

CHAPTER 4

JAPAN'S INTEREST FOR COOPERATE IN INDONESIA'S FORESTRY SECTOR

Chapter IV will be answering the research question of this thesis which is the factor that makes Japan's interest to get corporate with Indonesia in the forestry area. Moreover, this chapter will provide the evidence data or facts of the thesis statement which resulted from using theory and concept. As explained in Chapter I, theories that used in this thesis are National Interest theory and International Cooperation theory which is related to each other.

A. Japan wants to protect its people from the threat of global warming

Global warming is a real threat to the inhabitants of the earth. The evidenced by the increase in the surface temperature of the earth from year to year which caused several problems of natural disasters. Such as melting ice at the north and south poles which caused rising sea levels, sweltering temperatures in some regions of the earth, erratic seasons, hurricanes, extinction of animal and plant species on earth, and so on. According to the IPCC, starting from 1990 in 2100 the earth's temperature will increase up to 5,8°C. The global warming impact has been felt in Japan. Even in August 2010, the temperature in Japan reached 37 degrees Celsius which caused 132 people to die at that time (WWF Indonesia, 2010). Then also in August 2015, the temperature in Japan reached 38 degrees Celsius, and even the temperature at Ginza reached 50 degrees Celsius. Cause 25 people died, and 11,672 people were hospitalized because of heat (Tribun News, 2015). However, previously in 2013, the temperature in Japan reached 41 degrees Celsius. At least 21 people died due to extreme temperatures at that time. Global warming in Japan also caused the destruction of coral reefs in the waters of Ishigaki Island, Okinawa, which was caused by rising sea surface temperatures.

Also, some global warming impacts in Japan are possible to occur if there is no solution. It makes Japan's hot summers will become a hotter event. The number of days with temperatures of 30 degrees or above may double in some places. In Hokkaido, the number of days over 30 degrees is about 100 days by 2100. Typhoons are expected to increase in speed, and rising sea levels could produce massive coastal erosion. Also, Japan is predicted to have higher rainfall from global warming as a result of an "increase in atmospheric moisture availability," much of it

from typhoons and storms that present a flooding threat. The effects of global warming are possible to be most profound in the southern part of Japan, particularly Kyushu, which are expected to be hurt by a double whammy of high temperatures for more extended periods of time and more frequent and powerful typhoons. Super typhoons as strong as Hurricane Katrina that devastated New Orleans are expected to hit Japan over the coming decades with global warming perhaps being one of the causes of their mega strength. Tokyo, Osaka and other coastal cities are particularly vulnerable to sea level rises associated with global warming. If sea levels rise by 40 centimeters by the 21st century as they are expected to 2,339 square miles of land, occupied mostly by large cities, would be affected. If sea levels rise one meter 90 percent of Japan's beaches and many tidal mudflats, a critical feeding ground for birds and fish will disappear. The government is already preparing to spend vast amounts of money to build sea walls and take other measures to protect urban areas from rising seas. A study by Japan's National Institute of Environmental Studies and Ibaraki University predicted that global warming would cost Japan around \$170 billion a year by the end of the century if the problem is not addressed. The costs include \$83 billion from rain-induced floods, \$74 billion from floods caused by high waves, \$9.4 billion from landslides, \$2.4 billion resulting from a decrease in beech forests, \$430 million in sand erosion from beaches, \$1.19 billion in damage to people's health. Most of the damage is linked to increased rain from heavy storms, rising sea levels, and rising temperatures,

There are fears that global warming could disrupt the ocean currents around Japan and cause considerable damages to fisheries that Japanese depend on for food and dramatically disrupt Japan's weather. Particularly vulnerable are the currents in the Sea of Japan that carry life-giving oxygen to deep water and bring plankton to the surface. The Sea of Japan current is created by a rare phenomenon in which harsh bitter winds are blowing through an opening in a mountain range in the Russian Far East cool the sea in such a way that it triggers a downward current. The water temperatures in the Sea of Japan have risen by 1.5 degrees C to 3 degrees C in the past 50 years. The fear is that if the sea warms too much, the current will fail. The Gulf-Stream-like Kuroshio current off the east coast of Japan is also regarded a vulnerable to temperature changes. There are also worries about disease. Global warming could bring mosquitos that carry malaria, dengue fever, and West Nile fever into southern Japan. In 2005, mosquitoes that transmit dengue fever were found in Akita and Iwate prefectures in northern Japan. In the agricultural sector, global warming may cause agricultural areas to shift northward. It could

mean that oranges could be grown in the area that is too cold for them now and yields of Koshihikari rice will be reduced, and the rice could be less tasty (Hays, 2012).

Because of this, Japan is very concerned about the problem of global warming, as evidenced by various efforts by Japan to organize many programs related to reducing the effects of global warming. Since 2001 the law in Japan requires that all new and old buildings be renovated so that space is given for planting plants. At least 20% of the plants are displayed on the roofs of buildings (Liputan 6, 2005). It is done to maintain air temperature because plants can absorb heat. Japan also launched a satellite to monitor global warming in 2009. With this satellite, Japanese scientists were able to calculate carbon dioxide and methane from 56,000 points on earth. Japanese people have a unique tradition called "Uchimizu Daisakusen," which they do is watering groundwater to reduce the temperature of the soil, keep the soil dust, and make the temperature feel cold. Usually, this tradition is carried out on August 18-25. Also, Japanese society is also always orderly to recycle waste and be regulated by law so that it can be structured and systematic. Japanese people have their schedules to dispose of garbage divided into types as explained in the picture below:

Picture 4.1: basic rules to dispose of rubbish in Akabira city



Source: <https://jic.co.id/main/wp-content/uploads/2018/02/budaya-buang-sampah-di-jepang-002-destriyana.jpg>

Each region has different rules and schedules but broadly the same. The picture above is an example of a recycling system in Akabira city. It makes Japan the best country in the waste recycling system. The question of environmentally friendly transportation in Japan is the leading country for that. Through its automotive industry, Japan creates electric and solar power cars that are environmentally friendly. Even today, the electric car charging more than the gas station. Not only that, for the electricity problem, Japan will have the largest hydropower and solar power plant in the world, located in the middle of the sea. For solar power plant this project will be completed in 2018 and for the new hydropower plant will be completed in 2020.

Japan also collaborates with other countries to tackle the global warming problem. One of them is the program for training Environmental Leaders in Asia and African countries pioneered by the Ministry of Education, Science, and Technology. This program was implemented from 2008-2013. The aim of this program was to produce environmental leaders around the world by providing scholarships for students in developing countries to study undergraduate and postgraduate programs at the most advanced universities in Japan. Then Japan also provided funding of US \$ 10 billion from 2008-2013 to address the problem of global warming in Indonesia. In the forestry sector, Japan also cooperates with developing countries through JICA. Japan also approves the REDD + program, then Japan also agrees on the Kyoto Protocol and Paris Agreement¹. In fact, for Kyoto protocol, they also lobbied countries that have not become state parties to join the Kyoto Protocol, and Japan also tried to invite developed countries to assist developing countries in overcoming environmental problems in their countries (Andini, 2017). For the JICA forestry program, they had committed since 1991 when JICA collaborated with Malaysia. The project is named the Multi-storied forest management project. Even the JICA project in the forestry sector has almost every continent like in Oceania (Samoa, Papua New Guinea, Palau), Latin America (Costa Rica, Dominica Republic, Nicaragua, Panama, Mexico, Argentina, Uruguay, Ecuador, Columbia, Brazil), Africa (Ethiopia, Ghana, Kenya, Senegal, Tanzania, Burkina Faso, Madagascar), and Asia (Indonesia, Timor-Leste, Philippines, Vietnam, Malaysia, Myanmar, Lao PDR, China, Mongolia, Nepal, Iran).

¹“The Paris Agreement central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius”.

There are two Japan projects for forests in Indonesia, namely JICA forestry program and IJ-REDD+. For JICA forestry program, Japan focuses on improving the forest on strengthen the relevant stakeholders' capacity for restoration of degraded ecosystems in conservation areas, specifically National Parks. For example, the program is planting 8,000 Jelutung plant seeds in Bengkalis. The program conducted by JICA with Riau Provincial Government represented by "BBKSDA" and also from "Sinar Mas Forestry Group". Then JICA in Halimun Salak Mountain National Park Program. One of the program is Conservation Village Model. The Program includes three activities, Such as reforestation, participatory observation, and increased community income. 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. Then program JICA in Bromo Tengger Semeru National Park. In there, JICA collaborate with a Japanese company, Sumitomo Forestry Co.Ltd, concerning training in forest fire control. 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.Ltd, and PT. Kutai Timber Indonesia. For IJ-REDD+ Japan implemented it in two provinces in Indonesia, namely Central Kalimantan and West Kalimantan. In West Kalimantan the focus city are Ketapang District, Pontianak Regency, Kubu Raya Regency, North Kayong Regency, and Palung Mountain National Park. The 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. For Central Kalimantan one of the program called "Wild Fire and Carbon Management in Peat-Forest in Indonesia". 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.

Many eco-friendly programs issued by Japan, this proves that Japan is very concerned about the problems of global warming where global funding has had an impact on the lives of living things in Japan directly so that Japan wants to immediately overcome this problem so the impact does not spread to various aspects. Japan chose Indonesia because forest in Indonesia is the third

largest forest in the world with tropical forests and donations from the rainforests of Kalimantan and Papua. However, Indonesia includes in one of the countries with the broadest extent of tropical forest in the world that needs international funding support to protect the remaining tropical forests. Indonesia is currently in the first position as a country with the fastest rate of deforestation in the world, and the most significant country number 3 that produced gas emission (Greenpeace, 2010). Indonesia is the third most abundant greenhouse gas emitter after the United States and China (Koran Sindo, 2015).

B. Japan Wants to Prosper their Industry by Trading Carbon

Based on the Kyoto Protocol, which was carried out on December 11, 1997, industrial countries were required to reduce their greenhouse gas emissions collectively by 5.2% compared to 1990. The Kyoto Protocol was also approved to determine the emission reduction target and the reduction target time for developed countries. It is more important that the Kyoto Protocol is an institution designed to implement the Convention. Several mechanisms in the Kyoto Protocol that regulate the problem of reducing GHG emissions, as explained below:

2. Joint Implementation (JI), a mechanism that allows developed countries to build joint projects that can generate credit for reducing or absorbing GHG emissions,
3. Emission Trading (ET), a mechanism that allows a developed country to sell credit for GHG emission reduction to other developed countries. ET can be possible when developed countries that sell GHG emission reduction credits have a GHG emission reduction credit exceeding their country's target,
4. Clean Development Mechanism (CDM), a mechanism that allows non-ANNEX I countries (developing countries) to play an active role in helping to reduce GHG emissions through projects implemented by a developed country. Later the credit for the reduction of GHG emissions resulting from the project can be owned by the developed countries. The CDM also aims for developing countries to support sustainable development, besides that CDM is the only mechanism by which developing countries can participate in the Kyoto Protocol (WWF, 2008).

Clean Development Mechanism (CDM) is one type of market mechanism in the Kyoto Protocol which falls into the category of credit. Following what has been explained above, developed countries/industries in the Kyoto Protocol are required to reduce their average GHG emissions in the period 2008-2012 (first commitment period) by 5,2% below the emission level

in 1990. In this case, the CDM is a mechanism for providing carbon credits that can be used to fulfill these obligations by involving low greenhouse gas emissions projects in developing countries. CDM is also intended to help developing countries get clean technology investments in their efforts towards sustainable low-carbon development in their respective countries. The output of the CDM scheme is carbon credit called CER (Certified Emission Reduction) where each CER represents GHG emission reductions equivalent to one ton of verified carbon dioxide, as well as carbon credits in other schemes. CDM can be implemented by two ways which are REDD+ and Joint Crediting Mechanism (JCM)

1. REDD+ (Reducing Emissions from Deforestation and Forest Degradation)

The REDD mechanism is a mechanism in environmental mitigation efforts that discusses how to reduce carbon emissions through the cessation of deforestation in developing countries so that it can be used as an area of carbon absorption in order to deal with the issue of global warming. For implementation through REDD +, Japan and Indonesia have collaborated with the name IJ-REDD + in West Kalimantan 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).

Japan also conducts REDD + cooperation in Dien Bien, Vietnam. Within the province, MuongPhang Commune, DienBie District, and MuongMuon Commune, Muong Cha, District were set as the pilot. This project started on March 2012 – December 2013. The goal of the project is Findings and experiences obtained through Dien Bien REDD+ Pilot Project implementation will be reflected into National REDD+ Program (NRAP) and other related policies, and applied to REDD+ implementation in other provinces. Not only in Vietnam but REDD+ project also in other ASEAN countries which are Lao PDR. Project REDD+ in Lao PDR start in November 2015 – October 2020. Vientiane Capital and Luang Prabang Province become the place that project held. The objective of the project is to strengthen the goal for sustainable forest management by incorporating REDD + into the sector strategy and improvement of forest resource information. There are four outputs of this project: 1. Support the forestry sector at the central level, 2. Support the measurement of emission reductions and/or removals as a result of REDD+ implementation, 3. Support to the national REDD+, 4. Support REDD+ Readiness in Luan Prabang Province. After that in Cambodia, the project takes place in Prey Long area². The project goal is to reduce emissions from deforestation in Prey Long by promoting forest conservation through community-level conservation agreement and the management activities of the forest offices in Prey Long. Then for Oceania, Japan also collaborated with Papua New Guinea. This REDD+ project has been started since August 2014 - August 2019. It aims to fully operational the NFRIMS, including capacities to update and manage forest coverage and stocks on GIS, efficient forest monitoring system, improvement of

² includes mainly evergreen lowlands that are spread across provinces in the north-central parts of Cambodia and the west bank of the Mekong River.

coordination and technical capacity inter-agency for REDD + reporting, and development of appropriate training programs (JICA, 2014).

For the African continent, Japan collaborates with seven countries which are Botswana, Mozambique, Democratic Republic of Congo (DRC), Gabon, Cameroon, Kenya, and Ethiopia. For the African continent, this REDD+ project runs from 2016 – 2018. Many things that will be done by Japan which are represented by JICA are such as Readiness support, Demonstration, Implementation, Research, and development.

2. JCM (Joint Crediting Mechanism)

Implementation CDM through Joint Crediting Mechanism, It is different from REDD + which focuses on reducing emissions through forest conservation. The projects carried out in this collaboration include renewable energy systems to improve hydropower plants, a more efficient cement transportation system and solar and wind power energy installations. Reduction of greenhouse gases in the host country will be exchanged with developed countries that want to reduce greenhouse gases with non-tradable carbon credits. Carbon credit shows the amount of carbon dioxide that can be emitted by developed countries. The JCM is a bilateral collaboration that focuses on environmentally sound investments to support low-carbon development. This mechanism will be an incentive for Japanese companies to increase investment in low-carbon activities in developing countries. However, for now, the Japanese government benefits because some of the proceeds from GHG emission reductions in Indonesian investment projects can be claimed as the country's emission reduction. In this case, the two parties working together get a great benefit, both economic and environmental benefits, from the JCM collaboration.

In Indonesia in the 2013-2014 period, 13 projects have been implemented. From 13 projects, they consist of studies in the fields of renewable energy (from geothermal, hydro and biomass), energy efficiency, low-carbon transportation, carbon captured and storage (CCs), low-carbon agriculture, and forest-based activities. Here's an overview of the Japan-Indonesia JCM feasibility study and model project (**On Attachment Table 4.1**).

There is one JCM Project Planning Study conducted to make a concrete project plan for developing the JCM Model Project in the next fiscal year, including financial plans, construction plans, operational plans, implementation, and MRV structures. Then there are 3 Feasibility Studies for the JCM Project. The purpose of the JCM Feasibility Study is to look for potential projects/activities that can be part of the JCM, thus helping the development of the JCM, by

pursuing targets such as developing MRV methodologies that are relevant to the Project / related activities; Assessing the possibility of implementing each Project / activity within the JCM; Gather knowledge and experience gained during the process mentioned above.

International measurement, Report, and Verification (MRV) standard approved by the two countries will be used to calculate the reduction in emissions generated by low-carbon projects from the JCM project. The results will be recorded and can be used to meet Indonesia's and Japan emission reduction targets according to previous compliance. “Every year there are developments from the implementation of JCM projects conducted by Indonesia and Japan. In 2016 there were 108 feasibility studies conducted, and the total funds were almost Rp. 2 trillion. The projects cover a variety of industries, such as the cement industry, forestry, and technology”(Daud, 2016).

Besides in Indonesia, Japan also cooperates with Myanmar for this JCM. This collaboration was signed on September 16, 2016, at Nay Pyi Taw, Myanmar. However, the first project was only conducted on June 25, 2018. This project was named Power generation and avoidance of landfill gas emissions through combustion of municipal solid waste (MSW) yang Methodology Proponent by JFE Engineering Corporation. Then in the continent of Africa, Japan in collaboration with Mongolia. On the 8th of January 2013, this collaboration was signed in Ulaanbaatar. The first project was carried out on 28 January 2015 in the field of Energy Industries which was named Replacement and Installation of High-Efficiency Heat Only Boilers (HOBs) for Hot Water Supply Systems. Methodology Proponent by Suuri-Keikaku CO., LTD., And Climate Experts LTD. Costa Rica in Latin America also has a partnership with Japan for this JCM. on 19 December 2013 the signing of the JCM was conducted in Tokyo, Japan. The result was on September 8, 2017, Costa Rica and Japan agreed to carry out projects in the field of Energy Industries (renewable-/non renewable sources) which is Installation of Solar PV System which is conducted by Institute for Global Environmental Strategies. In the Middle East, Japan collaborated with Saudi Arabia on May 13, 2015. Their first collaboration in the energy demand field was namely Introduction of High Electrolyzer in Chlor-Alkali Processing Plant who conducted on 18 October 2017. Since 2011 a total of Japan has collaborated with 17 developing countries regarding the JCM namely Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Lao PDR, Indonesia, Costa Rica, Palau, Cambodia, Mexico, Saudi Arabia, Chile, Myanmar, Thailand, and the Philippines.

Japan and its industry are indeed inseparable. Since 1948 Japan began to develop the industry on a large scale such as in the manufacturing sector: ship industry, iron industry, and steel, industrial machinery and cement and glass industry (Haryanti, 2013). Then in 2006 as many as 326 Japanese companies entered the Forbes Global 2000 list. This figure reached 16.3% of the 2000 world public companies. The manufacturing industry is one of the Japanese forces, especially in the fields of electronics and automobiles. “In 2012, the industry was responsible for 27.5 percent of Japan's GDP. Significant industries in Japan include motor vehicles, electronic equipment, machine tools, steel and nonferrous metals, ships, chemicals, textiles, and processed foods. Japan is home to six of the top twenty largest vehicle manufacturers in the world – Toyota (1st), Renault-Nissan (4th), Honda (8th), Suzuki (10th), Mazda (14th), Mitsubishi (16th). The automobile industry also managed to register a massive 10.5 percent growth in 2009, despite the global financial crisis”. (EW ECONOMY TEAM, 2013). However, industry sector is the most significant contributor of GHG in Japan. In 2015 it reached 44.9% compared to transport sector, residential sector, and commercial and other³. It proves that Japan does not want to significantly reduce GHG in the industrial sector because it will affect production which will have an impact on their GDP and industrial welfare. So, Japan chooses another way to fulfill the Kyoto protocol where industrial countries are required to reduce their greenhouse gas emissions collectively by 5.2% compared to 1990 by buying carbon credits from Indonesia implemented through REDD + and JCM. In the REDD + scheme, Japan chose Indonesia because Japan was partially responsible for the destruction of Indonesia's forests during the world war for the needs of war and besides because Indonesia is the third largest tropical forest owner in the world but the deforestation rate is high. For the JCM scheme, Japan chose Indonesia because according to them, Indonesia is a market for them, proven by the number of Japanese companies in Indonesia, which are 1500 companies in 2018 (Lumanauw & Suhartadi, 2018). Also, the JCM mechanism is funded by the private sector and the government which is an advantage for Japan because of a large number of their companies in Indonesia. Then this collaboration is also based on investment and trade interests between Indonesia and Japan to carry out low-carbon projects (Purnomo, 2013).

³<https://www.env.go.jp/press/files/en/750.pdf>