

# Report about International Internship I, II (Bogor, IPB team)

Editor: K. Yamasaki (University of Tsukuba)

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*This is the report about International Internship I, II that is one curriculum offered by Master's Program in Graduate School of Life and Environmental Sciences at University of Tsukuba in Japan under collaboration with Bogor Agricultural University in Indonesia.*

## Outline of the study tour

### 1. Internship Objectives

We participated in this internship under following purpose:

*Indonesia is one of the biggest forest countries. In Indonesia, many activities are taken to conserve and sustain forest environment. By seeing these of activities, we learn the importance and impact of forest to habitant and ecosystem*

### 2. Organizers

Prof. Misa Masuda (Faculty of Life and Environmental Sciences, University of Tsukuba)

Prof. Lilik Budi Prasetyo (Faculty of Forestry, Bogor Agricultural University)

Dr. Ellyn Kathalina Damayanti (Faculty of Forestry, Bogor Agricultural University)

### 3. Participants and instructors

National Park Group (NPG):

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(Master's Program in Environmental Sciences, University of Tsukuba)

Ir. Edhi Sandra, M.Si.  
(Faculty of Forestry, Bogor Agricultural University)

Rural Development Group (RDG):

Kei Fujihira  
(Master's Program in Agro-biological Resource Sciences and technology, University of Tsukuba)

Mardiana Wachyuni  
(Master's Program in Management of Natural Resources and Environment, Bogor Agricultural University)

Prof. Misa Masuda  
(Faculty of Life and Environmental Sciences, University of Tsukuba)

### 4. Itinerary

This internship executed between Aug 28, 2013 to Sep 9, 2013 (for 13 days).

Brief schedule is as follows (If that helps, please check the detailed schedule of NPG appended to the end of this report):

\* Our team separated into 2 groups between Aug 30 to Sep 7:

#### Aug 28, 2013

Gathering at the airport at Jakarta. Moving to IPB.

#### Aug 29, 2013

Visiting IPB, CIFOR (Center for International Forestry Research).

#### Aug 30, 2013

NPG: Moving to Malang and visiting JICA project site.

RDG: Moving to Bojonegoro and field survey (farmlands and forest) and interview.

Aug 31, 2013

NPG: Watching Mt. Bromo.

RDG: Field Survey (farmlands and forest) and interview.

Sep 1, 2013

NPG: Moving to Jember.

RDG: Field Survey (farmlands and forest) and interview.

Sep 2, 2013

NPG: Visiting the office of MBNP (Meru Betiri National Park).

RDG: Field Survey (farmlands and forest) and interview.

Sep 3, 2013

NPG: Moving to Sukamade and observation.

RDG: Field Survey (farmlands and forest) and interview.

Sep 4, 2013

NPG: Observation and discussion. Moving to Rajegwesi.

RDG: Field Survey (farmlands and forest) and interview.

Sep 5, 2013

NPG: Observation and discussion.

RDG: Field Survey (farmlands and forest) and interview.

Sep 6, 2013

NPG: Observation and discussion. Moving to Ambulu.

RDG: Field Survey (farmlands and forest) and interview.

Sep 7, 2013

NPG: Observation and discussion. Moving to Surabaya.

RDG: Moving to Surabaya.

Sep 8, 2013

Moving to Jakarta.

Sep 9, 2013

Visiting JICA office. Go back to Japan.

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**The management of national parks in Indonesia  
from the perspective of the relationship with local people**

**Yui Sato (National Park Group)**

**1. Introduction**

Through this internship, especially I hoped to know about the relationships and interactions between national parks and local people. In Indonesia, most of national parks have conflicts or problems with local people in regard to forest resource. On this report, I mainly focus on the problems and solution in Meru Betiri National Park (MBNP).

**2. Conflicts and problems in MBNP with local people**

In the area of MBNP, local people used forest resource traditionally; cutting trees, gathering plants for meal or medicine, hunting animals, etc. They caused some environmental problems: deforestation, forest degradation, and extinction of species. After establishment of MBNP, the use of forest resource became limited. Logging became illegal. MBNP explained about the rule of national park to local people. But some people did not agree with MBNP because local people need to improve their livelihood by forest resource. So, some of them want to continue using forest resource in MBNP. There are 20 villages and 2000 people around MBNP. 88 trees were cut illegally in 2012. Forest rangers are patrolling and policing illegal logging. Before our visit, one of MBNP office was destroyed by local people. A MBNP staff said that a few people do not agree with the rule of MBNP. He said, "They are angry and hungry."

**3. Community development as the solution of conflicts and problems**

MBNP helps local people to improve their livelihood without depending on forest resource. This work called "community development". MBNP suggests alternative way to get steady income for local people. MBNP contributes education, techniques and facilities to local people. For examples, mushroom cultivation, medical plants cultivation, agroforestry are community development. It is often supported by international research organizations or NGOs; ITTO, KAIL and IPB etc.

I went to Curahnongko village to monitor mushroom cultivation as a community development. This project started in 2010 as a REDD+ program supported by ITTO and 7 and i Holdings. Rural Forestry Extension Center (SPKP), a NPO established by MBNP carrying out this project. Mushroom farmers got education and facilities for the cultivation. There are 4 mushroom farmers. Their work seems successfully because the amount of mushroom yield is stable although there is certain difference between dry season and rainy season. They get steady income from their farming. MBNP communicates with them and develop collaborating relationships continually. Fig.1 shows the inside of mushroom house. Fig.2 shows the autoclave which donated by ITTO and MBNP for culture sterilization. Mushroom cultivation seems not to need big plants and expensive facilities without this autoclave.



Fig. 1 Inside of the mushroom house



Fig.2 An autoclave for mushroom culture

Mushroom cultivation is one of good model for community development. But there are only 4 mushroom farmers in Curaunougko village. I could not know how the farmers were selected and how mushroom cultivation affects on the economy of this village. Of course, these people who work on this project can motivate other people in the village. I think this project is still on trial stage, and more active and effective long-term supports and monitoring are needed.

I also visited Sustainable Natural Conservation of Indonesia (KAIL) office in Ambulu. KAIL is a local NGO. KAIL and MBNP cooperate for community development. KAIL supports community development around MBNP. Their parent organization is Lembaga Alam Tropika Indonesia (LATIN). I talked with the staff of KAIL and learned their activity. They organize local community for reforestation and community development like medical plant farming and agroforestry. Agroforestry farmers planted trees in MBNP rehabilitation area and use the area for agroforestry. We met local farmers supported by KAIL. They said that their livelihood became good. Medical plant farmers group was consisted of woman. They cultivate medicine plants and making "jamu", Indonesian traditional medicine. Medicine plants are illegally gathered in MBNP, so cultivation of medical plants is good for protection of plants. And, jamu is a useful for poor people as a medicine. Women get steady income and feel worth of doing their job. A woman said that her livelihood was improved by medical plants cultivation.

For the management of national parks, community development is one of important work. It caused good effects on not only local economy but also forest protection and conservation of biodiversity. National parks should communicate with local people and build partnership. And, it is important to cooperate with NGOs and research organizations. Now, the protection of tropical forests is paid a lot of attention from oversea. By appealing the importance of community development, national parks will get more cooperation.

#### 4. Other activities on this internship

- Visit to Bogor Agricultural University (IPB) and Center for International Forestry Research (CIFOR) and World Agroforestry Center (ICRAF)

We interacted with researchers and students in IPB. We visited CIFOR and ICRAF. We got lecture about the works of CIFOR and ICRAF by two researchers. I understood new trends in tropical forest research.

- Visit to JICA project site in Bromo Tengger Semeru National Park (BTSNP)

We visited the project site of JICA. Project name is Capacity Building for Restoration of

Ecosystems in Conservation Areas. JICA tends to build new guideline for restoration of degraded lands. JICA cooperates with BTSNP. We visited the reforested area and the nursery. JICA try to use native species for planting because they aim to restore the original vegetation. There were four big problems on this project: frost attack, segmentation of lakes, lake eutrophication, and invasive species. We studied how JICA try to solve them. For this activity, it is necessary to obtain understanding and cooperation of local people. We talked with local staff of this project.

- Visit to MBNP office

We visited MBNP office and got information about the summary of MBNP. I interviewed about sea turtles and rafflesia (*Rafflesia zollingeriana*) conservation to the staff. Green sea turtle and rafflesia had been used as traditional medicine or food by local people. It caused the decreasing of their population. Now, MBNP is protecting and monitoring them. I studied the methods, achievements and problems.

- Visit to JICA office in Jakarta

We got lecture about two projects carried out in Indonesia. One is Capacity Building for Restoration of Ecosystems in Conservation Areas and another one is Indonesia-Japan Project for Development of REDD+ Implementation Mechanism. We studied the political background of forest protection. And also we understood the cooperative relationships between JICA and Indonesia government.

## **Report of exchange program for Indonesia focusing on the JICA's project**

**Kazuma Yamasaki (National Park Group)**

### **Introduction**

I write this report focusing on the JICA's project. We, the students participated in this internship, had three aims: Getting knowledge and watching the present situation in national park about (1) conservation of ecosystem, (2) ecotourism, (3) conflict with local people. The JICA's project have to do with this three themes.

Mr. H. Miyakawa is the chief advisor of this project named "Project on Capacity Building for Restoration of Ecosystems in Conservation Areas". They set their goal in this project to restore potential ecosystem of disturbed land by human activities. Therefore, they try to plant trees, develop new technique, cooperate with local people, and so on.

### **Rehabilitation and Restoration**

There are two ideas to restore forest of disturbed land. One is "Rehabilitation", the other is "Restoration". The JICA's project adopt latter idea.

Both rehabilitation and restoration, basic activities are planting tree and managing forest. But, on rehabilitation, "getting back function of forest" have priority over other things. "Function of forest", for example cultivating, preventing flood and so on. So, planting species are regarded strength and growth speed as the most important things. Non-native species often are chosen, and then forest different from the place potential vegetation will occur. And then, native animal (including bird and insect) does not return to the area.

On the other hand, on restoration, getting back "potential ecosystem" have priority over "getting back function of forest". So, plant species are chosen from trees living in the place actually (original species/endemic species).

Restoration is more difficult than rehabilitation. Species they can use are limited, therefore knowledge they can use are also limited. However, it is important for Indonesia to adopt restoration because the country has many species.

COP13 was held in Indonesia in 2007. Indonesian government made new law to protect the forest in 2008. But this law is based on the idea about rehabilitation. However Indonesian government understands they should change their idea from rehabilitation to restoration. So, the new law announced in 2011 has the word "restoration", but they did not give a definition and details for this word. Mr. Miyakawa is making the guidelines based on their activities, and he will submit the guidelines to Indonesian government.

### **Project site in BTSNP**

Mr. Miyakawa chose five places in Indonesia as project sites. This report take up one site on Bromo-Tengger-Semeru National Park (BTSNP) we visited. (Pic 1)

The project site on BTSNP is nearby Ranu Pani lake. The site is surrounded the village

Tengger people live in.(Pic 2) Population of this village is 3,000, 96% people work as farmer. This village acts the role of base camp climbing for Mt. Sumeru, and Ranu Pani lake is known as beautiful lake. So, many tourists visit this village.

### **Difficulties on the site and activities on the site**

Difficulties on the site are represented following two things:

- (1) *Characteristic agricultural form*
- (2) *Characteristic climate*

#### *(1) Characteristic agricultural form*

Basically, in national park, people is prohibited to do farming. But Tengger people have lived for long time at this place, so they are allowed farming specially. This village lies in mountains among Mt. Sumeru and Mt. Bromo. Tengger people make their farms on face of mountains.(Pic 3)

This characteristic agriculture has given impact for ecosystem in this location, especially 1980s after modern machines and fertilizer were used. Ranu Pani lake became small by sand flowing out from farms. And this lake was covered by algae kind of water fern in 2011 because of nutrient enrichment. Now some alien species appear in this location, for example Eupatorium.(Pic 4) Alien species are apt to invade weak ecosystem.

JICA staffs cannot ignore local people. Cooperative relation is needed among JICA staffs and local people. Local people understand their village can get income from ecotourism. Mr. Miyakawa approached local people, and persuaded them that visitor will decrease if destruction of nature goes on because visitors want to see beautiful nature. Local people displayed an understanding of this project, and now they are cooperating this project.

#### *(2) Characteristic climate*

This village lies on the mountain. The site is 2,200 meters above sea level. So, this site is very cold compared with other location in Indonesia. Midnight during dry season, Temperature is less than 0°C. (When we visited the site, we felt cold)



Pic 1, Entrance of BTSNP



Pic 2, Ranu Pani lake and village





Pic 3, Farms on face of mountain  
(courtesy of Y. Sato)



Pic 4, Eupatorium growing naturally.  
(courtesy of Y. Sato)

Low temperature prevents JICA staffs from planting in conformity with restoration. They restrict themselves to use only local species. In other words, they must find strong species against for cold nearby the site. They pick various seeds or young trees from forest nearby the site, and raise them in plastic greenhouse. (Pic 5) Now they discover one local species (red elder) matching for planting, and they should plant the trees on upper part of slope.



Pic 5, plants raising up in greenhouse

### **Past and future**

This project started in 2010 and will finish in 2015. Five years is short compared with time to mature the forest. This project focuses attention on start up for restoration. Before now, they have conducted base line survey and made cooperative relation with local people. They continue to develop new technique matching for this site, and will conduct validation of their guidelines. They also continue to educate local people how to manage the forest to go on restoration after this project finish.

### **Closing remarks**

I was surprised to hear from project staffs about their activities. I believed "Developing countries have similar problems anywhere. General solution exist and we should pursue such solution". I was wrong. I learned not only knowledge about conservation of ecosystem, ecotourism and so on, but also very natural idea: Every place have each own problems. It is important that to find out problems, to take the solutions matching for the problems, and to cooperate local people.



**International internship program Indonesia Bogor, Blora**

**Mizuki Tatsuno (National Park Group)**

Indonesia is one of the countries with large forest area. There are some national parks to protect forest from illegal activities. Each national park has problem between local people. We focused on the national park management to learn present situation of national park with local people. We went to two national parks. One is Bromo Tengger Semeru National Park and the other is Meru Betiri National Park.

**Bromo Tengger Semeru National park**

We went to Bromo Tengger Semeru National park on August 30. There were one of the project sites of JICA, Ranu Pani Lake and Ranu Regulo Lake. We went there to investigate present situation and countermeasures. The final purpose of activity was to reproduce the forest before the devastation. However, this site had four problems. Domination of alien species, shrinking of lakes by sediment, cold weather damage, eutrophication of lake.

- *Domination of alien species*

The vegetation was mixed by native species and alien species. However, alien species dominated in around two lakes. This situation made serious problem there. It was the devastation caused by alien species. JICA cooperated with national park to prevent it. The way of prevent was afforestation. They grew seedlings to be planted there. In addition, they made fertilizer from alien species to grow up their plant. Furthermore, recovery planting used by native species for around two lakes.

- *Shrinking of lakes by sediment*

Ranu Pani Lake was shrinking by sediment from field. Staffs of JICA were subjected two measured. One was to make dam for sediment, the other is to make trap to prevent inflow sediment. These two structures were made by national park staff and local people.

- *Cold weather damage*

Project site was located in the mountains, so climate was extreme. At night, temperature became very low. Most of plant lives in there include plant were forested became cold weather damage. JICA and national park researched about damage of cold weather damage and they found some species of plant withstand the cold weather damage. They will use that species to afforestation there.

- *Eutrophication of lake*

Eutrophication was caused by chemical fertilizer from local people field. To prevent

eutrophication, amount of chemical fertilizer must be reduced.

### **Meru Betiri National Park**

We went to Meru Betiri National Park on September 3-6 to study about role of ecotourism in MBNP. One was Sukamade, the other was Rajegwesi.

- *Sukamade*

This area was conservation area of sea turtles. There was a huge beach inhabited by four species of sea turtles. Green turtle, leatherback turtles, hawksbill turtle, and olive ridley turtle. Dominant species was green turtle. National park staff had two routine activities to conserve turtles. One was release of baby turtles and, the other was collect turtle eggs. Every morning and afternoon, 100 to 200 baby turtles were released by national park staff. Baby turtles were selected by growth condition. After release, baby turtles moved toward the light, so some of them moved to strange direction. It is natural phenomenon. Therefore staff did not help them.

Irrespective of season, some female adult sea turtles came to beach to lay eggs at night. So almost every night, turtle eggs were collected. When staff found the mother turtle laying eggs, measured the length of turtles and collected eggs. These eggs brought to hatchery to incubate.

Tourist could attend their activities. Actually, we released turtles in the afternoon and accompanied to collect eggs at night on September 3th. It was a great experience for us. Purpose of activity was to increase the number of turtles. The number of the turtles was decrease by human illegal activities and natural predators. Turtle eggs were protected by law. But the price of the egg was high, so eggs were hunted by human to sell in black market once. Nowadays, most of criminal were arrested. However, there were still natural predators, such as lizard and wild pig, wild boar.

Natural predators looked for eggs by smell of mucus during the laying. Collecting eggs was effective way to protect eggs from natural predators. But it was not enough. Further measure to protect from natural predators was necessary.

In addition, percentage to become adult turtle was very low, about one turtle out of one hundred turtles. Turtle population was helped by system of tagging and monitoring by national park.

Turtle population of the entire world is decreasing, Sukamade staff will continue their activity as far as possible.

- *Rajegwesi*

Rajegwesi was the village located in inside of MBNP. There was a community of local people named community ecotourism Rajegwesi(Masyarakat Ekowisata Rajegwesi /MER).

They focused on creating sustainable tourism area to social life, economy, ecology, for the people. Also to protect forest from local people, ecotourism was very effective. At one time, local people entered forest to cut trees and to hunt animals. It was essential for their life. However, the income increased by ecotourism, people didn't enter forest. Moreover, there are some ways to increase income. First one is homestay. Part of local people lent rooms in their houses for tourists. Actually, we stayed in one of the homestay in Rajegwesi. Second one is guide for tourist. Some local people who could speak English became guide for tourist. Third one is skill of making some products. For example, coconuts sugar, turtle handicraft made from shell of palm. It seems that their activity was successful, but there are some problems. First, the skill of speaking English was not enough. It was essential skill for guide. Second, not all people in the village benefited from the activity. Present situation was limited people accepted benefit. Third, income from ecotourism depended on number of the tourists. If the village was located in place where difficult to get, it made difficult to increase income, too. There are many activities for protect forest. Great important point is local people income. If income becomes high, they do not need to get material from forest. Ecotourism is effective way to protect forest.

### **Discussion**

I would like to make a discussion about conservation activity in Sukamade.

At the beginning, I explain about current situation of sea turtle. There are 7 species in the world. However 6 species of them are at stake of extinction. It's caused by excessive hunting, ocean pollution, losing of habitat and so on. Almost causes are induced by human activity. Accordingly we have to conserve sea turtle to increase number of them.

In Meru Betiri national park, we joined two activities to conserve sea turtle. One is release of baby turtles, second is collection turtle eggs. Both of them are effective way to conserve sea turtles from predators. Predators are not only human but also wildlife. Most of human who stole turtle egg was arrested presently. It is considered necessary further measures for wild predators.



baby turtle

## **Report of International internship program**

**Takehiko Kusuda (National Park Group)**

*Project of capacity building for restoration of ecosystems in Ranupani lake.*

### **[Background]**

- Ranupani lake is shrinking because of sedimentation from upland cropping. It occurs since 1980. Terracing is absent in this agriculture land, so that in rainy season coming massive erosion occurs and materials are transported to the lake located in bottom area. Nowadays, huge sedimentation in Ranupani is estimated to cause the sedimentation depth 9 to 20 m.
- Water pollution was caused by the heavy use of chemical fertilizer in agriculture land. Thereby, in 2011, blooming of invasive species *Salvinia molesta* occurred, and covered all of the surface of the lake.

### **[Activities]**

- Coordination with national park office and local people intensively to discuss about the problem. These activities enhance awareness of local people. They understood the importance of lake.
- Cleaned the Ranupani lake from *Salvinia Molesta*, together with local people by using manual technique during only 48 days.
- Tackling sedimentation activities such as construction dam with natural resource, sediment trap, brick production and planting in riparian.
- To Restore native species, the nursery was constructed for production of seedlings, they plant and conduct maintenance them.

### **[Actual problem]**

- Restoration area invaded by invasive alien species dominantly *Eupatorium odoratum* and others species. This situation induces the native or local species growth inhabitation as well. Many areas in Indonesia invaded by invasive alien species.
- In recent years, young tree just planted was founded to be caused inhabitation of physiological functions by frost. Especially during dry seasons, frost causes a big damage to planted young trees.

### **[Suggestion]**

- They must use the local trees for planting.
- They should advance the breeding of frost resistant.

### **[Conclusion]**

Currently, we don't have a valid measure against these new problems. Future, we must explore the better measures.

*Community for local revitalization (MER)*

[Background]

- Forest in Indonesia is decreasing due to illegal logging by poor people. To prevent the illegal logging, it needs to improve their quality of life

[Activities]

- Ecotourism made use of the regional resource. For example, Fishing experience, traditional craft tour, guide of how to make coconut sugar and ride a bull and plantation experience
- Help of Introduction new technology. They Introduce biogas energy to the family which bleed some cattle.

[Problems]

- Their skill of speaking English is not enough.
- They don't have know-how about the guide. So, we proposed create a guide map to them.
- Not all people in the village benefited from the activity. In the first place, the family which feed cattle is very few.
- Promotion activity is difficult because of bad location and accessibility. Therefore, they have no choice without rely on reviews.

[Suggestion]

- They should hold the seminar of studying English.
- They should develop the package tour collaborated with Meru Betiri and promote These activities.

## **Agricultural water use in mountainous region in Java**

**Kei Fujihira (Rural Development Group)**

I visited Prudok, Bojonegoro, located in hilly area in East Java. In this region, main crops are rice and maize in a year. There are a few irrigation canals, so that most of crops rely on rain, wells or spring. By surveying farmlands and interviewing farmers, I researched agricultural water use in this region.

I realized that geological condition determines distribution of crops. Above the hillside, farmlands are used for upland crops, mostly maize. By farmer themselves, agricultural water is taken from wells scattered at more than 150 m intervals in farmlands. Below the hillside, especially at the foothill, farmlands are used for paddy.

The Java Island is composed of many volcanic mountains. Therefore, the type of soil around Bojonegoro is volcanic soil. The volcanic soil has following characteristics: 1) Fertile soil, 2) water drainage property is high, 3) water holding capacity is high. High water drainage property shows ability of what how easily water penetrates the soil. It means that the soil does not have ponding water on itself usually. It is suitable condition for upland crops. High water holding capacity shows capacity of water contain of the soil. It means that the soil can keep much water in itself against gravity force, even during dry season. This is why, water around Bojonegoro never dry out during dry season.

Based on volcanic soil characteristics, the crop distribution around Prudok are reasonable. Above the hillside, there are slope. It is easy to drain water to downstream. Water can be taken from wells. Therefore upland crops are mainly planted here. Below the hillside, it is relatively gentle slope. Spring water flows to foothill. Therefore paddy is planted around foothill without irrigation.

This cropping rule of geological condition may be only adapted to rolling hills where there are no irrigation canals. If irrigation canals are being, paddy can be planted above the hillside.



## Acknowledgements

We appreciate Prof. Lilik Budi Prasetyo and Prof. Misa Masuda organizing this study tour. Dr. Ellyn Kathalina Damayanti and Dr. Kaori Shiga gave generously of their time for preparation of detailed plan. Ir. Edhi Sandra, M.Si kindly guided the study tour across Java Island. We still recall his encouraging word: "I am your father in Indonesia!".

Our thanks go as well to the experts and staff listed below. We believe that this study tour could be completed successfully because of their supports.

IPB: Prof. Lilik Budi Prasetyo, Ir. Edhi Sandra, M.Si, Dr. Ellyn Kathalina Damayanti.

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ICRAF: Mr. Chandra Irawadi Wijaya, Ms. Indah Fajarwah.

JICA: Mr. Hideki Miyakawa, Ms. Desitarani, Mr. Andi Iskandar Zulkarnain,

Mr. Shigeru Takahara, Mr. Hiroyuki Saito, Mr. Yuki Arai.

BTSNP: Mr. Andi Iskandar Zulkarnain, Mr. Toni Artaka.

Mrs. FARIANA PRABANDARI.

University of Jember: Dr. Cahyadi Bowo, Dr. Yanuar Feri, Ms. Umi.

MBNP: Mr. Pratono, Mr. B.S.Jati, Ms. Nur Rohmah, Mr. Ali, Mr. Alif Aulia

Ananda, Mr. Nugroho Dri Atmojo, Mr. JUNAIDI, Mr. KETUT EFENDI.

MER: Mr. WAHYU Candora KIRANA, Mr. WIDYO, Ms. PIYANI.

KAIL: Mr. Nurhadi, Mr. SUPARNO, Mr. SUQIONO, Mr. KASWINTO, Mr.

SUKIRMAN, Mr. SETOMI, Mr. HALMO.

TOGA: Ms. B.KATEMI, Ms. B.MUNAH.

University of Tsukuba: Prof. Misa Masuda, Ms. Kaori Shiga, ICEP office staffs.

Thank you again for all persons.

# Report of International Internship I,II

## Indonesia, Bogor team

This team are consisted of

K. Fujihira Y. Sato T. Kusuda M. Tatsuno K. Yamasaki



2013/09/27  
The debriefing session of  
International Internship

## Introduction

We made 2 groups:

1. Farming village group

2. National park group



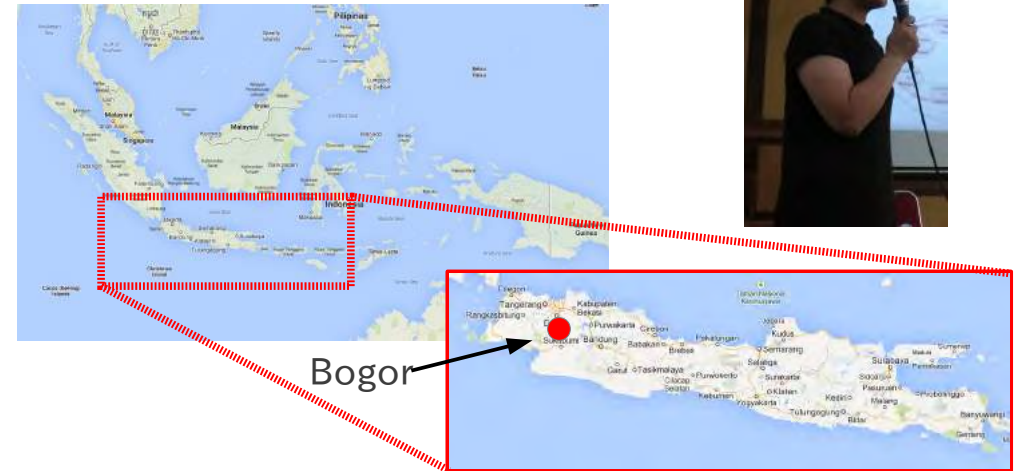
We conducted different activities,  
so we report about activities respectively.

## Introduction

When we go: 2013/08/28 – 09/09 (13 days)

Who led us: Professor M. Masuda

Where we go: Indonesia, Bogor etc



Agricultural water use for paddy  
during dry season in Java, Indonesia

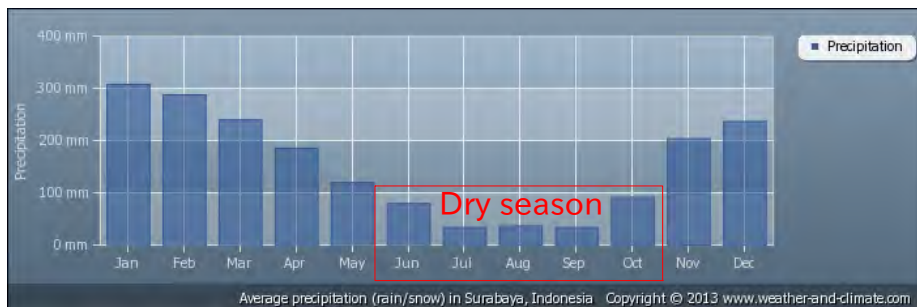
Kei FUJIHIRA

Agro-biological Resource Sciences and Technology  
Graduate School of Life and Environmental Sciences

27 September 2013

# Background

- Java has two seasons, rainy and dry.



- Paddy is the most popular crop in a year in Indonesia.  
Farmers plant paddy; maximum three times in a year!

How do farmers use water for paddy during dry season?

# Objective

To learn agricultural water use for paddy during dry season.

## Location

Java island

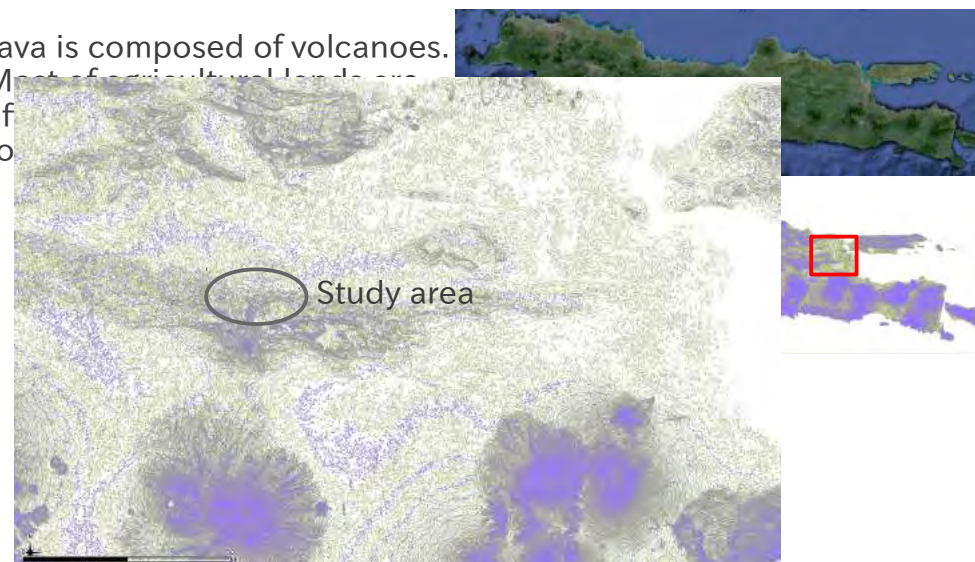
Java is composed of volcanoes. Most of agricultural lands are affected by mountainous topography.



## Location

Java island

Java is composed of volcanoes. Most of agricultural lands are affected by mountainous topography.





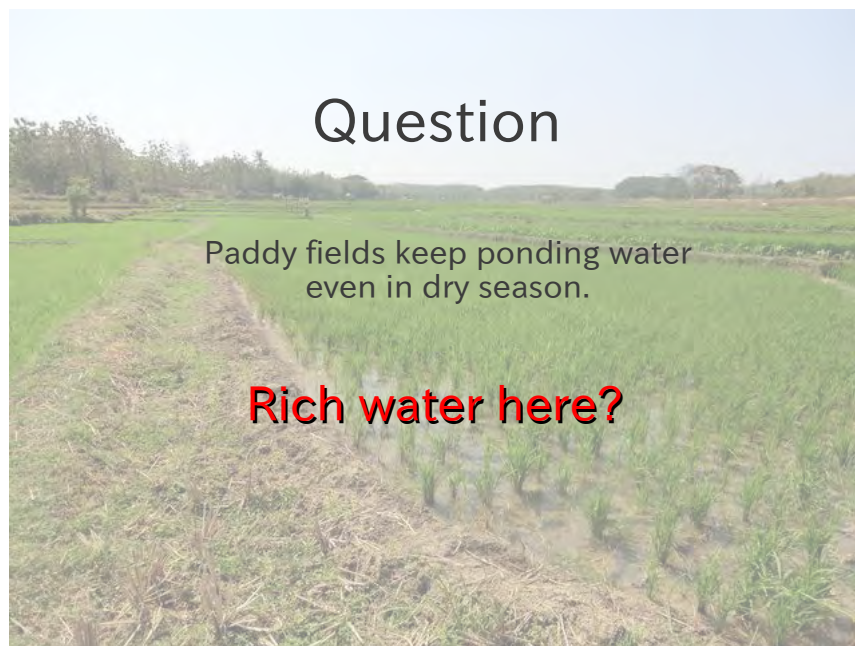
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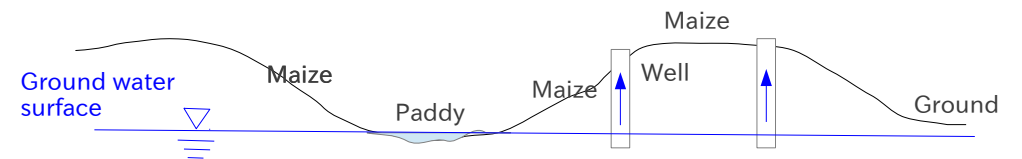




## Consideration

### Geological overview

Cross section

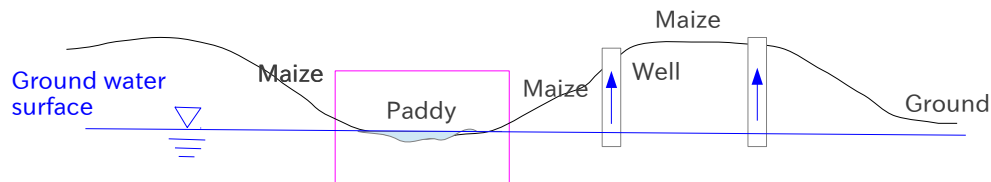




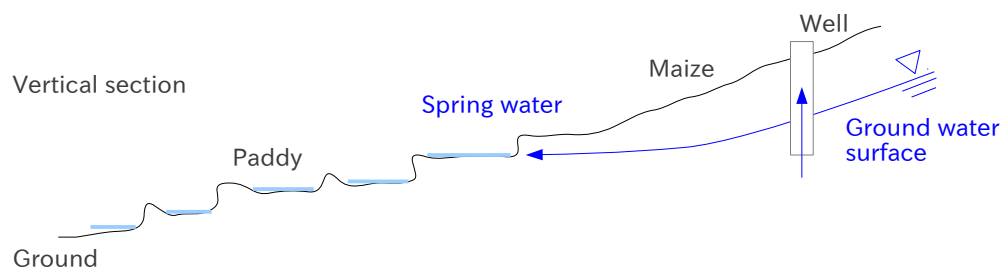
# Consideration

## Geological overview

Cross section

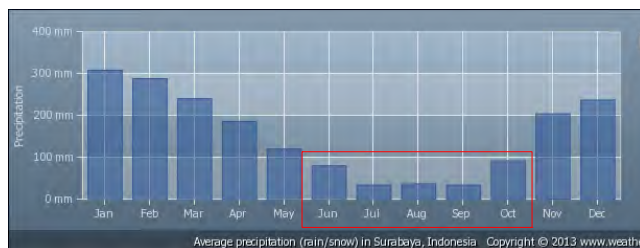


Vertical section



## Water integration

Less than 50 mm precipitation is not enough for paddy cultivation.



Area of paddy fields **vs.** Area of water catchment  
**Much smaller**

The paddy is located only in lower lands where water accumulate.

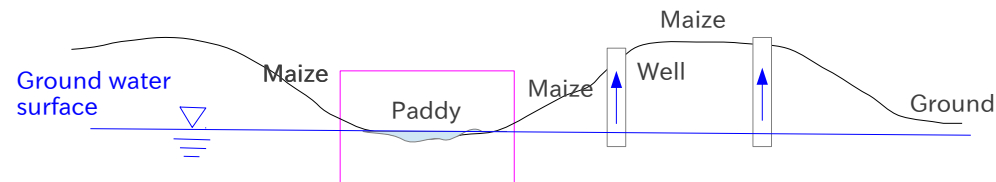
The paddy area is small.

Small amount of precipitation is enough for the paddy cultivation.

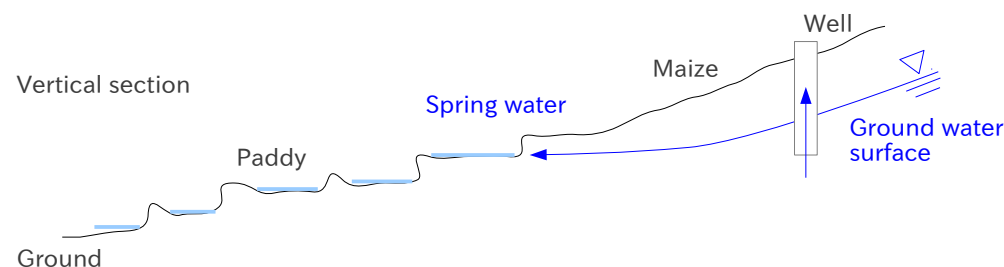
# Consideration

## Geological overview

Cross section



Vertical section



To take advantage of spring water, paddy is located in lower lands.

## Conclusion

During dry season, the geological condition around mountainous region in Java determines cultivation types. This is important especially for places where there are no irrigation facilities.

The paddy must rely on spring water. Therefore, it is inevitable for the paddy cultivation to be intensive at small-scale around the foothill.

Consequently, the upland crops are being above hillside relying on the well water.

# Introduction of our group

## National park group

- Mr. Edhi Sandra
- Y. Sato
- T. Kusuda
- M. Tatsuno
- K. Yamasaki



## Our objectives:

Getting knowledge and watching the present situation about

- (1) conservation of ecosystem, (2) ecotourism,
- (3) conflict with local people in national park.

We report 4 topics per one person respectively.

## SUKAMADE

tukik(baby turtle)



- Conservation area for sea turtle
- Routine activities , Release of sea turtles and collect turtle eggs.
- There are any facilities, Hatchery and pool for tukik.
- There is beach inhabited by four sea turtle species, green, leatherback, hawksbill, and olive ridley.

## Conservation activities



Release of sea turtles

- From 100 to 200 turtles are released everyday in the morning and afternoon.
- Turtles are selected by growth condition.



collect turtle eggs

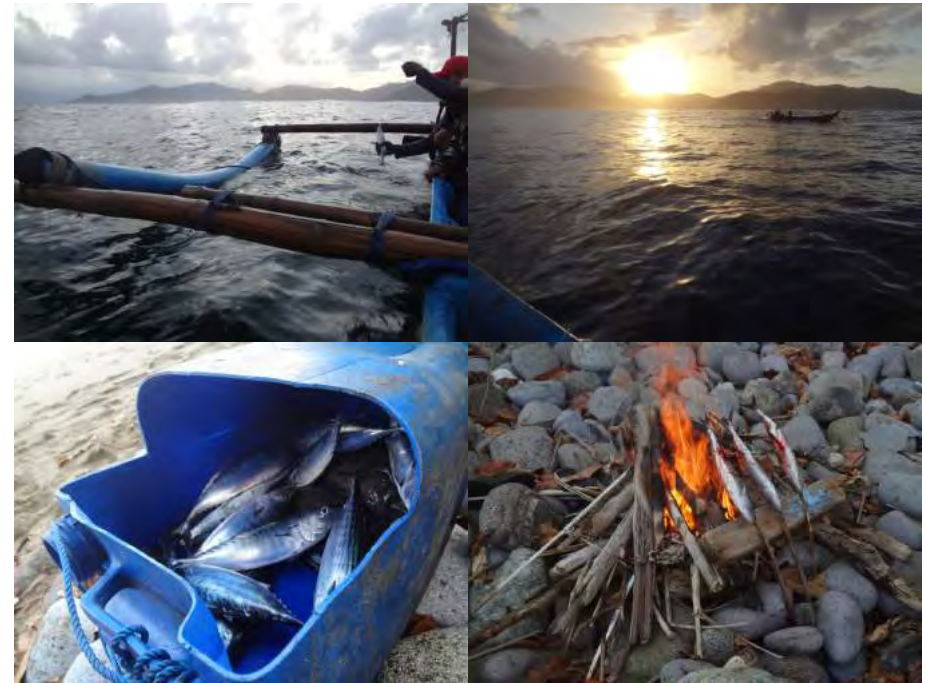
- To protect from human and natural predators.
- Collected turtle eggs are brought to hatchery to incubate.

## Why conserve sea turtle

- A number of sea turtle was decrease by illegal activities and natural predators.  
⇒ Nowadays, most of criminal who stole eggs are arrested. Further measure to protect from natural predators is necessary.
- Percentage to become adult turtle is very low, about one turtle out of one hundred turtles.  
⇒ Turtle population has been helped by system of tagging and monitoring.

# Community Ecotourism Rajegwesi (MER)

- MER was formed on 22 November 2012
- It has 22 members (at first 25)
- MISSION
  - The creation of international sustainable tourism area in Rajegwesi useful to social life, economy and ecology
  - Develop a sustainable tourism industry and community based Rajegwesi
  - Increase public awareness of conservation efforts and culture around the park Meru Betiri
  - Develop creative economic models based on local resource in Rajegwesi







## Problem

- Skill of speaking English is not enough.
- They don't have know-how about the guide.
- Not all people in the village benefited from the activity.
- Income from Ecotourism depend on number of tourists strongly.

## Conflicts

between MBNP and Local people

Local people had used forest resource.

It caused:

- Deforestation
- Forest degradation
- Extinction of species



Policing  
Illegal logging



Explanation  
about the rule



Some people  
disagree with MBNP

Establishment of MBNP

- Regulation of using forest resource
- Protection of endangered species

## Conflicts between MBNP and Local people

- Illegal logging  
88 trees/year (2012)



- MBNP office destroyed by local people

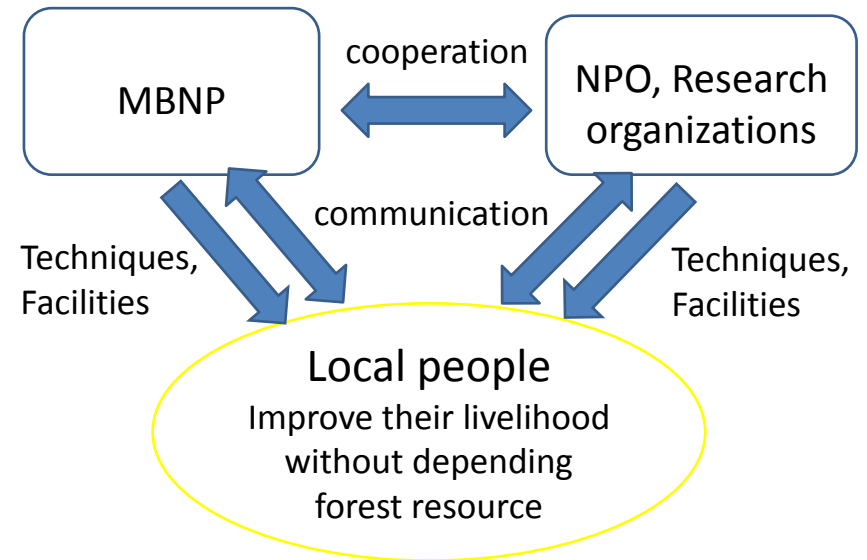
## Community Development

- Examples of community development
  - Medical plants cultivation
  - Mushroom cultivation
  - Agroforestry



- local people can get steady income from their work.

## Community Development



## JICA project on National Park

We visited BTSNP on 08/30, and talked with JICA staffs about their project.

- They try to come back forest onto disturbed land.
- Local people work feature agriculture.
- Forest have been cut down by local people.
- and Ranu Pani Lake is filled by large amount of sand.

Ranu Pani Lake



Fields on slope!





# Rehabilitation vs Restoration

## Rehabilitation

- Traditional idea
- “function as forest”
- NOT consider ecosystem

## Restoration

- New idea
- “potential ecosystem”
- using only native species



### JICA staffs adopt Restoration

- They restrict themselves to use only local species.
- They develop new technique Matching for this site.



It is important for Indonesia,  
Because 10% of all species live in this country!

# Conclusion of national park group

## Our objectives (show again)

Getting knowledge and watching the present situation about

- (1) conservation of ecosystem
- (2) ecotourism
- (3) conflict with local people in national park

- We could achieve our objectives.
- We could hear the story from various people.
- We realized that

- Every place have each own problems.

- General solution is nothing.

(It is very proper...)



Thank you for listening!  
Terima kasih banyak!





# The schedule of National park team of Bogor IPB internship

original file as plan schedule made by Dr. Ellyn Kathalina Damayanti, revised actually by K. Yamasaki.

Day	Date	Time	Activities	Transportation	Accommodation
Wednesday	28-Aug-13	16:00 – 20:00	Arrival at Jakarta - transfer to Bogor.	Faculty car of IPB (2 cars)	Land Huis IPB Guest House
Thursday	29-Aug-13	09:00 – 11:00	Courtesy Call to Faculty of Forestry IPB.	Walk	
		13:00 – 16:00	Courtesy Call & Lecture in CIFOR and ICRAF.	Faculty car of IPB.	
Friday	30-Aug-13	3:00 – 04:30	Bogor – Jakarta	Rent car	Cemoro lawang Guest House
		09:30 – 11:30	Jakarta – Malang	Flight	
		12:00 – 12:30	Malang – National park (BTSNP) office.	Rent car (2 cars)	
		12:30 – 13:00	Visiting national park office.		
		13:30 – 16:00	National park office - Project site on BTSNP.		
		16:00 – 18:30	Observation of project site. Interview to field manager.		
		18:30 – 20:00	Project site – Cemoro lawang		
Saturday	31-Aug-13		Rest day (go to watching Mt. Bromo)	Rent car	
Sunday	1-Sep-13	08:30 – 16:00	Malang - Jember	Rent car	Seven Dream Residence (hotel at Jember)
Monday	2-Sep-13	08:30 – 09:00	Jember – National park (MBNP) office	Faculty car of University of Jember	
		09:00 – 13:00	Visiting national park office. - Introduction of MBNP research and monitoring activities (wildlife, plants, REDD+, etc.) - Community empowerment surrounding MBNP (forest rehabilitation, TOGA, REDD+, etc.) - Discussion with University of Jember researchers on REDD+		
		15:00	Back to the inn.		
Tuesday	3-Sep-13	07:30 – 14:00	Jember – Sukamade	Rent car	Pondok Wisata Sukamade
		16:00 – 19:00	Seeing “tukik” (newly born turtles) hatchery. Releasing tukik to the sea. Taking to field manager.	Walk	
		21:00 – 01:00	Inventory and monitoring of turtles.	Walk	
Wednesday	4-Sep-13	08:00 – 12:00	Releasing tukik to the sea. Visiting Rafflesia monitoring plot. Visiting REDD+ permanent plot.	Walk	Home-stay
		13:00 – 18:30	Sukamade - Rajegwesi via “Green beach”.		
		21:30 – 22:30	Interview to NGO “MER”.		
Thursday	5-Sep-13	04:30 – 09:30	Ecotourism experience – fisheries industry	Boat	
		14:00 – 18:00	Ecotourism experience – folkcraft	Walk	
		20:00 – 21:30	Interview to NGO “MER”.		
Friday	6-Sep-13	08:00 - 11:00	Ecotourism experience – Specialty of this village.	Walk	Station of KAIL
		13:30 - 20:00	Rajegwesi - Jember - Ambure via REDD+ permanent plot.	Rent car	
		21:00 – 22:00	Introduction of NGO “KAIL”.		
Saturday	7-Sep-13	10:00 - 14:00	Introduction KAIL and “TOGA” activities. Discussion with KAIL and TOGA.	Walk and becak	Home-stay
		14:30 – 18:00	Ambule – Jember	Rent car	
Sunday	8-Sep-13	03:00 – 20:30	Jember - Surabaya - Jakarta	Rent car and flight	Oak Tree Hotel (hotel at Jakarta)
Monday	9-Sep-13	08:00 – 09:00	Jakart – JICA Office	Taxi	Seat of airplane
		19:00 – 13:30	Introduction JICA project. Discussion with JICA stuffs.		
		21:00	Back to Japae.	Flight	