.

An environmentally friendly alternative business that has been successfully developed is the Arih Ersada Group, consisting of 8 housewives in Batu Jongjong Village. They cultivate several easily available medicinal plants and produce various types of traditional Karo medicine. This year, they sold only 401 bottles/packs of medicine, generating a side income of IDR 12,927,000, which is much lower than last year's sales of nearly 1,000 bottles/packs. This decline was due to some group members' residences being hit by flash floods in the middle of the year, halting activities. Additionally, heavy rainfall and strong winds damaged the drying house, preventing the group from drying the ingredients quickly. However, by the end of the year, SHL and the group had repaired the medicinal plant demonstration plot, the group name sign, and the drying house. In addition to this group, there is also a group of only 2 farmers in Lau Damak Village who cultivate dwarf elephant grass to supplement their livestock feed. Since the second quarter, the group has harvested 519.7 kilograms of dwarf elephant grass, and in December 2024, SHL handed over a grass chopping machine to them. The fine grass also helps reduce the risk of injury to the mouth and digestive tract of livestock, allowing feed to be absorbed optimally and supporting livestock growth and health. The cultivation of dwarf elephant grass is currently also being followed by the BSR Group in Ujung Bandar Village.

To support residents' farming and livestock activities, SHL monitored 50 potential wildlife conflict locations in Lau Damak, Batu Jongjong, Ujung Bandar, Timbang Jaya, Timbang Lawan, Sampe Raya, and Sei Musam villages. Of these, 22 locations were visited by orangutans, and 11 locations were visited by tigers, but no conflicts occurred. Even when wildlife entered the villagers' gardens and were spotted, they were simply chased away with loud voices. The field team continues to educate residents on measures to mitigate conflicts with wildlife, such as building Tiger Proof Enclosures (TPE) to prevent tiger attacks and attaching zinc plates to fruit trees to protect against disturbances from primates, especially orangutans. Unfortunately, since there were no tiger conflicts this year and residents felt safe, the construction of TPEs was not a priority. However, zinc plates have been installed on 55 durian trees in the gardens of 4 residents in Lau Damak and Batu Jongjong villages.

In addition, SHL encourages residents to plant agroforestry trees. This not only makes use of existing land but also enhances community welfare by providing additional income from tree products, such as wood or fruit, while improving soil quality and the surrounding environment. Agroforestry also plays a role in protecting forest areas, reducing erosion, and maintaining biodiversity. In this way, the program supports natural resource conservation, improves food and economic security for communities, and contributes to climate change mitigation.

In 2024, SHL sowed 15,538 tree seedlings consisting of 15 types of woody and fruit plants at the nursery in Ujung Bandar Village. A total of 15,120 trees were planted across 15.2 hectares in Lau Damak and Batu Jongjong villages within Bahorok sub-district. After planting, we didn't just leave them but have been regularly monitoring their growth. A total of 13,769 trees, planted over 13.8 hectares in Lau Damak and Batu Jongjong villages, have been monitored. The highest tree survival rate reached 92 percent, while the highest tree mortality rate was 32 percent.

We concluded that the importance of early environmental education in community assistance programs in villages lies in its ability to foster awareness and environmentally friendly habits in the younger generation. By understanding the significance of protecting

the environment, children and youth in the village will grow into individuals who care about nature conservation and are equipped to address environmental issues in the future. This education also helps cultivate a generation that will know how to manage natural resources sustainably, reduce negative environmental impacts, and improve overall quality of life.

At the beginning of 2024, SHL collaborated with 6 schools located in Bahorok Sub-district, including 1 elementary school in Lau Damak Village, 2 elementary schools and 1 junior high school in Batu Jongjong Village, and 1 elementary school and 1 junior high school in Ujung Bandar Village, to jointly carry out environmental education activities. The series of activities conducted in the classroom included introductions, pre-tests, ice-breaking, lesson presentations, question and answer sessions, discussions, conclusions, rewards, and post-tests. The pre and post-tests were conducted to assess the students' level of knowledge before and after receiving the lesson. They also served as an evaluation for field staff to determine whether the teaching methods used were suitable for the students and whether the lessons were effectively absorbed.

There were 10 lessons delivered to students, covering topics such as orangutans, tigers, elephants, rhinos, key species of Gunung Leuser National Park, sources of oxygen on Earth, the importance of trees for life, the functions of forests for living organisms, waste management, and paper recycling. The activities were concluded with an evaluation in December. This year, there were 66 visits made to schools, involving 258 students, consisting of 111 boys and 147 girls.

SHL also continues to assist 4 conservation learning centers as alternative educational spaces for children besides their schools. One learning center is located in Lau Damak Village, one in Batu Jongjong Village, and two in Ujung Bandar Village. This program involves children aged 6 to 12 years. Assistance is provided twice a month for each learning center. Ten environmental and conservation-related topics were covered, including orangutans, tigers, maleos, komodos, Nepenthes, visits to SHL demonstration plots, river ecosystems, climate change, protected marine species, and dolphins. Learning activities were conducted both indoors and outdoors, such as visits to SHL demonstration plots, river observations, demonstrations on climate change using balloons filled with water and set on fire, as well as various ice-breaking and educational games. The activities were concluded with an evaluation in December. A total of 88 sessions were held for children at the 4 learning centers, involving 122 children, consisting of 54 boys and 68 girls.

SHL also provided learning houses with stationery, 22 mats, 1 bookshelf, 36 zipper bags, and 151 storybooks for the 4 learning houses. In addition, 60 units of thatched roofs were supplied to replace damaged roofs, along with wall painting for the Teladeh Lestari learning house in Batu Jongjong Village.

Sahabat Hijau, a community of young people who care about the environment and are supported by SHL, also carried out an environmental campaign. They designed infographics on 6 ways to teach children to love the environment, biodiversity in Indonesia, and Komodo dragons, and created fish posters for the commemoration of "International Biodiversity Day." They also promoted SHL's work programs and celebrated World Orangutan Day through Sahabat Hijau's social media platforms.

At the end of the year, SHL commemorated Orangutan Caring Week by involving 191 students and 12 teachers from Batu Jongjong Elementary School and SMPN 6 Satu Atap. The activities included coloring and drawing competitions for elementary school students, and an inter-class quiz competition for junior high school students. Additionally, a mini-workshop was held to educate teachers about orangutans and conservation efforts. The results of the mini-workshop revealed that some teachers were unaware that orangutans are one of the world's great apes. Even Ms. Yolanda, an elementary social studies teacher, commented, "I just found out that saving orangutans means we are also saving the forest."

This statement was somewhat surprising, as it highlighted the teachers' lack of knowledge about protected wildlife. However, we are glad that this mini-workshop helped improve the teachers' understanding of orangutan and habitat conservation.

In carrying out all activities of this program, there are several obstacles, problems, and significant challenges. Some communities still rely on environmentally unfriendly agricultural practices, requiring time and the right approach to shift these habits. Limited access to resources such as capital, technology, and training hampers the adoption of more sustainable practices. Furthermore, short-term economic needs often take precedence over conservation efforts, while climate change and natural disasters can damage agricultural yields and infrastructure. Mitigation programs are frequently hindered by inadequate infrastructure in conflict-prone areas, and communities have yet to fully recognize the long-term benefits of tree planting on their farms. Additional challenges include a focus on fast-growing commodities and a lack of resources for tree maintenance, highlighting the need for intensive care to ensure the long-term success of the program.

To address the above constraints and challenges, several solutions can be implemented. These include enhanced education and training for communities on environmentally friendly farming practices and the long-term benefits of agroforestry. Access to resources such as capital, technology, and training should be improved, particularly in remote areas, through partnerships with microfinance institutions and the provision of necessary equipment. Empowering communities economically through alternative livelihoods based on non-timber forest products can help reduce dependence on environmentally destructive practices. Additionally, improving infrastructure and providing adequate technology for wildlife conflict mitigation, along with rapid recovery efforts after natural disasters, are essential. Regular mentoring and monitoring of planted trees will ensure proper care, and cooperation among stakeholders will strengthen the effectiveness of conservation programs. By implementing these strategies, communities can overcome challenges while ensuring environmental sustainability and improving their overall well-being.

2. Program Achievement

The program summary and achievements from January to March 2024 are as follows:

2.1. Sustainable Livelihood Development

- a. Throughout the year, plants at dem-plot faced numerous challenges from pests and plant diseases. Dem-plot harvested 571.1 kg of red chili, 13.1 kg of chili caplak, 684 bunches of water spinach, and 28.5 kg of mustard greens, generating a side income of IDR 17,279,500.
- b. 1 time laboratory testing of liquid organic fertilizer has been done and the pocket book of liquid organic fertilizer production will be printed in the beginning of 2025.
- c. 3 training have been conducted on organic farming land management. These included training on making local micro organisms (MOL), controlling pests and plant diseases, and propagating *Trichoderma*, a beneficial fungus used for disease control. The last was held on making vegetable-based pesticides.
- d. 25 farmers have been supported in the production and application of liquid organic fertilizer for their agricultural crops in Lau Damak, Batu Jongjong dan Ujung Bandar Village. All of these farmers use semi-organic farming practices, which combine both chemical and organic fertilizers. The crops they cultivate include land rice, paddy rice, watermelon, red chili, water spinach, gambas, bitter melon, and white beans.
- e. We do not specifically form new farmer groups, but every month we survey farmers who are genuinely interested in independently producing organic fertilizer and applying it to their farms. we have decided to focus more on education and training, and to help facilitate their needs, such as providing barrels for fertilizer containers and EM4 to support the collection of materials needed for making organic fertilizer.
- f. We have been conducting field schools specifically for farmers who are willing to use organic fertilizer. We have facilitated farmers in Lau Damak Village, covering Suka Mulia Hamlet, farmers in Batu Jongjong Village, covering Simpang Empat Hamlet, and farmers in Ujung Bandar Village, covering Buluh Regen and Hamlet II.
- g. 21 farmers have received the 50 and 160 liters of drums and EM4 and assisted in the process of making liquid organic fertilizer in turn.
- h. 118 housemakers consisting of 13 houses in Lau Damak Village, 35 houses in Batu Jongjong Village and 70 houses in Ujung Bandar Village have been assisted in the activity of using their yard to grow vegetables organically. This year, the lowest average side income obtained from harvests per day is IDR 1,661 and the highest is IDR 2,646.
- i. Five cattle and goat farmers in Tanjung Naman Hamlet, Lau Damak Village and 2 farmers in Hamlet II, Ujung Bandar Village have participated in the activity of utilizing livestock manure to make solid organic fertilizer. Five farmers have made and used it for oil palm and 2 of them have reduced the use of chemical fertilizers. While 2 farmers just started in December.
- j. Since the second quarter, the group of odot grass cultivation at Tanjung Naman Hamlet in Lau Damak Village has harvested 519.7 kilograms of odot grass. SHL provided and handed over 1 grass chopping machine to them in December 2024.
- k. The Arih Ersada group managed to sell 401 bottles/packs of traditional karo medicine products generating a side income of IDR 12,927,000.

- l. 2 groups of odot grass cultivation; BSR group in Ujung Bandar Village and Berkah Jaya group in Lau Damak Village have been formed for the development of environmentally friendly alternative business activities.
- m. There are 6 cocoa farmers who were assisted. On average, cocoa plants have begun flowering, with two fields, owned by Mr. Metahsah and Mrs. Puji in Lau Damak Village, already bearing fruit.
- n. There are 7 pepper farmers who were assisted. Several pepper harvests have also been collected, including those from Mrs. Misnar and Mr. Misnan in Ujung Bandar Village, with pepper currently selling for IDR 100,000 per kilogram.
- o. Besides providing education to 13 cocoa and pepper farmers, experts also visit farmers' fields to see the condition of the plants directly and provide advice. This activity was aimed to increase their selling value in the future.

2.2. Conflict Mitigation between Human and Wildlife Especially Orangutan

- a. 50 potential wildlife conflict sites across the villages of Lau Damak, Batu Jongjong, Ujung Bandar, Timbang Jaya, Timbang Lawan, Sampe Raya and Sei Musam have been monitored. 22 locations were visited by orangutans, 11 locations were visited by tiger. No conflict occurred.
- b. 82 residents in Lau Damak, Batu Jongjong, Ujung Bandar, Timbang Jaya, Timbang Lawan, Sampe Raya and Sei Musam Village were educated on preventing conflicts with wildlife.
- c. 42 sheets of conflict mitigation poster have been delivered to 42 residents, including 19 from Lau Damak Village, 19 from Batu Jongjong Village, and 4 from Empus Village.
- d. 11 potential locations in Lau Damak Village, Batu Jongjong and Empus have been surveyed.
- e. Zinc plates were installed on 55 durian trees in the gardens of 4 residents in Lau Damak and Batu Jongjong Villages.
- f. No construction of TPE this year. This is because no conflicts have occurred in the past year so livestock owners feel safe. We monitored 7 TPEs and only 2 are still in good condition and in use while the others are damaged and no longer in use.

2.3. Forest Ecosystem Rehabilitation

- a. The socialization on tree planting was delivered to 19 villagers from Lau Damak and Batu Jongjong. 13 villagers agreed and the field team surveyed their land with a total area of about 13,8 hectares.
- b. A planting plan map is available.
- c. 15.538 seedlings from 15 species of fruit and woody trees have been sown in SHL's nursery at Buluh Regen Hamlet in Ujung Bandar Village.
- d. From May to June, we repaired the seedling house by replacing damaged wooden and bamboo poles and torn nets.
- e. 15,120 trees have been planted in Bahorok sub-district covering 15,2 hectares of Lau Damak and Batu Jongjong villages.
- f. 15,120 trees have been planted in Bahorok sub-district covering 15,2 hectares of Lau Damak and Batu Jongjong villages.
- g. 13.769 trees that have been planted in an area of 13,8 hectares have been monitored in Lau Damak and Batu Jongjong. The highest tree survival rate was 92 percent and the highest tree mortality rate was 32 percent.

2.4. Environmental Education

- a. SHL with schools have agreed to run the environmental education activities every month. 6 schools consisting of 4 elementary schools and 2 junior high schools located in the villages of Lau Damak, Batu Jongjong and Ujung Bandar, have agreed to continue school visits related to lessons about the environment and conservation of animals and their habitats. The things agreed upon are class selection, visit schedule, duration of activities, and theme of lessons to be delivered.
- b. 66 visits to schools were held, involving 258 students consisting of 111 boys and 147 girls. Ten lessons focused on the environment and nature conservation were delivered to the children, culminating in an evaluation in the final month.
- c. A package of markers and paper glue, 22 units of mats, 1 unit of bookshelf, 36 units of zipper bag, 151 units of storybooks have been purchased for 4 conservation learning houses in Lau Damak, Batu Jongjong and Ujung Bandar villages. 60 units of thatched roofs have also been purchased to replace the damaged roofs and wall painting have also done for Teladeh Lestari learning house.
- d. There were 88 mentoring sessions for children aged 6 to at the conservation learning centers in Lau Damak, Batu Jongjong and Ujung Bandar villages. This activity involved 122 children consisting of 54 boys and 68 girls. There were 10 lessons related to environment and conservation delivered and concluded with an evaluation in December.
- e. 3 environmental campaign activities have been carried out by Sahabat Hijau, namely designing infographics on 6 ways to teach children to love the environment, Biodiversity in Indonesia, Komodo, and posters dedicated to the “International Day for Biological Diversity”, socializing SHL work programs and carrying out World Orangutan Day. All activities were uploaded to Sahabat Hijau's social media.
- f. The event involved 191 students and 12 teachers from two schools: SDN Batu Jongjong and SMP 6 Satu Atap. The activities included coloring and drawing competitions for elementary school students, as well as inter-class quiz competitions for junior high school students. Additionally, a mini workshop was held to educate the teachers about orangutans, their natural habitats, and the efforts being made to conserve them. The students and teachers also listened to stories about orangutans and other animals in the forest.

3. Planning and Achievement in 2024

Output	Activity	Date of Implementation	Progress	Percentage of Progress	Remarks
COMPONENT 1. SUSTAINABLE LIVELIHOOD DEVELOPMENT					
Output 1.1. Availability of experimental land in the form of DEMPLOTS which are used to see the effectiveness of the use of organic farming systems and can be accessed by the community as a learning tool for organic farming;	K .1.1.1. Management planning and design layout of DEMPLOT	January to November	Tthe demonstration plot harvested 571.1 kg of red chili, 13.1 kg of chili caplak, 684 bunches of water spinach, and 28.5 kg of mustard greens, generating a side income of IDR 17,279,500.	100%	Throughout the year, the plants faced numerous challenges from pests and plant diseases.
	K.1.1.2. Management of the Organic Agriculture Learning Center	April, July and October	1 time laboratory testing of liquid organic fertilizer. A pocket book of liquid organic fertilizer production will be printed in the beginning of 2025.	100%	
	K 1.1.3. 3 times training on organic agricultural land management by bringing in participants from outside.	July, October and December	3 training have been conducted on organic farming land management. These included training on making local micro organisms (MOL), controlling pests and plant diseases, and propagating <i>Trichoderma</i> , a beneficial fungus used for disease control. The last was held on making vegetable-based pesticides.	100%	
Output 1.2. Increasing the capacity of 60 farmers in implementing environmentally friendly farming methods and reducing the use of chemicals by 20% by rehabilitating	K 1.2.1. Intensive assistance to 60 assisted farmers in producing/sustituting ingredients and applying POC correctly and effectively by reducing	January to December	25 farmers have been supported in the production and application of liquid organic fertilizer for their agricultural crops in Lau Damak, Batu Jongjong dan Ujung Bandar Village. All of these farmers use semi-organic farming practices, which combine both chemical and organic fertilizers.	100%	

10 hectares of land;	chemical use by 20%		The crops they cultivate include land rice, paddy rice, watermelon, red chili, water spinach, gambas, bitter melon, and white beans.		
	K.1.2.2. Formation of 2 new community groups (Dusun 1 and Hamlet 3, Ujung Bandar Village) as a form of cooperation in implementing POC	February	We do not specifically form new farmer groups, but every month we survey farmers who are genuinely interested in independently producing organic fertilizer and applying it to their farms. we have decided to focus more on education and training, and to help facilitate their needs, such as providing barrels for fertilizer containers and EM4 to support the collection of materials needed for making organic fertilizer.	100%	The budget for practice and equipment procurement was taken from the activity budget point e, f and g.
	K.1.2.3. Organizing organic farming field schools in 2 new organic farmer groups involving 30 farmers;	March	Since the third quarter, we have been conducting field schools specifically for farmers who are willing to use organic fertilizer. For example, we have worked with farmers in Lau Damak Village, covering Suka Mulia Hamlet, farmers in Batu Jongjong Village, covering Simpang Empat Hamlet, and farmers in Ujung Bandar Village, covering Buluh Regen and Hamlet II.	100%	The budget was taken from the activity budget point e and g.
	K. 1.2.4. Construction of 2 new POC shelters in 2 hamlets.	March	21 farmers have received the drums and EM4 and are being supported in the process of making liquid organic fertilizer in turn.	100%	We combined the budget for activities e, f, and g to support practical activities and equipment procurement.

Output 1.3. Optimization of community land through the use of yards;	K 1.3.1. Intensive assistance to 110 housewives in horticultural cultivation to increase household income.	February to December	118 housemakers consisting of 13 houses in Lau Damak Village, 35 houses in Batu Jongjong Village and 70 houses in Ujung Bandar Village have been assisted in the activity of using their yard to grow vegetables organically. This year, the lowest average side income obtained from harvests per day is IDR 1,661 and the highest is IDR 2,646	100%	
Output 1.4. Production of solid organic fertilizer using cow dung in each TPE kennel built	K.1.4.1. Survey and assistance for potential locations for shelter construction and Processing of cow dung as material for making organic fertilizers	April	Five cattle and goat farmers in Tanjung Naman Hamlet, Lau Damak Village and 2 farmers in Hamlet II, Ujung Bandar Village have participated in the activity of utilizing livestock manure to make solid organic fertilizer. Five farmers have made and used it for oil palm and 2 of them have reduced the use of chemical fertilizers. While 2 farmers just started in December.	100%	
	K.1.4.2. Development of Odot grass cultivation as additional feed	April and July	Since the second quarter, the group has harvested 519.7 kilograms of odot grass. SHL provided and handed over 1 grass chopping machine to them in December 2024.	100%	
Output 1.5. Compilation of strategic plans and actions in improving the community's economy through the development of	K 1.5.1. Assistance in developing the market value of the medicinal plant group 'Arih Ersada'	March	The group managed to sell 401 bottles/packs of traditional karo medicine products generating a side income of IDR 12,927,000	100%	
	K 1.5.2. Formation of groups and	March	2 groups of odot grass cultivation; BSR group in Ujung Bandar	100%	

environmentally friendly alternative businesses based on multi-stakeholders;	identification of needs and potential for the development of 2 new groups of multi-stakeholder environmentally friendly alternative businesses		Village and Berkah Jaya group in Lau Damak Village have been formed.		
	K 1.5.3. Assistance for 2 alternative business groups	February to December	2 groups in Ujung Bandar and Lau Damak Villages are cultivating odot grass for additional animal feed.	100%	
	K.1.5.4. Training on financial management, marketing, licensing, and the use of product development production tools	June	Due to the lack of effective alternative business activities, we decided to postpone the training.	-	
Output 1.6. Establishment of an optimal development pattern for agroforestry plant products	K 1.6.1. Assistance for cocoa and pepper agroforestry farming groups	February to December	There are 6 cocoa farmers who were assisted. On average, cocoa plants have begun flowering, with two fields, owned by Mr. Metahsah and Mrs. Puji in Lau Damak Village, already bearing fruit.	100%	
	K 1.6.2. Clinical assistance for agroforestry agricultural land	February to December	Several pepper harvests have also been collected, including those from Mrs. Misnar and Mr. Misnan in Ujung Bandar Village, with pepper currently selling for IDR 100,000 per kilogram.	100%	
	K. 1.6.3. Increasing the capacity of farmers in processing	May	Besides providing education to 13 cocoa and pepper farmers, experts also visit farmers' fields to see	100%	

	pepper yields to increase the selling value		the condition of the plants directly and provide advice.		
COMPONENT 2. MITIGATION OF WILD ANIMAL CONFLICT WITH HUMANS, ESPECIALLY ORANGUTAN					
Output 2.1. Decreasing cases of conflict between humans and wild animals, especially the Sumatran orangutan;	K 2.1.1. Monitoring locations prone to conflicts between wild animals and humans, especially orangutans	January to December	50 potential wildlife conflict sites across the villages of Lau Damak, Batu Jongjong, Ujung Bandar, Timbang Jaya, Timbang Lawan, Sampe Raya and Sei Musam have been monitored. 22 locations were visited by orangutans, 11 locations were visited by tiger. No conflict occurred.	100%	
	K. 2.1.2. Dissemination of adaptation to the mitigation of conflicts between wild animals and humans	February, May, August and November	82 residents in Lau Damak, Batu Jongjong, Ujung Bandar, Timbang Jaya, Timbang Lawan, Sampe Raya and Sei Musam Village were educated on preventing conflicts with wildlife.	100%	
	K.2.1.3. Adaptive community-based management of human and wildlife conflicts	March to December	No conflicts occurred this year	-	
	K.2.1.4. Production and distribution of media campaigns for mitigating wildlife conflicts;	March to April	42 sheets of conflict mitigation poster have been delivered to 42 residents, including 19 from Lau Damak Village, 19 from Batu Jongjong Village, and 4 from Empus Village.	100%	
Output 2.2. The development of an anti-animal	K 2.2.1. Availability of data and information on potential	January - February	11 potential locations in Lau Damak Village, Batu Jongjong and Empus have been surveyed.	100%	

attack agricultural model as a solution to minimize the potential for human-animal conflict;	locations as a reference for installing zinc plates and adapting gardens against animal attacks				
	2.2.2. Installation of zinc plate	April to December	Zinc plates were installed on 55 durian trees in the gardens of 4 residents in Lau Damak and Batu Jongjong Villages.	100%	
Output 2.3. Construction of TPE cages as a solution to minimize the potential for human conflict with Sumatran tigers and ensure the availability of livestock manure as a source of raw material for solid organic fertilizer;	K2.3.1. Survey and socialization of potential locations for the construction of TPE	February to November	The socialization was conducted to several livestock owners in SHL's assisted villages but no one is willing at this time. This is because no conflicts have occurred in the past year so livestock owners feel safe.	100%	
	K.2.3.2. Construction of 6 units of TPE cages.	March, May, July, September, October and November	No construction of TPE this year. We monitored 7 TPEs and only 2 are still in good condition and in use while the others are damaged and no longer in use.	-	
COMPONENT 3. FOREST ECOSYSTEM REHABILITATION					
Output 3.1. Availability of data and information on potential locations for planting 15,000 seedlings in the TNGL buffer zone;	K.3.1.1. Socialization and survey of planting land	February to November	The socialization on tree planting was delivered to 19 villagers from Lau Damak and Batu Jongjong. 13 villagers agreed and the field team surveyed their land with a total area of about 13,8 hectares.	100%	
	K 3.1.2. Making a planting plan map	February to November	The map is available.		
Output 3.2. Availability of supporting facilities for the production	K.3.2.1. Availability of 15,000 seeds	February to December	15.538 seedlings from 15 species of fruit and woody trees have been sown in SHL's nursery at Buluh Regen Hamlet	100%	

of 15,000 seeds;			in Ujung Bandar Village.		
	K.3.2.2. Availability of nursery facilities and infrastructure	February	From May to June, we repaired the seedling house by replacing damaged wooden and bamboo poles and torn nets.	100%	
Output 3.3. The planting of 15,000 seedlings in the TNGL buffer zone;	K.3.3.1. Planted 15,000 seedlings in the TNGL buffer zone	February to December	15,120 trees have been planted in Bahorok sub-district covering 15,2 hectares of Lau Damak and Batu Jongjong villages.	100%	
	K.3.3.2. Planted 20,000 seedlings in the TNGL buffer zone.	February to December	15,120 trees have been planted in Bahorok sub-district covering 15,2 hectares of Lau Damak and Batu Jongjong villages.	100%	
Output 3.4. Availability of data and information on the growth rate of 25,000 plant seeds in 2022;	K.3.4.1. Survey and monitoring of plant growth	January to December	13.769 trees that have been planted in an area of 13,8 hectares have been monitored in Lau Damak and Batu Jongjong. The highest tree survival rate was 92 percent and the highest tree mortality rate was 32 percent.	100%	
COMPONENTS 4. ENVIRONMENTAL EDUCATION					
Output 4.1. Implementation of 80 visits to 7 schools in 3 villages for 1 year;	K 4.1.1. Meeting with the school to prepare the schedule and visit materials for 1 year	January	The team discussed with schools involved in environmental education activities carried out by YSHL every month. 6 schools consisting of 4 elementary schools and 2 junior high schools located in the villages of Lau Damak, Batu Jongjong and Ujung Bandar, have agreed to continue school visits related to lessons about the environment and conservation of animals and their habitats. The things agreed upon are class selection, visit schedule, duration of	100%	

			activities, and theme of lessons to be delivered,		
	K 4.1.2. Routine visits to 6 assisted schools in 3 villages	February to December	66 visits to schools were held, involving 258 students consisting of 111 boys and 147 girls. Ten lessons focused on the environment and nature conservation were delivered to the children, culminating in an evaluation in the final month.	100%	
Output4.2. Managed 4 conservation learning houses in 3 villages;	K.4.2.1. Identification and purchase of RBK management support needs	4 times	A package of markers and paper glue, 22 units of mats, 1 unit of bookshelf, 36 units of zipper bag, 151 units of storybooks have been purchased for 4 conservation learning houses in Lau Damak, Batu Jongjong and Ujung Bandar villages. 60 units of thatched roofs have also been purchased to replace the damaged roofs and wall painting have also done for Teladeh Lestari learning house.	100%	
	K 4.2.2. Routine visits to 4 RBK.	February to December	There were 88 mentoring sessions for children aged 6 to at the conservation learning centers in Lau Damak, Batu Jongjong and Ujung Bandar villages. This activity involved 122 children consisting of 54 boys and 68 girls. There were 10 lessons related to environment and conservation delivered and concluded with an evaluation in December.	100%	
Output 4.3. Implementation of 3 times environmental	K.4.3.1. Preparation of environment	3 times	Campaign activities include socialization of environmental and conservation issues as	100%	

awareness campaign activities involving the 'green friends' community;	al care campaign plans		well as programs and events implemented by YSHL. This activity was carried out by YSHL's environmental education team together with YSHL's assisted youth community, Sahabat Hijau.		
	K.4.3.2. Implementation of 3 times environmental care campaign activities.	3 times	3 environmental campaign activities have been carried out by Sahabat Hijau, namely designing infographics on 6 ways to teach children to love the environment, Biodiversity in Indonesia, Komodo, and posters dedicated to the "International Day for Biological Diversity", socializing SHL work programs and carrying out World Orangutan Day. All activities were uploaded to Sahabat Hijau's social media.	100%	
Output 4.4. There is event Orangutan Caring Week	K.4.4.1. Preparation of Orangutan Caring Week activity plans	November	This activity was prepared for a week by SHL in collaboration with Sahabat Hijau, a storyteller from Kampung Dongeng Medan, and 3 volunteers.	100%	
	K.4.4.2. Implementation of Orangutan Caring Week activities.	November	The event involved 191 students and 12 teachers from two schools: SDN Batu Jongjong and SMP 6 Satu Atap. The activities included coloring and drawing competitions for elementary school students, as well as inter-class quiz competitions for junior high school students. A mini workshop was held to educate the teachers about	100%	

			orangutans, their habitats, and the efforts being made to conserve them. The students and teachers also listened to story telling about orangutans.		
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4. Activity Description

4.1. Sustainable Livelihood Development

a. Management planning and design layout of DEMPLOT (January to December)

The 3-rante (1 rante = 20x20 meters) demonstration plot is organized into areas for both long-term crops like red chili and chili caplak, as well as short-term vegetables such as mustard greens and kale. These plots are managed using a semi-organic farming system, which emphasizes the use of organic fertilizers while minimizing the application of chemicals. This approach aims to promote sustainability and reduce the environmental impact of farming practices.



Picture 1. Fruit rot that caused many chilies to die at the SHL Dem-Plot in Ujung Bandar Village.

In June, several improvements were made to the land, including replacing damaged fencing timbers and nets. Additionally, decaying oil palms and broken areca nut trunks, which had partially fallen onto some of the plots, were uprooted to clear the space and ensure better access and plant health. These efforts were aimed at enhancing the overall condition of the demonstration plot for more effective farming practices.

Throughout the year, the plants faced numerous challenges from pests and plant diseases. Red chili plants were particularly affected by patek and anthracnose, which caused the chili fruits to curl and rot. To manage this, the team removed the affected fruits and applied Pegasus Plus Bion M, which proved highly effective in minimizing the fruit rot.



Picture 2. SHL demonstration plot in Ujung Bandar Village.

Maize crops, although often plagued by monkeys, helped reduce the prevalence of whitefly and root rot attacks on the chili plants. However, the situation worsened due to very high rainfall, which further stressed the plants.

Red chilies suffered from Fusarium fungus and caterpillar pests, leading to the withering and death of many plants. Hybrid chilies were also attacked by thrips and mites, possibly

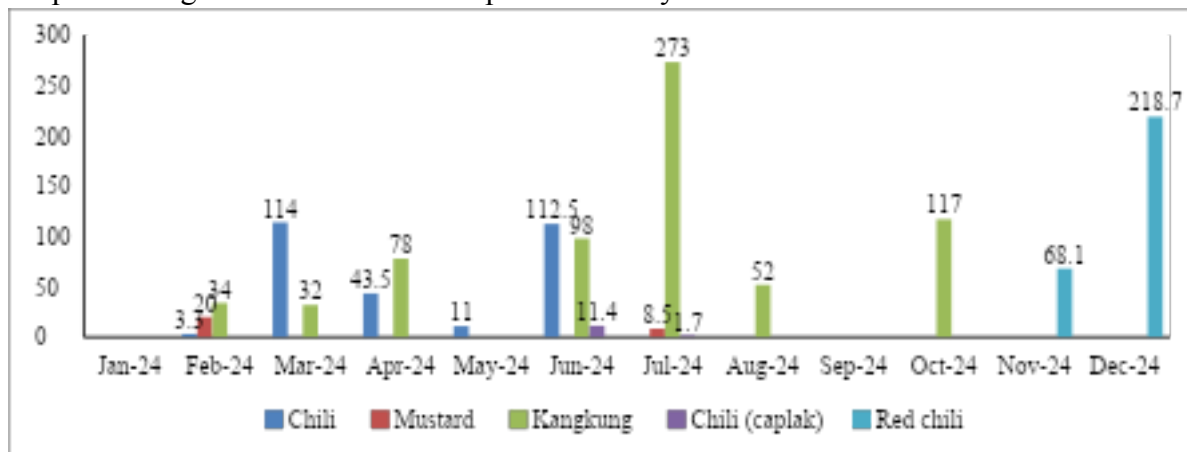
due to unfavorable weather conditions and a lack of essential nutrients like phosphorus and potassium. Even kale, which was only two weeks old, failed to be harvested as it was severely damaged by caterpillars. These challenges highlighted the vulnerability of the crops and the ongoing struggle to maintain plant health in such conditions.

During the early phase of chili planting in August, pests such as crickets and grasshoppers appeared, posing a threat to the young plants. To control these pests, the team applied Regent at a dosage of 50cc per bed. Seven days after planting, initial fertilization was carried out to support the growth of the chilies. Despite these efforts, some chili plants showed signs of yellowing and death, which could have been due to nutrient deficiencies, pest damage, or other environmental stress factors. This highlighted the need for continued monitoring and adjustments in pest and nutrient management strategies.

A routine treatment for the chili plants involves pruning those that enter the generative phase. This process is designed to stimulate the growth of new, more productive shoots, ultimately increasing fruit production. To minimize pest and disease attacks, fertilizers are applied in the morning, while fungicides and insecticides are sprayed in the evening. This timing is strategic, as it ensures that the pesticides are more effective, particularly for the chili plants, by allowing them to work without the interference of heat or strong sunlight, which could reduce their efficacy.

This year, the demonstration plot harvested 571.1 kg of red chili, 13.1 kg of chili caplak, 684 bunches of water spinach, and 28.5 kg of mustard greens, generating a side income of IDR 17,279,500. However, these results are still relatively small when compared to the operational costs of maintaining the demonstration plot. The monthly expenses for land and plant upkeep remain high, indicating that the current income is insufficient to cover the costs, highlighting the need for improvements in crop yields, pest control, and overall farm management to enhance profitability.

Graphic 1. Vegetable harvest at Dem-plot in January to December 2024



Note:

Chili in kilogram

Mustard and kangkung in bunches

b. Management of the Organic Agriculture Learning Center (April, July and October)

- Liquid organic fertilizer sample test

The tested liquid organic fertilizer is the result of research from Juanda Syahfridawani, a student of Pancabudi University Medan, with the title "Effectiveness of Farm Waste Liquid Organic Fertilizer on the Growth and Production of Green Mustard" which began in July 2023 and completed in May 2024. Lab test results and explanations are listed in Annex 1, Page 79.



Picture 3 and 4. Juju, a student of Pancabudi University was conducting research about the effect of liquid organic fertilizer on mustard at the SHL's Dem-plot in Ujung Bandar Village

- Preparation of liquid organic fertilizer pocket book
This guide is supposed to be printed in the form of a pocket book that will be given to the community in SHL assisted villages, especially farmers who implement organic farming systems. But again, SHL is still not satisfied with the test results of fertilizers made from several references. Until now, we are still studying how to make liquid fertilizers that have fewer ingredients and are easily available in the village. We plan to produce this pocket book by the end of 2024 at the latest.

c. 3 times training on organic agricultural land management by bringing in participants from outside (June, October and December)

Throughout the year, three training sessions were conducted on organic farming land management. These included training on making local micro organisms (MOL), controlling pests and plant diseases, and propagating *Trichoderma*, a beneficial fungus used for disease control. Additionally, a session was held on making vegetable-based pesticides. These trainings aimed to enhance the participants' skills and knowledge in sustainable farming practices, focusing on reducing the reliance on synthetic chemicals and promoting environmentally friendly methods of pest and disease management. These trainings were facilitated by Mr. Sumaliadi, a member of PANSU, the member of an association of organic farmers.

- Training on Local Microorganism (MOL) Production

On June 15, 2024, a training session on agricultural land management was held at the SHL's Dem-plot in



Picture 5. Training on Local Microorganism (MOL) production for farmers in Ujung Bandar Village

Ujung Bandar Village, attended by 20 farmers from Lau Damak, Batu Jongjong, and Ujung Bandar villages. Farmers were educated on natural farming techniques without synthetic chemicals. One of the main techniques taught was the production of Local Microorganisms (MOL) using locally available materials. MOL is used to activate compost and improve soil quality and plant growth. The process involved using various materials such as banana peels, pineapple fruits and peels, large tempeh, brown sugar, and others. During the training, the materials used included 5 bunches of banana peels, 5 pineapple fruits and peels, 10 large tempeh, 2 kg of brown sugar, 10 liters of clean water, 3 two-liter jerry cans, a machete or knife, 5 liters of first rice washing water, 5 liters of coconut water, 2 kg of fresh cow manure, a 5-liter bucket, and 10 ordinary balloons. The results of producing MOL were compared with chemical fertilizers such as NPK, KCL, ZA, and Urea. The experiments showed that in simple terms, organic and chemical fertilizers have significant similarities in terms of electrical energy usage. Bacteria in organic fertilizers can convert organic materials into electrical energy, similar to chemical substances. This indicates that both types of fertilizers can effectively manage plants, although organic fertilizers require specific time and soil media treatments.

- Training of Plant Pest and Disease Management

The training was held on October 19, 2024, at the SHL Dem-Plot in Ujung Bandar Village. A total of 15 farmers from Lau Damak, Batu Jongjong, and Ujung Bandar villages attended the session. This training was organized to address the challenges and issues faced by the farmers, such as yellowing of plant leaves, leaf curling, white root fungus, and other related problems. An effective way to address this issue is by applying Trichoderma around the plants.



Picture 6. Training on plant pest and disease control and trichoderma propagation in October 2024 in Ujung Bandar Village.

Trichoderma benefits plants by controlling soil pathogens like Fusarium and Pythium, boosting plant growth through improved nutrient uptake and soil structure. It also enhances plant resistance to both biotic and abiotic stress, improves soil quality, and breaks down organic matter into forms that plants can more easily absorb. Consequently, Trichoderma helps increase crop yields and reduces the need for chemical pesticides, making it an eco-friendly alternative in agriculture. Therefore, farmers are taught how to propagate Trichoderma, which involves using 1 kg of Trichoderma broodstock, 70% alcohol, 10 kg of fine bran, and 10 kg of compost. The process begins by mixing all the ingredients, except for the alcohol, and then steaming the mixture in a container for 15-30 minutes. After steaming, the mixture is allowed to cool, and alcohol is sprayed onto it. The material is then turned every 2 days and sprayed with alcohol. After 7-8 days, the Trichoderma propagules are ready for use.

- Training on making vegetable pesticides

The training was held on December 22, 2024, and attended by 10 farmers from Lau Damak, Batu Jongjong, and Ujung Bandar villages. The training focused on the preparation of vegetable pesticides and liquid organic fertilizer. To prepare the vegetable pesticide, the following ingredients were used: 2 kg of garlic, 2 kg of shallots, soap, and water. The process involves blending the garlic and shallots, then mixing the resulting paste with water in a 50-liter barrel. The mixture is left to ferment for 6 hours. When ready to use, add 1 tablespoon of soap, and mix 1 liter of the pesticide with 5 liters of water. For the liquid organic fertilizer, the following ingredients are needed: 30 kg of cow dung, 20 kg of bran, 30 kg of goat manure, 20 kg of chicken manure, and water. All the materials are mixed in a 200-liter barrel, with each material being coated in bran before fermentation for 18 days. At the time of use, mix 1 liter of the liquid fertilizer with 5-6 liters of water.



Picture 7. Training on making vegetable pesticides in December 2024 in Ujung Bandar Village.

d. Intensive assistance to 60 assisted farmers in producing/substituting ingredients and applying POC correctly and effectively by reducing chemical use by 20% (January to December)

A total of 25 farmers have been supported in the production and application of liquid organic fertilizer for their agricultural crops in Lau Damak, Batu Jongjong dan Ujung Bandar Village. All of these farmers use semi-organic farming practices, which combine both chemical and organic fertilizers. The crops they cultivate include land rice, paddy rice, watermelon, red chili, water spinach, gambas, bitter melon, and white beans.

In the first quarter, some rice farmers faced significant losses due to walangsangit pests, which suck the contents of rice grains during the ripening period, severely damaging their crops. In the second and third quarters, farming activity was limited, as many farmers, like the rice growers, allowed their land to rest for three months after the harvest. Additionally, it was observed that many of the SHL-assisted farmers also engaged in other work to supplement their income. These activities included daily labor, such as harvesting oil palm, ngelong (lifting wood), and sometimes working outside the sub-district to earn extra money.

However, in the fourth quarter, a positive development occurred when Mr. Toto, a chili farmer from Ujung Bandar Village, shared his experience with using organic fertilizer in the form of amino acids. He reported that his chili yield



Picture 8. Toto, a chili farmer in Ujung Bandar Village, practices semi-organic farming patterns

increased compared to previous harvests, and the harvest period (plant age) was also extended. This success has encouraged continued efforts to educate farmers about organic farming.

We have been dedicated to further educating farmers on organic farming practices by gathering information and references on making organic fertilizers, as well as natural pest and disease control methods using materials readily available in the village. As part of our support, we have also provided barrels for fertilizer-making containers. This year, 21 farmers received barrels, with sizes of 50 and 160 liters, based on the size of their land. Additionally, we continue to assist them in the practical application of liquid organic fertilizer, helping to enhance the sustainability and productivity of their farms.



Picture 9. Supriono, a farmer in Lau Damak Village, who received a blue barrel and practical assistance in making liquid organic fertilizer.

Table 1. Data on Farmer Assistance in the Application of Liquid Organic Fertilizer in January to December 2024

No	Name	Area	Type of Plants	1 st Quarter	2 nd Quarter	3 rd Quarter	4 th Quarter
BATU JONGJONG							
1	Yanita	5 rante	Land rice				Planting age: 3 months Use of chemical fertilizer: - 26 kg of Ponska ; RP 88,400 - 6 kg of TSP : RP 108,000 Use of organic fertilizer: - 4 liters of liquid fertilizer - 400 liters of water
2	Ramita	3 rante	Land rice				Planting age: 3 months Use of chemical fertilizer: - 20 kg of Ponska ; RP 68,000 - 4 kg of TSP : RP 72,000 Use of organic fertilizer: - 2 liters of liquid fertilizer - 200 liters of water
3	Biring Ali	5 rante	Land rice				Planting age: 3 months Use of chemical fertilizer: - 26 kg of Ponska ; RP 88,400 - 6 kg of TSP : RP 108,000 Use of organic fertilizer: - 4 liters of liquid fertilizer - 400 liters of water
4	Santi	4 rante	Land rice				Use of chemical fertilizer: - 24 kg of Ponska ; RP 81,600 - 6 kg of TSP : RP 108,000 Use of organic fertilizer: - 4 liters of liquid fertilizer - 400 liters of water
5	Ingan	3 rante	Land rice				Planting age: 3 months Use of chemical fertilizer: - 20 kg of Ponska ; RP 68,000 - 4 kg of TSP : RP 72,000 Use of organic fertilizer:

							- 2 liters of liquid fertilizer 200 liters of water
6	Fadli	1600 m2	Land rice			Land preparation	Planting age: 12 days Use of chemical fertilizer: 50 kg of Urea ; RP 165,000
7	Sunardi	4 rante	Land rice			Land preparation	Planting age: 13 days
8	Wagirah	1600 m2	Land rice			Land preparation	Planting age: 14 days
9	Sutarman	1600 m2	Land rice			Land preparation	Planting age: 15 days
10	Sunadi	800 m2	White peanut			Planting age: 60 days Use of chemical fertilizer: - 3 kg of NPK : RP 59,000 - 1 kg of TSP : RP 13,000 Use of organic fertilizer: 2 liters of liquid fertilizer Harvest : 6 kg	
			Pare				Planting age: 65 days Use of chemical fertilizer: - 1 kg of NPK Mutiara : RP 20,000 Harvest: 5 kg
			Gambas			Planting age: 60 days Use of chemical fertilizer: - 1 kg of NPK : RP 59,000 - 1 kg of TSP : RP 13,000 Use of organic fertilizer: 2 liters of liquid fertilizer Harvest: 12 kg	Planting age: 80 days Use of chemical fertilizer: - 1 kg of NPK : RP 59,000 - 1 kg of TSP : RP 13,000 Use of organic fertilizer: 2 liters of liquid fertilizer Harvest: 15 kg
	Sutarman	0,5 rante	Kangkun g			Planting age: 45 days Use of chemical fertilizer: - 1 kg of Urea : RP 14,000 Use of organic fertilizer: - 3 liters of liquid fertilizer - 16 liters of water	Planting age: 15 days Use of chemical fertilizer: - 1 kg of Urea : RP 14,000

						Harvest: 100 bunches	
		2 rante	Blue eggplant			Planting age: 45 days Use of chemical fertilizer: - 1 kg of Urea : RP 14,000 Use of organic fertilizer: - 3 liters of liquid fertilizer - 16 liters of water Harvest: 25 kg	Planting age: 65 days Use of chemical fertilizer: - 1 kg of Urea : RP 14,000 Harvest: 15 kg
		8 m2	Kemangi				Planting age: 65 days Harvest: 3 kg
		3 rante	Chilli				Planting age: 65 days Use of chemical fertilizer: - 1 kg of Urea : RP 14,000 Harvest: 50 kg
UJUNG BANDAR							
11	Supardi	4 rante	rice	Use chemical fertilizer Farmers only use chemical fertilizer once during the planting period. Use of organic fertilizer: - 230 milliliters of liquid fertilizer mix with 15 liters of water Harvest : 350 kg	resting the land after harvesting		
12	Mirna	4 rante	rice	Use chemical fertilizer Farmers only use chemical fertilizer once during the planting period. Use of organic fertilizer: - 230 milliliters of liquid fertilizer mix with 15 liters of water	resting the land after harvesting		

				Harvest : 450 kg			
13	Budi	4 rante	rice	<p>Use chemical fertilizer Farmers only use chemical fertilizer once during the planting period.</p> <p>Use of organic fertilizer: - 230 milliliters of liquid fertilizer mix with 15 liters of water</p> <p>Harvest : 350 kg</p>	resting the land after harvesting		
14	Triyono	4 rante	rice	<p>Use chemical fertilizer Farmers only use chemical fertilizer once during the planting period.</p> <p>Use of organic fertilizer: - 230 milliliters of liquid fertilizer mix with 15 liters of water</p> <p>Harvest : 450 kg</p>	resting the land after harvesting		
15	Juli Kamsih	4 rante	rice	<p>Use chemical fertilizer Farmers only use chemical fertilizer once during the planting period.</p> <p>Use of organic fertilizer: - 230 milliliters of liquid fertilizer mix with 15 liters of water</p> <p>Harvest : 350 kg</p>	resting the land after harvesting		
16	Siti	7 rante	rice	<p>Use chemical fertilizer Farmers only use chemical fertilizer once during the planting period.</p>	resting the land after harvesting		

				<p>Use of organic fertilizer: - 230 milliliters of liquid fertilizer mix with 15 liters of water</p> <p>Harvest : 600 kg</p>			
17	Mujito	4 rante	rice	<p>Use chemical fertilizer Farmers only use chemical fertilizer once during the planting period.</p> <p>Use of organic fertilizer: - 230 milliliters of liquid fertilizer mix with 15 liters of water</p> <p>Harvest : 350 kg</p>	resting the land after harvesting		
18	Juminem	4 rante	rice	<p>Use chemical fertilizer Farmers only use chemical fertilizer once during the planting period.</p> <p>Use of organic fertilizer: - 230 milliliters of liquid fertilizer mix with 15 liters of water</p> <p>Harvest : 350 kg</p>	resting the land after harvesting		
19	Toto	5 rante	Chilli				<p>Planting age: 4 months</p> <p>Use of chemical fertilizer:</p> <ul style="list-style-type: none"> - 7 kg of pupuk cantik : RP 112,000 - 11 kg of NPK grower ; RP 239,000 - 10 kg of KCL : RP 140,000 - 2 kg f CPN : RP 60,000 <p>Use of organic fertilizer:</p>

							<ul style="list-style-type: none"> - 30 liters of liquid fertilizer - 600 liters of water
20	Paidi	2,5 rante	Chilli				Planting age: 4 months Use of chemical fertilizer: <ul style="list-style-type: none"> - 6 kg of NPK Mutiara : RP 247,500 - 6 kg of Ponska ; RP 90,000 Use of organic fertilizer: <ul style="list-style-type: none"> - 30 liters of liquid fertilizer - 600 liters of water Harvest : 300 kg
21	Edi	3 rante	Chilli				Planting age: 4 months Use of chemical fertilizer: <ul style="list-style-type: none"> - 6 kg of NPK Grower ; RP 720,000 - 12 kg of Gandasil : RP 180,000 Use of organic fertilizer: <ul style="list-style-type: none"> - 30 liters of liquid fertilizer - 600 liters of water Harvest : 350 kg
22	Siti	800 m2	Pare and gambas				Use of chemical fertilizer: <ul style="list-style-type: none"> - 2 kg of NPK Mutiara : RP 40,000 Use of organic fertilizer: <ul style="list-style-type: none"> - 2 liters of liquid fertilizer - 32 liters of water Harvest : 4 kg of pare Harvest : 10 kg of gambas
LAU DAMAK							
23	Supriono	1 rante	Watermelon	Planting age: 60 days	Use of chemical fertilizer:		

				<ul style="list-style-type: none"> - 1 kg of Urea ; RP 19,000 - 50 kg of KCL : RP 35,000 Use organic fertilizer <ul style="list-style-type: none"> - 70 liters Harvest : 650 kg			
		4 rante	chili	Planting age: 95 days Use of chemical fertilizer: <ul style="list-style-type: none"> - 1 kg of Urea ; RP 19,000 - 50 kg of KCL : RP 35,000 Use organic fertilizer <ul style="list-style-type: none"> - 70 liters Harvest : 495 kg			Planting age: 44 days Use of chemical fertilizer: <ul style="list-style-type: none"> - 4 kg of NPK Mutiara : RP 480,000 - 1 kg of KCL : RP 120,000 Use of organic fertilizer: <ul style="list-style-type: none"> - 24 liters of liquid fertilizer - 400 liters of water
24	Jumiatik	3 rante	Watermelon			Planting age: 30 days Use of chemical fertilizer: <ul style="list-style-type: none"> - 2 kg of NPK Mutiara : RP 40,000 - 0,5 kg of KCL : RP 20,000 Use of organic fertilizer: <ul style="list-style-type: none"> - 1 liters of liquid fertilizer 15 liters of water	
		3 rante	Chilli			Planting age: 44 days Use of chemical fertilizer: <ul style="list-style-type: none"> - 4 kg of NPK Mutiara : RP 480,000 - 1 kg of KCL : RP 120,000 Use of organic fertilizer: <ul style="list-style-type: none"> - 24 liters of liquid fertilizer - 400 liters of water 	
25	Puji	5 rante	Land rice			Planting age: 90 days Use of chemical fertilizer: <ul style="list-style-type: none"> - 50 kg of NPK : RP 550,000 Use of organic fertilizer: <ul style="list-style-type: none"> - 100 liters of liquid fertilizer - 200 liters of water 	

e. Formation of 2 new community groups as a form of cooperation in implementing POC (February)

We do not specifically form new farmer groups, but every month we survey farmers who are genuinely interested in independently producing organic fertilizer and applying it to their farms. This is because many of the farmers previously assisted by SHL did not show strong commitment, which is why the number of farmers joining SHL fluctuates from month to month. As a result, we have decided to focus more on education and training, and to help facilitate their needs, such as providing barrels for fertilizer containers and EM4 to support the collection of materials needed for making organic fertilizer.

f. Organizing organic farming field schools in 2 new organic farmer groups involving 30 farmers (March)

Since the third quarter, we have been conducting field schools specifically for farmers who are willing to use organic fertilizer. For example, we have worked with farmers in Lau Damak Village, covering Suka Mulia Hamlet, farmers in Batu Jongjong Village, covering Simpang Empat Hamlet, and farmers in Ujung Bandar Village, covering Buluh Regen and Hamlet II.



Picture 10. Field school for making liquid organic fertilizer with farmers in Batu Jongjong Village



Picture 11. Field school for making liquid organic fertilizer with farmers in Ujung Bandar Village

g. Construction of 2 new POC shelters in 2 hamlets (March)

At the start of this program, we built a simple shelter for producing liquid organic fertilizer in the center of the village. However, because the village consists of several hamlets, some of which are located far from the center, some residents have found it difficult to access the fertilizer, especially when they need to carry it on foot to their farms. As a result, SHL initiated the distribution of 50- and 160-liter drums, along with EM4, to the assisted farmers on a rotational basis, according to their land needs. This year, 21 farmers have received the drums and EM4 and are being supported in the process of making liquid organic fertilizer in turn. Additionally, student interns from Universitas Pancabudi, Universitas Sumatera Utara, and Universitas Medan Area have participated in some of the activities.



Picture 12. Supriono, one of the chili farmers who received a 160-liter barrel in Lau Damak Village.

Table 2. Farmers receiving barrels in 2024

No.	Name of Village	Number of Farmer
1	Lau Damak	1 farmer
2	Batu Jongjong	12 farmers
3	Ujung Bandar	8 farmers

h. Intensive assistance to 110 housewives in horticultural cultivation to increase (February to December)

118 housemakers consisting of 13 houses in Lau Damak Village, 35 houses in Batu Jongjong Village and 70 houses in Ujung Bandar Village have been assisted in the activity of using their yard to grow vegetables organically. This year, the lowest average side income obtained from harvests per day is IDR 1,661 and the highest is IDR 2,646.

From the end of the second quarter to the beginning of the third quarter, the community faced challenges due to the hot weather, which caused the soil to dry out and resulted in



Picture 13 and 14. Siti, a housewife who uses her yard to plant long beans and cucumbers in Batu Jongjong Village

a lack of rain. Many wells dried up, making it difficult to water plants and meet daily household water needs.

For new residents, we continue to provide education on how to use kitchen waste to create organic fertilizer, utilizing stacked buckets as containers. Additionally, we supply nets, polybags, and vegetable seeds to those who need them.



Picture 15. SHL staffs were providing knowledge about using stacked buckets as containers for organic fertilizer to 3 residents in Batu Jongjong Village, Picture 16. SHL staff was distributing nets, polybags and vegetable seeds to residents of Ujung Bandar Village

Table 3. Monitoring house yard plants in 2024

No	Name of Village	1st Semester (IDR)	2nd Semester (IDR)	Total (IDR)	Daily Income (IDR)
LAU DAMAK VILLAGE					
1	Maritim (ld)	420400	405600	826000	2.294
2	Siti Rohani (ld)	463900	387000	850900	2.364
3	Susilawati (ld)	417200	364600	781800	2.172
4	Setiana (ld)	396600	382000	778600	2.163
5	Sri Ulin (ld)	386000	365000	751000	2.086
6	Puji Muliani (sm)	183000		183000	2.033
7	Supriono (sm)	400000	391200	791200	2.198
8	Lelawati (sm)	369900	385600	755500	2.099
9	Sarji (sm)	384000	382800	766800	2.130
10	Surip (sm)	185000		185000	2.056
11	Endamalem (tp)	388000	416000	804000	2.233
12	Pangertin (tp)	358500	377400	735900	2.044
13	Malam Ukur (tp)	360400	346400	706800	1.963
BATU JONGJONG VILLAGE					
14	Murni Ginting (t)	461500	417500	879000	2.442
15	Murni (t)	452500	410800	863300	2.398
16	Fitri (t)	393000	421900	814900	2.264
17	Rinem (t)	380500	365100	745600	2.071
18	Tumiem (t)	408500	462100	870600	2.418
19	Winda (t)	407000	411100	818100	2.273
20	Jul Apriani (t)	397500	400800	798300	2.218
21	Mastariah (t)	378000	372900	750900	2.086

22	Riah (t)	412000	387400	799400	2.221
23	Nurhaliza (t)	382500	358100	740600	2.057
24	Sinta (t)	188000	409900	597900	1.661
25	Santi (t)	360000	442500	802500	2.229
26	Nita (t)	383000	451500	834500	2.318
27	Rosma (t)	182000	394400	576400	2.135
28	Liza (t)	182000	389200	571200	2.116
29	Rindu (t)	380500	391000	771500	2.143
30	Novi (t)	383500	386600	770100	2.139
31	Junita (t)	383000	433500	816500	2.268
32	Evi (t)	380000	414500	794500	2.207
33	Siti Khadijah (t)	399000	403000	802000	2.228
34	Wagirah (se)	455500	497000	952500	2.646
35	Desi (se)	418500	498000	916500	2.546
36	Sunarseh (se)	379000	455000	834000	2.317
37	Tupon (se)	351000	384500	735500	2.043
38	Legia (se)	388500	477100	865600	2.404
39	Misni (se)	379500	420500	800000	2.222
40	Sumiyani (se)	365500	365000	730500	2.029
41	Tarmiseh (se)	395000	418500	813500	2.260
42	Ratna (se)	393000	423000	816000	2.267
43	Tatik (se)	511000	440000	951000	2.642
44	Rini (se)	347500	390000	737500	2.049
45	Ros (se)	370000	345000	715000	1.986
46	Suranta (se)	344500	400500	745000	2.069
UJUNG BANDAR VILLAGE					
47	Gito (d2)	440000	380000	820000	2.278
48	Tini (d2)	380000	447000	827000	2.297
49	Ngatemi (d2)	408500	414500	823000	2.286
50	Suwanti (d)	373500	402500	776000	2.156
51	Atik (d2)	434000	361500	795500	2.210
52	Juli kamsi (d2)	361500		361500	2.008
53	Mirna	368000	361500	729500	2.026
54	Yanti (d2)	406500	426500	833000	2.314
55	Nuraseh (d2)	365500	409000	774500	2.151
56	Widya (d2)	369000	365000	734000	2.039
57	Surya (d2)	409000	364500	773500	2.149
58	Legiem (d2)	413000	410500	823500	2.288
59	Jumirah (d2)	353000	368000	721000	2.003
60	Windasari (d2)	357000	418000	775000	2.153
61	Mujayana (d2)	343500		343500	1.908
62	Siti (d2)	395000		395000	2.194
63	Nek temu (d2)	356500	407000	763500	2.121
64	Listia (d2)	363000	356000	719000	1.997
65	Misri (d2)	364500	375000	739500	2.054
66	Nek tutur (d2)	378000	382500	760500	2.113

67	Misnani (d2)	398000	427000	825000	2.292
68	Sugirah (d2)		510000	510000	2.833
69	Surianto (d2)		379000	379000	2.106
70	Misi (d2)	394000	413500	807500	2.243
71	Evi (d2)	362500	376500	739000	2.053
72	Muliyati (d2)	347500	517500	865000	2.403
73	Sarinten (d2)	371000	478000	849000	2.358
74	Amelia (d2)	348000	471500	819500	2.276
75	Sri (d2)	391000	523000	914000	2.539
76	Desi (d2)	366500	468000	834500	2.318
77	Sugiarni (d3)	376000	445000	821000	2.281
78	Juliani (d2)	365000	521500	886500	2.463
79	Lastri (d2)	362500	477000	839500	2.332
80	Paini (d2)	348500	370000	718500	1.996
81	Fitriana (d2)	373000	514000	887000	2.464
82	Putri (d2)	351000	527000	878000	2.439
83	Irma (d2)	355000	457500	812500	2.257
84	Rubi (d2)	387500	539000	926500	2.574
85	Mirna (d2)	367000	421000	788000	2.189
86	Kemina (d2)	350500	511500	862000	2.394
87	Sumi (d2)	381000	470500	851500	2.365
88	Runta (d2)	410000	481000	891000	2.475
89	Ida (d2)		434000	434000	2.411
90	Sukini (d2)	347000	353500	700500	1.946
91	Mariani (d2)	364000	412000	776000	2.156
92	Kija (d2)	342000	411000	753000	2.092
93	Gianti (d2)	360000	354500	714500	1.985
94	Gina (d2)	347500	417500	765000	2.125
95	Erna (d2)	361000	491500	852500	2.368
96	Nek Giem (d2)	349000	479500	828500	2.301
97	sarjumi (d2)	364500	504500	869000	2.414
98	Yus (d2)	380000	432500	812500	2.257
99	Susi (d2)	367000		367000	2.039
100	Inten (d2)	372000	428000	800000	2.222
101	Suriyani (d2)	381000	386000	767000	2.131
102	Siti (d2)	367000	348500	715500	1.988
103	Sugirani (d2)	384000	388000	772000	2.144
104	Ana (d2)	377000	527500	904500	2.513
105	Putri (d2)	402000	388000	790000	2.194
106	Suryani (d2)	396000	442500	838500	2.329

107	Juli (d2)	369000	399000	768000	2.133
108	Diah (d2)	389000	411500	800500	2.224
109	Rini (d2)		437500	437500	2.431
110	Sutini (d2)	208000		208000	2.311
111	Parni (d2)	188000		188000	2.089
112	Nisa (d2)	184000		184000	2.044
113	Ayu (d2)	193000		193000	2.144
114	Tari (d2)	182000		182000	2.022
115	Rukyah (d2)	190000		190000	2.111
116	Saminem (d2)		436000	436000	2.422
117	Sunarsih (d2)		360000	360000	2.000
118	Sunarsih (d2)		405000	405000	2.250

i. Survey and assistance for potential locations for shelter construction and processing of cow dung as material for making solid organic fertilizer (April)

Five cattle and goat farmers in Tanjung Naman Hamlet, Lau Damak Village, have participated in the activity of utilizing livestock manure to produce solid organic fertilizer. These five farmers use the organic fertilizer for their oil palm plants. Meanwhile, two farmers from Hamlet II, Ujung Bandar Village, joined the program in November.

The benefits of organic fertilizer are truly felt by Mr. Harapan Ginting. Previously, he used chemical fertilizers such as TSP, NPK, KCL, and dolomite. However, with the organic fertilizer he now produces himself, he stopped using NPK in the third quarter and stopped using TSP in the fourth quarter. Currently, he only uses KCL and dolomite, which are applied once every four months. He now uses organic fertilizer for his 25 oil palm trees, with an average of 7 liters of fertilizer per tree.

Similarly, Mr. Malam Ukur has reduced his use of the chemical fertilizer KCL from the usual 2-2.5 kg to only 1 kg. By using organic fertilizer, his oil palm fruit bunches have become heavier, and the leaves are healthier. Currently, he applies organic fertilizer to his 32 oil palm trees, with an average of 5 liters of fertilizer per tree.

Table 4. Monitoring of solid organic fertilizer production in 2024

No	Name	Number of livestock	Average animal manure per day	Number of Ppm	Description
1	Harapan PA	21 sheeps	21 kg	1660	He previously used chemical fertilizers such as TSP, NPK, KCL, and dolomite. However, with the organic fertilizer he now

					produces by himself, he no longer uses NPK in the third quarter and stopped using TSP in the fourth quarter. Currently, he only uses KCL and dolomite, applying them once every four months. He now uses organic fertilizer for his 25 oil palm trees, with an average of 7 liters of fertilizer per tree.
2	Malam Ukur	4 cows	40 kg	1300	He has reduced his use of KCL chemical fertilizer from the usual 2-2.5 kg to just 1 kg. By using his organic fertilizer, the fruit bunches have become heavier, and the leaves are in good condition. He currently applies the organic fertilizer to his 32 oil palm trees, using an average of 5 liters of fertilizer per tree.
3	Hendri	9 cows	90 kg	2920	He uses chemical fertilizers, applying 1 kg of TSP and 2 kg of dolomite every 4 months. Currently, he uses organic fertilizer for his 50 oil palm trees, with an average of 4 liters of fertilizer per tree.
4	Erwin Ginting	8 cows	80 kg	2600	He uses organic fertilizer for his 32 oil palm trees, applying an average of 5 liters of fertilizer per tree.
5	Junaidi	5 cows	50 kg	1250	He uses organic fertilizer for his 32 oil palm trees, applying an average of 5 liters of fertilizer per tree.
6	Rina Niszari a	4 cows	-		new member
7	Turiem	4 cows	-		new member

The information in the table above cannot be used as a standard for the dosage of fertilizer per palm tree and its results, especially since these palm trees are on average 5 to 10 years old. We believe it would be beneficial to conduct specific research on the use of organic fertilizers for oil palm from the nursery stage to planting, so that the results can be more measurable. The expectation is that if production yields can be maximized, farmers will no longer expand their land for palm cultivation but instead optimize the land they already have.



Picture 17 (left). Farmer was collecting goat manure for solid organic fertilizer production.
 Picture 18 (right) Monitoring the production of solid organic fertilizer in Lau Damak Village.

j. Development of Odot grass cultivation as additional feed (April and July)

Rumput Odot (*Pennisetum purpureum*) is a type of tall grass that can reach 2-4 meters and is often used as animal feed. Its leaves are broad, green, and rich in protein and fiber, making it a good feed for cattle and other livestock. It grows fast, is resistant to drought, and can be harvested several times a year. For cultivation, the soil needs to be well cultivated and it is usually grown through cuttings or seeds, with regular cutting to encourage new growth. Apart from being a feed, elephant grass also helps prevent soil erosion thanks to its strong root system.

Currently, there are 2 locations for Odot grass cultivation in Tanjung Naman Hamlet, Lau Damak Village. However, planting at the first location was temporarily halted because it had to be fenced off first. The second location is a new site managed by four farmers, covering an area of 1 rante (20x20 meters). This land, previously used for palm oil cultivation, has been borrowed by the farmers for the past 1 to 2 years. The group has planted Odot and Elephant grass in stages. Although both of them are two different types of

grass, both are commonly used as animal feed. Since the second quarter, the group has harvested 519.7 kilograms of odot grass.



Picture 19. Harvesting odot grass in Lau Damak Village.

Table 2. Monitoring odot grass in October to December 2024

Time	Location 2	Harvest
April to June	938 clums (each clums weighing approximately 0,5 kg)	Total 468,8 kg
July to September	27 clums (each clump weighing approximately 0.25 kg)	Total 6,75 kg

October to December	12 clums of odot grass (each clump weighing approximately 1,6 kg)	Total 44,2 kg
	25 clums of milk grass (each clump weighing approximately 1 kg)	

Forage grass should be fine to facilitate easier digestion for livestock, enhance digestive efficiency, and reduce the risk of injury to the mouth or digestive tract. Fine grass clippings also aid the microorganisms in the rumen to digest fiber more effectively, allowing for better nutrient absorption. Additionally, fine grass is easier to mix with other feeds, resulting in a more balanced diet and making it simpler to distribute feed evenly. Seeing the seriousness of these 2 farmers cultivating dwarf elephant grass, SHL provided and handed over 1 grass chopping machine to them in December 2024.



Picture 20 and 21. The handover of the grass chopper machine to farmers in Lau Damak Village as well as a test run of the machine.

k. Assistance in developing the market value of the medicinal plant Aarih Ersada Group (March)

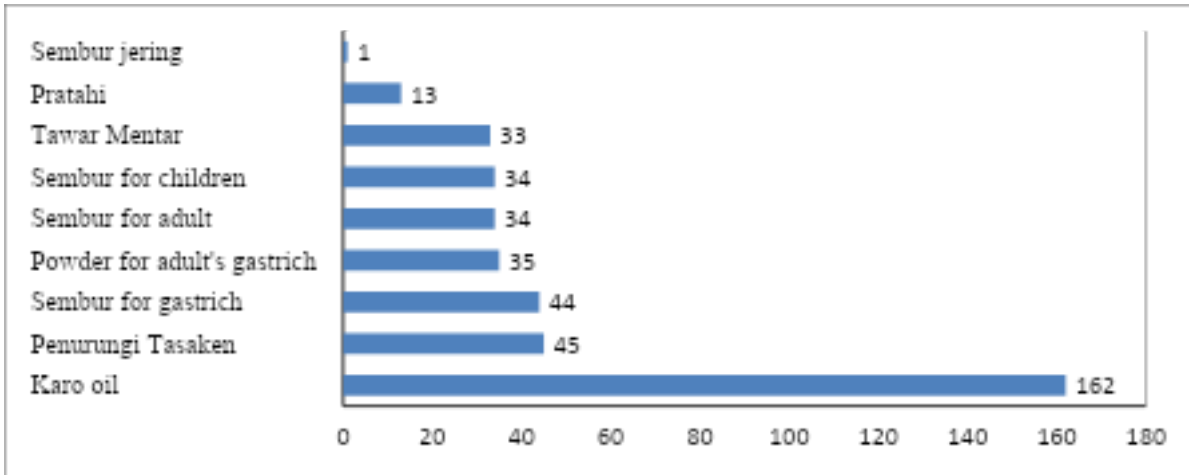
Although this group is now independent, we continue to conduct monthly monitoring, which includes recording products sold, checking bookkeeping, and discussing any obstacles they face to find solutions together. The group also received a grant of IDR8,000,000 from the village government, which they used to purchase equipment that supports their business, such as refrigerators, stainless steel pans, stoves, and more.

This year the group managed to sell 401 bottles/packs of traditional karo medicine products generating a side income of IDR 12,927,000 for 9 group members consisting of housewives living in Batu Katak Hamlet, Batu Jongjong Village.

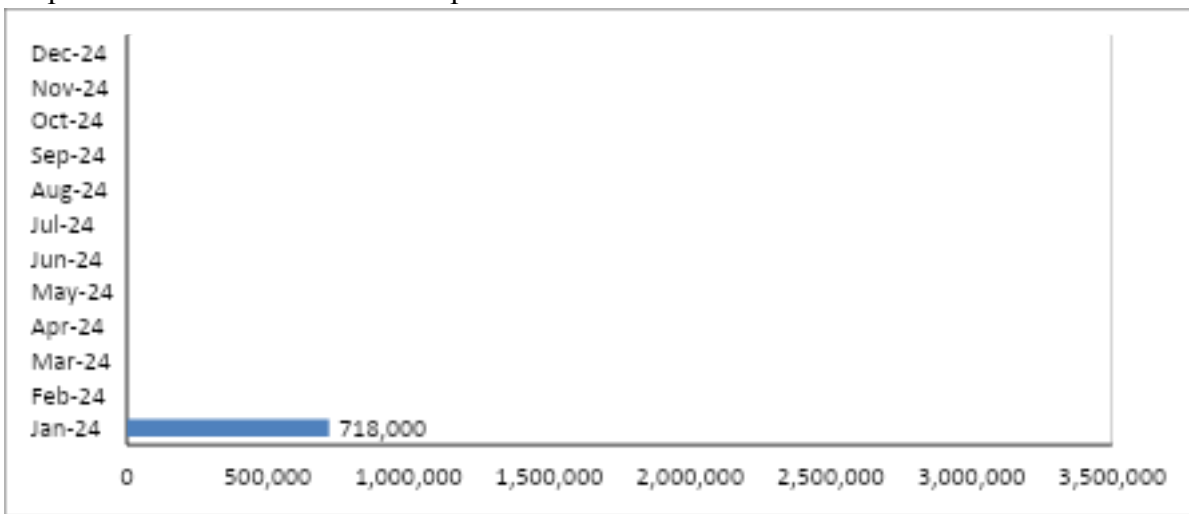
The obstacle is that the group has not yet been able to obtain a BPOM (Food and Drug Administration) license due to incomplete product data, including the Latin names of each ingredient, clinical trial results, quality tests, and reports on safety and side effects. One effort made by SHL is to collaborate with students and lecturers involved in medicinal plant research, particularly for karo oil products, which are the best sellers.

The field team and group members also repaired the damaged group name sign, plant name tags and dry house on December. The cost for this activity was shared by the group and SHL.

Graphic 2. Number of medicinal products sold in 2024



Graphic 3. Side income from sales proceeds in 2024



Picture 22 (left). The group name sign reparation,
 Picture 23 (right) Making the plant name tags in Arih Ersada's demplot in Batu Jongjong Village

I. Formation of groups and identification of needs and potential for the development of 2 new groups of multi-stakeholder environmentally friendly alternative businesses (March)

There are 2 groups formed, namely:

- The BSR (Bandar Sumber Rezeki) Group in Ujung Bandar Village, which has been cultivating maggots as animal feed for two quarters. This activity has received training, but the results have not been significant. After analysis, it was found that the main challenges were inadequate cages and insufficient feed. Although feed could be sourced from leftover food, particularly fruit from traditional markets, group members, who also have other jobs, were unable to regularly go to the market to collect the feed. As a result, the group decided to discontinue the maggot cultivation activity and replace it with odot grass cultivation.
- Berkah Jaya Group in Lau Damak Village is also cultivating odot grass.

This group was inspired by a group in Lau Damak Village that had successfully cultivated odot grass and received 1 machine from SHL.

m. Assistance for 2 alternative business groups (February to December)

There are 2 groups of farmers from Batu Jongjong and Lau Damak Villages who cultivate odot grass as an environmentally friendly alternative business. Until now, the harvest is still small and is used by group members for additional animal feed in turns. The hope is that if the odot grass planting area becomes wider, this grass can be processed into pellets as animal feed.

- Odot Grass Cultivation by the BSR (Bandar Sumber Rezeki) Group in Ujung Bandar Village. A group of 3 farmers in Pelar Hamlet planted odot grass on an area of 1 rante (1 rante = 20x20 meters) with a spacing of 80x80 centimeters. Planting age is 1 month and 80% of the plants have leaves.
- Odot Grass Cultivation by the Berkah Jaya Group in Lau Damak Village group of 4 farmers in Suka Mulia Hamlet planted odot grass on an area of 2 rante (1 rante = 20x20 meters) with a spacing of 80x80 centimeters. A total of 750 grass stems were planted per rante. Planting age is more than 1 month. Grass growth is slow and uneven, some are attacked by pests so that the leaves dry out.



Picture 24 (left). Monitoring the odot grass cultivation in Ujung Bandar Village. Picture 25 (right) Monitoring the odot grass in Lau Damak Village

n. Training on financial management, marketing, licensing, and the use of product development production tools (June)

Due to the lack of effective alternative business activities, we have decided to postpone the training.

o. Assistance for cocoa and pepper agroforestry farming groups (February to December)

Cocoa farmers faced several challenges such as cocoa plants have produced fruit, but the fruits are dry and some are affected by white mold. To address this issue, we shared knowledge with the community on how to create vegetable pesticides and plant growth stimulants. We hope that the farmers will apply this knowledge to manage and reduce the problems they are encountering.



Picture 26. Monitoring the cocoa cultivation in Lau Damak Village.

In the fourth quarter, SHL with Mr. Sumaliadi, an expert in organic farming land management, conducted training on local microorganism production (MOL), liquid organic fertilizer, Trichoderma propagation, and plant-based pesticides. He also visited cocoa and pepper farms, providing valuable suggestions. For cocoa, he recommended sprinkling Trichoderma around the plants and watering them with MOL every 3 days at a 1:1 ratio. He emphasized proper pruning techniques, advising the complete removal of downward branches, maintaining a plant height of 2 meters, and ensuring the distance between branches (dorget) does not exceed 2 meters. On average, cocoa plants have begun flowering, with two fields, owned by Mr. Metahsah and Mrs. Puji in Lau Damak Village, already bearing fruit.

Table 5. Monitoring of cocoa farms in Lau Damak and Batu Jongjong in December 2024

No	Name of Farmer	Monitoring Result
Lau Damak Village		
1	Puji (sm)	The cocoa trees have borne fruit and are now being fertilized with urea.
2	Syamsul Efendi (sm)	When cacao flowers fall off, it is recommended to clean the new shoots to maintain proper spacing between them.
3	Sarji (sm)	Eight cocoa trees were successfully inoculated, but the leaves dried out due to a lack of shade.
4	Supriono (sm)	Eight trees were successfully inoculated, but the condition of the bush and cocoa field was not properly maintained.
5	Metahsah (ug)	The cocoa has been maintained according to last month's training, which included pruning branches and shoots.
6	Bolang Ginting (ug)	Some cocoa trees are lacking nutrients, causing their roots to protrude from the ground, which leads to the trees tilting and falling.

p. Clinical assistance for agroforestry agricultural land (February to December)

Of the 16 farmers, only 8 are still cultivating pepper in Batu Jongjong and Ujung Bandar villages. They face numerous challenges from the nursery stage to planting, including unfavorable weather conditions, inadequate planting media, lack of shade, and insufficient fertilization. While all eight pepper cultivation locations have flowered and borne fruit, and some have even been harvested, the yields have not been optimal. As a result, the harvests are mainly for household consumption rather than for commercial sale.



Picture 27. Monitoring the pepper cultivation in Ujung Bandar Village

In October, Mr. Sumaliadi, the resource person for the trichoderma propagation training, also visited the eight pepper cultivation locations to see the problems. The advice given was to make an anchor from inanimate objects such as iron or bamboo so that the nutrients in the pepper are fulfilled. He also suggested using inanimate anchors like iron or bamboo to support the plants and fulfill their nutritional needs. For yellowing leaves, MOL should be watered every 3 days at a 1:5 ratio. Several pepper harvests have also been collected, including those from Mrs. Misnar and Mr. Misnan in Ujung Bandar Village, with pepper currently selling for IDR 100,000 per kilogram.

Table 6. Monitoring pepper in Batu Jongjong and Ujung Bandar villages in December 2024

No	Name of Farmer	Monitoring Result
Batu Jongjong Village		
1	Tupon	The pepper plants are growing well and are well-maintained. The owner regularly applies NPK chemical fertilizer, but the plants have not yet borne fruit.
Ujung Bandar Village		
2	Edi	The land is bushy, pepper has started to creep up but lacks maintenance. The leaves look yellow and lack nutrition.
3	Yusuf	The land is bushy, pepper has started to creep up but lacks maintenance. The leaves look yellow and lack nutrition.
4	Poniman	The pepper plants appear to be somewhat unkempt; however, six of the plants have borne fruit, and they have produced a substantial amount.
5	Paidi	Pepper has flowered and 40% fruiting.
6	Misnar	Pepper has been harvested as much as 1.5 kg with a selling price of 100,000/kg.
7	Misnan	Pepper has been harvested 1 ounce and consumed for his own household needs.

q. Increasing the capacity of farmers in processing pepper yields to increase the selling value (May)

In addition to providing education to cocoa and pepper farmers, experts also visit farmers' fields to see the condition of the plants directly and provide advice.

Three cocoa farmers and one pepper farmer participated in the Trichoderma propagation training held in October at the SHL dem-plot, as described in activity code b above. The farmers also received practical guidance in their respective fields, including how to prune cocoa branches. The downward branches should be completely cut off, with a maximum plant height of 2 meters and a maximum distance of 2 meters between the

branches. For cocoa cultivation, an effective method is to sprinkle Trichoderma around the plants and water them with MOL (Microbial Organic Liquid) every 3 days at a 1:1 ratio.

For pepper cultivation, an effective approach is to create stakes from inanimate objects such as iron or bamboo to ensure the plants receive adequate nutrients. To address yellowing leaves, watering is done with MOL (Microbial Organic Liquid) every 3 days at a ratio of 1:5.



Picture 27. Expert visit to farmers' land in Lau Damak Village

4.2. The Conflict Mitigation between Human and Wildlife Especially Orangutan

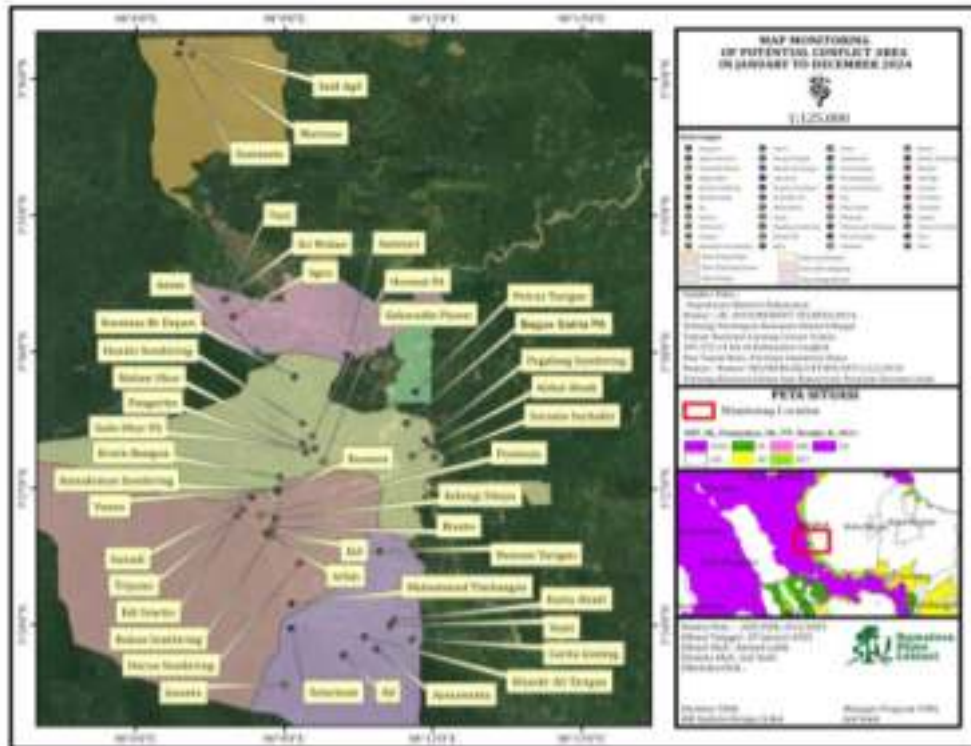
a. Monitoring locations prone to conflicts between wild animals and humans, especially orangutans (January to December)

50 potential wildlife conflict sites across the villages of Lau Damak, Batu Jongjong, Ujung Bandar, Timbang Jaya, Timbang Lawan, Sampe Raya and Sei Musam have been monitored. 22 locations were visited by orangutans, 11 locations were visited by tiger, with reports from landowners and residents mentioning tiger footprints and roars. However, no physical evidence of the tigers was found when the team visited the sites. Fortunately, there was no conflicts occurred. Residents reported that they only chased the orangutans away using vocal sounds, preventing any serious wildlife interactions.



Picture 28. Orangutan spotted on the boundary of Mr. Sunadi's farm in Batu Jongjong Village, precisely in Batu Katak Hamlet.

In March, an orangutan was spotted on the boundary of Mr. Sunadi's farm in Batu Jongjong Village, precisely in Batu Katak Hamlet, at coordinates N 03 44 67.67, E 098 13 90.21. At that time, the field team documented it with a mobile phone camera from a distance of about 20 meters, so the picture was not good.



Map 1. Potential conflict area in 2024

Table 7. Monitoring potential conflict area in 2024

No	Name of Villager	Name of Hamlet	Coordinate N	Coordinate E	Type of Plants in Garden	Month of Monitoring											
						Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
A Lau Damak Village																	
1	Zaki	Suka Mulia	3.444025	98.186193	durian, palm oil trees, duku, jengkol			long tailed monkey, beruk									
2	Rosmina br Depari	Selayang	3464722	98,1598	durian, palm trees, pinang, chili			no info	long tailed monkey, beruk, gibbon						long tailed monkey, beruk, gibbon		
			3,4917	98,153751						orangutan, long tail monkey, beruk, gibbon	long tailed monkey, beruk, gibbon		tiger, long tailed monkey, beruk, kedih				
3	Pangertin	Tusam Pinter	3,463212	98,157497	durian, palm oil trees, chili			no info				long tailed monkey, beruk, gibbon	long tailed monkey, beruk, gibbon				long tailed monkey, beruk, gibbon
4	Sada Ukur PA	Tusam Pinter	346473	98,15978	durian, palm oil trees			no info							long tail monkey, beruk, gibbon		
5	Kekal Abadi	Biak Mampe	3 46 19.86	98 19 34.76	durian, karet, pisang, jengkol					long tailed monkey, beruk							long tailed monkey, beruk
6	Saharudin Pinem	Tusam Pinter	3.459857	98163325	durian, pisang					long tailed monkey, beruk, kedih	long tailed monkey, beruk, kedih	long tailed monkey, beruk, kedih		long tailed monkey, beruk, kedih			long tailed monkey, beruk
7	Pangertin PA	Tusam Pinter	3.463136	98157671	sawit, durian, karet, cabe					long tailed monkey, beruk, gibbon	long tailed monkey, beruk, gibbon				long tailed monkey, beruk, gibbon	tiger, long tailed monkey, beruk, kedih	

8	Malam Ukur	Tusam Pinter	3.466541	E. 98.156482	durian, palm oil						long tailed monkey, beruk, gibbon	long tailed monkey, beruk, gibbon	long tailed monkey, beruk, gibbon	long tailed monkey, beruk, gibbon			long tailed monkey, beruk, gibbon
9	Hendri Sembiring	Tanjung Naman	3,47389	98,473949	sawit						long tailed monkey, beruk, gibbon	long tailed monkey, beruk, gibbon		long tailed monkey, beruk, kedih			
10	Aman	Selayang	3,500313	98,140423	palm oil, durian							long tailed monkey, beruk, kedih	long tailed monkey, beruk, kedih				long tailed monkey, beruk, gibbon
11	Pagalan Sembiring	Biak Mampe	3,467798	98,197345	palm oil, rubber, duku							long tailed monkey, beruk, gibbon					long tailed monkey, beruk, gibbon
12	Hormat PA	Tusam Pinter	3.46909	98.15931	palm oil												tiger, long tailed monkey, beruk, kedih
13	Bagus Staria	Suka Mulia	3.28'25	98.11'27	rubber trees												tiger, long tailed monkey, beruk, kedih
Batu Jongjong Village																	
14	Kelengi Sitepu	Batu Katak	3,43897	98,14744	durian, palm trees, coffee		orangutan, bear				orangutan, long tailed monkey, kedih	long tailed monkey, kedih		long tailed monkey, beruk, kedih			long tailed monkey, beruk, gibbon
15	Suranta Br Sembiring	Batu Katak			durian, rubber and palm oil trees		orangutan, long tailed monkey			orangutan, long tailed monkey							long tailed monkey, beruk, kedih
16	Mariono	Batu Katak			rubber trees												long tailed monkey,

																	beruk, kedih		
17	Aji (Bagong)	Kampung Baru	3.388932	98170172	karet, durian, sawit, jernang, jengkol												long tailed monkey, gibon, beruk		long tailed monkey, beruk, gibon
18	Jasanta	Kampung Baru	3.378031	98150172	palm oil, durian												long tailed monkey, gibon, beruk		long tailed monkey, beruk, gibon
19	Rukun Sembiri ng	Tegapen	3 43 32.5	98 14 51.21	palm oil, durian								oranguta n, long tailed monkey, gibon, beruk	long tailed monkey, beruk, gibon	long tailed monkey, beruk, gibon				
20	Ijul	Tegapen	3.422272	98169808	durian, pinang, mangostee n								oranguta n, long tailed monkey, gibon, beruk					long tailed monkey, beruk, gibon	
21	Edi Suwito	Batu Katak	3.440073	98.13377	palm oil, rubber trees, pinang								oranguta n, long tailed monkey, gibon, beruk	long tailed monkey, gibon, beruk			long tailed monkey, beruk, gibon		
22	Triyono	Batu Katak	3.442309	98.136143									oranguta n, bear, long tailed monkey, gibon, beruk	long tailed monkey, gibon, beruk, bear			long tailed monkey, beruk, gibon		
23	Harun Sembiri ng	Simpang Empat	3.422568	98.155248	palm oil, durian, banana								oranguta n, long tailed monkey, kedih	long tailed monkey, beruk, gibon	long tailed monkey, beruk, gibon			long tailed monkey, beruk, kedih	long tailed monkey, beruk, kedih
24	Kemale man Sembiri ng	Batu Katak	3.449698	98.1477	limes									long tailed monkey, kedih, beruk	long tailed monkey, kedih, beruk	tiger, long tailed monkey, beruk, kedih		long tailed monkey, beruk, kedih	

25	Yunus	Batu Katak	3.26'58	98.8'49	palm oil, rubber trees							long tailed monkey, beruk, gibbon		long tailed monkey, beruk, gibbon		tiger, long tailed monkey, beruk, kedih
26	Rusmen	Batu Katak	3,448662	98,14775	palm oil, rubber trees									orangutan, long tailed monkey, beruk, kedih		
27	Rianto	Tegapen	3,269	98,846	palm oil, rubber trees									long tailed monkey, beruk, kedih		
28	Saharudin Pinem	Tegapen			palm oil, durian									long tailed monkey, beruk, gibbon		
29	Muhamad Timbangan	Simpang Empat			palm oil, durian, pinang		orangutan, long tailed monkey			orangutan, long tailed monkey				orangutan, long tailed monkey, gibbon, beruk		
30	Arfan	Tegapen	3.25'58	98.8'44	palm oil, durian											tiger, long tailed monkey, beruk, kedih
31	Rukun S	Tegapen	3.25'59	98.8'41	palm oil, durian											orangutan, tiger, long tailed monkey, beruk, kedih
32	Erwin Bangun	Batu Katak	3.27'15	98.8'54	durian											tiger, long tailed monkey, beruk, kedih
33	Poniman	Batu Katak	3 44 01.93	98 14 19.39	rubber trees			no info								

34	Sunadi	Batu Katak	3 44 67.67	98 13 90.21					SHL team found 2 orangutan (female and a baby) from a distance of 20 meters at N 03 44 67.67, E 098 13 90.21								
35	Aji (Bagong)	Kampung Baru	3.388932	98170172	karet, durian, sawit, jernang, jengkol						orangutan, long tailed monkey, gibbon, beruk						
36	Jasanta	Kampung Baru	3.378031	98150172	palm oil, durian					orangutan, long tailed monkey, gibbon, beruk							
C Ujung Bandar Village																	
37	Asmawanta	Bandar Baru	3,39108	98,18074	durian, palm oil trees, pinang, and rubber trees			no info									long tailed monkey, beruk, gibbon
38	Cerita Ginting	Bungara			palm oil and rubber trees, rice			tiger footprints around the garden									long tailed monkey, beruk, gibbon
39	Nemani Tarigan	Bandar Baru	3,426634	98,181882	karet, durian, sawit						orangutan, long tailed monkey, gibbon, beruk	long tailed monkey, gibbon, beruk		long tailed monkey, beruk, gibbon			long tailed monkey, beruk, gibbon

40	Khaidir Ali Tarigan	Bandar Baru	3,3955669	98,177012	karet, durian, sawit						orangutan, long tailed monkey, gibbon, beruk	long tailed monkey, gibbon, beruk	orangutan, long tailed monkey, gibbon, beruk	long tailed monkey, beruk, gibbon			long tailed monkey, beruk, gibbon
41	Sutarnan	Bandar Baru										long tailed monkey, gibbon, beruk		orangutan, long tailed monkey, gibbon, beruk	long tailed monkey, beruk, gibbon		
42	Yenti	Bandar Baru	3.39977	98.18570	rice												long tailed monkey, beruk, kedih
43	Kasta Abadi	Bandar Baru	3.40186	98.18684	durian												tiger, long tailed monkey, beruk, kedih
D	Timbang Jaya Village																
44	Yani	Hamlet 4	3,519208	98,129893	palm oil, durian, pinang								orangutan, long tailed monkey, kedih	long tailed monkey, kedih			long tailed monkey, beruk, kedih
45	Sri Wulan	Dusun 5	3.51932	98.12994	palm oil,									orangutan, long tailed monkey, beruk, gibbon			orangutan, long tailed monkey, beruk
E	Sampe Raya Village																
46	Samsuri	Tualang Gepang												orangutan, long tailed monkey, gibbon, beruk			
F	Sei Musam Village																
47	Mariyono	Tanjung Subur			palm oil, rubber, durian									orangutan, long tailed monkey,	long tailed monkey, beruk, gibbon		

																	gibon, beruk			
48	Said Agil	Tanjung Subur			palm oil, rubber, durian												orangutan, long tailed monkey, gibon, beruk	long tailed monkey, beruk, gibon		
49	Sumianto	Tanjung Subur			palm oil, rubber, durian												orangutan, long tailed monkey, gibon, beruk	long tailed monkey, beruk, gibon		
F	Timbang Lawan Village																			
50	Agus	Dusun 1	3,3046	98,758	palm oil													long tailed monkey, beruk, kedih		

b. Dissemination of adaptation to the mitigation of conflicts between wild animals and humans (February, May, August and November)

In the villages of Lau Damak, Batu Jongjong, Ujung Bandar, Timbang Jaya, Timbang Lawan, Sampe Raya and Sei Musam, 82 residents were educated on preventing conflicts with wildlife. The field team emphasized practical steps such as using zinc plates on fruit trees to deter animals like orangutans, building TPE cages to protect livestock, and implementing agroforestry with a layered system to provide habitats and food sources for wildlife while minimizing conflicts. Residents also learned how to make safe firecrackers from recycled materials like milk cans and bottles, aiming to avoid the use of harmful weapons or traditional firecrackers that pose risks to both humans and wildlife. These efforts are essential for promoting harmonious coexistence between communities and wildlife while supporting sustainable practices in agriculture and conservation.



Picture 29. Socialization of conflict mitigation to residents in Batu Jongjong Village.

c. Adaptive community-based management of human and wildlife conflicts (March to December)

No conflicts occurred in this first quarter.

d. Production and distribution of media campaigns for mitigating wildlife conflicts (May)

In May, the team distributed conflict mitigation posters to 42 residents, including 19 from Lau Damak Village, 19 from Batu Jongjong Village, and 4 from Empus Village. The posters displayed the contact numbers of SHL staff, who can be reached for reporting wildlife conflicts or disturbances. These posters were affixed to the walls of houses, coffee shops, and offices near areas that are prone to wildlife conflicts. The goal of this initiative is to empower local communities to quickly report and address issues, thereby enhancing both community safety and wildlife conservation efforts in the region.



Picture 30. Distribution of posters on conflict mitigation to residents in Batu Jongjong Village

e. Availability of data and information on potential locations as a reference for installing zinc plates and adapting gardens against animal attacks (January to February)

The installation of zinc plates on fruit trees is one of the key strategies to prevent conflicts between orchard owners and primates, particularly orangutans. During a socialization session held to inform the community about this initiative, all orchard owners expressed their full support, recognizing that the installation of zinc plates would help prevent or reduce disturbances from wildlife, thereby minimizing economic losses. As part of the planning process, 11 potential locations in Lau Damak Village, Batu Jongjong and Empus have been surveyed for the installation of these zinc plates. This proactive approach aims to safeguard both the orchards and the local wildlife, promoting a more harmonious coexistence between the two.

Table 8. Zinc plate installation location survey in 2024

No	Name	Location	Coordinate N	Coordinate E	Number of Trees
1	Zaki	Lau Damak	3 44 40.25	98 18 61.93	8 durian trees
2	Rosmina br Depari	Lau Damak	3 46 47.22	98 15 98.00	50 durian trees
3	Saharudin Pinem	Lau Damak	3 45 98.9	98 16 33.9	15 durian trees
4	Aji	Batu Jongjong	3 38 89.3	98 17 01.7	10 durian trees
5	Jasanta		3 37 80.31	98 15 01.72	8 durian trees
6	Rukun S	Batu Jongjong	3 43 30.7	98 14 46.6	5 durian trees
7	Petrus Tarigan	Empus	3 48 55.5	98 19 44.2	25 durian trees
8	Sada Ukur PA	Lau Damak	3 47 43	98 19 42	16 durian
9	Kasta Abadi	Ujung Bandar	3 40 18.6	98 18 68.4	17 durian
10	Erwin	Batu Jongjong	3 27 15	98 85 4	10 durian
11	Andre	Batu Jongjong	3 27 15	98 85 4	4 durian



Picture 31 dan 32. Survey of locations for installing zinc plates in the villagers' gardens of Lau Damak and Empus Village

f. Installation of zink plates (April to December)

In an effort to reduce conflicts between landowners and wildlife, particularly primates like orangutans, zinc plates have been attached to fruit trees to prevent them from climbing and causing damage, such as breaking branches or consuming fruits. During this year, zinc plates were installed on 55 durian trees in the gardens of 4 residents in Lau Damak and Batu Jongjong Villages. This initiative aims to protect the livelihoods of local farmers while also safeguarding the natural habitats of wild animals.



Picture 33. Zink plate installation in Batu Jongjong Village



Picture 34. Zink plate installation in Lau Damak Village

In fact, many residents' gardens have been surveyed but installation is not done in all locations. In addition to the fairly difficult road access to the location, especially during the rainy season, cutting tree branches between one tree and another is also sometimes a problem. Landowners must use wood cutting machines and not all have them. If borrowing must pay around Rp 150,000 per day. Things like this become obstacles to the installation of zinc plates.

Table 9. Installation of zinc plates in 2024

No .	Name of Owner	Location	Coordinate N	Coordinate E	Number of Trees
1	Rukun S	Batu Jongjong	3 43 30.7	98 14 46.6	5 durian
2	Saharudin P	Lau Damak	3 46 57.9	98 16 47.7	12 durian
3	Rukun Sembiring	Batu Jongjong	03 43 80.1	98 14 35.0	18 durian trees
4	Sri Wulan	Timbang Jaya	3.519488	98.129981	20 durian trees

g. Survey and socialization of potential locations for the construction of TPE (February to November)

The construction of TPE cages is one of the efforts to prevent conflicts between the community, especially farmers, and tigers, both in residential areas and in plantations used as grazing sites for livestock like cows. The community understands the benefits of these TPE cages; however, they face several challenges. One significant obstacle is the difficulty in obtaining wood for the main pillars and bamboo for the razor wire fencing. Additionally, some residents do not have enough land available for the cages. Over the past two years, as no conflicts have occurred, villagers have developed a sense of safety, which has led them to deprioritize the need for TPE cages.



Picture 35. Socialization about zink plate installation in Lau Damak Village

But we are still surveying the location for the construction of TPE in the future. There are 3 locations that have been surveyed for the needs of 12 cows in Lau Damak and Timbang Lawan Village.

Table 10. Survey of TPE construction location in 2024

No	Month of Survey	Name	Location	Coordinate N	Coordinate E	Number of Livestock
1	Oct-24	Agus	Timbang Lawan	3.3046	98.758	4 cows
2	Nov-24	Hormat PA	Lau Damak	3.46909	98.15931	3 cows
3	Nov-24	Malam Ukur	Lau Damak	3.47677	98.157035	5 cows

h. Construction of 6 units of TPEs

There is no construction of TPE cages this year. This is because there has been no conflict throughout this year so that residents still feel safe and TPE construction is not their priority. We monitored 7 TPEs and only 2 are still in good condition and in use while the others are damaged and no longer in use.



Picture 36 and 37. Monitoring TPEs in Lau Damak Village

4.3. The Forest Ecosystem Rehabilitation

a. Socialization and survey of planting land (February to November)

The socialization on tree planting was delivered to 19 villagers from Lau Damak and Batu Jongjong. 6 of them only received the socialization and were not willing to participate in this activity because they planned to plant oil palm on their land. The other 13 villagers agreed and the field team surveyed their land with a total area of about 13,8 hectares. The land survey was conducted using GPS and drones.



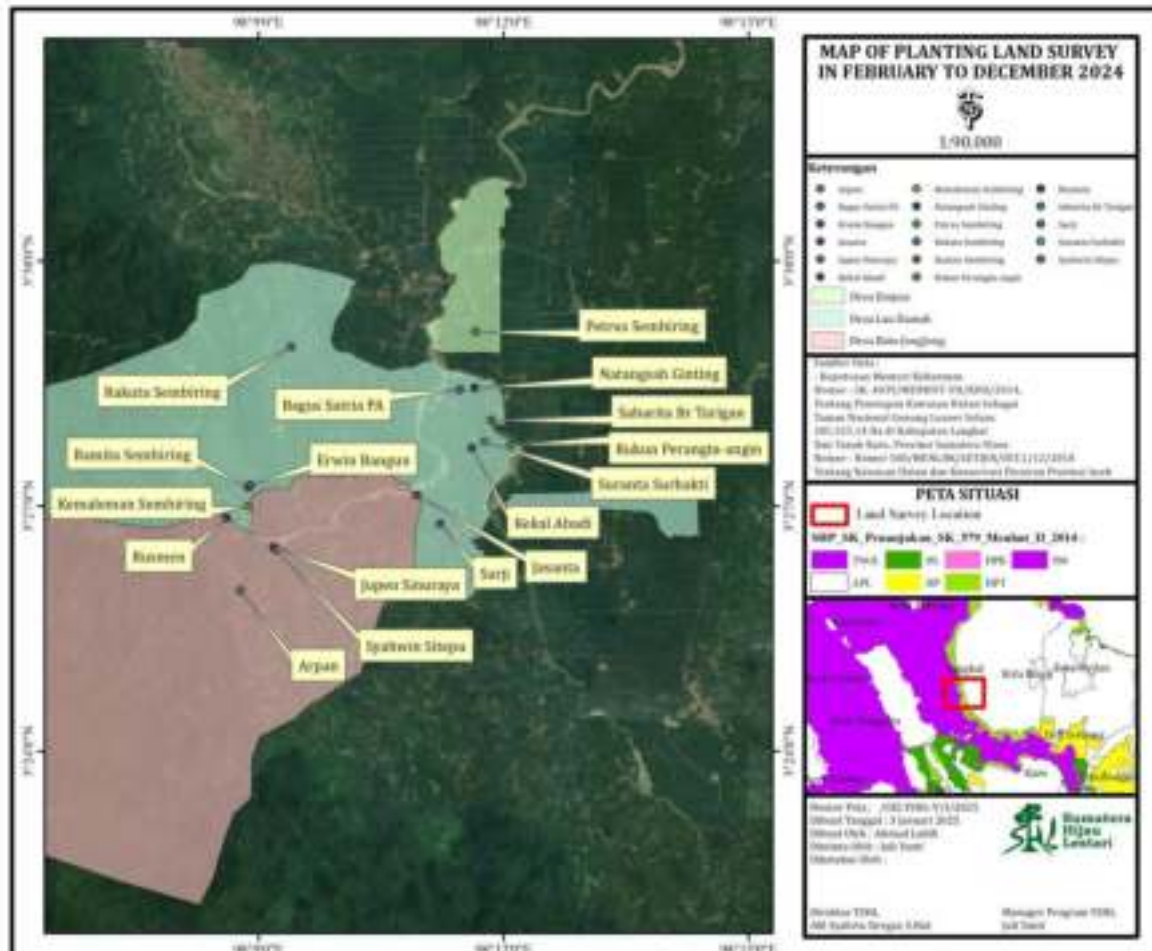
Picture 38 and 39. SHL staff socializing tree planting and land surveying using drones in Batu Jongjong Village.

Table 11. Socialization and land survey from in 2024

No	Land Owner	Location			Area (ha)	Yes/No
Lau Damak Village						
1	Kekal Abadi	Biak Mampe	3,34619	98,1935	1	Yes
2	Suranta S	Biak Mampe	3,48563	98,1942	0,5	Yes
3	Natangsah Ginting	Biak Mampe	3,47416	98,19405	1,1	Yes
4	Sarji	Biak Mampe	3,4467	98,1869	0,7	Yes
5	Jasanta	Biak Mampe	3,4523	98,1823	0,7	Yes
6	Sabarita Br Tarigan	Ujung Gorap	3,4676	98,1974	1	Yes
7	Bagus Satria PA	Ujung Gorap	3,473805	98,19102	0,7	Yes
8	Rakuta Sembiring	Tanjung Naman	3,482468	98,156545	0,7	Yes
9	Sada Ukur	Tusam Pinter				No
Batu Jongjong Village						
10	Marjuni	Tegapen				No
11	Katani Sembiring	Tegapen				No
12	Arpan	Tegapen	3.432808	98,146168	1,2	Yes
13	Rusmen	Batu Katak	3.447610	98,143310	1	Yes
14	Kemaleman Sembiring	Batu Katak	3,44993	98,14781	1,3	Yes
15	Sadarta dan Pinem	Batu Katak				No
Empus Village						
17	Petrus Tarigan	Empus	03.48563	098.1942	1,2	Yes
18	Adi Sembiring	Empus				No
Timbang Lawan Village						

19	Persada	Selang Pangeran				No
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b. Mapping areas that meet sustainability criteria (February to November)



Map 2. Survey of prospective land for tree planting in 2024

c. Availability of 15.000 seeds (February to December)

Starting from late December 2023 to mid-February 2024, many seedlings died. This was due to the high rainfall at the end of December 2023. Flea pests also attacked the seedlings quite a lot. Usually, the planting team tries to stop them by spraying plant-based pesticides, but there were no staff in the field from late December to mid-January, this could not be done. At the end of February, the plant-based pesticide has been sprayed regularly.

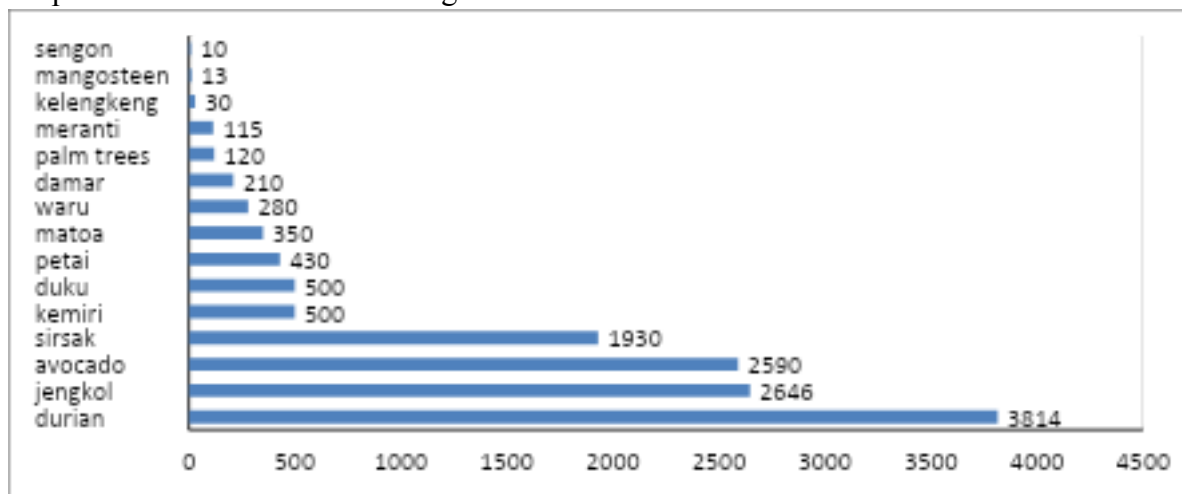


At the end of February, the plant-based pesticide has been sprayed regularly.

A total of 15.538 seedlings from 15 species of fruit and woody trees have been sown in SHL's nursery at Buluh Regen Hamlet in Ujung Bandar Village.

Picture 40. SHL staff was sowing avocado seeds at the nursery in Ujung Bandar Village.

Graphic 4. Number of tree seedlings sown in 2024



d. Availability of nursery facilities and infrastructure (February)

From May to June, we repaired the seedling house by replacing damaged wooden and bamboo poles and torn nets.



Picture 41 and 42. SHL's nursery at Buluh Regen Hamlet in Ujung Bandar Village

e. Planted 15,000 seedlings in the TNGL buffer zone (February to December)

In general, tree planting brings a wide range of positive impacts, both for the sustainability of ecosystems and the improvement of people's quality of life in social and economic aspects. Through its role in maintaining the balance of nature, reducing the impact of climate change, and supporting the economic sector, tree planting is a long-term investment that benefits all parties.



Picture 43. Tree planting activities in Batu Jongjong Village

This year 15,120 trees have been planted in Bahorok sub-district covering 15,2 hectares of Lau Damak and Batu Jongjong villages. The planting was done together with the landowner and some villagers to help transport the tree seedlings from the SHL nursery to the planting site, to make holes and plant.

The main obstacle faced by the team during tree planting activities is the unpredictable natural factors, particularly weather-related challenges. Transporting seedlings to planting locations is already difficult due to the distance, requiring the use of various transportation methods such as four-wheeled vehicles, motorcycles, and even walking. However, heavy rains can cause rivers to rise and flood, blocking access to the planting sites. In such situations, the team may still try to proceed with the planting, but they face delays and need to exert extra energy to transport the seedlings under challenging conditions. These unpredictable natural disruptions can significantly hinder the planting schedule.

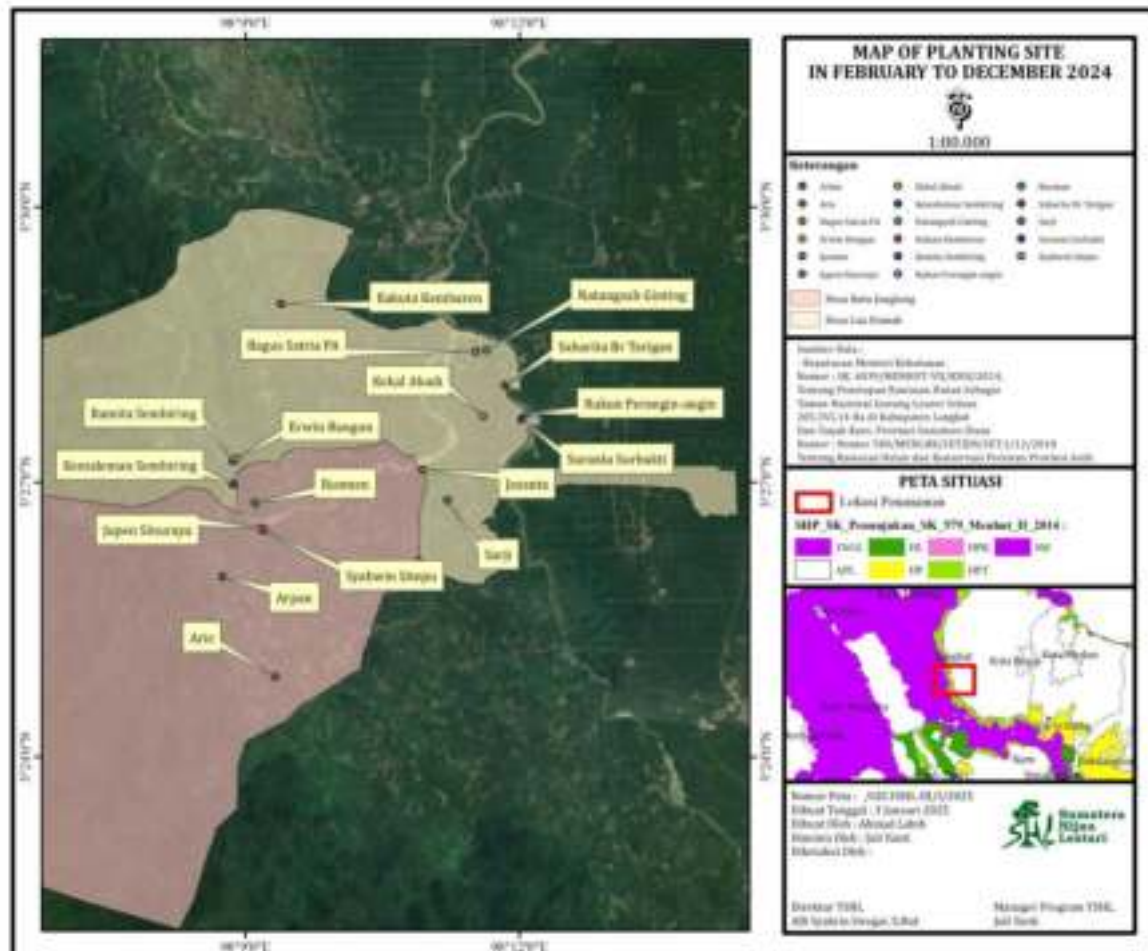


Picture 44. Tree planting activities in Batu Jongjong Village

Table 12. Tree planting sites in 2024

No .	Month	Land Owner	Location	Coordina te N	Coordinat e E	Area (Ha)	Number of Trees Planted
1	Feb-24	Aris	Batu Jongjong	3,41459	98,1554	1	810
2	Mar-24	Kekal Abadi	Lau Damak	3,46202	98,1934	1	884
3	May-2 4	Natangsah G	Lau Damak	3,474165	98,194058	1,1	1.610
4	Jun-24	Suranta S	Lau Damak	3,4614	98,2004	0,5	505
5	Jul-24	Sarji	Lau Damak	3,4467	98,1869	0,7	735
6	Jul-24	Jasanta	Lau Damak	3,4523	98,1823	0,7	740
7	Aug-24	Sabarita Br T	Lau Damak	3,4676	98,1974	1	1.200
8	Aug-24	Rusmen	Batu Jongjong	3,4462	98,1518	1	1.245
9	Sep-24	Bagus Satria PA	Lau Damak	3,4738	98,192	0,7	725
10	Sep-24	Kemaleman S	Batu Jongjong	3,4496	98,1477	1,3	1.130
11	Sep-24	Arfan	Batu Jongjong	3,4328	98,1458	1	1.021
12	Oct-24	Rakuta S	Lau Damak	3,482468	98,156545	0,7	670
13	Oct-24	Rukun PA	Lau Damak	3,462473	98,201466	1,1	995
14	Nov-24	Syahwin Sitepu	Batu Jongjong	3,441198	98,153361	1	845
15	Nov-24	Jupen Sinuraya	Batu Jongjong	3,441651	98,152933	1	885

16	Dec-24	Ramita S	Batu Jongjong	3,453891	98,147705	0,7	565
17	Dec-24	Erwin Bangun	Batu Jongjong	3,45427	98,148238	0,7	555



Map 3. Tree planting sites in 2024

f. Survey and monitoring of plant growth (January to December)

We used 2 methods in monitoring, namely the Census and the Intensity Sampling (IS). Monitoring using the census method is carried out on land with an area of 1 hectare, the number of plants is not too much and the topography is quite sloping. The census was carried out as a whole to check the condition of the seeds. Our reference is Hadinoto, Suhesti E, Suwarno E. 2018. Kesesuaian Jenis Pohon Di Hutan Kota Pekanbaru. Jurnal Kehutanan Wahana Foresta 13 (2) :



Picture 45. Monitoring the trees growth in Batu Jongjong Village

118-131. Meanwhile, monitoring using the Sampling Intensity method is carried out on an area of 1 hectare or with steep topographic conditions so that it can take a long time if monitoring is carried out by means of a census. Monitoring is done by making several sample plots with a plot size of 20x20 m for each plot and in determining the number of plots it is calculated with a sampling intensity of 10%. Our references is Setiawan B, Firdaus R, Idris M H. 2020. Evaluasi Kegiatan Rehabilitasi Hutan Dan Lahan Konvensional Pasca Bencana Di Balai Kesatuan Pengelolaan Hutan Maria Donggomasa Kabupaten Bima. Jurnal Sangkareang Mataram 6 (1) : 22-28.

There were 13.769 trees that have been planted in an area of 13,8 hectares have been monitored in Lau Damak and Batu Jongjong. The highest tree survival rate was 92 percent and the highest tree mortality rate was 32 percent.

Table 13. Tree monitoring in 2024

No	Month of Planting	Land Owner	Location	Area (Ha)	Trees Planted	Month of Monitoring	Sampling Intensity	SI (m2)	Plot Area (m2)	Number of Plot
1	Sep-23	Suratno	Batu Jongjong	1,3	1.017	Jan-24	0,13	1300	400	3,25
2	Jul-23	Misnah	Batu Jongjong	1,3	1.120	Feb-24	0,13	1300	400	3,25
3	Dec-23	Edi Suwito	Batu Jongjong	1,2	1.027	Mar-24	0,12	1200	400	3
4	Feb-24	Aris	Batu Jongjong	1	810	May-24	0,1	1000	400	2,5
5	Mar-24	Kekal Abadi	Lau Damak	1	884	Jun-24	0,1	1000	400	2,5
6	May-24	Natangsah Ginting	Batu Jongjong	1,1	1.610	Aug-24				
7	Jun-24	Suranta Surbakti	Lau Damak	0,5	505	Sep-24	0,05	500	400	1,25
8	Jul-24	Sarji	Lau Damak	0,7	735	Oct-24	0,07	700	400	1,75
9	Jul-24	Jasanta	Lau Damak	0,7	740	Oct-24	0,07	700	400	1,75
10	Aug-24	Rusmen	Batu Jongjong	1	1.245	Nov-24	0,12	1200	400	3
11	Aug-24	Sabarita Br Tarigan	Lau Damak	1	1.200	Nov-24	0,1	1000	400	2,5
12	Sep-24	Bagus Satria P.A	Lau Damak	0,7	725	Dec-24	0,07	700	400	1,75
13	Sep-24	Arfan	Batu Jongjong	1	1.021	Dec-24	0,13	1300	400	3,25
14	Sep-24	Kemaleman S	Batu Jongjong	1,3	1.130	Dec-24	0,1	1000	400	2,5

Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6	Plot 7	Number of All Plots	Survived Trees	Survival Percentage (%)	Dead Trees	Immortality Percentage (%)
17	18	19	15				69	920	92	82	8
17	19	21	19				76	882	79	238	23
18	18	22					58	846	82	181	18
16	19	17					52	642	79	168	21
21	18	18					57	645	73	239	27
21	19						40	396	78	109	22
27	29						56	533	73	202	27
31	27						58	549	74	191	26

33	29	29					91	877	70	368	30
34	32	35					101	842	70	358	30
22	29						51	492	68	233	32
21	19	22	20				82	943	83	187	17
22	27	24					73	715	70	306	30

4.4. The Environmental Education

a. Meeting with the school to prepare the schedule and visit materials for 1 year (January)

At the beginning of the year, the team discussed with schools involved in environmental education activities carried out by YSHL every month. 6 schools consisting of 4 elementary schools and 2 junior high schools located in the villages of Lau Damak, Batu Jongjong and Ujung Bandar, have agreed to continue school visits related to lessons about the environment and conservation of animals and their habitats. The things agreed upon are class selection, visit schedule, duration of activities, and theme of lessons to be delivered, as shown in the tables below.

Table 14. School visit schedule in 2024

No	Nama Sekolah	Day and Duration	Number of Visit
1	SDN 056585 Biak Mampe, Desa Lau Damak	Monday, 120 minutes	Once a month
2	SDN 057735 Batu Katak, Desa Batu Jongjong	Monday, 120 minutes	Once a month
3	SDN 054895 Batu Jongjong	Monday, 120 minutes	Once a month
4	SMPN 6 Satu Atap, Desa Batu Jongjong	Monday, 120 minutes	Once a month
5	MIS Asmaul Husna, Desa Ujung Bandar	Monday, 120 minutes	Once a month
6	MTs Asmaul Husna, Desa Ujung Bandar	Monday, 120 minutes	Once a month

Table 15. Lessons for school visit activities in 2024

Month	Lesson	Goal
February	Orangutan and their habitat	The students understand the importance of conserving orangutans, which are endangered, and to learn about the different species of orangutans and their natural habitats in tropical forests. Students will also recognize the impact of habitat destruction on the survival of this species. Additionally, they are expected to develop awareness of environmental preservation, understand the connection between human activities and environmental damage, and think critically to find solutions to environmental issues, so they can actively participate in efforts to conserve wildlife and their habitats.
March	Tiger and their habitat	The students understand the importance of conserving tigers, which are endangered, to recognize different species of tigers along with their physical characteristics and behavior, and to learn about their natural habitats, such as tropical forests and grasslands. Students are expected to realize the impact of habitat destruction, illegal

		poaching, and human-tiger conflicts on the survival of this species. Additionally, they are encouraged to develop awareness of wildlife conservation, understand the relationship between humans and nature, and think critically to find solutions for preserving tigers and their habitats.
April	Elephant and their habitat	The students understand the importance of conserving elephants, which are endangered, to recognize different species of elephants along with their physical characteristics and behavior, and to learn about their natural habitats, such as forests, grasslands, and savannas. Students are expected to realize the impact of habitat destruction, poaching, and human-elephant conflicts on the survival of this species. Additionally, students are encouraged to develop awareness of wildlife conservation, understand the relationship between humans and nature, and think critically to find solutions for preserving elephants and their habitats.
May	Rhino and their habitat	The goal of students learning about rhinos and their habitat is to understand the importance of conserving rhinos, which are endangered, to recognize different species of rhinos along with their physical characteristics and behavior, and to learn about their natural habitats, such as tropical forests, grasslands, and wetlands. Students are expected to realize the impact of habitat destruction, poaching, and the loss of food sources on the survival of this species. Additionally, students are encouraged to develop awareness of wildlife conservation, understand the relationship between humans and nature, and think critically to find solutions for preserving rhinos and their habitats.
June	The key species of Gunung Leuser National Park and its biodiversity	The goal of students learning about keystone species in Gunung Leuser National Park is to understand the important role these species play in maintaining ecosystem balance, such as Sumatran orangutans, Sumatran tigers, Sumatran elephants, and Sumatran rhinos. Students are expected to recognize the physical characteristics, behaviors, and natural habitats of these species, as well as understand the threats they face, such as habitat destruction and illegal poaching. Additionally, students are encouraged to develop awareness of the importance of conserving keystone species for the preservation of nature and to think critically in

		finding solutions to support conservation efforts in Gunung Leuser National Park.
July	The importance of trees for life	The students learnt about trees as a source of life is to help them understand the vital role trees play in maintaining ecological balance. By studying how trees provide oxygen, clean air, shelter, and food, students can recognize their importance in supporting both human life and biodiversity. This knowledge encourages students to appreciate the value of trees in combating climate change, preventing soil erosion, and sustaining wildlife. Ultimately, it aims to inspire students to take action in protecting and conserving forests for a healthier planet.
August	Source of oxygen on earth	By studying natural sources of oxygen, such as plants, trees, and algae through photosynthesis, students could recognize the importance of preserving these ecosystems for human survival and environmental health. This knowledge would also help them understand the interconnection between living organisms and the environment, and motivate them to take action to protect forests, oceans, and other natural habitats that are vital sources of oxygen.
September	The forests and their functions for living things	By studying how forests provide oxygen, regulate climate, conserve water, and support biodiversity, students will recognize their importance in sustaining life on Earth. This knowledge will also raise awareness about the threats forests face, such as deforestation, and encourage students to take responsibility in protecting and preserving forests for the well-being of future generations
October	Waste management	The students understood the importance of proper waste management in protecting the environment. By learning about different types of waste (such as organic, recyclable, hazardous, and e-waste), students can recognize how each type affects the environment and human health. They would also understand the methods to manage waste effectively, such as recycling, composting, and safe disposal, and how these practices can reduce pollution, conserve resources, and create economic value. This knowledge would empower students to make informed decisions and contribute to sustainable waste management in their communities.

November	Paper recycling	The students understood the importance of waste management, especially paper, in reducing environmental pollution. Through this activity, students could learn how to transform used paper into new products, such as recycled paper, thus reducing the need for natural resources and energy. Additionally, they would understand the economic and environmental benefits of recycling, such as saving trees, reducing pollution, and contributing to sustainability.
December	Evaluation	To assess the students understanding, knowledge, and skills acquired throughout the year. This evaluation helps determine whether students have grasped key concepts, can apply what they've learned, and are ready for the next level of education. It also provides feedback for both students and facilitators (SHL's staffs) to identify strengths and areas for improvement, ensuring that learning objectives have been met and guiding future teaching strategies.

The series of activities carried out in this activity are introductions, pre-tests, lesson (using ppt media, posters, maps, games, practices, etc.), questions and answers, discussions, rewards, conclusions and post-tests.

Pre-test is given to students before the lesson is started and post-test is given after the lesson is completed. These tests are carried out to determine the level of students' knowledge before and after receiving lessons, as well as to determine the level of success of the team in delivering lessons, whether it can be absorbed by the students well or not.

b. Routine visits to 6 assisted schools in 3 villages (February to December)

This year, SHL assisted six schools across three villages in Bahorok Sub-district: SDN Biak Mampe in Lau Damak Village, SDN Batu Katak, SDN Batu Jongjong, and SMPN Satu Atap in Batu Jongjong Village, and MIS and MTs Asmaul Husna in Ujung Bandar Village. A total of 66 visits to schools were held, involving 258 students consisting of 111 boys and 147 girls. Ten lessons focused on the environment and nature conservation were delivered to the children, culminating in an evaluation in the final month.

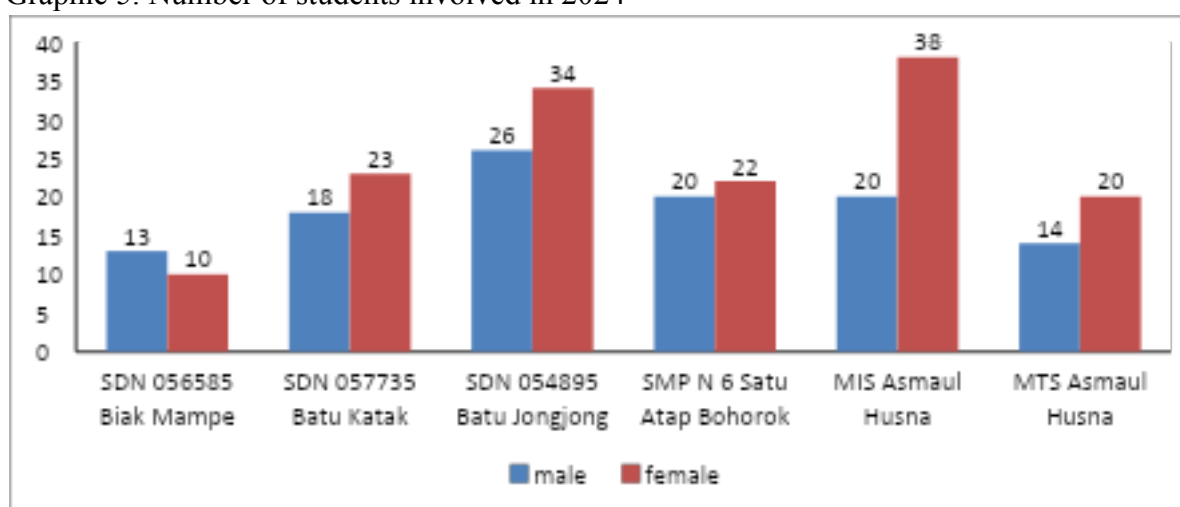


Picture 46. The students of SDN Batu Jongjong are learning about the importance of trees for life.

Table 16. Lessons for School Visit Activities in February to November 2024

Month	Lesson
February	Orangutan and their habitat
March	Tiger and their habitat
April	Elephant and their habitat
May	Rhino and their habitat
June	The key species of Gunung Leuser National Park
July	Sources of oxygen on earth
August	The importance of trees for life
September	The forests and their functions for living things
October	Waste management
November	Paper recycling
December	Evaluation

Graphic 5. Number of students involved in 2024



c. Identification and purchase of RBK management support needs (February, April, July and October)

A sense of security and comfort is one of the factors that can support the success of a teaching and learning process. Therefore, tools, materials, and a comfortable room to support learning activities. In addition to repairing the room or building where learning takes place gradually and alternately, SHL also provides reading books, story books, game packages, zipper bags, and so on according to the needs of each learning house.

Table 17. List of children's needs at 4 conservation learning house

No	Name of Conservation Learning House	Items	Number of Items
1	Harapan Kita in Lau Damak Village	Story books	16 books
		Markers and paper glue	1 package
2	Teladeh Lestari in Batu Jongjong Village	Story books	17 books
		Mats	2 unit
		Wall painting, dcoration, bookshelf	1 package
		Thatched roof	60 pieces
		Markers and paper glue	1 package

3	Lentera Hijau in Ujung Bandar Village	Story books	16 books
		Mats	2 unit
		Zipper bag	12 unit
		Markers and paper glue	1 package
4	Bunga Simalem in Ujung Bandar Village	Story books	16 books
		Zipper bag	12 unit
		Markers and paper glue	1 package



Picture 47 and 48. SHL staff, Sahabat Hijau, and the children of the conservation learning house Teladeh Lestari are repairing their learning house in Batu Jongjong Village

d. Routine visits to 4 RBK (February to December)

There were 10 lessons delivered to children in the four learning houses while in December was an evaluation in the form of answering questions and multiple choice tests. Activities were not only carried out indoors but also outdoors so that the children could learn based on the experiences they got directly in nature. This was also done to avoid boredom in learning.

There were 88 mentoring sessions for children aged 6 to at the conservation learning



Picture 49. The children in Conservation Learning House Bunga Simalem in Ujung Bandar Village are learning about the climate change.

centers in Lau Damak, Batu Jongjong and Ujung Bandar villages. This activity involved 122 children consisting of 54 boys and 68 girls.

Table 18. Lesson list for conservation learning house in 2024

Month	Lesson	Purpose
February	<p>Main lesson: Orangutan and their habitat</p> <p>Additional activity: Creating works of art from plants</p>	<p>The children understand the important role of orangutans in forest ecosystems, including their species diversity, dietary habits, conservation status, the threats they face, and conservation efforts. They recognize that orangutans are vital for seed dispersal and maintaining the health of their habitats, which helps support the regeneration of the forest. This highlights the need to protect these remarkable creatures and their environments to preserve the balance of the ecosystem and ensure the survival of many other species.</p> <p>By engaging in collaborative art projects, children can enhance their creativity while fostering a deeper connection to the environment. These activities encourage them to observe natural elements more closely, express their understanding through art, and appreciate the beauty and importance of the natural world. Additionally, working together on these projects promotes teamwork, communication, and shared learning experiences.</p>
March	<p>Main lesson: Kedih</p> <p>Additional activity: Making fine art from feather wire</p>	<p>The children learn about Kedih, one of Sumatra's endemic animals, understanding its vital role in maintaining the forest ecosystem, similar to that of orangutans, by helping to spread seeds for forest regeneration. They also explore Kedih's dietary habits, its differences from other monkey species, the threats it faces, its conservation status, and the efforts that can be made to preserve this unique primate. This knowledge fosters a deeper appreciation for biodiversity and the importance of protecting these animals and their habitats.</p> <p>To help the children improving and developing skills, observation, appreciation of nature, and artistic thinking.</p>
April	<p>The main lesson: Maleo</p>	<p>The children learn about the significant role of the Maleo, an endemic species of North Sulawesi Island, in the ecosystem. They explore its diet, reproductive habits, and the threats it faces, such as habitat loss and predation. Additionally, they investigate conservation efforts aimed at</p>

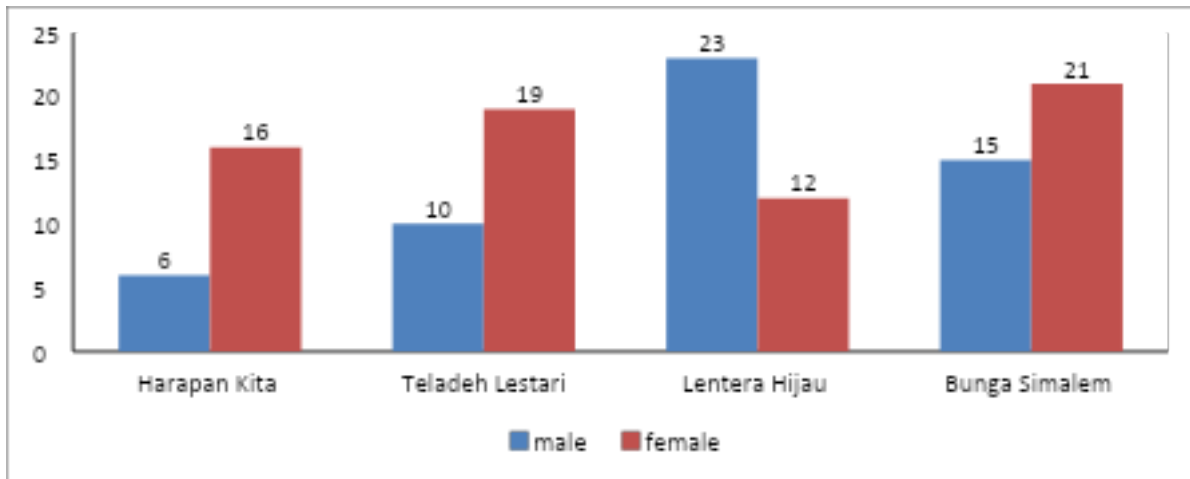
	Additional activity: Games	protecting the Maleo and its habitat. This educational approach deepens their understanding of biodiversity conservation and highlights the unique challenges faced by endemic species like the Maleo in maintaining healthy ecosystems. It fosters a sense of stewardship for wildlife and encourages the children to appreciate the importance of preserving endangered species and their natural environments.
May	The main lesson: Komodo Additional Activity: Make a comic story about Komodo	The children learn about the unique features of Komodo dragons, which are endemic to Flores Island, East Nusa Tenggara. They explore the dragon's diet, reproductive habits, and the threats it faces, such as habitat loss and human-wildlife conflict. The children also examine the efforts being made to conserve Komodo dragons and their habitats. This educational focus helps children understand the importance of wildlife conservation and the necessity of protecting endangered species like the Komodo dragon to ensure their survival for future generations. The children are trained to cultivate their imagination and express it through writing and drawings. This training encourages them to explore creative ideas, develop storytelling abilities, and communicate their thoughts visually. By engaging in writing and drawing activities, children enhance their cognitive and artistic skills, while also fostering self-expression and confidence in sharing their ideas with others. This process not only stimulates creativity but also promotes literacy and artistic development, providing a valuable foundation for their overall growth, learning, and future success.
June	The main lesson: Nepenthes	The children learn that Nepenthes, or pitcher plants, are unique due to their carnivorous nature and specialized pitcher structures. They explore how Nepenthes reproduce, the ecological threats they face, such as habitat loss and climate change, and the conservation methods in place to protect these plants and their habitats. This knowledge enhances their appreciation for biodiversity conservation and encourages them to adopt sustainable practices to preserve unique plant species like Nepenthes in their natural

	<p>Additional activity: making leaf carvings, and planting mustard and kangkung in SHL's Demplot</p>	<p>environments. Through this, the children gain a deeper understanding of the importance of protecting diverse plant species for the health of ecosystems.</p> <p>Children develop skills, discipline, and cooperation through activities such as leaf carving and group planting of mustard greens and kale seeds. These activities not only foster creativity and attention to detail in leaf carving but also teach responsibility and teamwork in nurturing plants from seedling to maturity. This hands-on approach encourages children to appreciate nature's beauty while learning essential life skills and the importance of collaboration in achieving common goals.</p>
July	<p>Main lesson: Visit the SHL's Demplot</p> <p>Additional activity: Tell a story about the experience of visiting the SHL demonstration plot</p>	<p>The children can learn how to farm organically using natural ingredients without chemicals. They also understand that organic farming is an important effort to save the environment by reducing pollution, protecting soil health, and conserving water. Through this, the children gain awareness of sustainable agricultural practices and their positive impact on ecosystems, fostering a sense of responsibility for preserving the environment while promoting healthier food choices.</p> <p>Children can tell stories well by sequencing the events they experience directly, allowing them to express their thoughts and experiences in a clear and organized way. This helps them develop their narrative skills and understand the structure of storytelling. Additionally, by reflecting on the events they describe, children can identify and articulate the lessons they've learned, enhancing their ability to think critically and connect personal experiences to broader life lessons. This process encourages both self-expression and personal growth.</p>
August	<p>Main lesson: The river ecosystem</p>	<p>The children know that a river has various components, such as animals, plants, and other elements, which can be categorized into biotic and abiotic components. Biotic components include living organisms like fish, plants, and microorganisms, while abiotic components consist of non-living elements like water, rocks, and air. This understanding helps children recognize the interconnectedness of living and non-living things</p>

	<p>Additional activity The river observation</p>	<p>in ecosystems and the importance of maintaining a balanced environment for all components to thrive.</p> <p>The children can categorize the various animals and plants they find in the river into the correct categories of biotic and abiotic components. They understand that biotic components refer to the living organisms, such as fish, plants, and insects, while abiotic components refer to the non-living elements, such as water, rocks, and sunlight. This skill helps them better understand the structure of ecosystems and how both living and non-living components interact to maintain balance in the environment.</p>
September	<p>Main lesson The climate change</p> <p>Additional activity Demonstration of climate change examples</p>	<p>Children understand the impacts and causes of environmental issues, such as greenhouse gas emissions. They learn about the role of individuals in protecting the environment and the importance of taking action to reduce their ecological footprint. Through this, they develop critical thinking skills, enabling them to analyze problems and think of solutions. Additionally, children cultivate empathy and a sense of social responsibility towards other living beings, fostering a deep understanding of how their actions affect the planet and its ecosystems.</p> <p>By demonstrating examples of climate change, children can be better prepared to face future challenges and contribute to climate change mitigation efforts. Through learning about the causes and effects of climate change, such as rising temperatures, extreme weather events, and habitat loss, children can understand the importance of taking action.</p>
October	<p>Main lesson: Protected marine life</p>	<p>The children understood the importance of conserving marine biodiversity and the role of protected species in maintaining a healthy ocean ecosystem. By learning about different protected marine species, such as endangered fish, corals, and sea turtles, students can recognize the threats these species face, such as overfishing and habitat destruction. This knowledge encourages students to appreciate the value of marine conservation efforts, understand the impact of human activities on the oceans, and become advocates for</p>

	Additional activity: Drawing with origami paper	sustainable practices that help protect marine life for future generations. Through this activity, the children could learn about different marine species, such as fish, turtles, and corals, and understand their importance in the ocean ecosystem. By using origami, children also developed fine motor skills, spatial awareness, and the ability to follow instructions. This hands-on approach made learning about marine life engaging and helped foster an appreciation for the environment, while promoting both artistic expression and environmental awareness.
November	Main lesson: Dolphin Additional activity	The children could learn about their behaviors, habitats, and the importance of protecting them from threats such as pollution and habitat destruction. This knowledge encouraged empathy for wildlife and promotes environmental awareness. Additionally, learning about dolphins could inspire children to care for the natural world and understand the importance of preserving marine life for future generations.
December	Evaluation	To assess the children understanding, knowledge, and skills acquired throughout the year. This evaluation helps determine whether students have grasped key concepts, can apply what they've learned, and are ready for the next level of education. It also provides feedback for both students and facilitators (SHL's staffs) to identify strengths and areas for improvement, ensuring that learning objectives have been met and guiding future teaching strategies.

Graphic 6. Number of children' involve in 4 Conservation Learning Houses in 2024



e. Implementation of 3 times environmental care campaign activities (3 times)

Campaign activities include socialization of environmental and conservation issues as well as programs and events implemented by YSHL. This activity was carried out by YSHL's environmental education team together with YSHL's assisted youth community, Sahabat Hijau. The campaigns that have been conducted include:

- Designed infographics and poster
Sahabat Hijau used their Instagram platform (sahabathijau_) to promote these infographics and posters. They aimed to raise awareness and educate their audience about environmental conservation, biodiversity, and species. The infographics were 6 ways to teach children to love the environment, Biodiversity in Indonesia, Komodo, and a poster dedicated to the "International Day for Biological Diversity".
- Socialized SHL's program
Sahabat Hijau collaborates with the environmental education team, community assistance team and tree planting, in taking photos and videos in the field. The photos and videos were uploaded to Sahabat Hijau's social media by tagging YSHL. This is done to socialize YSHL's work programs to the wider community and campaign on current environmental and conservation issues.
- World Orangutan Day
YSHL commemorated Orangutan Day by creating an orangutan mural with the theme "Love for Orangutans" at one of the assisted schools, SMP 6 Satu Atap in Batu Jongjong Village on August 21, 2024. This activity was accompanied by a photo competition with the background of the mural which was followed specifically for students at the school. Participants must also tag SHL using the hashtag



Picture 50. Mural with the theme "Love Orangutan" on the wall of the One Roof Junior High School in Batu Jongjong Village.

#JagaOrangutanJagaKehidupan. YSHL collaborated with Sahabat Hijau and 2 volunteers, Restu Purba and Hani, as muralists.



Picture 51. SMPN 6 Satu Atap Batu Jongjong, Sahabat Hijau, Volunteers and SHL commemorated Orangutan Day on August 21, 2024

f. Implementation of Orangutan Caring Week activities (November)

This year's Orangutan Caring Week took place on November 26, 2024, at SDN 054895 Batu Jongjong in Bahorok District. The event involved 191 students and 12 teachers from two schools: SDN Batu Jongjong and SMP 6 Satu Atap. The activities included coloring and drawing competitions for elementary school students, as well as inter-class quiz competitions for junior high school students. Additionally, a mini workshop was held to educate the teachers about orangutans, their natural habitats, and the efforts being made to conserve them. In addition, the children and teachers also listened to stories about orangutans and other animals in the forest.

From the results of the sharing and discussion, it was revealed that some teachers were not aware that orangutans are one of the great apes in the world. Even Ms. Yolanda, an elementary school Social Studies teacher, expressed, "I just found out that saving orangutans means we are also saving the forest." This statement surprised the SHL team a bit, as it highlighted the teachers' lack of knowledge about protected animals. However, we are pleased that this mini workshop helped increase the teachers' understanding of orangutan and habitat conservation.



Picture 52. Participants of a mini workshop on orangutan and habitat education with teachers of elementary and junior high schools in Batu Jongjong Village at the Orangutan Caring Week event on November 26, 2024.

This activity was successfully carried out by SHL in collaboration with a storyteller from Kampung Dongeng Medan, Kak Jeni, Sahabat Hijau: Kak Sri, and three volunteers: Kak Icha, Syafa, and Alif.



Picture 53. Orangutan Awareness Week commemoration on November 26, 2024 at Batu Jongjong Elementary School.

5. Challenges and Solution

5.1. The challenges

The obstacles, problems and challenges faced in running this program include:

- a. Some communities continue to rely on environmentally harmful and unsustainable agricultural practices, such as excessive chemical use and land burning. Transforming these long-established habits requires time, education, and the implementation of the right strategies to encourage the adoption of more sustainable and eco-friendly farming methods.
- b. Access to essential resources like capital, technology, and proper training is often limited, particularly in remote areas. This lack of resources makes it challenging for communities to adopt new, environmentally friendly practices or solutions, hindering their ability to transition to more sustainable agricultural methods.
- c. Community economic needs often take precedence over conservation efforts, particularly when conservation requires changes that affect the utilization of natural resources, such as relinquishing land ownership. This can create a conflict between immediate economic survival and long-term environmental sustainability.
- d. The increasingly apparent effects of climate change, including extreme weather events and natural disasters like flash floods, pose a significant threat to the sustainability of empowerment programs. These events can damage the infrastructure and agricultural products that communities have worked hard to develop, undermining progress and hindering long-term success.
- e. Mitigation programs frequently encounter challenges due to limited infrastructure in areas prone to wildlife conflicts. For instance, creating Tiger Proof Enclosures (TPE) and installing zinc plates to protect crops is difficult because of rugged terrain and a lack of necessary tools and resources, making it harder to implement effective wildlife conflict prevention measures.
- f. Many communities do not fully recognize the long-term benefits of planting trees on their farms, such as enhanced soil fertility, reduced erosion, and the potential for

increased income from tree products like fruit and timber. This lack of understanding can hinder the adoption of agroforestry practices, which require a long-term perspective for sustainable outcomes.

- g. Many farmers prioritize short-term economic gains, opting to plant fast-yielding crops like rice or maize, rather than trees that take years to mature and bear fruit or produce other products. Additionally, limited capital and resources to purchase quality tree seedlings or properly maintain the trees already planted create significant barriers to the adoption of agroforestry practices.
- h. Once trees are planted, their maintenance presents a significant challenge. They require careful attention, particularly in the early stages of growth, including regular watering, fertilizing, and protection from pests. Without proper care and ongoing maintenance, the trees may not thrive, hindering the success of agroforestry initiatives.

5.2. Solution

To address the above constraints and challenges, several solutions can be implemented in the future. These include:

- a. Enhanced education and training for communities on environmentally friendly farming practices and the long-term benefits of agroforestry.
- b. Access to resources such as capital, technology, and training should be improved, particularly in remote areas, through partnerships with microfinance institutions and the provision of necessary equipment.
- c. Empowering communities economically through alternative livelihoods based on non-timber forest products can help reduce dependence on environmentally destructive practices.
- d. Improving infrastructure and providing adequate technology for wildlife conflict mitigation, along with rapid recovery efforts after natural disasters, are essential.
- e. Regular mentoring and monitoring of planted trees will ensure proper care, and cooperation among stakeholders will strengthen the effectiveness of conservation programs.

By implementing these strategies, communities can overcome challenges while ensuring environmental sustainability and improving their overall well-being.

6. Closing

This project report has been compiled as part of the assigned task. We acknowledge that the report may not be perfect, but we have made every effort to complete it to the best of our abilities and in accordance with the guidelines provided.

We would like to express our sincere gratitude to all those who have provided support, advice, and assistance in the preparation of this report, both directly and indirectly. Without their help, this report could not have been completed successfully.

We hope this report proves to be useful and informative for further knowledge development and practical application related to the project. Constructive feedback and suggestions are highly welcomed for improvements in the future.

Finally, we hope that this report contributes positively to the project's development and benefits all parties involved.

Medan, 14th January 2024

Project Manager,
Juli Yanti.

7. Annexes

Annex 1. Laboratory Test Result of Liquid Organic Fertilizer

a. Ingredients

No	Name of Ingredients	Quantity
1.	Lamtoro leaf	2 kg
2.	Moringa leaf	2 kg
3.	Ripe pace fruit	2 kg
4.	Coconut water	20 liters
5.	Water from rice washing	10 liters
6.	Banana peel	3 kg
7.	Eggshell	2 kg
8.	Molasses	1,5 liters
9.	EM4	1 bottle

b. Laboratory test result



Laboratorium Tanah, Tanaman, Pupuk, Air

BADAN STANDARISASI INSTRUMEN PERTANIAN
 Laboratorium Pengujian Batai Penerapan Standar Instrumen Pertanian Sumatera Utara

JALAN JENDERAL BENDI SOEDIRO HANG KAWUTUN NO. 1 & 2 MEDAN 20111
 Telp. (061) 750718 Fax. (061) 780383 Website: sandi.bsp.pertanian.go.id E-mail: lab@bsp.pertanian.go.id



Meliputi analisis contoh tanah, pupuk organik, air, dan insektisida organik

Medan, 04 Agustus 2023
 Koordinator Laboratorium



Rofliki Chairah, SP
 NIP. 19910720 2010031 001

P.2.2 Tidak dapat di terima apabila tidak sesuai yang di antara lain: kesesuaian hasil, keterlambatan atau adanya cacat lainnya. Menunggu hasil pengujian akan, menguji, mengkonfirmasi data yang sudah ada dan menguji lagi sesuai hasil terdahulu dan Laboratorium Pengujian Batai Penerapan Standar Instrumen Pertanian Sumatera Utara. Fasilitas sesuai standar nasional.

Based on the lab analysis results mentioned, the composition of the organic fertilizer has various elements that are important for plant growth. Specifically, this fertilizer will function for

overall plant growth because it contains the nutrients needed. Here are some of the main functions of the elements in the organic fertilizer:

1. C-organic (Organic Carbon 1.86%): A good organic fertilizer usually has a C- organic content that varies between 1% to more than 3%. A value of 1. 86% for C- Organic in the organic fertilizer is not too low and can be considered quite good, C-Organic acts as a source of energy for soil microorganisms and helps improve soil structure.
2. N-total (Total Nitrogen 0.10%): A value of 0,10% for N-Total in organic fertilizer belongs to a relatively low range. But the support of the value of other elements can help the vegetative growth of plants, including the formation of leaves and stems.
3. P₂O₅ (Phosphorus pentoxide 0.12%): the standard for the p₂o₅ content in fertilizers is often listed in regulations issued by the Drug and Food Regulatory Authority (BPOM) or the Agency for Agricultural Research and Development. (Balitbangtan). However, in general, for fertilizers containing phosphorus, the value of 0.12% P₂O₅ belongs to a low range. Fertilizers with a low phosphorus content such as this may be suitable for plants that require little phosphorus or for soil that is already sufficiently fertile with phosphates. However, for soils that are deficient in phosphorus or for crops that require more phosphorus (such as fruit plants and flowering vegetables), fertilizer with a higher P₂O₅ content may be required. Phosphorus Supports the formation of roots and flowers, as well as affects the development of seeds and fruits.
4. pH 5.72: The soil pH is ideal for most agricultural crops.
5. CaO (Calcium Oxide 0.96%): The value of 0,96% for the content of CaO in fertilizer is considered quite good. A sufficient amount of calcium in fertilizer can help in improving plant health and crop quality. Important for root development and plant cell health.
6. MgO (Magnesium Oxide 0.07%): A 0.07% value for MgO in fertilizer belongs to the low category. Fertilizers with a low magnesium content may not be sufficiently effective to cope with a plant's deficiency, essential in the formation of chlorophyll and plant metabolism.
7. Na₂O (Sodium Oxide 0.05%) : Although in small amounts, sodium can help in ion transport and plant water balance.

The content of micronutrients such as manganese (Mn) and zinc (Zn) in organic fertilizers can be crucial for plant growth and development. However, specific standards for Mn and Zn content in Organic Fertilizers in Indonesia may not always be as clearly available as they are for major fertilizer elements such as nitrogen, phosphorus, and potassium. In general, the content of micronutrients in organic fertilizers can vary depending on the source of fertilizer, the type of plant to be planted, and the local soil conditions. The content of Mn 3 ppm (parts per million) and Zn 1 ppm in organic fertilizer appears to be quite low, especially when compared to more concentrated micro fertilizers or chemical fertilizers specifically formulated to contain micronutrients.

To assess whether these values conform to standards or recommendations for organic fertilizers in Indonesia, it is recommended to refer to regulations issued by the Drug and Food Supervisory Authority (BPOM) or the Agency for Agricultural Research and Development (Balitbangtan), or consult with experienced farmers. Both values (Mn 3 ppm and Zn 1 ppm) may be able to meet the micronutrient needs of certain plants, especially if the soil is already sufficiently fertile with micronutrients. However, for soil that requires more micronutrient supplementation or for plants that are sensitive to Mn and Zn deficiencies, it may be necessary to consider additional fertilizer or more intensive fertilization techniques.

Overall, this organic fertilizer will support plant growth in terms of vegetative (leaves, stems) and generative (roots, flowers, fruits) as well as help increase soil fertility.

Annex 2. References for Visit to School Activities

No	Lesson	References
	Orangutan and their habitat	<ul style="list-style-type: none"> - https://id.wikipedia.org/wiki/Orang_utan - https://id.wikipedia.org/wiki/Orang_utan_tapanuli - https://yayasanpalung.com/2021/08/24/ini-alasan-mengapa-orangutan-disebut-sebagai-petani-hutan/ - http://ksdae.menlhk.go.id/berita/1326/kondisi-terkini-populasi-dan-habitat-orangutan- - https://www.worldwildlife.org/species/orangutan - https://www.wwf.id/id/learn/forest-wildlife/orangutan
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Annex 3. References for Conservation Learning Houses Assistance Activities

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