

## **CITES AND DOMESTIC ECONOMY IN INDONESIA: *The Efforts of the Indonesian Government to Change The Lamakera Fishers' Commodity in Implementing the 2013 CITES Convention***

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### **Abstract**

In 2012 researchers proposed a moratorium on international trade in the import and sale of the gills of Manta Rays. In the 2013 CITES conference in Bangkok, a convention to prohibit manta ray and shark hunting is agreed by 93 countries. Indonesia as the second sea fish producer affected by this policy, especially for the fishers in Lamakera, Solor Islands, East Nusa Tenggara. Since hundreds of years ago, the Lamakera fishers known as stingray and whale hunter, and stingrays species is their main economic commodity. Indonesia, as a part of CITES, is bound and must obey to the convention. Then, in 2014, the Indonesian government has issued a regulation banning manta rays. This paper will use the liberal institutional approach in describing how the Indonesian government tackles the issue of environment, implementing CITES conventions, and solve the economic problems of local people that involving diverse stakeholders.

**Keywords:** CITES, Indonesia, Manta Rays, domestic economy, environmental governance

### **Abstrak**

*Pada 2012 para peneliti mengusulkan moratorium perdagangan internasional dalam impor dan penjualan insang Sinar Manta. Dalam konferensi CITES 2013 di Bangkok, sebuah konvensi untuk melarang manta ray dan perburuan hiu disetujui oleh 93 negara. Indonesia sebagai penghasil ikan laut kedua yang terkena dampak kebijakan ini, terutama bagi para nelayan di Lamakera, Kepulauan Solor, Nusa Tenggara Timur. Sejak ratusan tahun yang lalu, para nelayan Lamakera dikenal sebagai pemburu ikan pari dan ikan paus, dan spesies ikan pari adalah komoditas ekonomi utama mereka. Indonesia, sebagai bagian dari CITES, terikat dan harus mematuhi konvensi. Kemudian, pada tahun 2014, pemerintah Indonesia telah mengeluarkan peraturan yang melarang pari manta. Makalah ini akan menggunakan pendekatan kelembagaan liberal dalam menggambarkan bagaimana pemerintah Indonesia menangani masalah lingkungan, mengimplementasikan konvensi CITES, dan memecahkan masalah ekonomi masyarakat lokal yang melibatkan beragam pemangku kepentingan.*

**Kata kunci:** CITES, Indonesia, Manta Rays, ekonomi domestik, tata kelola lingkungan

## INTRODUCTION

Indonesia is a maritime country that three-quarters of its region is the ocean. The coastline of Indonesia is the second-longest in the world after Canada (BPS, 2017b). FAO stated that Indonesia is the second world biggest fish producer that in 2014, it has 6 million ton potential (Katadata, 2016), with around 19% contribution to GDP (BPS, 2017b). The fishing area spread up to 5.8 million Km<sup>2</sup> in Indonesia's fisheries management territory (WPPNRI) (BPS, 2017b).

Based on 2016 BPS-Statistics, the number of catch fishers is around 1% of the total number of labours (BPS, 2017a) comprising 960 thousand people (BPS, 2016). East Nusa Tenggara is one of the provinces in Indonesia that has fishing potential, estimated at around 24,981 people work as fishers. Lamakera is a village on Solor Island under East Flores Regency, which part of East Nusa Tenggara Province. The geographical condition, which is the strait, makes the Lamakera sea area visited by various types of fish, including whales and manta rays. Since hundred years ago, the habitants of Lamakera worked as hunters of whale and Manta Rays.

In 2010, Lamakera fishers hunted 330 Manta Rays and 330 Mobula Stingrays. The high price and demand for Manta Rays from China for traditional Chinese medical treatment materials, makes Manta Rays continue to be hunted by fishermen in the region. The high demand also affects the value of the Manta gills industry in China annually, which rose from 11 million USD in 2010 to 30 million USD in 2013. Over-massive hunting of stingrays and slow biological cycles of Manta Ray, as well as no international rules governing trade in these species, has made the population of Manta Ray's decline and lead to global extinction (Heinrich, O'Malley, Medd, & Hilton, 2011).

In 2012, researchers proposed a moratorium on international trade in the import and sale of Manta gills, by making an international protection policy under the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES). Then in 2013, the CITES Conference Meeting in Bangkok

declared Manta Rays and Sharks as protected species in international trade (Psihoyos, 2015).

One hundred forty-nine countries become part of the CITES. Indonesia itself join with CITES since 1987 (CITES, n.d.), which is expressed in the Presidential Decree No. 43 of 1978 (WWF-Indonesia, 2005). During the 2013 CITES meeting, Indonesia positioned itself as a country that refused the moratorium, because Manta was one of its trade commodities (Kompas, 2013). Nonetheless, because 93 countries from 149 countries were approved (Psihoyos, 2015), Indonesia inevitably had to follow the results of the meeting. So the Indonesian Government released the Minister of Maritime Affairs and Fisheries Regulation No. 4/KEPMEN-KP/2014 (Wahyudi, 2014). It regulates the protection of Manta Ray, both Bureaus and Oceanic and also prohibit the trade of their body parts or their derivatives products (Kementerian\_Kelautan\_dan\_Perikanan, 2014). In other side, Manta rays are the primary commodity of Lamakera fishers. This condition raises a question of how the Indonesian Government changes the livelihoods of Lamakera fishers concerning the implementation of CITES 2013.

## THEORETICAL FRAMEWORK

The moratorium proposed by scientists in the CITES is a moratorium on trade in endangered species. So to understand this, the author will relate this problem with some theories such as the concepts of trade, international trade, and the relationship between international trade and environmental conditions. Trade is the activity of buying and selling goods and services with compensation for payment from the buyer to the seller or with product exchange (Hayes, 2017), to get profit or additional value from these activities. International trade allows every nation to obtain goods or services and profit opportunities that they cannot get in the domestic market. So that countries conduct cooperation to suffice their domestic needs. Aside from being a means to fulfil nations needs, it also becomes an arena of economic competition among the nations (Gilpin & Gilpin, 2001).

International trade liberation was led by the United States since 1930 caused by the thrust of more protectionism in international trade. In 1948 the US with 23 other countries formed a General Agreement on Trade and Trade (GATT) aimed to reduce trade barriers among them. Furthermore, in the 8th Uruguay round, they agreed to reduce non-tariff barriers (NTB) such as quotas, procurement policies that prioritize domestic products, and regulations on product safety and the environment. In 1995 GATT was transformed into a World Trade Organization (WTO) which functions as an institution with enforcement power that can help to prevent a national standard become a technical obstacle in international trade (Vogel, 2000).

The liberalization of trade is increasing the penetration international economy into domestic. It grows capital accumulation, technology transmission, and macroeconomy improvement (Rao, 2000). It is also increasing levels of product competition, levels of social welfare, and the possibility of international peace (Gilpin & Gilpin, 2001). Besides the positive impacts, trade liberalization also creates complex problems for domestic conditions such as cultural infiltration, deteriorating technical sovereignty, and even declining environmental conditions (Rao, 2000).

In international trade, there is a relationship pattern between developed and developing countries. Developing countries usually become exporters of raw materials or semi-finished materials from nature needed by manufacturing industries in developed countries. Whereas developing countries import manufactured goods that have higher added value than the developed partners. The broad prospect of profit from international trade makes the producers of goods want to increase their trade intensity by taking more raw materials from nature without regard to the impact of environmental damage due to excessive exploitation (Sorin & Choomta, 2015). In other words, the indirect pressure from international trade is the increasing demand for natural materials (Kuna-Marszałek, 2016). Consequently, the developing countries as a raw material sender that taken from nature will face

the threat of declining public health due to the environmental damages (Rao, 2000).

Since international trade indirectly harms the environment. Then when assessing international trade policies, it is crucial to not only consider conventional economic indicators such as GDP and the number of employment opportunities. However, it also needs to consider environmental factors such as the cost of environmental improvement. Because the exported raw materials or energy, we grab it from nature. It can be a picture of the quantity of lost natural resources. The increasing number of natural resources lost can be a cause of ecosystem decreasing (Jaramillo, 2011).

International policy is needed to make trade more sustainable with long-term benefits, and this policy overseen by an international institution that has the authority to intervene. Besides, it is also necessary as trade measure to protect the environment that knows as environmental trade measures (ETM) to limit the adverse effects of international trade and to encourage environmental improvement. ETM has six standard classifications, namely in the products/ processes, taxes, subsidies, trade restrictions, sanctions, and trade conditionalities (Rao, 2000).

The international economic organization such as WTO (world trade organization) is aware of the impact of environmental damage from economic activities of international trade. So they establish an agenda to improve the environment. Before transforming into the WTO, since 1971 GATT began to pay attention to environmental issues by releasing a study entitled "industrial pollution control and international trade" which focused on examining the implications of environmental protection policies for international trade (Sorin & Choomta, 2015). Besides, in 1994, along with the agenda of transformation into the WTO, GATT member countries formed a commission of trade and environment (CTE) (Rouse, 2017), which then legitimized in 2001 (WTO, 2017a).

WTO, as a multilateral organization, has a significant role in reducing the adverse impact of international trade on the environment (Sorin &

Choomta, 2015). Because WTO has regulations and an enforcing mechanism for its member countries, including in the trade negotiations under the Doha agenda that oversight by the Trade and Environment Committee (WTO, 2017b). International trade cooperation also raises the interplay between a domestic policy on international policy. Because in international trade, a country's national policy will affect two business actors, namely local producers and foreign competitors (Vogel, 2000).

Environmental issues become part of the International Political Economy because of the roots of the relationship between trade, natural resources, and environmental conditions. Moreover, international trade actors use natural resources to increase their economic productivity from nature or the environment, while these resources are limited. So that environmental problems can not be separated from international economic activities, whether that is trade, investment, or finance. Thus, global governance that can govern the trade that still can protect the environment is crucially required.

According to Paterson and Stevis (2006), there are three approaches to see global environmental politics (Clapp, 2014). Firstly, Neoclassical Economy which sees a tendency to see that the expansion of global trade, investment, and finance as a whole has a positive impact on the natural environment. This approach has underlying assumptions that the country can finance environmental improvement from its profit obtained. This view also assumes that the increasing of a prosperous society in line with the demand for environmental cleanliness.

The second is Ecological Economists and radicals. It opposes or criticizes and doubting the neoclassical economic thinking. This perspective stated that trade, investment, and financial liberalization and all kinds of activities aimed at increasing economic productivity would cause damage to the environment because resources taken from nature which the number is limited.

The third is the liberal institutional approach. It approves classical and radical economic thought because in some cases, the

political economy will have good and bad effects on the environment. Institutional liberalism believes that the establishment of international governance between countries can establish a strict rule to manage the global economy that does not endanger the environment while they get benefits from economic globalization. It proposes the existence of a governance mechanism in a trade that continues to benefit the environment so that some trade such as de in toxic goods trade or hazardous chemicals should not be encouraged and the resolution of the problem can be regulated through trade agreements with environmental agreements.

In describing the problems of the Manta Rays restriction trade, CITES, and the domestic economy in Lamakera. The author will use the liberal institutional approach because practically the actor whose solving this environmental problem takes an institutional governance approach. To be exact, the actors both the state and non-state agreed on the manta rays restriction trade into the CITES convention framework that also involving many stakeholders in governing it.

## CITES AS A CONVENTION ON INTERNATIONAL TRADE

Manta ray is a kind of marine species. There are several agreements or conventions governing the limitation or protection of marine capture, such as the Convention on Fishing and Conservation of the Living Resources of the High Seas (1958), 1973 the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention on Biological Diversity (1992), 1994 Lusaka Agreement on Cooperative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora, 1995 Agreement for the Implementation of the Provisions of the 1982 UN Convention on the Law of the Sea relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks.

This paper will focus on discussing CITES as an international trade convention. CITES is a convention that establishes to tackle trade-induced species that can cause risk to

biodiversity loss. CITES is a multilateral international agreement that established since the 1960s that agreed by 80 members countries. It aims to protect and maintain the sustainability of the traded wildlife. CITES is a convention to governs the issue of endangered species of animals and plants in international trade. This convention aims to ensure that the trade in endangered species of animals and plants does not threaten the survival of rare specimens of high trade value that use for food, clothing, musical instruments, or medicines. The high exploitation of wildlife as well as ecological factors such as the habitat loss of a species that makes the existence of various wildlife threatened (CITES, 2017c).

Some several international bodies or organizations regulate fishing such as the Regional Fisheries Body (RFB), the United Nations (UN) and the International Union for Conservation of Nature (IUCN) which gave birth to various international agreements that regulate fisheries management and marine environmental protection. RFB is a cooperation agency established by the state has known since 1948 for the benefit of fishing arrangements by region to help develop conservation, management, and development of marine resources. The RFB's mandate is only advisory, and its policies are not binding on its member countries (Salomon, 2013).

While the United Nations in 1982 issued UNCLOS which further regulates the state's provisions in accessing resources in the sea area along 12 miles or 20 KM from the coastal area known as the exclusive economic zone (EEZ) (Salomon, 2013). Then IUCN is a union membership or environmental network consisting of governments and CSOs formed since 1948. IUCN meetings resulted in several international agreements relating to the protection of species at sea including fish such as the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species (CITES) and the World Heritage Convention (IUCN, 2017).

Since the CITES is an international trade regulation, the entire process step in establish-

ing the convention, IUCN also coordinated with the GATT Secretariat (General Agreement on Tariffs and Trade) or currently the WTO (World Trade Organization). WTO, as an international trade institution, can help CITES to protect endangered species in international trade. That is because the WTO has a vision of sustainable trade and development, which also seeks to protect and preserve the environment. WTO agreement is more binding to the parties because the system is based on regulations rather than power (Rao, 2000).

The coordination is intended to make sure that there will be no violation of the convention in international trade. Each country or regional economic organization voluntarily binds to CITES, but these parties must be able to implement the convention up to the national level, and up to now 183 countries are participating in CITES (CITES, 2017c). Each Party to the Convention must designate one or more Management Parties responsible for managing a licensing system relating to the convention and one or more Scientific Authorities to provide input on the effects of trade in protected species.

CITES-protected species consist of three categories. The first is the endangered category, which means that a species in this category only permitted to trade under certain extraordinary conditions. The second category is not too endangered, which means that a species needs to be controlled to avoid improper use that is not following the survival of the species. The first and the second category agreed based on the stipulated resolution provisions such as population numbers and habitat conditions of the species. The third is protected category at least one country, where the country requests that parties involved in CITES take control of the trade-in these species. Species protected by CITES can be traded internationally after going through specific licensing mechanisms such as the national licensing system of the sending and receiving countries, and not in violation of a country's national laws (CITES, 2017a).

CITES takes the categories from the IUCN Red List that become a guide for multilateral international environmental agreements

(IUCN, 2017). IUCN categorizes the species based on quantitative data because extinction is considered a possibility of a process (IUCN, 2012). The IUCN Red List categorizes manta rays in the “vulnerable” category (Mantaray-World, 201AD). The category is measured based on specific indicators, for example: the number of species has decreased by more than 50% in the last thirty years, and the cause can be reversible or stopped; globally, the existence of the species is not found in more than 10 locations; and the number of adult species is less than 10,000 (IUCN, 2012). The decreasing number of manta rays mainly caused by anthropogenic factors such as over-massive hunting, pollution, and ship-collision (Mantaray-World, 201AD). The manta rays’ habitat spread only in nine locations, namely India, Thailand, Guangzhou-China, Philippines, Sea of Cortez-Mexico, Mozambique, Sri Lanka, Western Australia, and Indonesia (Heinrich, O’Malley, Medd, & Hilton, 2011).

### THE FISHING INDUSTRY OF MANTA RAYS IN LAMAKERA INDONESIA UNDER CITES REGULATION

Historically, the marine was considered as an open-access grounds for fishing that completely allowable for anyone to catch fish (J.C.J.M. van den Bergh, Hoekstra, Imeson, Nunes, & Blaeij, 2006). Fisheries is one of the human activities that have a direct impact on the marine environment because these activities have gradually exploited about 90% of large fish that resulting marine species population decrease compare with to their historical level (Salomon, 2013). Almost one hundred per cent the livelihood of Lamakera population is fishers.

Lamakera is a village on Solor Island under the administration of East Flores Regency, East Nusa Tenggara Province, in Indonesia. The geographical factor that is a coastal area that traversed by manta rays and sharks makes Lamakera community becomes a hunter of the species. The ability to hunt these species is passed down from generation to generation. Manta Rays are one of the primary fishery commodities of the Lamakera community.

Lamakera fishers catch Stringrays using metal spears with bamboo handles by jumping from the ship to spear and rope the back of the animal (Lewis et al., 2015). These Manta Rays are captured and then sold to traders and collectors as one of the economic activities to meet their daily needs (BPSPL-Denpasar, 2016).

Based on data 2010, Lamakera fishers hunted around 330 of Manta Rays per year, and they sold it for 20 US dollars each set and 500-600 US dollars for gills per kilo (Psihoyos, 2015). While data from June to September 2014 recorded around 120 Manta Rays with a total sales of 29,018 kg for 143 million rupiahs (Putra & Prabuning, 2015). Naturally, the life cycle of Manta rays is 40 years, with adult age to reproduce is on 8 to 10 years, and the birth number is a single pup for two to five years (Heinrich et al., 2011). Based on the information above, the total estimation for each year is around 480 Manta Rays caught by Lamakera fishers. The high number of Manta Rays hunting in Lamakera can categorize to overfishing that can threaten the existence of these species to be reduced and possibly extinct. Manta rays are wildlife that captured and traded abroad by the fishers so it can be categorized as international trade that needs to be regulated internationally to protect from excessive exploitation.

There are two reasons why an environmental problem becomes addressed international concern in economic cooperation framework. Firstly because of the discovery of new problems discovered by scientific groups regarding environmental issues, and the second because of the economic interconnectivity between countries (Proost, 1998). Manta rays grow to be an issue in international trade because scientists have discovered the imbalance between the number of hunting and the birth rate of the species that will impact on biodiversity loss.

According to the community of Lamakera, gills are a valuable part of the Manta Rays. The gill taking process is carried out on the beach, washed, and weighed heavily to local buyers and dried by local buyers who are intermediaries. While for the meat, it sold to the local community in the market that used for consumption,

animals food, or shark fodder. The average dry weight of the gills is around 5 kilos, and the meat is around 25 kg. Then after the gills dried, the intermediary sells it to buyers in Jakarta and Surabaya to be exported to China for around 5.3 million rupiahs whereas the fishers only get two million for the same gills from this mediator (Lewis et al., 2015).

Manta rays are CITES protected species that classify in the second category that is not too extinct, only because the slow biological cycle with excessive exploitation will make these species within next few decades included into the endangered category (CITES, 2016b). CITES decide to protect Manta Rays and classify it into the second category agreed on the 14th CITES conference. This conference yield some collective agreements for all the parties, secretariat, and standing committees in the CITES concerning the issue. For instance, all of the parties must consult with their national policymakers regarding the implementation of CITES, especially with the fisheries bodies. The parties also must strengthen the efforts to develop and provide financial assistance for the exporting countries. The parties have to provide funding for marine officers at the CITES Secretariat, and adding experts in fisheries to improve sustainable fisheries management. They have to respect the convention by avoiding shark and manta rays hunting include storing and selling activities of these species that are prohibited (CITES, 2016a).

The trading and catching of Manta Rays are prohibited in 180 countries unless there is an authority from the national authority designated by CITES (CITES, 2016a). Each country that is a party to CITES must have national authority body both as management authority and scientific authority. In Indonesia, the authority is the Directorate for Biodiversity Conservation, and the General Directorate for Ecosystems and Natural Resources under the Ministry of Environment and Forestry while the Scientific Authority Agency held by the Indonesian Institute of Sciences (LIPI) (CITES, 2017b). The Protection of Manta Rays in Indonesia governed by The Ministry of Maritime Affairs and Fisheries of the Republic of Indonesia in

collaboration with Conservation International Indonesia. The Indonesian government has issued three policies from the regional level up to the national level. At the national level, Manta ray protection put into the 2016-2020 National Action Plan (Sianipar, 2016).

### **THE EFFORTS OF THE INDONESIAN GOVERNMENT TO CHANGE THE FISH COMMODITIES IN LAMAKERA**

Since the stipulation of Manta Rays and Sharks as protected animals in the 2013 CITES Convention, the Indonesian Government through the Minister of Maritime Affairs and Fisheries Regulation No. 4 / KEPMEN-KP / 2014 released regulations on full protection of Manta Birostris and Manta Oceanic dated January 27, 2014. According to the law, the Manta ray trade in both its body parts and its derivatives will be subject to a maximum fine of 25,000 USD (Wahyudi, 2014). The majority of Indonesian people, especially Lamakera people, are Muslim. The *Majlis Ulama Indonesia* (Indonesian Ulema Council) also strengthens the rule of prohibiting manta rays capture by deciding a fatwa No.04 of 2014 that concerns the Preservation of Endangered Animals to Maintain Ecosystem Balance. According to Hayu Prabowo (chair of the Environmental Breeding Institute of MUI in 2015), he stated that although the fatwa not legally binding, it is religiously binding for followers of Islam (Aceh\_Insight, 2014).

The enactment of the regulation prohibiting the hunting of Manta Rays by the Indonesian Ministry of Maritime Affairs and Fisheries has led the government to improve the management of the Marine National Park (MNP) in East Nusa Tenggara Province. The improvement plan stated in the short-term 5-year plan and the 20-year long-term plan which aims to save and protect the ecological fisheries industry and its ecosystem. So, the area grows to be a tourist destination for sailing and recreation. The management of the area is carried out by the Ministry of Fisheries and Maritime Affairs through the National Water Conservation Area Agency (Balai KKPN) in collaboration with working groups such as the NTT KKPN, Provincial Regional Secretariat,

Tourism Office, NTT Province Maritime and Fisheries Office, NTT Province Tourism and Culture Office, NTT Provincial Office NTT Province Planning and Development, NTT Provincial Environment Agency, NTT Provincial Transportation Agency, NTT Provincial Mining and Energy Office, NTT Regional Police, LANTAMAL VII Kupang, Universities (Nusa Cendana University, Artha Wacana Christian University, and Muhammadiyah University Kupang), involving FAO, Non-Governmental Organizations (Lehari Foundation, Alfa Omega Foundation, Coastal and Ocean Development Foundation, and The Nature Conservancy-Savu Sea MPA Development Project), NTT Provincial All-Indonesian Fishermen Association, Community Groups, and the business entities in the field of fisheries and tourism (KEPMEN-KP, 2014). The MNP making hoped to become a facility that supports fish resources and its ecosystem that will develop tourism.

One of the steps to change the economic sector of Manta Pari hunters is to shift their economic sector to the eco-tourism sector. To develop the project, Indonesia received funding about 10,183,486 USD from the GEF (Global Environment Facility) sourced from the GEF Trust Fund. The role of implementing agency in this project is conducted by WWF (World Wildlife Fund), while the Ministry of Maritime Affairs and Fisheries conduct as implementing agency. The project aims to conserve marine biodiversity in Eastern Indonesia. The total cost needed is about 62,530,499 USD, and the implementation started in May 2017 (GEF, 2017).

The development of eco-tourism firstly initiated by some international NGO such as WildAid, Silvercrest Foundation, and Sharksavers, they establish the project following the conservation tourism model such as in Kona, Hawaii, and the Maldives because the development model in these regions can generate annual revenues of around 3-8 million US dollars (Heinrich et al., 2011). The Government of Indonesia itself put their plan to conserve manta ray in the 2016-2020 Short-Term National Action Plan, the Decree of the Minister of Maritime Affairs and Fisheries (KEPMEN-KP/2014/No.6), and Long-Terms National Action

Plan 2014 – 2034 (KEPMEN-KP, 2014). The establishment of manta ray conservation as an eco-tourism destination in Indonesia region was established in Papua since Papua released local regulation in the Raja Ampat region in protecting Pari Manta and Shark in 2012 (Nikijuluw, Papilaya, & Boli, 2017).

The prohibition and regulation of the capture of Manta Rays in Indonesian regions through a systematic mechanism can support the conservation of Manta and bring more significant economic impact to the country. The steps taken include: 1) Following up on the prohibition of arrest and law enforcement in the field. Like through setting local rules; 2) Counseling and public awareness, especially to fishers; 3) Closing the practice of illegal trade; 4) Encouraging marine tourism entrepreneurs to promote manta dive tourism; 5) Encouraging local people to make conservation efforts and include them in marine tourism activities (Sianipar, 2016).

Indonesian conservation development is conducted by the governments through cooperation with some organizations such as the Reef Check Foundation, ILCP (International League of Conservation Photographer) and BP-SPL (Coastal and Marine Resource Management Agency) Denpasar to establish a National Water Park (Putra & Prabuning, 2015). Preserving manta rays species through the conservation tourism development programs can reach 100 million US dollars of the economic potential annually, as happened in several countries such as Western Australia, Maldives, and Hawaii (Heinrich et al., 2011). These organizations also provide counselling session to local people to shift their fish commodity to other types of fish that would provide a better economic income prospect. With a ratio of two hundred thousand from manta hunting while from other types of fish, it reaches two million rupiahs per day (Putra & Prabuning, 2015). So, the conservation program is considered to provide higher economic value than poaching by killing manta rays to sell its gills.

BPSP socialization program of fish commodities shifting in Lamakera was based

on research by the Ministry of Maritime Affairs and Fisheries (Putra & Prabuning, 2015). The data stated Lamakera region is part of the 573 Indian Ocean zone which has 491.7-ton potential fisheries per year that consist of about 410 tons of pelagic fish, 66.2 tons of demersal fish, 5.9 tons of penaeid shrimp, 4.5 tons of consumable reef fish, a ton of lobster and 2.1 tons of squid (KEPMEN-KP, 2011). In addition to the socialization program of BPSL also prompt the local fisher to diversify their products into processed products because the price of fish fell by 20% if there was a plentiful supply (Putra & Prabuning, 2015).

## CONCLUSION

CITES 2013 is one of the conventions that can be an instrument for protecting the environment in the case of manta rays that are too massively hunted, which can conduce biodiversity loss in the environment. Fishers in the Lamakera region of Indonesia are people who rely on manta rays and sharks as their trade commodities. CITES classifies manta rays as restricted or prohibited species for sale. Indonesia, as one of the parties in CITES, will inevitably have to follow these regulations even though it can affect the community's economy.

In the case of 2013 CITES convention, Indonesia implementing the Convention through Decree of the Minister of Maritime Affairs and Fisheries (KEPMEN) No.4 / 2014 concerning the prohibition of manta rays. Indonesia also appoints some national bodies as a management body and the scientific authorities to overwatch and tackle the issue. For technical implementation, Indonesia included the manta protection agenda in the National Action Plan for 2016-2020. Then because the majority of the people of Lamakera are Muslim, the regulation is assisted by MUI fatwa because the fatwa is considered more binding for Muslims.

Then the efforts taken by the government to change the livelihoods of the people of Lamakera were carried out into two ways that involved various stakeholders, both regional, national, and international. First, by building an MNP as a conservation area that will function

as an ecotourism area, provides a prospect of higher economic value. The development of the area requires quite a long time by involving various stakeholders both national and local government agencies, academics, local NGOs, and international NGOs such as the Reef Check Foundation, Shark Saver Wild Aid with funding from GEF assisted by WWF. The second is by providing education to Lamakera fishers to shift their fishery commodities to pelagic, demersal, shrimp, and consumable reef fish and give counselling sessions to diversify their processed products. So they will continue to earn economic income even though manta rays have prohibited to captured.

It can be said that environmental problem solving is useful because all of the stakeholders that consist of government and non-government cooperate to tackle this issue. They not only issued a regulation but also give technical assistance to Lamakera people to develop the ecotourism area and to shift the commodities. However, the process of developing conservation areas requires a long time. During this period, the fishers will face some difficulties in adjusting to new conditions and in finding a definite market for their commodities. Because of that condition, this governance also requires the participation roles of private entrepreneurs to find a vivid market that can accommodate the fishers to sell their fish and its processed products.

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