

Project Report

MOBILE EDUCATION & CONSERVATION UNIT

MECU



Final-REPORT

Submitted by

Orang Utan Republik Foundation

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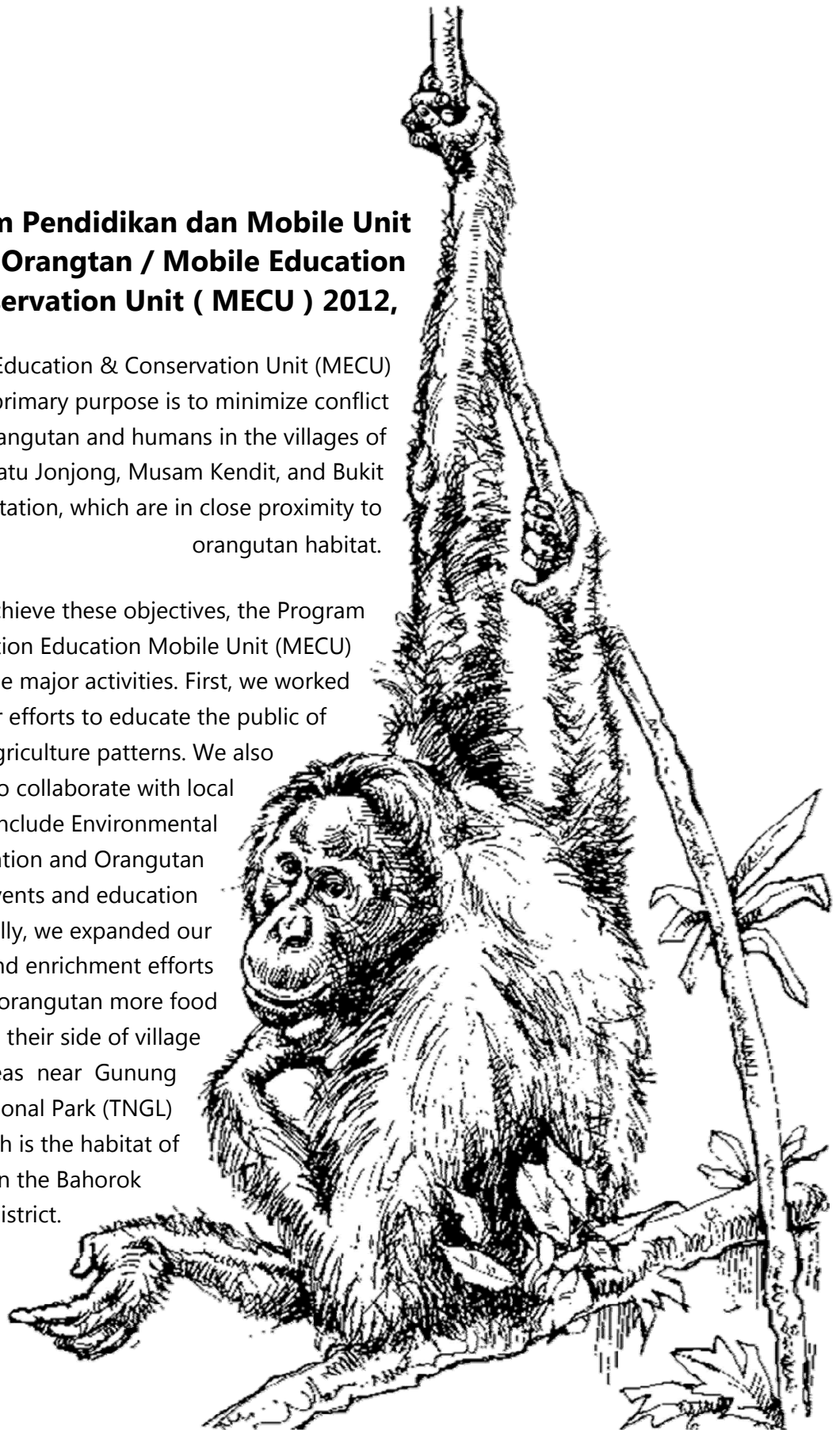
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Program Pendidikan dan Mobile Unit Konservasi Orangutan / Mobile Education & Conservation Unit (MECU) 2012,

Mobile Education & Conservation Unit (MECU) program's primary purpose is to minimize conflict between orangutan and humans in the villages of Sampe Raya, Batu Jonjong, Musam Kendit, and Bukit Lawang plantation, which are in close proximity to orangutan habitat.

To achieve these objectives, the Program Conservation Education Mobile Unit (MECU) focused on three major activities. First, we worked to continue our efforts to educate the public of ecological agriculture patterns. We also continued to collaborate with local schools to include Environmental Education and Orangutan Conservation events and education materials. Finally, we expanded our reforestation and enrichment efforts to offer the orangutan more food options on their side of village border areas near Gunung Leuser National Park (TNGL) which is the habitat of Orangutans in the Bahorok district.



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Preface

We thank the Orangutan Republik Foundation (OURF), President / Project Officer: Gary Shapiro, Grant Manager: Dan Benveniste, OURF USA Santa Monica U.S. Fish and Wildlife (USFW), OURF Indonesia, Yayasan Orangutan Indonesia Education Initiative, Foundation Advisor: Mr. Soedomo Morgonoto; coach of foundation: Mrs. Angelina Sondakh; Chairman / Program Director: Mr. Ridwan Effendi; Chief of Monitoring & Evaluation Program: Mr Marison Guciano; Financial and Administration: Mrs. Kristian P. Rohani; The Forestry Service of North Sumatra; Whole Donors NGOs / NGO, btnG North Sumatra; Bukit Lawang BBTNGL; Bahorok District: the village head in Bahorok, as well as the entire staff of Mecu 2 and friends and volunteers (CPOI-Sumatra) who have given contributed either directly or indirectly to this MECU program.

We believe the MECU program report will provide a significant impact to offer solutions now facing all inhabitants towards establishing a shared sustainable community forest.

Sincerely,
Herman Syahputra
Director of Program Operations





CHAPTER 1

INTRODUCTION

Brief description of 2012 MECU programs

This is the second year we have used the Mobile Conservation Education Unit. In 2011, the first MECU program was implemented. This year, MECU-2 programs were conducted in the villages of Batu Jonjong, Timbang Lawan, Bukit Lawang and Sampe Raya. These villages are directly adjacent to the forests of Gunung Leuser National Park (TNGL) which is the habitat of orangutans in the Bahorok district.

The primary purpose of MECU is to educate local villagers about the importance of the orangutan and the value for all in conserving its habitat. MECU staff also works with local villagers to demonstrate ways to improve the local economy through alternative business models and also to support ecological conservation of orangutans and their habitats.

This year, MECU programs were focused on three areas. First, we continued to work to educate the public and create awareness of patterns of ecological agriculture. Second, we expanded our Environmental Education and Orangutans Conservation and their habitat programs in schools. Third, we enlisted members of the community to engage in reforestation efforts near the borders of Gunung Leuser National Park. More food options for orangutans on National Park grounds will keep them safer.

This year, MECU continued routine visits to each village. Interest in organizing farming methods increased as we provided regular discussions on organic agriculture and appropriate agricultural technologies with the villagers. MECU staff also assisted the villagers in making



small scale plant nurseries in each village and organic farm. Best practices for plant cultivation and propagation training were also demonstrated. Local villagers with the most experience and wisdom were encouraged to share their secrets for successful plant growth and in maintaining and caring for the forest.

MECU continued to promote education and awareness of the importance of the orangutan and its habitat. MECU staff visited five local elementary schools and five high schools in the Bahorok district to discuss the conservation of the Orangutan. A special event, World Environment Day was organized and created by MECU staff to boost our outreach efforts in the schools. In addition, educational materials created for students were distributed throughout the surrounding community.

MECU staff also organized a project to re-establish green areas in the forest boundaries in the village of Batu Jonjong. This activity put all of our education outreach efforts into practice. We enlisted the help of local villagers and environmentally concerned students to plant trees for enrichment and more food options for orangutans in the neighboring national park. This event fits MECU's mission of building public awareness and creating a harmonious life with the forest and orangutans.

To maintain the quality of the program, the MECU staff carried out monitoring of finance programs both internally and externally. Regular visits to involved parties were made to update documentation for reports.



The background of the Program

Recent PHVA document assess the Orangutan status, including their population in Borneo and Sumatra which is now in danger, and projections about the long-term survival could be extinct, (Singleton et al, 2004.). Recent surveys in the final report, issued in August 2004, states that the Borneo Orangutan population is between from 5.000 to 6.000 individuals. Factors affecting the remaining orangutans require immediate mitigation actions by conservationists and wildlife management authority.

Sumatran orangutan species ranged from 7,000-7,500 individuals in 2004. In 2009 populations decreased from 6,500 to 6,700 individuals (Singleton, personal communication). Remaining orangutans are found in 13 habitat units (HU), especially in the province of Aceh. Most groups have fewer than 500 individuals, and only three groups have populations of more than 1,000 individuals (Singleton, et. Al, 2004). Current data indicates that the overall population decreased at a rate of approximately 1,000 individuals per year primarily due to habitat destruction (illegal logging), poaching, "pest" (Robertson and van Schaik, 2001). The loss rate is significantly greater than the rate of population growth, and habitat destruction and conversion is also significant: 10 versus 13, lost 10% or more of their habitat annually.

At the level of habitat destruction, there is a possibility that the Sumatran Orangutan could be extinct within the next five to ten years. The extinction status of Sumatran Orangutan may now share same status with other wild animals such as the Sumatran Lar owa, gibbons, sun bears, Sumatran elephant, rhino and tiger.

The MECU program works to decrease the threat of extinction through education outreach and awareness programs by CPOI-Sumut to directly influence the attitudes and actions of villagers living in areas adjacent to the habitat of endangered wildlife.

Ignorance to wildlife is common among local residents, and the need to meet the economic necessities which motivate the local population is essential. The MECU program has made progress in addressing these conflicts in villages with a program of early education and awareness geared especially for children and village leaders.



Currently there are two NGOs which serve these issues: the Sumatran Orangutan Conservation Program (SOCP), and the Sumatran Orangutan Society-Orangutan Information Center (SOS-OIC). However, neither have the resources to cover the entire area of orangutan habitat covering Aceh and North Sumatra.

This can be demonstrated by the perception of the villagers, who still have weak knowledge of the importance of the orangutan. OURF and OUREII through their partners Sumatra, CPOI-North Sumatra, propose to implement participatory methods to build awareness of the villagers to increase their awareness to be more environmentally friendly. We believe that villagers can improve the skills and ability to increase their livelihoods while sharing the environment with the orangutan.

OURF's approach consists of frequent visits to the village in order to restore long-term relationships with CPOI-North Sumatra. Conservation education by OURF through CPOI-Sumatra aims to protect orangutans and loss of habitat. OURF believes the best way to create awareness of the village is to build trust with the village leaders and explain to them that conserving and improving their livelihood could be jointly undertaken.

CPOI-North Sumatra is also working with the Ministry of Forestry of Indonesia. CPOI Sumatra has regular supervision by OURF Sumatran Orangutan Education Consortium and participates with the Sumatran Orangutan (SOEC) covering SOCP, SOS, and FFI. Through this interaction, CPOI Sumatra has gained knowledge of the activities to maintain an environment that will be used to help guide the project in the local villages.





Overview of Field Program

MOBIL EDUCATION & CONSERVATION UNIT (MECU)

2012.





Component Activities 1

Activity to Increase Knowledge and Awareness of Organic Farms & Nurseries

One of our first project objectives is to improve and strengthen public knowledge about organic farming and plant cultivation. Through improved access to information we can provide opportunities to demonstrate organic farming and plant propagation methods. The activities of a team of Conservation Education Program Mobile Unit (MECU) consist of routine visits to each village. Regular discussions with village residents on organic agriculture and appropriate agricultural technologies provide an opportunity for problem solving and feedback. Another part of this project is demonstrated by building small-scale nurseries in each village. MECU staff has implemented organic farming in 4 villages so far. More education includes propagation methods training, and inviting local farmers to share their wisdom in maintaining and caring for the community forest.



1. Routine visits to the community.



MECU met regularly to assist community groups in the targeted villages, the Batu Jonjong, Timbang Lawan, and Bukit Lawang.



A visit to each village in the early stages was made to establish contact persons in each village. To find a contact person, MECU staff coordinated with village government to find people having a problem or concern with the orangutans' issues. MECU also provided information about activities to be undertaken within the MECU to the village government.



Based on information and recommendations from the respective village head, MECU teams made contact and visited each individual. (MECU) Program staff then explained the MECU program and asked about anything they wanted help with the community. Each individual was asked to assist in implementing activities in the village. In this way, MECU teams gained the support and cooperation of

several individuals who would later become contact persons of this MECU in each village. The contact persons are listed in the following table:



Table of MECU Contact Persons in 4 Villages

No.	Village name	Contact Person names
1	Batu Jonjong.	1. Evi Br Ginting. 2. Mistriani Br Pinem.
2	Timbang Lawan.	1. Saman Barus. 2. Suriyadi. 1. Sabarata.
3	Sampe Raya.	1. Saiful Ricky. 2. Aidil Asri. 3. Murad. 4. Hendro.
4	Bukit Lawang.	2. Rohani. 3. Khairul Bariah. 4. Rasimah. 5. Darma.

In July 2012, the Conservation Education Program Mobile Unit (MECU) team successfully facilitated the formation of community groups and established nurseries in 4 villages, namely Batu Jonjong, Timbang Lawan, Bukit Lawang and Sampe Raya village.



In each village, MECU held meetings and organized events to show the villagers organic farming methods. These teams also worked together to plan and build a village nursery. MECU teams worked with the village contacts to create these activities to show and discuss how the village community could benefit from being part of the MECU program.

2. Regular discussions about organic agriculture and appropriate agricultural techniques with village residents.



MECU staff held discussions in each village visits every month. Village meetings were conducted in the afternoons and evenings, when people had finished their work in the garden. Every meeting was held for 2-3 hours and followed by all members of the target groups.



A meeting between Conservation Education Program Team Mobile Unit (MECU) and community groups in the village of Batu Jonjong. This meeting was held in the evening after work.

Discussion themes are determined by the issues facing each community. Of particular interest is the creation of improved rural livelihoods through organic agriculture. MECU also provided helpful information about the importance of sustaining the forest, and coexisting with its inhabitants such as the orangutan.

Villagers were also introduced to cooperation models that lend capital in order to build financial independence and self-reliance.

MECU teams hold micro lending workshop.

MECU staff introduced the concept of Micro Lending to the villagers by holding a workshop on the subject. Villagers participated in a discussion about identifying potential resources for capital and challenges they faced. The MECU team members facilitated this discussion / brainstorming session to discover the needs of each village and possible solutions within the community.

We now have great difficulty with farming because our land is no longer fertile. Fertilizers are expensive, we have many pests and pesticides are expensive poisons. We also have difficulty finding a good rambung seed because it is expensive and not always good quality.



Participants provided responses to questions raised about potential

resources within each village. The MECU team facilitated the villagers' discussion and helped to organize their responses, which were written on sheets of blank paper.



The MECU staff discussed how Resources have value. The villagers learned the basic ideas behind creating a Micro Lending community, where Value is not just limited to money, it can be seen in developing a skill or providing a service. These resources can be a potential source of capital. Resources were identified as could be anything that is useful in building a better quality of life, with more dignity.

Participants were also asked to think of problems as challenges and opportunities for creating solutions. They were asked to identify problems and to think of their causes. Villagers were reminded to not be afraid of problems, since they simply point to things that need to be faced, addressed and solved. .

Villagers identified the main problems affecting them as being a lack of education, lack of capital and the very hard work among the people. Farmers also discussed agricultural difficulties such as dealing lost fertility of crops, and the expensive prices of fertilizer. Agricultural pesticides, it was also noted, which are used to kill pests, are toxic.

Other problems facing local farmers are the difficulties in obtaining a reasonably priced, quality seed. Additionally, the rampant use of Bahorok durian tree used for building materials, without means or motivation for reforestation because of the difficulties in finding affordable, quality durian seeds.

The MECU team pointed out that in all the villages and there is always the potential for problems. The potential can be likened to motivation or motion, while the problem can be something that resists change or inertia. If the driving force is stronger than the resistance, then the village will progress. But if the motivation and resistance are equal, the village will be difficult to change. Because of this, the village should identify and strengthen a driving force. In other words, village and community must strengthen their potential: Human, Social, Natural, Financial and physical resources. The village participants agreed to continue a discussion about what steps should be taken to strengthen their potential resources.



3. Making small-scale nurseries in each village



Seed crops, or crops of good quality fruit was identified as one of the most important needs of the community. But the desire to build a plant nursery in the community was very low.

MECU teams explained the benefits for village society and the economy as well as reducing the potential for conflicts with neighboring orangutans. Conflicts with orangutans have increased as the number of durian trees in their forest habitat has decreased significantly. As

orangutans search for food, they venture onto private property when the trees produce fruit.



MECU emphasized the importance of developing a community nursery business, and how it would help to reduce conflicts with orangutans. The MECU team worked in collaboration with community groups and assisted in the villages of Batu Jonjong, Timbang Lawan, Bukit Lawang and Sampe Raya to build nurseries.

MECU staff facilitated the activities of small-scale cultivation which started in July through December of 2012. During

this phase, the MECU team focused on planning the locations and helping to build the nurseries. The MECU staff also helped to strengthen motivation for the seedling cultivation business by demonstrating to locals about the proper implementation process of seeding and preparation.



1. Nursery Group Formation & Strengthening Citizens motivation in doing the Plant Propagation.

The Conservation Education and Mobile Unit (MECU) team then conducted meetings to organize nursery groups. MECU teams worked in collaboration with their respective contact persons, who, in turn then held meetings with villagers. The contact persons met with their village group to share what they learned from the MECU team. They worked to offer ideas about how to organize groups and plan activities to begin their village seedling nursery. The meetings were intended to strengthen their confidence with hands on experience in propagating plants to produce fruit and seed crops. These seed crops would then be planted in orchards adjacent to the Gunung Leuser National Park (TNGL).

No.	Village Names	Group Names	Number of Group members
1	Batu Jonjong	Desa Batu Jonjong group	14 people
2	Timbang Lawan	Desa Batu Jonjong group	10 people
3	Sampe Raya	Harapan Jaya group	12 people
4	Bukit Lawang	Lestari Group	14 people
Total			50 people

2. Nursery planning

The following activity facilitated by the MECU team consisted of developing a cultivation plan. This plan would determine which types and amounts of seedlings to be grown in each nursery. The location of the nursery and seeds sources were also discussed. The group also organized to delegate duties so that each person was responsible for contributing with their group.

From this discussion, the entire group set a goal cultivating plants that produce fruit. These seedlings could be planted in an orchard and distributed to communities in need. The various seed types are described in the following table:



TYPES OF SEEDLINGS CULTIVATED FOR EACH VILLAGE

No.	Village	Number of seedlings	Type of Seedlings
1	Batu Jonjong	2.500 seedlings	Durian, Kakao, Rambutan.
2	Timbang Lawan	2.500 seedlings	Durian, Cempedak, Rambung (Karet), Manggis, Duku, Sungkai, Medang.
3	Sampe Raya	2.500 seedlings	Durian
4	Bukit Lawang	2.500 seedlings	Durian
	total	10.000 seedlings	

Residents worked together as a community to look for seeds near quality parent trees. The nursery group members agreed to meet once a week to prepare the site, build the nursery, fill poly bags, and plant seedlings, collect grain for seed, plant seedlings also to perform maintenance.

Once the seedlings were mature the connection group would seek to make ensure parent trees were of good quality from existing trees in the community.

3. Implementation of Nursery Activities.

The nursery activities were carried out by respective villagers. Cultivation activities were done in several steps: First, the nursery site was selected. Next, the nursery was constructed. Poly bags were filled with soil to prepare for seed cultivation. Team members worked together to collect seeds and plant them in the prepared poly bags. Finally, seeds in the poly bags were watered.

1. Nursery Site Selection.

To determine the best location of the nursery activity, MECU team and community groups discussed the criteria for suitable location for cultivation. It was determined that the best location for a nursery would be a flat place close to a source of water, and have easy access to a road. It was also decided that the cultivation area be free from interference of livestock, and not prone to flooding.



TABLE OF LOCATIONS FOR EACH VILLAGE SEED GARDEN

No.	Village	Village Nursery Location	Coordinate Point
1	Batu Jonjong	Dusun Tegapen, Desa batu Jonjong	N 03° 24,930', E 098° 09,886'
2	Timbang Lawan	Dusun Kampung Bukit, Desa Timbang lawan	N 03° 32,445' E 098° 07,819'
3	Sampe Raya	Dusun II – Desa Sampe Raya	N 03° 30,557'E 098° 09,598'
4	Bukit Lawang	Dusun III- Gotong Royong, Desa Bukit Lawang	N 03° 30,395' E 098° 09,992'

2. Nursery Construction



This nursery was built with bamboo seed poles. The fence and the roof were made of net. The size of the nursery determines the number of seedlings that will be grown. The following were photos of the nurseries in each respective village.





Kebun Bibit Desa batu Jonjong



Kebun Bibit Desa Timbang Lawan



Kebun Bibit Desa Sampe Raya



Kebun Bibit Desa Bukit Lawang

TABLE of SEED GARDEN SPECIFICATIONS IN EACH VILLAGE.

No.	Village	SEED GARDEN SPECIFICATIONS	
1	Batu Jonjong.	Nursery Size	: 3 x 6 Meter
		Materials used	: Bamboo, The Net and net pre-Fence, Plastic Ropes, Wire
		Number of seeds	: 2.500 rods
		Type of Seed.	: Durian, Cacao, Rambutan
		Land	:
2	Timbang Lawan.	Nursery Size	: 7 x 12 Meter
		Materials used	: Bamboo, The Net and net pre-Fence, Plastic Ropes, Wire



		Number of seeds	:	2.500 rods
		Types of Seed	:	Durian, Cempedak, Rambung (Rubber),Mangosteen,Duku, Sungkai, Medang
3	Sampe Raya.	Nursery Size	:	2 x 10 Meter
		Materials used	:	Bamboo, The Net and net pre-Fence, Plastic Ropes, Wire
		Number of seeds	:	2.500 Batang
		Types of Seed	:	Durian.
4	Bukit Lawang.	Nursery Size	:	4 x5 Meter
		Materials used	:	Bamboo, The Net and net pre-Fence, Plastic Ropes, Wire.
		Number of seeds	:	2.500 rods
		Types of Seed	:	Durian

3. Filling Poly Bags



Members of the nursery worked together to prepare the planting medium for seedlings. Small poly bags were filled with soil for easy transplanting. In this activity, the children of the family members involved in the nursery helped nursery members by filling poly bags.

4. Collecting Seeds and Planting Seeds in poly bags



Villagers joined groups to look for and collect seeds for the garden nurseries. Men helped to gather some of the seeds which were located far away from the village.

People gathered seeds from gardens of durian, cacao and rubber which were in healthy condition and had good quality fruit. The collected seeds



were then handed to the ladies and placed in moist soil to stimulate growth. The seeds were then transferred once the sprout appeared in the prepared poly bags.



Residents took duku, mangosteen and cempedak seeds from under trees known for good quality fruit. The seeds were gathered in the early morning or late afternoon and kept in plastic bags to avoid excessive evaporation. After arriving in the nursery site, the seedlings were planted immediately in poly bags and doused with water to wet the soil.



Villagers were limited in obtaining durian seeds because they can only be found during November-December. As a result, some of the prepared poly bags were unable to be filled as planned. Durian seedlings tend to grow under the durian tree but do not do well if they are too old, or transplanted.

5. Monitoring of Seed Plant.

The process of seed treatment was carried out by members of each of the respective

village nurseries. Seed monitoring involves watching the seeds or seedlings as they are still very vulnerable. Care is taken early on to ensure that seeds grow where they are placed.

Group members take turns monitoring the seed and soil conditions of each seedling. If the conditions are dry, residents immediately water them. Watering is done in the morning or late afternoon. In watering, residents are also careful not to pour or overwater. After one month treatment, the seedlings were already strong and mature enough to survive.



4. Facilitating Nursery Training



Knowledge and skills in cultivation are vital information for farmers' families. With new knowledge and skills, families can produce their own seeds and save quality seeds to be planted in their garden later. By being able to keep their own seeds, the family farmers are not dependent on the seed market. This can also reduce their expenditures for their families.



Nursery training activities were conducted in September 2012, and involved each member of the nursery group. The training was conducted by presenting both theoretical and practical knowledge of forest biodiversity. The knowledge provided by the MECU team included the theory of cultivation and an introduction to Property Plant Biodiversity. Discussion also included the

importance and benefits of biodiversity and the current condition of the forest. Villagers were also taught about the importance of Parent Tree Identification for biodiversity conservation.

4. Organic farming training in the four targeted villages



Organic farming training was conducted to enhance the knowledge and increase motivation of local villagers in the practice of ecological farming patterns. Efforts to strengthen the motivation of the villagers to become gardeners are shown in the following exercise. Each participant was asked to list the kinds of vegetables they buy and estimate how much is paid to buy vegetables at the market. Participants were then asked to identify the types of

vegetables that can be planted themselves. The same participants are then asked to calculate how much money can be saved by growing food at home or in a village garden.



TYPES OF VEGETABLES PURCHASED AT MARKET

No	TYPE OF VEGETABLE PURCHASED	Self-planted Vegetables	TOTAL CONSUMPTION Average (Per Month)	NILAI NOMINAL (Rp).
1.	Cassava leaves	X	8 binds	4.000,-
2.	Rimbang	X	1 Kg.	8.000,-
3.	Spinach	X	8 binds	4.000,-
4.	Velvetleaf	X	4 binds	4.000,-
5.	Watercress	X	8 binds	Watercress.
6.	Eggplant	X	2 Kg.	Eggplant.
7.	Jengkol	X	2 Kg.	Jengkol.
8.	Small Chili	X	2 Kg.	Small Chili.
9.	Red Chili	X	2 Kg.	50.000,-
10.	Tomato	X	1 Kg.	10.000,-
11.	Garlic	X	2 Kg.	16.000,-
12.	onions		2 Kg.	20.000,-
13.	cabbage		2 Kg.	8.000,-
14.	mustards	X	1 Kg.	4.000,-
15.	Melinjo	X	2 Kg.	16.000,-
			Total	240.000,-

Mobil Education & Conservation Unit (MECU) team staff pointed out that most types of vegetables that are purchased can be planted in a garden plot. The amount of money spent for a family shopping for vegetables can be up to Rp. 240.000. This money can actually be saved, when the family decides what kinds of vegetables they need to grow.



Another advantage to growing small crops is that the farmer can be sure that what they are eating is a healthy food. The Mobile Education & Conservation Unit (MECU) further emphasized the importance of eating and growing healthy foods. These healthy foods are free of toxic chemical ingredients and help to maintain the health and intelligence of children. MECU staff demonstrated tips on how to easily produce healthy vegetables



using compost. Soil fertility increases with compost use and maintenance of the compost helps to reduce pests. Participants were then shown how to make compost and organic festisida, so that they can improve the production of healthy food for local families.



Implementation of organic training conducted at the next meeting included the understanding of the process of composting and how to make organic fertilizer, as well as the benefits of using organic fertilizer. MECU staff demonstrated how to make both a liquid and a solid organic fertilizer, or Natural Festisida.

Understanding the process of composting gave participants valuable information explaining how the process of decomposition of organic matter into the soil occurs. Participants were invited to bring a fresh guava fruit sample, and observe from the beginning the condition of fresh guava. Finally they are asked to notice how the guava had begun to dry and then break down into organic material back to the soil. Then, participants are invited to observe the inorganic material, for example plastic bags, which, can not be decomposed, only after a very long time they crumble into smaller plastic pieces but do not decompose.



Participants were then asked a series of questions such as, "Why do we decompose organic material? And why is plastic not biodegradable? What works to help the decomposition process?" These questions were asked to interest the participants and help them understand the benefits of Microorganisms. The use of fertilizers

and toxic chemicals have created an environment in which microorganisms could not exist. Microorganisms play an important role in decomposition and help to restore healthy soil conditions.



In the introduction session about composting, participants are invited to identify the types of organic materials that exist around us. Then the facilitator explained that these organic materials can all be utilized as compost. Participants were then taught to understand the benefits of organic fertilizer. During the next session participants were given instruction on how to make organic fertilizer in both liquid and solid form. Workshop attendees were also taught how to make a natural pesticide.



Participants learned about the ecology of the soil, especially microorganisms, which help to break down organic matter. Participants also learned about the types of materials that can be used to create organic compost and organic pesticide. Hands on demonstration of these activities helped the local villagers understand how to make liquid and solid compost as well as an organic pesticide.

Activity:

Learning from local experts to preserve and care for the community forest



Local wisdom has an important role in the determination of public attitudes in organizing their life, and how people interact with others and nature. The traditional

wisdom of local communities lies in the form of spiritual values. The traditional teachings encourage behavior that acts in harmony with others and nature. Most local villages have grown and now have more contact with a more modern society. The traditional life of the community is changing. These changes were not always positive, and some changes have impacted the local villages in a negative way.



For instance, the erosion of the values of wisdom and culture of the people, who maintain harmony with others and nature, has changed into a more rational, individualistic and commercial society.

Traditional ideas may hold solutions for problems now facing local villages.

MECU looked at traditional strategies of problem solving in the form of wisdom, knowledge, beliefs and way of life. MECU staff then consulted with village elders to find methods which promoted harmony with other people and living things. They hoped to find solutions to problems such as how to maintain natural strength and capital, and more essentially, to reduce public conflict with orangutans and their habitat.

In other words, the purpose of conducting local wisdom investigation was to change the Anthropocentric paradigm that sees the human being as the center of the system of the universe. In the Anthropocentric view, ethics, values and moral principles only apply to humans. The needs and interests of humans have the highest value, and their existence is considered the most important among all other living beings.

MECU staff introduced the the concept of a new paradigm, the Ecocentric paradigm, which is a world view that is more far-reaching. Ecocentrism, is focused on the entire community, and includes ecological ethics which concerning living and non-living things. Ecologically, living beings and objects are related to one another and share a unique relationship. Therefore, duty and moral responsibility relies on living beings with awareness of their place in the community and environment. We share an obligation and moral responsibility which also applies to all living creatures.

*Hukum Adat Melayu Langkat
Tentang Lantang Rimba, Larangan-
Larangan Petuah Melayu Yang Mengatakan:
Tanda orang memegang amanah,
Pantang merusak hutan & tanah*

*Tanda ingat ke hari tua,
Laut dijaga & bumi dipelihara*

*Tanda ingat adat lembaga,
Laut dikungkung & hutan dijaga*

*Tanda sadar dirinya khalifah,
Terhadap lestarnya alam tidak terbantah*

*Beramu tak merusak kayu
Berotan tak merusak hutan
Bergetah tak merusak rimba
Berumah tak merusak tanah
Berkebun tak merusak dusun
Berkampung tak merusak gunung
berladang tak merusak pematang*



In this local wisdom investigation, the Mobile Education and Conservation Unit (MECU) team took the first step of identifying individuals who have traditional training or leadership roles in the community. MECU staff then visited them to conduct interviews in order to learn skills which might be of value to everyone in the community. Local wisdom, or skills and talents were then documented to share with the community. Finally, MECU teams acknowledged these individuals as community leaders whose knowledge, and specialized skills might be shared with the community.



The Mobil Education and Conservation Unit (MECU) team consulted with community leaders and village administrations in respective villages. Their objective was to discover which community members practiced skills that may enhance the quality of life and support the environment in a sustainable and harmonious manner. From the information given, MECU teams investigated further to find out what kinds

of specialized knowledge or skills each leader possessed.

No.	Names of Person	Information
1	Muhammad Sani	Eaglewood Development & Conservation activists
2	Suriyadi	Micro Hydro and development activists Murai Batu and Fish
3	Uncu Niyem	Drug spluttered
4	Rasimah	Spicy Porridge
5	Jali	Seed cultivator
6	Bangun	Successful fish farmers
7	Rohani Nasution	Pioneers of Development Credit Union / Savings and Loans in Bukit Lawang, Composer & Leader Qasidah (Group Music Environment).



8	Komunitas Kapal	Batu	Owners of the gardens outside the region TNGL orangutan habitat
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2. Visits, interviews and documentation of traditional wisdom and skills

Based on information from the investigation, the Mobil Education and Conservation Unit (MECU) team then visited each individual and asked whether they would like to be interviewed. Interviews were conducted subsequently with the following people; Mr. Muhammad Sani, Suriyadi Uncu, Niyem.Ibu Rasimah, Pak Jali, Mr. Wake, Mrs. Nasution Spiritual and Community citizens Stone Boat. From the interviews and other individual inquiries we hope to gather and share information to help in build a prosperous livelihood that is in harmony with nature.

Muhammad Sani

Mr. Mohammed Sani is middle-aged man from Bukittinggi, West Sumatra and has been living in the Bahorok Village since 1983. Many people knew him as "Mr. Farmer Iyek Eaglewood".

He was a man of commitment and a strong motivation to develop the cultivation of aloes. He said, "Eaglewood needed to be preserved, because the condition of the forest was seriously damaged, and in fact it has economic value." He also cultivates and plants rare agarwood trees, not just in the garden, but also in the TNGL. The scarcity of the agarwood trees has been a result of the rising prices of aloes. In Medang, prices for aloes reached up to Rp. 1.000.000, in the market. Local residents began to search for Medang aloes in the forest areas in the TNGL area to sell in the market. In their search for aloes, many trees were cut by residents in the area. The rise of this activity made the forests in the TNGL region increasingly disturbed.

Muhammad Sani realized that local villagers' search for aloes had a devastating effect of the forest. He began pioneering the cultivation of aloes in 1994. He has also actively invited other villagers in neighboring districts to also cultivate aloes. He also provides seeds for aloe plants for local people interested in the cultivation of aloes.

He was able to garner government support for his efforts. It wasn't until 2007 that many local people became interested in following in his footsteps to cultivate aloes. In 2008, he



invited other farmers who had vast land to begin to cultivate the aloe plant. With this farming partnership, he managed to plant 10,000 trees of aloe on land which covered no less than 10 ha. Muhammad Sani used compost to enrich the soil, and transformed a barren desolate space into a fertile organic aloe farm.

The MECU team asked him how much money could be made growing aloe. He believes "that is obviously quite large and promising, Alhamdulillah enough to eat and pay for children's education". He said that he only expects 1 Kg only for Medang aloes for each tree. Quality aloes may fetch between Rp. 1000000-3000000 at the market. This result is much more lucrative than the planting of oil palm, "So if you want to be rich, plant aloes instead of palm plants." he said. Aside from his income from Medang aloes, he also makes tea from aloe leaves, which are used for treating diabetes and to improve stamina.

Suriyadi

Suriyadi is a young man who believes that the use of land and natural potential is key to improving the welfare of the farming community around TNGL. He wanted to explore other methods of food production that would eliminate the need to clear forests to create more garden space. He began pioneering the development of micro-hydro projects in the form of jurung spawning and fish farming using aquaculture methods. He also breeds hummingbirds and stone crickets.

He did this with the help of his group, "Komunitas Selang Pangeran". They built their micro hydro project with the intent to increase self-reliance. Fueled by their passion, they collected information online through the internet. The group consulted various sources for information on the technical development of micro-hydro, jurung spawning and fish farming using aquaculture methods. They also learned about the cultivation of a humming bird stone cricket. Then they raised funds to build a trial Micro-hydro project which has yet to be completed because of constrained funding. However, their aquaculture project to cultivate fish and their cultivation of a humming bird stone cricket has shown promising results.





Komunitas Batu Kapal (Ship Rock Community)

The Batu Kapal Community has a unique point of view regarding the orangutan. Instead of being annoyed with the orangutan and treating them as pests, they think of the orangutan as a potential benefit.

During the phase of the travel program in 2012, MECU team carried out an intensive interaction with the Batu Kapal community. In this activity, communication with their MECU team suggested that they want to manage their community in a way that ensures the sustainability of orangutans and provides income benefits the community. This community also plans a Batu Kapal management area to be a center of learning about the environment and the conservation of orangutans. They plan to create a Batu Kapal foundation to ensure the survival of the orangutan groups that live there and to create jobs for their community.

Uncu Niyem

Uncu Niyem is a grandmother who is also well-known in the village community as a handyman, or "spat". Her knowledge has been passed from generation to generation. She creates remedies for treating colds. Medicinal spray is made from various nutritious plants that repel wind. She said that in the past, the Malay and the average karo mastered these treatments. In order to create these remedies, they grew a variety of plants. However, now many of the herbs used for her remedies are difficult to find, even in the jungle.

Mrs. Rasimah



Mrs Rasimah is a Malay woman with a family tradition of making spicy porridge. Spicy porridge is a delicious food that is also used as a medicine. This traditional food is prepared for the sole purpose of breaking the fast during Ramadan. This spicy porridge requires at least 40 kinds of plants and herbs, most of which are found in the forest.



Mr. Jali

Mr. Jali is a Malay farmer who cultivates seedlings. He started out as a lumberjack, but he felt that day to day life was too difficult, so he changed his profession. As a result of his new occupation as farmer, he has been able to improve his livelihood.

Mr. Bangun

Mr. Bangun is a karoneseman who enjoyed fish farming. Because of his love, he has pioneered the cultivation of fish since 1980. When he began his fish farm he did not own land. Now he owns 8 hectares of productive rice fields and fish ponds. Mr. Bangun shares his knowledge with others who want to learn fish farming so that they can increase their income.

Mrs. Rohani Nasution



Mrs. Rohani Nasution is a housewife who works on a variety of projects. She was one of the victims of the Bahorok flash floods in 2003. Since 2009, she began to encourage women to form Savings Groups. She currently assists two Savings Groups with a total membership of 36 people. Her Savings Groups have managed to raise Rp. 14,000,000, for the Lestari and Rp. 12.000.000, for the Seroja group. As a result of their Savings Group membership, the women no longer have difficulty in getting loan capital to run a business. Mrs Nasution has also been active in taking care of a Qasidah group, and composes music. She has written fourteen songs about environmental topics such as forests, orangutans, and garbage. Her independant spirit is valuable and we admire her persistence.



Indigenous cultural values in Malay

Langkat Malay Customary Law about Lantang Rimba, the Prohibitions, and Langkat Malay advices which are excavated as follows:

Sign of the hold the mandate,
Abstinence destroy forests and land

Signs remember the old days,
Sea kept and Earth maintained

Signs remember customary institutions,
Sea constrained and Forest maintained

Mark realized he was caliph,
Towards natural sustainability is no doubt

Beramu does not damage the wood
Berotan does not destroy forests
Sap does not damage the jungle
Settle down does not damage the soil
Gardening does not destroy the village
Berkampung do not damage the mountain
farming does not damage embankment

3. Promoting knowledge and wisdom values to the wider community

MECU staff has been responsible for promoting information and traditional values to the wider community through various means. This includes printing and the distribution of information materials, presenting topics of discussion with the community, and organizing the 2012 Bukit Lawang Cultural Festival, held December 9th through December 11th.





ACTIVITIES COMPONENT 2

Teaching students about the importance of the orangutan and its habitat

This activity aimed at expanding students' horizons of thinking about the environment, particularly their awareness of the importance of orangutans and their habitat. This activity was conducted in five schools in the District of Bahorok. The program seeks to reach as many students as possible and urge them to participate in the efforts of environmental education and conservation of the orangutans.



Environmental education programs on the subject of conservation of orangutans were presented on October - November 2012. MECU organized a series of activities which included: a workshop on the subject of Orangutan Conservation attended by 20 teachers from 10 schools in Bahorok. MECU staff also prepared materials for students' campaigns. They also visited five schools to promote the environmental education program and orangutan conservation. MECU teams organized the event day at school, and distributed materials to schools and community

campaigns. MECU staff also worked to facilitate and support schools to develop an environmentally friendly campus and educating about orangutan conservation in four schools.



1. Local training for teachers about Orangutan Conservation in the district of Bahorok



Loklatih Orangutan Conservation Education for teachers was designed to establish initiate the implementation of Environmental Education and Orangutan Habitat Conservation in schools. This workshop for teachers was organized to increase awareness and concern of environmental issues involving the Orangutan and their habitat.

This all day workshop was held on October 24, 2012 at the Visitor Centre-Bukit Lawang. Twenty teachers from ten schools in the Bahorok district attended, as well as members of the Head Unit - BBTNGL-Bukit Lawang, and Polhut and Personnel team of MECU.

This training activity was divided into two sessions. The first training session was about the importance of implementing an Environmental Education and Conservation of Orangutan Habitat program in local schools. The second part of the workshop included training activities for teaching and presenting the topics of Environmental Education and Habitat Orangutan Conservation. Teachers were given backround information to better understand the TNGL area. Potential oppotunities and challenges in preservation were also discussed. This material was taught by Mr. Sudiro, Head Unit of BBTNGL-Bukit Lawang. Additionally, an Environmental Ethics talk was presented by Mr. Iswanto, S.Ag. MSP, Antropology Lecturer of University of North Sumatra. Additionally, a discussion on the topic of Developing a Model of Environmental Education in schools was delivered by Pajjo, Field Program Manager of MECU. Each speaker provided insights and interactive discussion to build understanding and knowledge among the participants.



Results obtained from the workshop are as follows:

1. Teachers gain understanding of the environmental conditions, the importance of forests, and the relationship of orangutans in the TNGL area.
2. Teachers became motivated to have a plan to share information about the environment and the important role of TNGL and orangutans with their students. These topics will be incorporated into learning activities in appropriate areas of study that they teach.
3. Teachers expect this training to continue and expand to other schools.

2. Preparing educational materials for students

Teachers helped to draft campaign materials on the subject of environmental education and the conservation of orangutans and their habitat. Campaign materials were also prepared and teaching materials were compiled for environmental education and the conservation of orangutans and their habitat.

Preparation of educational materials and campaigns are organized with the following considerations: first, the material must be able to directly reach students so that they understand more about environmental education and Orangutan conservation in relationship to their habitat. Also, collaborating with teachers to attract students by giving them valuable information will motivate them to play an active role in the preservation of the environment and the conservation of orangutans and their habitat.

The MECU team prepared learning materials such as presentation slides and short films about the environment. A slide presentation about possible school excursion activities was also given. Additionally, presentation about the key species of Guning Leuser National Park was delivered by Mr. Alexander, a staff member of BBTNGL. Another slide presentation of Orangutan, and threat conditions was



delivered by Hamka, a MECU team member. A discussion on the important role of the student club, Nature Lovers was delivered by Paijo, MECU Field Manager. Each presentation was followed by a question and answer session with students. After these activities, students were also invited to watch a few movies, including An Imaginary Letter from the Year 2070, which was followed by a discussion to explore perception and attitudes. Other films included The Majestic Plastic Bag (a mockumentary), and film about global warming.

3. Incorporating environmental education visits and orangutan conservation in schools

This activity was carried out by MECU staff visits to five schools. The purpose of this activity was to provide information, knowledge, and build students' awareness of and concern for environmental issues today. In particular, the activity focused on conditions of TNGL area where the orangutan and their habitat is threatened with extinction.



The MECU Team was assisted by teachers who have been involved in the Lokalatih Environmental Education program and shared an interest in the conservation of orangutans and their habitat. Students gathered in one classroom especially reserved for the MECU team to present their presentation on Environmental Education which

stressed the important issue of conservation of orangutans and their habitat.





Through the information presented and films, the students gained knowledge and concern about environmental issues facing the forest and orangutan. The students responded enthusiastically to the information presented by the speakers.



"I learned that the orangutan has many similarities with humans. Orangutans help to preserve the forests."

Budiman PA.
SMK Pemda



"I first hoped the forest could be turned into a village so it would be lonely. Now I realize the forest is extremely important for us so that water continues to exist"

Irianti Br Ginting
SMAN Bahorok



"Apparently we have destroyed nature, but there are still many people who are destroying the forest even more."

Jondri
SMAN Bahorok



4. Distribution of materials



Educational materials describing the environmental education program and habitat conservation activities of the MECU program were distributed to students at school sites. Students were also given information about conflict mitigation with orangutans. Community projects for conservation of biodiversity were also featured.

5. World Environment Day at school



This event was aimed to encourage the students and the community to play an active role in preserving the environment. Participants were involved in various activities such as planting trees on the school campus. Students also helped to clean up around the school. Students and other participants also discussed strategies for sympathetic actions when confronted with orangutans in the District area.

Mahogany and agarwood trees were planted on the school campus by students, teachers, and the MECU team. Mangosteen and durian fruit were also planted. The students planted a total of 120 rods. The school planting sites were as follows:

No.	School	Tree types	Number
1	SMAN-1 Bahorok	Mangosteen, Agarwood, Mahogany	Agarwood: 10 Rods Mangosteen: 10 Rods Mahogany: 10 Rods



2	SMA/SMK Bahorok	Mangosteen	Mangosteen: 10 Rods Agarwood: 10 Rods Mahogany: 10 Rods
3	SMPN-1 Bahorok	Mangosteen	Mangosteen: 10 Rods Agarwood: 10 Rods Mahogany: 10 Rods
4	SDN 053956 Landbow Timbang Jaya	Mangosteen	Mangosteen: 10 Rods Agarwood: 10 Rods. Mahogany: 10 Rods
		total	120 rods

The MECU program in schools included a school yard cleanup and an activity to create sympathetic action and caring for orangutans in the District area. MECU also continued to support schools in developing environment-based school and orangutan conservation in four schools.



Students collected trash in the garbage bins on the school campus. The MECU program provided support to four the targeted schools by providing separate trash bins for both organic and inorganic matter. MECU team members helped build the school bulletin board which provides information on local plants.

MECU also carried out acts of sympathetic care of orangutans in the District. Measures undertaken consisted of making convoy to campaign for orangutan conservation, tree planting activities along the road from the hill at Bahorok.



6. First Tree Planting clubs started in five Schools in the Bahorok district



The establishment of a Tree Planting Club was intended to promote environmental awareness through the activity planting trees. Tree Planting Club activities began soon after the MECU staff met with students at each school. In carrying out this activity, MECU team worked with the teachers in each school.

6. Reforestation and Enrichment for Orangutans in the forest boundary



This activity was aimed to motivate local people to go green and provide enrichment and plant feeding options for orangutans in village borders to the Gunung Leuser National Park (TNGL). Students and villagers worked together to plant Mangosteen and Durian for orangutans. The volunteers planted as many as 200 trees at the edge of the village with the Gunung Leuser National Park.

Fruit seeds of Mangosteen, Durian and Cocoa were ordered from a nursery. The purchased seeds were then distributed to the nurseries in the villages within the boundaries of TNGL in Batu Jonjong village. Seedlings were then distributed to the planting site and prepared for tree planting activities. The number of plants and types of crops grown is shown on the following table:

Table of Orangutan Feed Plants

No.	Types of Orangutan Feed Plants	Number of plants
1	Mangosteen	100 rods.
2	Durian	100 rods..



In addition, an independent group of residents continued the project of greening deforested land. 1,000 rods of both rubber and cocoa seedlings were planted in open land.

Table of Plantings for reforestation on critical land

No.	PLANT TYPES USED FOR REFORESTATION	Number
1	Cocoa	1000 rods
2	Rambung	1000 rods





Monitoring Program

The monitoring program is a way to chart the progress of development programs. The Mobile Education and Conservation Unit (MECU) program worked to implement three steps to monitor this program. First, periodic reports with documentation were written. Second, financial programs were monitored, both for internal and external parties. Third, the programs impact was surveyed.

Each month members of the MECU team reported on the implementation of activities. All MECU staff prepared monthly reports describing their roles in these activities. Program development and financial activities were carried out based on the existing evidence and the facts of development in the field.

To measure the effectiveness and supervise the program, the MECU team conducted a survey of its impact. The survey was given during program services and interviews were conducted with members of the public that included students and teachers. Actual conditions that occurred in the field were also observed and noted.



CHAPTER III

ANALYSIS of RESULTS and PROGRAM ACHIEVEMENTS

The long-term goals of this program are to reduce orangutan conflicts with humans in four villages (Batu Jonjong, Sampe Raya, Timbang lawan and Bukit Lawang), which are directly adjacent to the area of the TNGL as the orangutan habitat. This program has worked with the public in various ways: to increase the knowledge of students in five local schools, raise awareness and making information available, providing training of organic farming methods, reforestation and orangutan enrichment plant options, as well as environmental education to schools and communities in the Bahorok district.

Long-term goals would be achieved through the direct purpose of MECU. There were three objectives set out in the program, namely:

1. Strengthening public knowledge in the agricultural sector about organic farming through regular discussions and organic agriculture training.
2. Increasing awareness through conservation education in 5 schools in the District of Bahorok.
3. Reforestation of the forest boundary to the settlement of 4 villages with fruit crops to provide orangutans feeding options.

Goal 1	Realization
Strengthening public knowledge in the agricultural sector about organic farming through regular discussions and organic agriculture training.	The current understanding that society already has some knowledge of organic farming, as well as motivation to do it.

Result.

	Expected results	Realization
H.1.1.	Increasing and strengthening people's knowledge in the agricultural sector with organic farming through direct training.	Various activities and opportunities for the public to gain information about organic farming with practical applications and tips for success.



No.	Activities	Indicator of result	Program achievements
1	A visit to each village for 3 times in 1 month.	Implementation of three visits to four villages in one month.	MECU team conducted monthly visits to each village to create group meetings, and to provide mentoring and monitoring of the group activities.
1.1	Building relationships with contact person.	5 contact persons in each targeted villages	The program succeeded in establishing contact persons in 4 villages.
1.2	Farmers Group Formation	Four organic farm groups formed.	Four farmers groups were created.
2	Regular discussions with the villagers about organic agriculture and appropriate agricultural technologies.	Regular discussion about organic problems and some other issues were held in farmer groups.	Regular discussion was held for every monthly group meeting.
2.1	Explanation and investigation of potential problems/solutions.	There is problem and conflict between orangutan and farmers in agricultural sector.	MECU team worked together with villagers to uncover potential problems and solutions and of the village. This event was attended by all members of the target groups.
3	Making small-scale nurseries in each village.	Establishing nurseries for each group in 4 villages.	4 units were built in 4 villages, with seeds that have been grown in nurseries each village.
3.1	The establishment of the nursery.	There is a nursery unit by farmers group in 4 villages.	Four nursery groups were formed.
3.2	Determining the location of nurseries in 4 villages.	Strategic location of nursery from the site farms and forests.	There is nursery location in each village.



3.3	The propagation and preparation process.	The realization of the process monitored by the MECU nursery team.	Nursery activities were completed, as evidenced by the presence of nurseries in each village.
3.4	Distribution of seeds to 4 Villages.	Available seedlings were distributed for planting to farmers.	Seeds have been distributed and planted.
4	Organic farming training in the 4 targeted villages.	There are now 40 farmers who know and understand about organic farming.	50 residents of four villages have now obtained organic agricultural training.
4.1	Monitoring organic groups in 4 villages.	Implementation of the monitoring activities of organic group members.	Monitoring activities of groups were completed.
5	Breeding Training		
5.1	Monitoring breeding groups in 4 villages	There are 20 trained people in nursery skills.	50 local people are now trained in nursery skills.
6	Investigation of local wisdom to preserve and care for forest from the community.	Investigating to find valuable information in the form of local wisdom for maintaining and caring for forests.	Individual businesses which use valuable skills and local wisdom values embraced by society are documented.
6.1	Discussions with traditional leaders to seek wisdom to preserve the forest.	The valuable skills of local wisdom are documented.	The valuable skills of local wisdom are documented to be shared.

Goal 2	Realization
Education programs to raise awareness of forest conservation in five schools in the Bahorok district.	Teachers from 10 schools and students from 5 schools attended educational workshops on the importance of preserving local forests.

Result

.	Expected results	Realization
H.2.1.	Students in 5 schools in Bahorok are aware of the importance of orangutans and their habitats in 4 villages.	More than 200 students learned about orangutans and their habitat as well as the current situation of the environment.



No.	Activities	Indicator of result	Program achievements
1	Five schools, both elementary and high schools, in the Bahorok district were visited by MECU staff to discuss the conservation of the Orangutan.	Implementation of visits to five schools in Bahorok twice a month.	Increased awareness in these schools about environmental issues.
1.1	The creation of Environmental and Health Education classes for grades 2 and 3 of SMU.	Increasing students' knowledge of the importance of the forests and orangutan.	Environmental Classes emphasizing conservation of orangutans and their habitats were formed in 2 high schools (SMAN and SMA of local government).
1.2	The creation of Environment and Environmental Health Education classes for grades 5 and 6.	Increasing students' knowledge about health and the environment in the home.	Environment Classes to teach conservation of orangutans and their habitats were formed in primary school, SDN 053956.
2	Organized Global Environment Day at school.	Corresponding Environmental Day events were planned in 5 schools.	Implementation of Environmental Day activities in schools.
2.1	Planting trees in the school yard.	100 trees were planted in 5 schools in the first year of the program.	This year MECU programs planted trees in 4 schools, with a total of 120 trees planted.
2.2	Net action settlements around the school	A hygiene action was implemented within 1 month.	Clean action was implemented in 5 schools.
2.3	Sympathetic action in the district concerned orangutans	Weekly orangutan caring groups (PPO) met in the district of Bahorok.	sympathetic actions were completed in the district level.



3	Creating educational materials (such as workbooks with illustrated orangutans and their habitat) for students.	MECU created educational materials that supported this program.	Educational materials were prepared and distributed to the students and community residents.
4	Educational materials distributed to schools and community	Educational materials were distributed to schools and communities in four villages.	

Goal 3	Realization
Reforestation of the forest boundary to the settlement of 4 villages with fruit crops as orangutan feeding options.	Students and Batu Jonjong residents adjacent to TNGL planted 200 fruit trees and 2,000 garden plant seedlings to revitalize the degraded land close to the village.

Result

	Expected Result	Realization
H.3.1.	Reforestation on the edge of the village with forest fruit crops to offer orangutans feeding options from 200 different trees.	Students and Batu Jonjong residents in the village border with TNGL area worked together to plant 200 fruit trees and 2,000 garden plant seedlings to revitalize the degraded land close to the village.

No.	Description of activities	Results	Indicators
1	Description of activities	Result indicators	Realization
2	Students from five schools in 4 villages of Bahorok volunteered to plant trees.	Reforestation at the edge of the forest or the settlement boundary of 200 trees during the first years of the program.	Tree planting activities were conducted by involving 20 students of 5 schools and the villagers.



3	Created a survey to measure the impact of the MECU program.	Creation of a survey to measure the level of knowledge and any change in attitudes of residents in four villages and of students in five schools.	Impact survey was conducted during the program events through interviews, chats, discussions and observations. Local citizens in 4 villages and students in 5 schools were questioned about knowledge and changing attitudes on environmental issues.
4	Creating Planting Clubs in 5 Schools in the Bahorok District.	5 students club caring for orangutan in 5 schools.	5 Planters Clubs were formed in 5 school sites through the MECU program.
5	Monitoring of programs and its finances to involve internal and external parties.	The program was monitored appropriately with the program referral.	Financial monitoring and reporting mechanisms were implemented in the program and field monitoring.



CHAPTER IV

ANALYSIS OF OPPORTUNITIES, CHALLENGES and FOLLOW-UP RECOMMENDATIONS CONFLICT REDUCTION PROGRAM to CREATE SUSTAINABLE COMMUNITIES WITH ORANGUTAN

OPPORTUNITIES

Since 2011-2012, the MECU program team has had many discussions and chats with the community to explore the potential of the location of the program, opportunities, expectations and needs of the community in an effort to resolve more conflicts with the orangutans.

Building an Environment Services model to instill Awareness, Motivation and Support for Communities to work toward Forest Conservation and Orangutans

The villagers, especially farmers, learned best by following a pre-existing model. A Development Model is expected to be an option that will provide real benefits and can be easily reproduced from the original model.

Well planned demonstration sites can greatly enhance education and raise public awareness of our activities. We see the construction of these models as a concrete manifestation of ideas and forms that have proven economic benefit, and can be adapted for village use. We believe that these sites will increase awareness and motivation of people to participate in preserving the forests and the habitat of orangutans.

Some models that have a potential to positively impact the community include: A. Micro Hydro Power Plant Model, a Model for Aquaponics using River Fish Farming and Irrigation, a return to Mixed Garden Model, an Organic Farming Model, and the Establishment of a Center for Environmental Education and Conservation of the orangutan. Natural potential to develop this model is supported



A Micro Hydro Power Model can be built to utilize the flow of water contained in irrigation canals. The electrical energy generated from a Micro Hydro Power Plant can be used to light public facilities; roads, houses of worship, as well as residential houses. The existence of the proven benefits of this model will certainly stimulate the community to develop a duplicate model for and by the people themselves. In turn, the existing facts of the merits of the forest will certainly reinforce beliefs about the benefits of preserving forests.

Aquaculture Business Development using irrigation to create Awareness, Motivation and Support for Communities in Forest Conservation and Orangutans

Another potential opportunity is the use of irrigation channels to develop an Aquaculture model for business. The program has only started to facilitate the development of small-scale models affecting a few households. An expansion of Aquaponic projects can benefit society and is an easy mode to duplicate. Successful Aquaculture Models can capture the interest of the public and increase investment in this business model. Once villagers begin to experience the benefits of sustainable businesses they will be invested in helping to maintain and preserve the forests.



Using a Mixed Garden Model

Agriculture is a major source of income for local communities particularly in the Bahorok region. Farming was once a community activity that followed a pattern of a Mixed Garden which used a variety of plants in each plot. But in recent years, the community began to convert the Mixed Gardens into a monoculture plantation model that favors Rubber and Palm Oil. The urge to change from the Mixed Garden model into monoculture is tempting because



of monoculture plantation productivity.

Mixed Gardens reduce the need for agricultural land, and help conserve and preserve natural resources. Farmers can produce successful crops without the need to tear down existing forests. In this way a return to the Mixed Garden Model can help to reduce the rapidly degradation of forests and orangutan habitat. An organic Mixed Garden Model will also greatly improve the quality of soil fertility and agricultural land.

Mixed Garden use can be more easily accepted by community groups with appropriate education about the benefits of returning to this method. In this way, the MECU program can provide support to facilitate the development from monoculture to Mixed Garden usage. Longer term garden projects with abundant yields will help to inspire more independent local citizens to return their gardens to the Mixed Garden format.

Facilitating Projects for Increased Revenue

Poverty is a major factor that drives people to do things that undermine and threaten the sustainability of the lives of orangutans and their habitats. In the long run, people suffer greatly as they make short sighted decisions without awareness of their future impact. In order to alleviate poverty, it is essential to educate people to rise out of the poverty trap. Empowered citizens will make better decisions and be motivated through the principle of self-reliance.

It is imperative undertake systematic efforts to build public awareness that will motivate and assist communities to create business models based on self-reliance to lift them out of the poverty trap.

One cause of the continued poverty among poor households is the lack of venture capital opportunities. Most local villagers cannot obtain a loan from a bank or other institution for authorized capital. The MECU team made an important first attempt to encourage poor households to accumulate capital independently. Poor families are encouraged to accumulate capital, so the model is usually applied in saving activities. Often the poor families are not used to saving money and they are not able to save despite their best efforts. It is important for the program to show poor households how to identify potential savings. And it is also important because it strengthens community ties to back capital within the community.



Building a Model of Organic Farming

Real potential exists to develop organic farming projects. Organic gardening helps to support the family and reduces household spending which can be set aside for savings. For example, the application of organic farming skills can easily be put to use in building a kitchen garden to cultivate small scall vegetable cultivation. The cultivation of organic crops is intended to produce vegetables for household consumption, or to sell or trade with neighbors. Through this approach, people will understand organic farming, as well as the real benefits of organic farming which they practiced in the past.

When a family grows vegetables for the household, they save money shopping. Then they can put money aside for savings. This model has proved to be quite effective with some groups of people who carry out the activities of savings and loans and combine them with organic-farming. Crops of organic vegetables can save the average poor household at least Rp. 50.000, - s / d 100 000,-per month. This amount is available to loan to the members of the group. The 20 people save together, then in a month the group is able to accumulate a capital of Rp. 1.000.000, - up to 2.000.000, - per month. Every month this capitol is lent to members to invest in productive venture capital projects, such as poultry farming, fish farming, or handicrafts.

A Center for Environmental Education and Oranutan Conservation

Building a Center for Environmental Education and the Conservation of Orangutans is a way to help the public adapt the concept of sustainability in a way that benefits everybody. A Center for Environmental Education will inspire the conservation of orangutans and their habitat by offering valuable educational programs. However, we must be able to demonstrate the value of the offering this development model to the community. We believe that an Enviornmental Education Center can be a fun, interesting place to visit. The surrounding areas should be well planned in order to bring their natural beauty, and offer a refreshing respite from daily life.



The Model for Environmental Education Centers and Orangutan Conservation can be developed by choosing a community garden site with a beautiful landscape with the best development potential. The program developers will collaborate with the community, so it does not have to spend so much money to buy the land. In this partnership, the rights of each member will be outlined and they will have a say in how it is built and the how the land is managed. A provision would be included for the managers and owners of the land to act as stakeholders in the resulting project.

An Environmental Education Center site to conserve the forest and orangutan inhabitants includes concepts from MECU programs. For example, the use of environmentally friendly services by incorporating micro-hydro electric plants, fish farming, composting, building nurseries, and maintaining organic farming plots. This location needs to be equipped with several buildings for visitors, such as lodging, a camping ground, a restaurant, and an assembly hall.

CHALLENGES

The MECU team views challenges as opportunities to potential solutions. We are faced with some challenges which are as follows:

1. Human resource capacity.

MECU staff works hard to retain a knowledgeable, skillfull, motivated and committed staff of the individuals involved in the maintaining of the existing models. Quality staff relies on proper management. In this case, these challenges can be solved by creating good management which allows for the birth and the development of knowledge, skills, motivation, and commitment among the community of all personnel are involved.

2. Sustainability Program

Support for beginning the sustainability program is vital. The sustainabilty program depends on everyone involved. Part of our education is focused on the principle that sustainability depends on the growing involvement and particiaption for it to be



successful.

3. Science and Technology

Project plans must be supported by the model of science and appropriate technology. Some models require application of technology which can be developed to support the environment. This can be applied to determine the types of plants suitable for transitioning from cultivation of rubber, or oil palm plantations. Another example, is the development of fish farming, which requires knowledge of the feed manufacturing technology, and the use of local materials that do not pollute the water.

4. Synergistic Partnership Program with Community and Supporting Parties

Construction of the Model for Environmental Education certainly cannot be completed without the support and active participation of the community and stakeholders. Efforts made by MECU program to encourage the establishment of a collaborative partnership between MECU program, community and all participating parties.



RECOMMENDATIONS

Based on the available opportunities and challenges in the growing MECU program, orangutan conflict has been reduced with sustainable communities. The program recommends a few things to be considered as we carry out programs in the future, the recommendations are as follows:

1. Continue to construct model environment demonstration sites for workshops that create awareness, motivate and support sustainable communities which promote orangutan and forest conservation in the following areas 1) Build a Micro Hydro Power Plant demonstration unit as a model. 2) Create an aquaculture business model designed to harness river fish for farming and water for irrigation. 3) Construct a Mixed Garden demonstration site as a model. 4) Create demonstration sites for Organic Agriculture. 5) Building the Center for Environmental Education and Conservation in collaboration with the public to conserve the orangutan and its habitat.

To be considered in the development of these models of engagement are the following issues: 1) Giving attention to further improve the capacity of human resources, by providing training for management that supports the same goals development of knowledge, skills, motivation and commitment to the community and program implementation team. 2) Seeking a Sustainability Support Program. 3) Science and Technology. 4) Encourage the establishment of Synergistic Partnership Program with Community & Support Parties.

2. Program at the village in the future is expected to implement the program approach methodology and action research field school farmers. This approach is implemented with the flow of events: 1) Orangutan Conservation Training Cadre. 2) Formation of Savings and Loans Group. 3) Formation of Assessment and Conservation Planning and orangutan habitat. 4) Implementation of Assessment and Conservation Planning and orangutan habitat. 5) Establishment of a Pilot Action Group Business Development and Utilization of Ecological Environmental Productive Environment services. 6) Packaging Technical Training and institutional strengthening or Community Group. 7) Cross Visit, Study Visits Appeal and Learning. 8) Monthly Workshops. 9) Rallying support with communities and stakeholders. 10) The public and the Mobile campaigns in actions Ecological Environmental Productive Business Development, Development Activities Unit for Environmental services utilization and conservation of orangutans and their habitats.



3. At the level of values, beliefs and paradigms of society, the program needs to touch this aspect of the orangutan conflict reduction program with a sustainable society. These aspects are the factors that influence and determine the behavior of the public, as well as knowledge. The only possible paradigm changes if they could realize that the environment, economy, forests and orangutan work together as a system of mutual influence of cause-effect relationships. In building one paradigm change, it is intensifying discourse and communication of information and knowledge to provide enlightenment and realization that the environment, economy, forests and orangutan are a system of mutual influence in the cause-effect relationships. Intensifying efforts and communication of information and knowledge can be done by: 1) Promoting increased mutual learning process between people who have enlightened the people who are finding conception itself, for example through cross visit, case study and study visits between citizens, monthly workshops, cross learning and mentoring residents in the society.
4. The need to make a short film to document the learning process, and efforts to build the community lifestyle in harmony with the orangutan and its habitat and community efforts in building self-reliance. The finished film can be shown to neighboring communities to provide information and to inspire them to do the same thing and translate to the next village.
5. School level of education and awareness efforts still need to be improved in the sense that they should be able to touch the number of individuals who were subjected to a lot more as well as with the number of schools and the distribution of the village area. The development of program ideas, strategies and methodology in an innovative manner can deliver real and sustainable impact. Students and teachers with growing awareness should be followed up with: 1) Encourage the establishment of an organization comprised of teachers and students to actively participate in environmental conservation, orangutans and their habitat. 2) Capable Students and Teachers recruited to become pioneers in the efforts of environmental conservation, orangutans and their habitat. 3) Continue to help schools to develop programs and develop materials for environmental education. 4) Mentoring and coaching programs for teachers and students groups to be able to manage and develop organizational actions of environmental conservation, orangutans and their habitat.
6. Strengthening the commitment and concrete support for government efforts to improve the economy through the development ecologically sound of production activities.
7. Encouraging the establishment of a cooperative or synergistic partnership between government, stakeholders, and community forest areas in order to minimize the conflicts with the orangutans.





CHAPTER V

CONCLUSION

2012 MOBILE EDUCATION & CONSERVATION UNIT PROGRAM

Mobile education and conservation unit program in 2012 was been done with our best efforts. Various results and achievements of the program as defined were fulfilled, which we expect will contribute significantly to the reduction of Orangutan-Human Conflict. But we know that the MECU program is only a small start in a vast expanse of conflicts. There are still many things that must be done in order to build a support system for reducing orangutan-human conflict and building sustainable communities.

To make this happen, CPOI depends on the support and active participation of all parties so that we can continue our efforts on a broader scale. In this way we hope to provide a significant impact on overall orangutan conservation and creating sustainable forest communities.

While this report has been prepared and submitted, we realize we may not have reached all of our goals. However, we never stop learning and plan to get better. Hopefully, all parties who have interest in this report can understand and appreciate our challenge.

Thank you for your attention.

Medan, January 6, 2013

Director of Program Operations- MECU program

Herman Syahputra





**FINAL REPORT: MOBILE EDUCATION AND
CONSERVATION UNIT PROGRAM-YEAR 2**

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