

CHAPTER 3

JAPAN-INDONESIA COOPERATION IN FORESTRY SECTOR

The issue of global warming has become a significant concern since the last few decades, mainly because the impact caused by global warming has significantly affected the existence of the environment and human life. As an illustration, every year humans dump 20 billion tons of carbon dioxide (CO₂) emissions into the earth's atmosphere, while trees produce no less than 700 billion tons of carbon dioxide per year. Although it emits carbon dioxide gas but the trees also absorb the gas and produce the oxygen needed as a living substance. The steps to overcome or reduce the impact of global warming include:

1. Through the efficiency of energy utilization, among others by reducing the use of motorized vehicles, making savings in electricity consumption, and so on,
2. By utilizing resources that can be updated or environmentally friendly energy, such as wind energy, biogas, etc.,
3. Reforestation, forest destruction prevention, and forest fire management.

Forest in Indonesia is the third largest forest in the world with tropical forests and donations from the rainforests of Kalimantan and Papua. According to data from Forest Watch Indonesia¹ (FWI), an independent Indonesian forest monitoring agency, a total of 82 hectares of Indonesia's land area is still covered by forests. Forests are a supporting factor for the natural balance of the world and Indonesia is one of the countries that have excellent forestry potential. Tropical forest in Indonesia has lots of potential microbiological energy that is necessary for the world. Microbiology energy can be used as the second and third generation of energy sources in the world. Microbiological energy can only found in tropical forests that are rich in biodiversity.

Japan has committed to Indonesia for rehabilitate forests in Indonesia since the 1960s, only 15 years after Indonesia gained independence from Japanese occupation. Cooperation through the project "Mountain Logging Practice in Java," in addition, project cooperation also carried out cooperation in the field of education and job training, technical assistance, forest management, and trade in forest products (Sinaga, 2015). Cooperation between Indonesia and

¹ Forest Watch Indonesia (FWI) was built to make changes to the system in accessing data and information on forest management in Indonesia, where existing conditions indicate that data and information are challenging or not accessible to the public.

Japan covers various aspects of the forestry sector, such as the fields of conservation, human resource development, reforestation and forest rehabilitation. The form of that cooperation is grant-aid, technical assistance, and invite staff of the Ministry of Forestry to attend education, training, seminars and other activities in Japan. The Japanese government agencies that are the counterparts in this cooperation are Forestry Agency (Ministry of Agriculture, Forestry and Fisheries), JICA, Environment Agency, and Ministry of Foreign Affairs (Kementrian Lingkungan Hidup Republik Indonesia, 2015)

A. JICA (Japanese International Cooperation Agency)

Indonesian forests provide rich biodiversity and ecosystems. Forest lands in Indonesia cover around 233 million hectares. However, these forests are in danger of deforestation and degradation with 1.08 million hectares annual loss during the period 2000 - 2005. The conservation areas account for about 12% of total forests in Indonesia, and National Parks accounts for 60% of the conservation areas. They recognized as significant not only in Indonesia but Internationally, and it is an urgent task to conserve them. Additionally, many National Parks are facing problems arising from exotic and invasive species.

The Indonesian Ministry of Forestry and Japan International Cooperation Agency (JICA) established the Project on Capacity Building for Restoration of Ecosystems in Conservation Areas in March 2010 to strengthen the relevant stakeholders' capacity for restoration of degraded ecosystems in conservation areas, specifically National Parks.

JICA in Indonesia is the largest and one of the oldest in the world. Indonesia is the largest recipient of grants aid based on the number of funds that have been distributed in stages and has sent 33,630 Indonesian participants to join the training program in Japan, and 11,108 Japanese experts have been assigned to Indonesia. JICA is directly under the ODA (Official Development Assistance) organization so that the funds used for the JICA project come from ODA.

1. JICA in Bengkalis Project

On January 7, 2011, Dr. Sakakibara from JICA was directly present in the Bengkalis. His arrival was to see the condition of the GSK-BB Biosphere Reserve (Giam Siak Kecil Bukit Batu) in the Bengkalis. After the visit on September 17, 2012, an agreement reached between JICA and the Bengkalis Regency which is a form of cooperation with the provision of technical assistance by JICA to Bengkalis district by sending eight representatives from Bengkalis Regency to take

part in an environmental ecosystem structuring course in Japan. Training for the eight representatives regarding environmental management in Japan to be implemented in Bengkalis Regency. Then on 17 September 2012, a cooperation agreement was signed in the form of assistance provided by JICA on environmental management in the Biosphere Reserve, Bengkalis Regency. The education and training sponsored by JICA as an institution formed by the Japanese government. Then in March 2013 eight representatives from the Bengkalis District were sent back to take part in a training program on environmental ecosystem management in Japan for two weeks. After attending the seminar, Bengkalis Regency Government and Riau Provincial Government through BBKSDA began carrying out environmental ecosystem structuring actions which were the results of training attended by Bengkalis representatives in Japan by assistance from JICA(Sinaga, Kerjasama Jepang-Indonesia Melalui Japan International Corporation Agency di Cagar Biosfer Giam Siak Kecil-Bukit Batu, Kabupaten Bengkalis (2012-2014), 2015). The first stage of the implementation of the program is to conduct a special review at Bukit Batu resort and see the planting position of plants that will be cultivated in the Biosphere Reserve area. The program conducted by JICA together with the Riau Provincial Government Representative represented by "BBKSDA" and also from "Sinar Mas Forestry Group²". Then in the April 2013 after reviewing the area, 8,000 seedlings of Jelutung³ Were planted in the GSK-BB Biosphere Reserve area conducted by JICA in collaboration with the Indonesian Environmental Information Center (PILI)⁴, the Sinar Mas Forestry Group in this case APP, and Riau Natural Resources Conservation Center (BBKSDA).

²"Sinar Mas Forestry manages industrial forest plantation companies operating on the islands of Sumatra and Kalimantan. Sinar Mas Forestry is the exclusive wood raw material supplier for the Asia Pulp & Paper pulp and paper mill".

³"is a tree species from the subfamily oleander. This tree can grow up to 60 meters in diameter by 2 meters. This tree grows in Peninsular Malaysia, Kalimantan, Sumatra, and southern Thailand".

⁴"PILI is a non-governmental organization whose programs and activities oriented to nature and environmental conservation. The PILI Green Network program divided into two main components, namely Spreading Knowledge (SK) and Shelter Initiative (SI)".

Picture 3.1: Jelutung Plant



Planting Jelutung plants is done because regarding maintenance, it is not delicate, only need to do watering organic fertilizer every month. Besides, this plant can restore the damaged natural balance in the peat swamp forest area in the GSK-BB Biosphere Reserve. Besides that, the planting of this plant is expected to be able to provide welfare benefits for the community around Bukit Batu because the Jelutung stem and sap have a high economic price. One hectare of Jelutung land can generate around Rp. 117 million. The price of the sap reaches Rp. 20,000 per kilogram. After entering 2014 the evaluation was carried out and founded that the GSK-BB Biosfer Reserve condition was still damaged, even the damage was getting worse. Jelutung plants which are the result of JICA assistance cooperation are mostly damaged. Wild encroachment also increased around 1.18% compared to the year before the implementation of the JICA program, this caused a massive fire which caused several hotspots and resulted in a smog disaster in Riau Province. Based on data obtained from research conducted by LIPI, it can be seen from 2010 that around 1,000 hectares or around 0.50% of the GSK-BB Biosphere Reserve conservation area experienced encroachment. Then in 2012-2013, the damage in the GSK-BB Biosphere Reserve was still the same percent as in the previous year. To reduce the percentage of damage to the food chain, cooperation was held by asking for assistance from JICA in handling and structuring the conservation area. However, entering 2014 after the grant recorded around 3,000 hectares of land damage was found in the Biosphere Reserve conservation area (Sinaga, 2015, p. 10).

2. JICA in Halimun Salak Mountain National Park

Not only in Bengkalis but JICA also carried out a project in Gunung Halimun Salak National Park (TNGHS) in 2004, and the program ran for five years. The area of GHSNP reaches 113,357 ha. The area spread in three districts, namely Lebak Regency, Banten Province, Bogor Regency, West Java Province and Sukabumi Regency, West Java Province. This collaboration is included in the platform of *Japan International Cooperation Agency Mist Mountain Salak National Park Management Project* or shortened become JICA GHSNP-MP which has a goal to increase the efforts to manage forest resources and biodiversity in TNGHS with emphasis on the preservation of forests (Pratidina, 2014). As a result of this collaboration, the TNGHS Center with JICA established a GHSNP Model program that had a prosperous idea with GHSNP as outlined in the form of a program "Conservation Village Model⁵" (MKK). Based on secondary data released by the BTNGHS (2005) the Conservation Village Model Program includes three activities, Such as:

1. Reforestation / Rehabilitation includes:
 - a. Socialization activities,
 - b. Joint Community Planning,
 - c. Planting plants that function in conservation, economic and social manner
 - d. No monoculture cropping patterns,
 - e. Application and regulation of cropping patterns from short to long-term plants,
 - f. Intercropping (low, medium, high plants),
 - g. Making plant nurseries,
 - h. Increasing community capacity through nurseries,
 - i. Enhancing community capacity through training and plant techniques.
2. Participatory observation includes:
 - a. Observing together the strengths, weaknesses, opportunities, and threats of potential,
 - b. Joint observations carried out and witnessed by relevant parties (NGO Community, GHSNP Office, Regional Government),

⁵ is a conservation area management approach carried out by the Directorate General of PHKA implemented by Gunung Halimun Salak National Park. It emerged as a management model to answer the changing paradigm of conservation area management by cooperating with the surrounding and inside communities to manage and maintain the GHSNP area. The Conservation Village model is a village model in which it can carry out protection activities independently, maintain a good ecosystem and can economically provide welfare for the community. The vision of this project is the Community living together with the National Park.

- c. Joint observation can be a medium for building awareness of forest areas,
 - d. Observations were made to see the potential that exists in forest areas that can be utilized economically by the community (especially non-timber forest products).
3. Increased community income includes:
- a. The joint business group engaged in processing non-timber forest products,
 - b. Management of ecotourism managed together with the community,
 - c. Development of industrial plants or craft materials (bamboo, rattan),
 - d. Development of appropriate technology and post-harvest management,
 - e. Build marketing for non-wood products that can be developed,
 - f. Enhancing community capacity through training, comparative studies, internships, formal education,
 - g. Program integration through ongoing assistance from capacity building.

The conservation village program is one program that combines the improvement of community welfare and environmental sustainability by involving various parties to assist the continuity of this program. However, in the beginning, the conservation village program was pioneered by JICA. JICA seeks to support the interests of the environment and the interests of the community. With the concept of the Conservation Village Model (MKK), JICA is trying to assist GHSNP in reforesting deforested forests through the concept of community participation, and developing productive economic enterprises for people in the region (Pratidina, 2014, pp. 263-264)

3. JICA Project in Bromo Tengger Semeru National Park (TNBTS)

Bromo Tengger Semeru National Park is a conservation area that has a unique ecosystem among others. There is a sea of sand at an altitude of 2,050 meters above sea level, and there are several lakes at an altitude of 2,300 meters above sea level, the lake name is Lake Ranu Pani. The lake surrounded by enclaves with the majority of its inhabitants are vegetable farmers without terracing. So, the processing of non-environmentally friendly agricultural systems results in disruption of the ecosystem of Lake Ranu Pani, namely the occurrence of sedimentation and eutrophication due to excessive use of chemical fertilizers which causes blooming of water spikes (*Salvinia Molesta*) which covers the entire surface of the lake. Bromo Tengger Semeru

National Park has a type of mountain tropical rainforest, which indeed Bromo is a plateau in East Java.

JICA perform some activity which was done in collaboration with the board TNBTS in the region, such as:

- Training in making brick without burning from sedimentation mud,
- Making sediment retaining trenches at the edge of Lake Ranu Pani,
- Managing *Salvinia* manually, in collaboration with the community, students, nature lovers, and volunteers.

This activity was carried out to restore the condition of the lake that had been damaged due to the neglected maintenance of the surrounding ecosystem, so that it began to be invaded by exotic plant species *Eupatorium Odoratum*⁶ and *Acacia Decurens*⁷. In order for the *Eupatorium Odoratum* and *Acacia Decurens* plant invasion not spread the damage to the TNBTS ecosystem and how to deal with it. JICA and TNBTS administrators collaborate on activities other than the above three activities, which are:

- Conduct surveys and field studies, such as:
 - i. Causes of damage,
 - ii. Geography and vegetation conditions,
 - iii. Plant species composition,
 - iv. Socio-economic conditions of the community.
- Limit the location of the restoration target,
- Establish work groups and carry out training,
- Construction of plant nurseries,
- Procurement of seeds from the National Park area,
- Making a restoration design,
- Restoration activities consist of natural succession, natural succession with assistance, enrichment and planting(Japan International Cooperation Agency).

⁶ Asteraceae family who has a chemical substance in the form of flavonoids, saponins, and tannins which are efficacious to heal wounds.

⁷ Commonly known as black wattle or early green wattle is a perennial tree or native to eastern New South Wales, including Sydney, the Greater Blue Mountains Area, the Hunter Region, and southwest to the Australian Capital Territory. It grows to 2–15 m (7–50 ft) and it flowers from July to September.

In addition to these two activities, there is another activity which is a collaboration with a Japanese company, Sumitomo Forestry Co.Ltd, concerning training in forest fire control. This activity was carried out during two productive days on 10-13 July 2011 at the Bromo Tengger Semeru National Park Hall. The purpose of this activity is training and counseling on forest fire control in Bromo Tengger Semeru National Park. The training was held by four institutions, namely the Bromo Tengger Semeru National Park, JICA, Sumitomo Forestry Co. large hall. Ltd, and PT. Kutai Timber Indonesia. TNBTS often experiences forest fires. In July 2011 there was a forest fire covering 10 hectares. The type of fire characteristic is ground fire, where reeds dominate the burning area. Besides that, fires also supported by extreme climatic conditions and winds. The efforts that have been carried out by TNBTS are: forming a Brigdalkarhut post, forming MPA, law enforcement, rehabilitation of burned areas, carrying out partnerships. The materials presented on the first day of training were:

- a. Forest fire fighting organization,
- b. Get to know Manggala Agni,
- c. Government Regulation in the field of forest fires,
- d. Forest fires in Indonesia and forest fire control policies,
- e. Fire behavior,
- f. Basics of forest fire suppression,
- g. Forest firefighting equipment.

Then on the second day of training, conducted practical exercises extinguishing equipment use forest. The tools that practiced for forest fire fighting activities are manual tools (hand tools) and mechanical devices. The use of the Manual Tool (hand tools) includes a two-eye ax, one-eye ax, hoe, two-function ax, bush hook, sharp harrow, harrow hoe, shovel, and back pump. Whereas mechanically is the use of water pumps and complementary equipment. The following is the complete schedule for conducting training and counseling activities on forest fire control (Japan International Cooperation Agency).

Table 3.1: Full schedule of training and counseling activities on forest fire control.

NO	Date	Event	Location
1	10 July 2011	Travel from Jakarta to Malang	

2	11 July 2011	Submission of forest fire control training materials	Resort Ranu Pani and Wonokitri
3	12 July 2011	The practice of using forest fire extinguishers	Resort Ranu Pani and Wonokitri
4	13 July 2011	Back to Jakarta	

Source: <https://www.jica.go.jp/project/indonesian/indonesia/008/news/general/110713.html>

B. IJ-REDD+ (Indonesia - Japan Reducing Emissions from Deforestation and Forest Degradation)

Japan also collaborates with Indonesia on the REDD + ⁸ Program. REDD first discussed on the UNFCCC global agenda and the 13th COP in Bali which produce the “*Bali Action Plan*”⁹ which supports the REDD mechanism policy. After the Bali Action Plan was approved, a meeting was held a year later in Poznań, Poland which agreed to REDD activities should be expanded, adding three strategic areas to two points previously agreed in Bali. The three strategic areas are emission reduction through the role of conservation, sustainable forest management and enhancement of forest carbon stocks. These five things aim to reduce deforestation and forest degradation in developing countries because the expansion of the points above has directly changed the name of REDD display to REDD +. Japan as one of the countries that approved REDD +, issued a green policy in their country explaining that Japan is committed to reducing greenhouse gas emissions in low levels with environmentally friendly technologies and promising financial assistance for develop countries to overcome the effects of global warming such as in Indonesia through JICA.

The environmental policy is "The Cool Earth Partnership". The program was introduced to the global economic forum in September 2009. Japan provided 10 billion USD for developing countries including Indonesia for environmental adaptation and mitigation projects. The form of cooperation on environmental mitigation projects known as 'Indonesia Japan Project for

⁸ Reducing Emissions from Deforestation, and Forest Degradation (REDD) are measures designed to use financial incentives to reduce emissions from greenhouse gases from deforestation and forest degradation. REDD + does not only include reducing greenhouse gases but also includes the role of conservation, prolonged forest management, and enhancement of carbon forest stocks. This scheme will help reduce poverty and achieve sustainable economic growth. The process of implementing REDD + focuses on stakeholder involvement. Voices from the community, indigenous people and traditional communities must be taken into consideration to ensure that the rights of those living in and around the forest will be guaranteed.

⁹ The Bali Action Plan did not introduce binding commitments to reduce greenhouse gas emissions but included the request for developed countries to contribute to the mitigation of global warming in the context of sustainable development.

Development of REDD+' is a program between the Government of Indonesia (Ministry of Forestry) and Japan (Japan International Cooperation Agency / JICA) which aims to develop a REDD + mechanism in West Kalimantan Province and Central Kalimantan. Officially the collaboration document or IJ-REDD + Project RoD (Record of Discussion) was signed on February 4, 2013, in Jakarta with a duration of 3 years (June 2013-June 2016) (Sosialisasi Proyek IJ REDD+ di Kabupaten Ketapang, 2013). There are five outputs of activities that will be carried out by the IJ-REDD + project, which will be continuously targeted to contribute to the development of REDD + in Indonesia, which are:

1. Level of REDD+ Province of West Kalimantan; Monitoring activities (Remote Sensing, Field Survey, GIS) have been carried out, Training and put into REDD+ MRV (Monitoring, Reporting, and Validation), and RAD-GRK,
2. REDD+ model in the National Park; Facilitation Training, Capacity Building of National Park Staff (Workshop Collaborative Management), Socio-economic Survey, Survey on FPIC, Survey and Training on Biodiversity Survey,
3. REDD + model for HP / HL / APL is developed at pilot site (s),
4. Provincial level MRV in Central Kalimantan; Meeting with JICA-JST Project (Hokkaido University) in collaboration with IJ-REDD +, attending the Peat Carbon Measurement Workshop organized by BSN and JICA-JST Project, 4th International Workshop on Wild Fire and Carbon Management in Peat-Forest in Indonesia, and held a Joint Workshop on REL and MRV of Peat Land and Peat Forest in Central Kalimantan,
5. Support the National REDD + Level by contributing actively in presentations at various meetings; COP 19 in Warsaw, REDD + Partnership Workshop and Meeting. Some activities related to the Joint Credit Mechanism are Interactive Dialogue with Privat Sector in Japan and supporting REDD + sessions at the JCM Capacity Building Workshop. Also, there are activities related to Capacity Building, namely the Satoyama Training Course in Japan and the Visiting Program to Japan (IJ-REDD+ PROJECT, 2013)

One of the factors that Japan cooperates with Indonesia is because Japan considers it a developing country that has a large number of tropical forests, besides that Indonesia is also listed as the third largest emitter in the world after China and the United States. It is what makes

Japan try to find a joint solution to overcome global warming problems. The collaboration is also expected to help Japan in meeting the target of reducing greenhouse gas emissions from the industrial sector by purchasing forest carbon credits in Indonesia. Japan must fulfill the emissions target of 25% based on 2020 according to Kyoto Protocol agreement.

Japan considers the collaboration as a new media or way to invest appropriately in efforts to improve the environment by reducing costs and indirectly. The collaboration will also encourage the formation of carbon market credit cooperation that is not only beneficial for environmental improvement and fulfillment of emission reduction targets but also provides additional benefits for Japan in securing its position as an investor in developing countries, especially Indonesia. This collaboration utilizes the funds and technology owned through the official development assistance framework, known as *Official Development Assistance* (ODA) and carried out by JICA.

1. IJ-REDD+ in West Kalimantan Project

West Kalimantan is a pilot project for IJ-REDD + program carried out by JICA, the fourth largest province after Papua, East Kalimantan and Central Kalimantan with an area of 146,807 km². 65% of West Kalimantan's territory consists of forests, includes tropical forests which have three functions, such as conservation forest areas, protected forest areas, and production forest areas. In 2000, based on Forestry Minister's Decree number 259 of 2000 the forest area in West Kalimantan reached 9,178,760 hectares and then on December 20, 2013, according to the Forestry Minister's Decree number 936 forest areas in West Kalimantan to 8.1 million hectares (Wibowo, 2014). It is what underlies the selection of West Kalimantan as a pilot area for REDD + implementation carried out by JICA. This project can support the "green" development goals and is expected to be a step forward in preparing for the beneficial and sustainable development of West Kalimantan in both social and ecological economics.

In West Kalimantan, the focus areas of the IJ-REDD + project are Ketapang District, Pontianak Regency, Kubu Raya Regency, North Kayong Regency, and Palung Mountain National Park. These projects include technical assistance for community empowerment in the Kalimantan region such as GPNP Officer Training, Workshop on Wood Product Utilization for Climate Change Mitigation, Peat Area Fire Control Community Development Program (FCP), and foreign loans. As proof, in 2015 a request for a Japanese technical cooperation sheet was

titled “Project for Community Movement Program on Forest and Land Fire Prevention/FCP” submitted to the Japanese Government through Bappenas. Overall, this program covers dissemination activities resulting from FCP cooperation, development and strengthening of the central and regional government systems for fire prevention, to policy support (Japan International Cooperation Agency, 2017).

The National Park model will also be modified using traditional Japanese land management methods, which is “*Satoyama*¹⁰”. Satoyama model practiced in Palung mountain national park conservation area and the concession area of Ketapang, North Kayong, Kubu Raya and Pontianak in the province of West Kalimantan for three years. In the National Park model like this, the surrounding community is one of the keys to the success of the forest conservation program. Community involvement in this program is to self-regulate the use of rice fields, farms, rivers, water reservoirs in each community's area so that their area remains sustainable and can increase income to meet economic needs (Kristanty, 2013).

2. IJ-REDD+ in Central Kalimantan Project

The Province of Central Kalimantan is one of the nine provinces determined by SBY to be the area for implementing REDD + pilot projects. Receiving this determination, West Kalimantan is committed to reducing emissions, improving forest conservation and developing sustainable forest governance. Based on the forestry minister's decree No.759 / KPTS / Um / 10/1982, the total area of Central Kalimantan forest territory is 15.3 million hectares. In 2011, Central Kalimantan by Forest Watch Indonesia categorized as the province with the highest rates of deforestation and forest degradation. However, deforestation and forest degradation caused by forest fires, legal and illegal logging (Tolo, 2014). Employees and forestry police also exacerbate forest damage on Central Kalimantan. Ideally, to maintain a forest area of 15.3 million hectares, Central Kalimantan needs at least 3,000 forest police. However, Central Kalimantan only has 390 forest police. Moreover, the police and military at Central Kalimantan are easily bribed by timber entrepreneurs.

¹⁰ applied to the Mosaic of ecological systems such as villages, farmlands, secondary forests, artificial forests, grasslands, bamboo groves, and irrigation ponds that have been formed and maintained through long-term human influences. Satoyama are areas where people live and get their livelihood, and at the same time, are often inhabited by a variety of adapted species and rely on these landscapes to survive, and to their own culture, so they play an essential role in sustaining and enhancing biodiversity.

One of the IJ-REDD + programs in Central Kalimantan is "The Project for Wild Fire and Carbon Management in Peat-Forest." The project has been carried out since 2008 but later in 2013 was included in the IJ-REDD + agenda. This collaboration is carried out in order to develop a research project on forest fires and carbon management in peat forests in Indonesia. The aim is to develop a system of mechanisms for managing peat forests. The "Wild Fire and Carbon Management in Peat-Forest in Indonesia" project has been conducted by JST-JICA in conjunction with Indonesian authorities to initiate a carbon management system in the Peatlands of Central Kalimantan since 2008. Since remarkable progress has been made on the project, after 1st JST-JICA International Workshop "Wild Fire and Carbon Management in Peat-Forest in Indonesia" held at Jakarta (5-6 March 2009). The 2nd International Workshop (Palangka Raya, 28-29 September 2010). The 3rd International Workshop (Palangka Raya, 22-24 September 2011), International Symposium (Bogor, 13-14 September 2012). The 4th International Workshop 2013 has been held at Palangka Raya, 24-26 September 2013, to share updated information, experiences on project activities and other special sessions such as recent forest and climate change activities in Indonesia (REDD + and MRV systems), capacity building & networks, etc.

Besides, "The Project for Wild Fire and Carbon Management in Peat-Forest", the project from IJ-REDD + is conducting workshops for 11 participants. The workshop contains GIS¹¹ Training and remote sensing bases, conducted to improve the monitoring capacity of the peatland forests of Central Kalimantan Province. The workshop was held on 8 to 12 June 2015 in Palangka Raya. Experts from IJ-REDD + and Palangka Raya University were the speakers at this Workshop. They explain the basics of remote sensing and GIS, an overview of REDD + activities, and basic knowledge of peatland with directives providing an understanding of the importance of REDD + activities on Central Kalimantan's peatlands. Then they also do a basic manipulation training for satellite image analysis and GIS integration. Field survey techniques that focus on verifying satellite image analysis and positioning points surveyed with GPS also demonstrated so that participants can conduct effective and sustainable field surveys.

¹¹ stands for Geographic Information System or geographic information system. GIS is a tool that can be used to manage (input, management, and output) spatial data or data that is referenced by geographic. Any data that refers to the location on the earth's surface can be referred to as spatial data with geographic references.