The Mobile Education & Conservation Unit (MECU) is the mobile arm of the Yayasan Penduli Orangutan Indonesia (YPOI), located in Medan, North Sumatra. The MECU program’s primary focus is to minimize conflict between orangutan and humans in various villages located in and near Bukit Lawang and the border of the Gunung Leuser National Park Sumatra, Indonesia. This area has significant human/wildlife conflict, especially with the critically endangered Sumatran Orangutan (Pongo abelii), the endangered Sumatran Lar Gibbon (Hylobates lar) and the endangered Siamang (Hylobates syndactylus).

YPOI has working agreements with the following communities: Batu Jonjong, Bukit Lawang, Timbang Jaya, Kuta Gajah (Kinangkong), Laudamak and Timbang Lawan which are all located in close proximity to orangutan habitat.

The MECU program provides the education to local villagers about the importance of the flagship species of the National Park, the orangutan, and the value in conserving its habitat as a way of avoiding conflicts with wild animals in and occasionally venturing outside of the National Park into the surrounding cultivated lands. MECU staff also works with local villagers to demonstrate ways to improve the local livelihood through alternative business models and also to support ecological conservation of orangutans and their habitats.

MECU will be implemented continuously and appropriately on target to provide real experience and work for communities around the buffer zone of Gunung Leuser National Park. Activities that are carried out together with our work partner, the community group, are:

1. Demplot Pertanian Selaras Alam Timbang Jaya Village
2. Rumah Pintar Kinangkong in Kuta Gajah Village, Kutambaru District
3. Campaign (education and awareness) of Orangutan and nature conservation for students and community around the buffer zone of Gunung Leuser National Park.
4. Smart car for students in urban areas and villages
5. Volunteer and eco-tour program
PREFACE

Praise gratitude we prayed to the presence of Almighty God, because with His help we were able to complete this report of Mobile Education and Conservation Unit (MECU-VII). Despite the challenges and the obstacles that we experienced in the process of this project, we were working to fix it properly.

We are thankful to Dr. Gary Shapiro and Inggriani Shapiro (founder and Co founder of Orang Utan Republik Foundation) Secretary-Sussan Callery, Ms Elizabeth Varnhagen and Leif Cocks (founder of the International Charity, The Orangutan Project), and Mr Max & Henrica Tramboo from Panomatic, Mr Soedomo Morganoto (founder Excelso coffee), PT Rutan, PTPN-III Medan, Mr Soehartono, Mr David Black and all donatur and NGO, Scorpion Foundation, PPLH Bahorok, Bukit Lawang Trust, Green Class Bukit Lawang, HPI Bukit Lawang and volunteers that have contributed both directly and indirectly in this MECU program.

This report is expected to be able to give significant impact on the problem solving for the conflict between Orangutan and the society who live around the forest.

My Regards,

Herman Syahputra, S.Pd
Director YPOI
Overview of MECU 2017

Mecu–VII is the advance program of CPOI. The development of Yayasan Peduli Orangutan Indonesia (YPOI-North Sumatra) program in 2017 has provided significant contributions and positive changes for the community. The MECU-VII program is designed to implement an applied-based program with a systematic approach with dynamic concept.

Based on the condition on the ground, there are still many people who have low income. And this case is feared could lead actions that will disrupt the ecosystem of Gunung Leuser National Park which is the habitat for Sumatran Orangutan (Pongo abelii) and humans living around it especially in Simolap/Tegapen area. MECU-VII team automatically has a harder task to handle this problem.

Therefore, one of programs that have been done through the Mecu-VII program is DemPlot Pertanian Selaras Alam (PSA). PSA is expected to be a pilot project for environmentally friendly farming practices for farming communities around the buffer zone of Gunung Leuser National Park. They can eventually manage their farms in accordance with applied science in PSA. Another solution is to empower farmers and collaborate with other institutions that have the same concern for agriculture today by bringing together farming communities in organic farming communities.

Smart House Program aims to provide education services to the community, especially for people who do not have basic skills of reading, writing and arithmetic located in Kinangkong sub-village, Kuta Gajah Village, Kutambaru District to add knowledge, to prevent intelligence, to increase vocabulary, to improve communication skills, to improve concentration, to calm our mind, to improve memory and to improve understanding.

Smart Car Program aims to provide educational services for communities by delivering conservation and education messages on the importance of maintaining the environment, protecting nature, biodiversity, ecosystems and to increase the spirit of students reading interest by providing small conservation library.

As well as other programs such as livelihood program, eco-tour, tree planting, environmental day events, orangutan caring week event, all of which become the goal of mecu program to preserve the environment and improve the community economy around the region Gunung Leuser National Park.
Problem Statements

ENVIRONMENTAL CONFLICTS WITH AGRICULTURE

Large tracts of wild rainforest that serve as habitat for endangered species such as orangutans and gibbons, are still being degraded and converted into agricultural land. Such conversion from forest to farm continues to take place both inside and outside of the protected forests of Gunung Leuser National Park. The ecological impacts are felt by local villagers in the form of landslides and floods and when wildlife wander into orchards and crop lands of local farmers in search of food. The need to address numerous human land use conflicts makes formal and informal education about conservation of natural resources a vitally important part of slowing or stopping the ongoing decline in wildlife populations and degradation of forest habitat along the boundaries of the National Park.

ECONOMIC FACTORS and COMMUNITY NEED

Local villagers who live in small rural communities around the periphery of Gunung Leuser National Park need general and specialized education and training to address numerous problems facing their livelihood. By law they are not allowed to clear the forests within the national park. They are also pressured to sell their land or convert their diverse subsistence crops and orchards to monoculture oil palm by local economic incentives and the existing plantation owners. Moreover, those that work for corporate agricultural firms as field workers frequently are trapped in a cycle of debt causing their families to suffer, particularly the children who may be forced to work in the fields rather than attend school. Some villages are so remote and roads so poor, children of grade school age frequently do not attend government schools, particularly when bad weather makes traveling extremely challenging. MECU education programs help to serve the community needs by providing education in the villages for school age children and their parents, who also may be illiterate.

PUBLIC HEALTH NEED

Villagers, including children and adults, who work in and around large scale agriculture (e.g., oil palm plantations) are frequent victims of pesticide and chemical exposure, poor sanitation, parasites, and other diseases. Formal and informal education that is holistic and covers waste management, water conveyance, storage and treatment and sanitation, and methods to grow food organically and efficiently using compost and integrated pest management (rather than toxic and expensive chemicals) help villagers to help themselves improve their own livelihood and general health.
WELCOME TO OUR PROJECT
MECU (MOBILE EDUCATION CONSERVATION UNIT)
Component of Activity 1.

Activity in Demplot Pertanian Selaras Alam

The demonstration plot has now entered its third year and has given good experiences for the development of Yayasan Peduli Orangutan Indonesia (YPOI) program in 2017. Many things have happened, and the existence of the demonstration plot has provided a positive example and contribution to the surrounding community. The development and changes of demonstration plot in this year is significant, that is, we continue to conduct continuous experimental activities with various experiments in accordance with the capacity of existing human resources. By increasing production for the needs and independence of DemPlot is understand the local market situation, adjust to the weather conditions, knowing suitable plants planted during the season especially the rainy season. And we show additional models and methods of agriculture, especially in the use of a small yard by making a vegetable house.

In Demplot PSA, we applied an agricultural system that encourages the formation of healthy soil and plants by practicing cultivation practices such as recycling of nutrients, crop rotation, proper soil processing, and avoiding synthetic fertilizers and pesticides. In order to support DemPlot needs, the utilization of organic materials derived from plants and animals should be carried out optimally and sustainably, since the use of synthetic chemicals in agriculture, the real function of the soil is lost. This is because the land is seen as a mere object regardless of its sustainability. One indicator of the declining level of soil fertility is the increasing use of artificial fertilizer per unit area to maintain the level of productivity.

Based on the history and experience that illustrates that agriculture is no longer promising both in terms of productivity and safety to be consumed if conventional cultivation practices, the use of chemical fertilizers, pesticides and others still continued. Now the problem is what should we do to rescue the current condition because the damage that has happened is so severe? DemPlot PSA is one of the alternatives that can be applied to reduce the acceleration of destruction and is even expected to be an attempt to restore or restore agriculture. DemPlot PSA is better known as organic farming, botanical agriculture and many other terms. DemPlot PSA is a more environmentally friendly agricultural system and approaches to the potential use of farmers as the main actors to play this process.
1. Activities in Demplot Pertanian Selaras Alam (PSA)

Routine Activities

Demplot PSA always works together with the community both schools and public, especially farmers around Demplot. MECU team regularly conducts meetings to carry out activities with farmers by forming an organic farming community and also students around Demplot. Activities in Demplot start from the manufacture of natural fertilizer to biopesticide and do some experiments of horticulture / vegetable planting techniques. Demplot PSA also coordinates with the village government to obtain information about people who have problems or concerns with agricultural and orangutan issues. MECU team also provides information to the village government on the activities to be implemented so that we can work together.

Land Clearing

We use the tripe machine to clear the land so that it will be more neat and weed. We can use the remaining swipe for compost material. Plants will more easily get nutrients and plant growth will grow faster and fertile if we use compost. PT Rutan donated a mini triller machine in 2016 and it is very helpful in the processing of producing good soil. Usually area with size 20 x 20 m, it will spend 25 minutes by using manual power (man power by using hoe). But the farming community is very grateful because using the machine can save time, it only takes about 10 minutes to loose the soil. The farmers also appreciated their gratefulness with the help of machine loan to cultivate their land. Besides, the farmers also get additional information about conservation, orangutan and science about crop cultivation: compost, biochar, and organic cultivation technique (data of the machine usage is attached).
Experiments Activities

We do some experiments with several methods and treatments such as:

1. Planting Rice in Used Aqua Gallon

Utilization of used aqua gallons can be done repeatedly, as we do, these gallons have been used 3 times for rice plants. There are 4 treatments that we tested:
- Plot 1, Control
- Plot 2, using biochar
- Plot 3, using a mixture of biochar and compost 1:2
- Plot 4, using manure and biochar 1:2

The most significant results in the experiment were the increase of production and the number of tillers in plot 4 using manure and biochar. Then followed by plot 3 using biochar and compost, and the use of only biochar differs from control, so the conclusion is biochar use should be mixed with compost or manure.

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<tr>
<td>Biochar : kandang</td>
<td>85</td>
<td>21</td>
<td>97</td>
</tr>
</tbody>
</table>

The average result of the trials
2. Planting Vegetables in Plastic House

Planting vegetables using plastic house is very effective because it will not have many problems, especially pests, rainy season and others. When compared to the open place, the success rate of vegetables will be more optimal. However, the cost becomes high at the beginning of making the plastic house. Then we must regularly watering plants at least 2 x daily in the morning and evening. Basic fertilizer basins such as compost and manure should be sufficient to meet the nutritional needs required by the plant.

We made 3 plots to see the differences that occur in plants in the plastic house. Tests that have been done are:

1. Plot 1, kangkung with compost and manure 1 : 1, the growth and production is optimal
2. Plot 2, spinach with compost and manure 1 : 1, the production is optimal, 2 - 3 x harvest
3. Plot 3, mustard with only compost, the production is less than optimal.
3. Planting Lettuce in Streiform

The hydroponic planting of the wick system is a convenient way for beginners, by providing adequate nutrition at the roots of the plant will grow optimally and provide satisfactory results. The experiments performed on these lettuce plants 40 days after planting can be harvested, but the weakness of the dependence on instant nutrition ready to use the manufacturer’s products. When compared with the nutrients / liquid fertilizer is made by itself the results are not optimal longer and slender stems. Media materials are sometimes difficult to obtain.

4. Planting Medicinal Plants in Used Tires

Planting medicinal plants in used tires is very effective because a variety of plants can be made in groups. Even if a flood comes, the plants can still awake. This method is also quite effective as a medium of learning for anyone who wants to plant both urban and rural communities. If we plant one type of plant in one used tire, we can write its nameplate and its function. We can also prepare a handbook on how the plants grow and their function.

5. Planting in Used Bottle of Mineral Water

Utilizing waste, especially bottles of mineral water is a wise act for those who want to take advantage especially to grow vegetables for household needs, means that we have participated in saving the earth from waste. The use of used bottles can be used as a container to grow vegetables or other for everyday purposes. Of course the results of the plant is useful as food consumption. Planting in used/waste materials are very easy and can provide a positive value for everyday life and the environment to be green, clean and healthy.
Appropriate Agriculture Technology in Demplot Pertanian Selaras Alam (PSA)

Farmers face a very dynamic problem where the biological damage of the soil, which has lost its fertility, pests, expensive fertilizer and agricultural toxins. It is not only difficult to obtain good seeds but also expensive to buy seeds. In Demplot PSA, we always make simple experiments to create a technology, such as we make compost from the rest of the garden waste, the cow manure, choosing some pest trap plants or we can simply processed some plants in Demplot as pest trap, for example the papaya leaves. The efforts to increase the development of agricultural technology that prioritizes the natural materials that exist around

Demplot is to achieve the natural harmonious farming. While liquid compost is more practical. By soaking a bag of cattle dung into the drum and filled with full water, then leave for 15 - 21 days, the fertilizer is ready to be used for casting. The things that help accelerate the composting process is the number of microorganism populations, the surface area of the material with the cutting of material as small as possible, Organic materials used such as legumes, stimulators such as manure, MOL (local microorganisms), and EM4 (effective micro organism)

a. Compost

Compost is the final result of organic material process with the help of bacteria. In compost, there is not much element of N, P and K, that is why it is different with synthetic fertilizer. However, compost contains many micro nutrients Fe, S, Ca, Mg, etc. We can not have these elements in artificial fertilizers generally. We make 2 types of compost in Demplot, they are solid compost and liquid compost. In producing solid compost, we collect organic waste materials (from kitchen, garden, livestock, etc.) and cut them into pieces. Then we mix them with wet and dry organic material, put them into a box. If we use
bamboo, it should be coated under the branches for the circulation of air and the water is not stagnant. Besides, we must control the temperature, moisture content, humidity odor, acidity. flipping through the compost according to the natural process conditions (2 or 3 weeks). The compost will be ready to be used in 2-3 months.

b. Biochar

Biochar has been used by ancient people to fertilize the soil. It has been demonstrated that the addition of biochar into the soil may reduce CO2 and other greenhouse gas emissions into the atmosphere recently. The world of modern science and technology has begun to examine the influence of biochar on plant growth since the early 20th century. The use of biological charcoal as a fertilizer of plants has been done by ancient people in various regions. In Indonesia, rural communities have used charcoal or other wood as a source of energy and improved soil fertility to a limited degree. But modern societies realize the true benefits of biochar after the discovery of fertile black soil in the Amazon basin, South America. The black soil called the terra preta Amazon was formed more than 2000 years ago by the habit of burning biomass society and immerse it into the ground. At demplot, we have just started trying to make biochar as an additional media planting and do its use through several experiments to cultivated plants.

c. Biopesticide

In demplot, we produce biopesticide by using the existing plants around such as inggu leaves, soursop leaves, papaya leaves, spinach leaves that are extraced and used as a biological agent, then spray it into plants infected by pests or diseases. This biodiversity treatment to provide plant resistance against virus attacks and diseases.

d. Pest Trap Plants

We plant the pest trap plants among the cultivated plants. They are flower of Tahi Ayam and Kipahit, with bright yellow flowers and have a distinctive odor. When pests touch them, the pests will not want to come to disturb the plants anymore. This is quite efficient with the result of the quality of organic farming. This behavior has been done since the commencement of organic farming activities, in Demplot PSA.
e. Medicinal Plants

We have planted many kinds of medicinal plants, such as, red ginger, elephant ginger, kencur, kelor, galangal, male papaya, lengkuas, pare, etc. We plan to make special block for medicinal plants. We will process them into medicine and sell it.

6. Nursery

MECU program sees the importance of developing a nursery business in Demplot PSA as a base of improvement to reduce orangutan conflict. Based on an idea of MECU program and community groups in Laudamak and Timbang Jaya villages to do nursery business.

a. Filling Polibag

This activity carried out independently by community groups that are involved in MECU program. In filling polibag, we use soil, compost and rice husk with a ratio of 1: 1: 1 to support the growth of plants to grow optimally.

b. Planting The Seeds Into Polibag

Planting the seeds are adjusted with type of the plant, because each plant has its own characteristics. That is why it has different treatment for each plant.

c. The Treatment

Before being moved to the planting area, the seedlings must be treated very well. The good treatment must be conducted regularly especially the nutrients for plant to grow.

d. Planting Seeds in Demplot

Planting activities carried out regularly based on the condition of the seeds, ready or not. We must know the age of the seeds to be planted, because it will affect the growth and production. If the age of the seedlings is sufficient then planting can be done.
e. Treatment, Sanitation, Fertilization and Maintenance

Good treatment is conducted since the beginning of planting until the harvest time. There is a lot of work to be prepared. The example is we should add solid fertilizer in the planting media, the soil, and after the seeds grow, we should give liquid fertilizer 3 times in a week to accelerate the growth. And the most important thing is the planting media must be clean and we should notice to the pests or another.

f. Harvest and Post-Harvest

Harvest that is obtained from organic farming in Demplot PSA depends on the season that takes place every year. Because the weather greatly affects the crop. The production of this harvest is sold to the market, the restaurant of Bukit Lawang Hill, Ecolodge, local restaurants, and household around Demplot (Fluctuations of results and sales data are in Appendix.

7. Trainings in Demplot PSA

The participants is educated with information and knowledge about how the process of composting, decomposing organic materials into fertilizer, etc. There is also question and answer session about organic and unorganic things, decomposing, etc. These subjects are discussed to stimulate participants to recognize microorganisms that are often victimized by the use of synthetic fertilizers and chemical toxins.

In the introduction of organic fertilizer, participants are invited to list the types of organic materials that are around us. Then the facilitator explains that the organic materials can all be used as compost. Participants are then invited to discuss to understand the benefits of organic fertilizer. Subsequent sessions of participants are given direct exposure and practice on how organic liquid and solid fertilizer manufacturing, organic pesticide. They will start this session by collecting materials, preparing tools and work procedures.

From this training, the participants gain knowledge about soil ecology, especially microorganism which helps many people in their life. Participants recognize the types of organic materials that can be used as
Participants understand how to make liquid compost, solid compost and organic pesticides and biochar.

1. Hydroponic Training

Hydroponic training was conducted at Anugrah Farm. It was followed by YPOI team and the community. The purpose of this training is to provide education and knowledge for urban communities to motivate them in growing plants is a small yard. YPOI provides a simple practice at demplot for people who come from other villages or city to learn. So that they understand that hydroponics is simple, easy, although the nutrient is a little bit expensive. The nutrition can be made by ourselves but not optimal. Hydroponic with the wick system we did at Dem9plot had good results, lettuce vegetables grew well.

2. Join The Organic Farming Community

YPOI build partnerships with activists of organic plants through several meetings and training which are conducted regularly twice a month. YPOI is in the process of improving organic products optimally so that can be supreme in the market. Farmers usually face many obstacles during the rainy season because many plants are damaged, especially vegetable crops such as spinach, mustard greens, kangkung. YPOI is still collecting the data where each farmer makes a master plan about the area of the garden and what plants are planted. It will be easier for YPOI to look for the obstacles or challenges in the market until now.
Visit activities in Demplot PSA
Component of Activity 2
Learning Activity in Kinangkong Smart Car

@Ypoi: open ceremony of Kinangkong Smart Car

Smart House Program aims to provide education services to the community especially for people who do not have basic skills to read, write and count. The problem of the development of education is the low understanding on the importance of reading for the life. They do not realize the advantages of reading as follow:

1. To add knowledge
2. To develop intelligence
3. To increase the vocabulary
4. To improve communication skills
5. To improve concentration
6. To calm our minds
7. To improve memory.
8. To increase understanding
Kinangkong Smart House is located in sub-village of Kinangkong, Kuta Gajah Village, Kutambaru District, Langkat Regency. This sub-village is one of seven sub-villages that is left-behind, located adjacent to Gunung Leuser National Park. Many children do not go to school, drop out of school, due to several factors including:

Lack of parents awareness on the importance of education for children because of their busy time to work in the morning. But according to a mother, it is not actually a problem. A husband and his wife can alternately pick their children to school but most of them are too lazy because of the distance of the school is far enough and the road is damaged.

If they hire a motorbyker, the cost is very expensive. They pay for Rp 200,000 per week for one child. It means they need to pay Rp 800,000 per month for transportation costs only. The access (far distance and damaged road). Some children are also affected with a thought that mending rubber is better than going to school because they will make money. Children in the age of 12 years old who do not go to school or quit, they help their parents to mending rubber or herding cows.

Based on those reasons, YPOI built the smart house, a wood building with zink roof, the size is 3 x 6 meters. In the beginning, YPOI team sosialized this program to the villagers in Kinangkong sub-village. With this approach, we will gradually merge with them and they do not longer consider us as stranger.
Names of committee in Kinangkong Smart House:
Advisor : Kepala Desa Kuta Gajah
Founder : YPOI
Administrator :
The Head : Simson Wiratama Kembaren
Secretary : Sri Evalina
Finance : Norman Hidayat
Members :
   Hakrido Sitepu
   Fernando Sitepu
   Berna Deta
Teacher : Sri Evalina

Names of Children in Kinangkong Smart House

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<tr>
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<td>4</td>
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<td>7</td>
<td>Pioni</td>
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Lesson and training that has been delivered in 2017:

1. Reading and writing
2. Coloring and drawing
3. English
4. Reading Al-quran
5. Names of protected animals
6. Names of plants
7. Introduction of rubbish (organic and non organic)
8. Training of organic fertilizer
9. Training of origami paper
10. Training of cooking

Photo: Drawing activities in Kinangkong Smart House
Learning activity in Kinangkong
Component of Activity 3

Education Activity Through Smart Car

MOBIL PINTAR

MENGABDI

MENJADIKAN

MEMBUKA CAKRAWALA

JENDELA DUNIA
Smart Car Program aims to provide educational services for communities by delivering conservation and education messages on the importance of maintaining the environment, protecting nature, biodiversity and ecosystems. Besides, to increase the spirit of students’ interest on reading by providing small conservation library. The problem of educational development is the low understanding of the importance of reading for the life and development of the next community.

This program is implemented with the emphasis of the School Visit concept, where the main objective is the students are expected to participate in conservation activities since their early age. School Visit activities consist of:

*Pre test and Post Test*: it is conducted to see the students’ knowledge about orangutan and the habitat, both before the activity begins and after the activity finish.

Presentation about Orangutan by introducing the habitat, the way of life, types of orangutan, and the conservation of orangutan. We present a simple material with detailed information. The main focus of this program is the protection of orangutans.

Share Discussion: it is to strengthen the understanding of the material presented, followed by discussion, question and answer about orangutans and their habitat. This is done to create two-way communication so that the messages can be delivered well.

Presentation about Smart Car is the main focus of this activity where the concepts is raising awareness through reading books from a mobile library.

Presentation of EcoTour is the explanation about an education with outdoor activity.
Beneficiaries

Beneficiaries of this activity are students from the level of kindergarten, elementary, senior high school until senior high school. The data is as follow:

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I. Method
YPOI wants to take a responsible to participate and care about education by providing Smart Car Service, considering that a group of community do not have support to continue their education due to various problems of life, economic factor or the other factors.

The form of educational activities that will be implemented by YPOI is providing a smart car in Medan city, Deli Serdang and Langkat regency and in regency - city in North Sumatera Province generally. The follow up concept is:

1. Duration of the activity will be longer so that we can get two-way communication more effective.
2. Periodic visits to schools to improve understanding
3. Setting a more effective and efficient schedule, especially for the school and YPOI staff
4. Update of material and tools or instruments

Component of Activity 4

Pre Test dan Post Test
Presentation about orangutan, and tools/instruments
Share Discussion
Restoration program based on our audiences with SPTN V Bukit Lawang as the stakeholder of the National Park area where the restoration location will be determined. The next step was sending permission letter to do survey and take coordinate point with GPS. MECU team continued to hold meetings and discussions with Gunung Leuser National Park Office about approval letter. According to their opinion, this approval process will take a long time due to the General Director Office in Jakarta. The draft of proposal was completed with budget and workplan which has been presented to BBTNGL Medan, Mr Rahmad Simbolon. And the first survey has been conducted by BBTNGL Medan, SPTN Bukit Lawang accompanied by community group that involved in the restoration activity.

Audience with the Head of Field Management of National Park Area III in Stabat, Mr. Turnip and the Vice of Field Management, Mr. Diro, was conducted to have next explanation about the approval letter. Then the final audience about this restoration program was held in BBTNGL Medan. YPOI also coordinated with OIC as a foundation that has been already had a lot of experiences about restoration and patrol program. It is expected YPOI and OIC will be synergized in restoration and community patrol activity in Simolap forest of Gunung Leuser National Park in 10 hectares area.
At this time, process of getting the approval with BBTNGL Medan has been running well, YPOI is waiting for the final decision from the Ministry of Environment to obtain a location permit to do restoration with BBTNGL Medan.

Forest restoration and patrolling activities will be conducted by YPOI Partnership with local community group, Syukur Tani, and cooperate with BBTNGL covering an area of approximately 10 ha in Simolap Forest of Gunung Leuser National Park. It is administratively included in Kuta Gajah Village, Kutambaru District, Langkat Regency of North Sumatra. This activity is an effort to restore the original forest ecosystem that has been lost due to the encroachment of the area. The main focus of this restoration is to accelerate the formation of forest stands by planting different types of native plants using the "Framework Species Method" developed by FORRU-CMU (2006). And also restore the habitat of animals such as orangutans, birds and others.

Photo: map of restoration site in Forest Block of Simolap Resort in Marike, Gunung Leuser National Park, Kutambaru District, Langkat Regency of North Sumatra.
Table: Coordinate Points of Critical Land in Forest Block of Simolap Resort Marike which is Administratively Included in Kuta Gajah Village, Kutambaru District, Langkat Regency of North Sumatra

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Photo@YPOI first presentation of restoration program in BBTNGL Medan

Photo@YPOI second presentation in BBTNGL Medan in summarizing mutual agreement for both parties and annual work frame.
Volunteer program is a program for people around the world who want to apply their skills in environmental work in Bahorok District, Langkat Regency, North Sumatra Province, Indonesia. By matching your skills and interests to the needs of YPOI, we identify interesting projects for them to work on. Their support will enable us to become an impacting organization and deliver high quality programs in the field.

While eco-tour program intends to offer pre-planned or customized travel plans to suit your tastes and budget. It will be a cultural tour, adventure tour, or a combination - you produce the best holiday in North Sumatra, Indonesia. By taking one of our tour packages, means that you have participated in a community environment and conservation activities because we will directly donate 50% of the profits for the project activity.

Some of activities that have been worked on by volunteers are:

Visiting demplot PSA in Timbang Jaya Village. Here, volunteers can help organic farming activities, such as seeding, planting, making simple compost from leaves that have fallen on the demplot, from the remaining animal manure, using natural ingredients in the demplot to be used as a natural pest trap, then applying it to the plant in demplot. Volunteers can be also acted as facilitator to serve the students or guest who come to demplot to share their knowledge and experiences especially in organic farming.

Photo: Kimberly Riley, a volunteer from USA
Recognizing YPOI project is not only by being a volunteer but also by taking ecotourism program related to orangutans in Gunung Leuser National Park. You can CRU program with the elephants in Tangkahan and discussions about YPOI programs while drinking fresh coconut water in demplot. The arrival of Emily and Alan intends to write stories or news about NGO activities in North Sumatra who work on environmental and conservation to one of the independent media. If they succeed, they planned to donate some profits to YPOI. Emily planned to create 4 postcards, posters for promotion of demplot activities, and some pictures will be given to YPOI to be used or published on the website.

Besides, YPOI also introduce some models of economic alternative in Bahorok. They are:

- **Biogas**

  Biogas is managed by Mr. Basiran in Timbang Lawan Village. In an area of approximately 1 hectare, he creates a friendly environment and sustainable. This can be seen in the presence of 10 cows that can produce cow dung for 60 kg per day on average. This cow dung is used as biogas raw material that can support 2 households. In addition, Mr. Basiran also uses cow dung as fertilizer for plant and fish food. He also maintains several types of chickens and birds where the cages are built on the fish pond so that the chicken and birds manure will fall into the pond and fishes will feed it. He also plants several types of oranges originally come from Java and Thailand.
- **Home Industry**
  One of the livelihoods in Bahorok is home industry to make tofu, tempe, roof of palm and traditional rattan equipment. These products are sold around Bahorok District. But rattan, they have received orders from outside Bahorok, such as Medan City.

- **Ecotourism of Mangrove in Sicanang**
  The existence of this ecotourism emerged with the establishment of Mangrove Protected Area in Sicanang, the result of village deliberation facilitated by the Government and YAGASU that concentrate on preservation and protection of mangrove forests.

- **Waste Bank in Sicanang**
  The waste bank is headed by Mrs. Arma by empowering local people especially mothers as workers. At the beginning, it was ignored because considered as an impossible thing, but now it has brought a positive change in Sicanang. At least, some people have been conscious not to throw garbage into a river that always causes flooding. This waste bank has several programs, including health programs and scholarships. Health programs can be enjoyed by the community by collecting garbage that is rewarded with money, then the money is saved. This savings can be used for free medical treatment in waste bank. While to get the scholarship program, members must collect the minimum garbage worth Rp 100,000 per month. There are already 3 universities cooperate with the waste bank. This year, waste bank has provided 5 faculties that can be chosen by the members. The faculties are Economics of Management and Accounting, Law, Counseling, Engineering and Biology.
Parapat is a small town that becomes one of the most attractive destinations on the shores of Lake Toba. It is precisely located in the district of Simanindo, North Sumatra. Parapat town is about 45 km from Pematang Siantar with a travel time of between 45 minutes to 1 hour by using public buses. While distance from Parapat city to Medan city is approximately 160 km by the distance between the 4-5 hour drive.

Looking around the Parapat city, we can see that the architectural style of the buildings in the town of Parapat is the harmonization of the elements of architecture of traditional, modern, and tropical. In addition to architectural tours, Parapat also rich in nature, historical tours, and culinary. The coolness of this small town will make you linger around the city to enjoy the exoticism that offers.

**DESTINATIONS**
- Samosir Island
- Tomok and Tek Tek
- Beautiful traditional house
- Tan Gedian Simanik
- Waterfall

**BAHOROK**

Bahorok is one of the most popular destinations in Sumatra. It is a very convenient step for those who love nature, with a lot of activities. It is easily accessible and is a lively and social place. There are many places you must visit, such as Bukit Lawang, Batu Kapal, Selang Pangeran, Batu Katat and Simolap.

Besides seeing orangutans, you can do other outdoor activities such as jungle trekking, rafting, tubing (floating with inner tube), caving, cycling to see around the villages and taste delicious traditional food. Even it is perfect for relaxing and for families.

**DESTINATIONS**
- Bukit Lawang
- Batu Kapal
- Selang Pangeran
- Batu Katat
- Simolap

**PACKAGES**
- Jungle Trekking
- Bird Watching
- Caving
- Rafting
- Tubing
- Shipatone
- Waterfall
- Village Tour (cycling or Beka)
- Cooking Class
- Medicinal Plants Class
- Traditional Drumming Class

**POINTS OF INTEREST**

*If you are lucky, you can see Orangutan, Long Tail Macaques, Pig Tailed Macaques, Thomas Leaf Monkey, and wild Orangutan. Besides, you can also visit butterfly beach, cave, waterfall, and hot spring.*

**TANGKAHAN**

Tangkahan is a small village on the border of Gunung Leuser National Park in North Sumatra. It is situated at the junction of two rivers, the Buluh River and the Batang Hari River. Tangkahan specializes in eco-tourism activities like jungle trekking and elephant riding. It is the perfect place to get off the beaten track, but still have access to nice food and comfortable bungalows. Tangkahan is an interesting place in many ways. Interesting for what it has to offer and an interesting background. The elephants, the jungle, and the clean rivers are obvious attractions.

What makes Tangkahan different is that it is a good example on how community-based eco-tourism can decrease illegal logging, improve livelihood, and develop a sense of pride amongst the locals.

There are 10 trained elephants (April 2007) at Tangkahan which are available for jungle trekking though their primary role is to protect and patrol the National Park from illegal activities like animal poaching and illegal logging. These elephants were original troublesome elephants that were involved in arable fields and houses in surrounding villages. Now they serve to protect not only the villages but other elephants in the wild.

**PACKAGES**
- Jungle Trek
- Elephant Trek
- Washing Elephant
- Caving
- Tubing

**BERASTAGI**

Berastagi is a tourist town, another lovely town located in Karo highlands. The town is known for its plantations and various kinds of flowers, vegetables and fruit, most famous which is Musingsia passion fruit. It’s 66 km southwest of Medan and is 1,906 feet above sea level.

From this city, the visitors can enjoy charming scenery to the active mountain, such as Sibayak Mountain and Samosir Mountain, to climb Sibayak Mountain require at least 5 hours trip and we could enjoy pretty scenery in these mountains or 3 to 4 hours trip in the forest to reach the forest to see the nature wealth inside, for both the flora and the fauna around this forest.

The atmosphere of green nature from the reflection of the trees from the slope of Sibayak Mountain made the Berastagi city had flooded by tourists. The hill line along with the agricultural field, are always ready to refresh its visitor's eyes. Berastagi which rich with agro-industries became the appropriate choice for recreation sport other than Toba Lake and Samosir Island, which has been a trademark of North Sumatra.

**DESTINATIONS**
- Taman Lumbini
- Air Terjun Sipiso-Piso
- Simalage Resort
- Hill of Camingi and Fruits Market
- Hot Spring Siduhak beach
Photo: tube rafting in Bohorok River, bukit

Photo: Sidamanik tea garden

foto: Poto: a visit to local shop in Samosir lokasi danau toba-samosir

Photo: waterfall in Marike, Simolap bukit lawang

Photo : Emily and Alan had a field trip in Gunung Leuser Photo: Kim Riley, a volunteer, was trekking in Gunung
Component of Activity 6

a. Tree Planting

YPOI does not only concern with the existence of orangutans but also the forest where they live in. That is why YPOI works with community groups and students from kindergartens, primary schools, junior and senior high schools to motivate people in the form of planting. During this time, we have planted trees on the sidewalk, in the river bank, in the buffer zone between Gunung Leuser National Park with local community farms and other critical places.

On December 17th 2017, YPOI together with the communities groups and 30 students have planted trees in the basin of Bas-bas River. It is located in Suka Mulia sub-village, Lau Damak Village, Bahorok District, Langkat Regency. We planted 800 trees, there are tampoi, jackfruit, mangosteen, petai, jengkol and kayu raja trees. The purpose of this planting is to preserve the forest as well as to reduce the conflict between humans and the long tailed monkey species that are always disturbing the local people’s gardens. That is why we planted fruit tree along the Bas-bas river which is the entrance of the wildlife to the community garden.
Data of Tree Planting

Data Persentase Tanam Pohon Program MECU

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<td>Total</td>
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</tr>
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</table>
b. The World Environment Day

The theme of The World Environment Day in this year is “Connecting People to the Nature”. Many activities were carried out to commemorate the Environment Day 2017 in order to arise awareness to behave wisely to the environment in every sides of our life. World Environment Day were held on 20th until 21st May 2017 in PPLH Bahorok. There were workshop and competitions. While the cleaning action was held in Bukit Lawang area (Vido Dido - Rindu Alam Hotel) and tree planting symbolically held in PPLH Bohorok. We planted 700 trees. This activity has been conducted by several institutions that care about the environment. The names of participating institutions are:

YEL – PPLH BOHOROK
BUKIT LAWANG TRUST
BATU KAPAL COMMUNITY
YPOI
HIMPUNAN PRAMUWISATA INDONESIA (HPI) BUKIT LAWANG.

We hope through this event, the community and all stakeholders especially those who live in Bahorok are inspired to take action wisely on the environment. It was expected that there would be a solidarity on the issues that threaten environmental sustainability.

c. Bukit Lawang Conservation

The conservation festival is aimed to introduce Bukit Lawang with its various local heritage and the communities care in taking care of nature and the biodiversity. The theme is Conservation Festival which is usually held by Bukit Lawang Trust and YPOI as a partner. This event was held on November 4th 017 in Bukit Lawang by inviting stakeholders and students from Trsut School and their parents.

Some NGOs both local and international participated in this festival. There were many performances like poems, dance, talkshow, coloring, and display of the communities products, sharing information about the environment and orangutan and other interesting activities.
d. Orangutan Caring Week 2017

The number of protected wildlife populations in the forest area of Gunung Leuser National Park as orangutans, tigers, elephants and rhinoceros are threatened to decline due to widespread forest encroachment and wildfire in some forests in Sumatra. Therefore, it takes the attention of all parties so that the animals can be preserved in a sustainable area.

The threats to orangutans in the forests is higher recently due to illegal logging and poaching in the forest area of Sumatra. Based on this situation, YPOI collaborates with stakeholders held the Orangutan Caring Week in 2017 with a lot of activities. It is hoped that with this event, the society and youth people will more care and aware on the orangutans sustainability.

The theme of Orangutan Caring Week was “Organic Conservation to Save Orangutan”, an education statement for us to understand the importance of preserving wildlife and aware with healthy food. This event was a learning media especially for students in the early age. They were expected to understand the importance of preserving nature for the survival of endangered animals in the forest of Gunung Leuser National Park. A series of the activities were drawing, coloring, quiz and games. Participants came from kindergarten, elementary, junior and senior high schools in Bahorok District.
YPOI became one of the participants in INDOFEST or Indonesia Festival which was held by Medan Independent School on September 30th, 2017. It was located in Tijili Square, Medan. This festival was a good moment to socialize YPOI program to the visitors of exhibition. Besides, we could educate students, parents, teachers and other visitors about a endangered species protected by Indonesian government one, orangutan, which is icon of Indonesia that only exist in Sumatera and Kalimantan island. In this moment, we also promoted tour and training packages by distributing brochures to visitors and participants of Indofest.

The visitors who visited our display were very excited because they could take a picture with orangutan costume. This was also a good chance to tell people to not catch, kill, or keep it at home as pet. This is because of the population of orangutan decreases every year and categorized as endangered species.

YPOI can not save this world alone. We need all parties work together to maintain its sustainability and preserving the habitat. Forest is the lungs of the world, it is our duty as human beings to keep it growing. Without realizing the fact is orangutans play an active and important role in maintaining the sustainability of the forest every day.
Program Monitoring

Program monitoring is a mechanism for monitoring travel and program development. MECU) program implemented three steps to monitor the program:
1. Perform regular documentation of reports
2. Monitoring the program and finance both internally and iexternal
3. Conduct a survey of program impacts

Documentation is included in activity report. Each staff write report monthly which describe the activities that have been conducted. While the program management monitor the program and finance periodically. Report of activities and finance are written based on real evidence and facts in the field.

To manage and oversee the program, YPOI conducts survey of program impact. Survey during the program implementation is conducted by interviewing the community and students as well as teachers, while also observing the actual conditions that occur in the field.
CHAPTER III.

ANALYSIS OF ACHIEVEMENT AND PROGRAM RESULT

The long-term outcomes of the program are: Reducing orangutan conflict with humans, especially those that are directly adjacent to Gunung Leuser National Park as the habitat for orangutans, increasing the community knowledge especially students through awareness, training of agriculture in demplot PSA, reforestation and enrichment of orangutan feed plants and environmental education to schools and communities in Bahorok District. This long-term goal is achieved through the immediate objectives of the MECU program.

There are four goals set out in this program:

1. Increase the community knowledge in agricultural sector by using the pattern of demplot PSA through the discussion and training.
2. Conduct awareness and education of conservation and environment at schools in Bahorok and urban districts, and also build smart house as a learning center.
3. Reforestation on the boundaries of Gunung Leuser National Park and planting fruit trees on the banks of river bas-bas
4. Conducting many kinds of environment and conservation activities

The Result of Program Mecu-VII is:

1. The establishment of an organic farming learning center called Demplot PSA in Timbang Jaya village and various activities that have been conducted by educating children from schools, parents, communities and local farmers.

2. The establishment of smart house located in kinangkong sub-village, Kuta Gajah village as a learning center for children who do not go to school or quit from school. Teaching and learning activities run three times a week.
3. The existence of a smart car unit that is functioned as a mobile educational car to reach the urban and rural areas. This car is also priveded with books telling about environment and conservation.
4. The establishment of a coorporation between YPOI and BBTNGL to conduct restoration program that will be implemented in sector 5 of Gunung Leuser National Park.

5. Implementation of tree planting activities, environmental day, bukit lawang conservation, orangutan caring week, and exhibitions related to orangutan.
CHAPTER IV.
ANALYSIS OF OPPORTUNITIES, CHALLENGES, AND RECOMMENDATION TO FOLLOW UP REDUCING CONFLICT BETWEEN COMMUNITY AND ORANGUTAN PROGRAM

OPPORTUNITY

Since the MECU program from 2011 until 2017, MECU has conducted many discussions and meetings with the community to explore the potentials, opportunities, hopes and needs of the community in solving conflict between orangutan and the community.

Some opportunities related with the usage of potential, hope, needs, in solving the conflict is by building the awareness, motivation and support for the community in preserving forest and orangutan. The opportunities are:

Villagers especially the farmers learn more by imitating what is already or done. The development of a model becomes an option that is expected to provide real benefits and can be implemented by the community by practicing the models and doing experiments.

Some models that are potentially have an impact on the community:
1. Demplot PSA,
2. sustainable livelihood development model, mix garden or polyculture or agro-tourism,
4. Model of orangutan research camp for students / ranger
5. Restoration in Gunung Leuser National Park area. The natural potential in the bohorok region, especially the land that directly borders with TNGL to develop this model is quite supportive.

The existence of the benefits of this forest will certainly reinforce community beliefs about the benefits of forests for their lives. The proven benefits of this model will certainly stimulate the community to develop this model for and by the community itself.

Motivation and Support for The Community in Preserving Forest and Orangutan.

Utilization of forest as a buffer and contributor of O2 will be sustainable only if the forest remains sustainable. The program only facilitates the construction of models on a small scale and only able to involve a few households. But there are benefits to the community and can be seen directly by other citizens.
Model development is an important and inseparable part of educational activities and community awareness. Model development is a manifestation of ideas and concrete form of a choice that can be applied by the society and proven to provide economic benefits for them. This will further strengthen community awareness and motivation to participate in conserving forests and orangutans in a sustainable way.

Facilitate to Improve The Community pendapatan.

Poverty is one of the factors that push people to undertake various destructive activities and threaten the sustainability of orangutans and their habitat. To undertake poverty alleviation, the important thing to do is to build awareness and motivation of the community to rise out of their poverty entrapment based on self-supporting principles. Conducting field school education to explore local potential and wisdom from local communities, that is the only way the community empowerment will be built.

In this case, it is important to make systematic efforts to build awareness and motivation of the community, offer and facilitate the community in implementing models of activities that can lead them to rise from adversity and out of poverty alleviation by building self-reliance.

CHALLENGES

There are some challenges that need to be solved in the process of managing and utilizing the opportunities and potentials. Some of the challenges are:

1. **The capacity of human resource**
   The human resources capacity that are mentioned here including improving knowledge, skills, motivation and commitment of individuals involved in the construction of a model. But those things are actually dynamic things that can be developed or decreased, depending on their management. In this case, this challenge can be solved by establishing a good management system, allowing for the development of knowledge, skills, motivation and commitment among the community of all personnel involved especially the YPOI team.

2. **Sustainability of Program and Promotion**
   The sustainability of program support in the phase of building a model is very important. Unsustain support always fail all works that have been built with hard work since
the beginning of the program. Promotion which is not optimal will give the consumer effect in purchasing our program.

3. **Knowledge and Technology**

An offer of a model should be supported with appropriate and sufficient science and technology. Some models that can be developed require the application of technology, for example in terms of determining the type of plant suitable for cultivation in rubber plantation and palm oil plantation. The development of cultivation of plants and farms requires the science and technology of making food from local materials.

4. **Synergistic Partnership Program with Communities & Support of Parties**

The development of a model can not be done by a program without the support and active participation of the community and the parties. The efforts of MECU program are still lacking in encouraging the establishment of a collaborative partnership between MECU program, the community and related parties.

**RECOMMENDATION**

Based on the exposure to opportunities, potentials and challenges facing MECU program in reducing orangutan conflict with the communities, this program recommends some things to be considered and applied in future program. The recommendation is creating a model in case of utilizing environmental services to increase awareness, motivation and community support in forest and orangutan conservation, such as:

- Restoration in the area of Gunung Leuser National Park collaborated with related institutions and communities (counseling systems)
- Sustainable livelihood development program.
- Environmental education program
- Monitoring and investigation program

In the development of this model, there are several things need to be considered. They are: 1. Focus on the efforts to increase the capacity of human resources especially in terms of knowledge, skills, motivation and community commitment by implementing good management and YPOI team as program implementers, 2. Seeking sustainable support for program, 3. Science and technology. 4. Encourage the establishment of a synergistic
partnership with the community. 5. Establish and enhance partnership or cooperation with institutions that conducting the same program.

Future programs are expected to apply the approach and methodology of field school and research. This approach is carried out with the flow of activities; 1. Providing education center, 2. Training of Orangutan conservation cadres. 3. Composing the study and conservation plan of orangutans and their habitats. 4. Establishment the development of ecologically productive business group and utilization of environmental services. 5. Technical Training Packages and institutional strengthening / community groups. 6. Cross visit and comparative study. 7. The development of an activity unit for the utilization of environmental services of conservation of orangutans and their habitats.

At the level of values, beliefs and paradigms of society, programs need to touch the aspect of conflict reduction between orangutan and the community. This aspect is the factor that influences and determines the behavior of the community, beside the knowledge. Changes in the paradigm of society are only possible if they can realize that themselves, their environment, their economy, forests and orangutans are a system of mutual influence. Efforts to intensify information, communication and knowledge can be done by encouraging and improving the process of mutual learning among the enlightened citizens, for example through cross visit and comparative study among the citizens, and mentoring among the community themselves.

And it is necessary to document the community's knowledge, local wisdoms and their concrete efforts in building a harmonious lifestyle with orangutans and their habitats. Education and awareness at schools still need to be improved in the sense that they must be able to touch individuals in larger number. It is also important to develop more innovative program ideas, strategies and methodologies to deliver real and sustainable impacts.

Strengthen the commitment and concrete support of local governments on the efforts to improve the economy through the development of ecologically productive efforts.

Encourage the establishment of synergic partnerships between government, forest stakeholders and communities to minimize community conflict with orangutans.
CHAPTER V
CLOSING


YPOI’s Mobile Education & Conservation Unit (MECU 7) program in 2017 has been well implemented. The various outcomes and achievements of the program as set out by the program have been achieved, which is expected to contribute significantly to the conservation of the environment through Demplot PSA and the reduction of orangutan conflict with communities around the forest of Gunung Leuser National Park. But we must admit that MECU program still need to build a good supporting system to reduce the conflict between orangutan and the communities.

To make this idea comes true, YPOI can not do it alone without support and role of all parties in order to develop the program in a wider scale. Thus, it is expected that this program is able to provide significant impacts for the sustainable development of orangutan problem solving and forest communities

This report has been compiled and submitted. We realize that there are still many weakness but we will never stop learning to get better. We hope all parties can understand and accept this report. Thank you.

Medan, 31st December 2017
My Regards,

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Director YPOI