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THE ERADICATION OF IUU FISHING IN INDONESIA FOR ECONOMIC FISHERIES

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ABSTRACT

Illegal, Unreported and Unregulated (IUU) fishing poses a significant challenge to the management of marine and fisheries resources. This practice brings negative impacts on several aspects, including the economy. To address this problem, the Government of Indonesia established a special Task Force to Combat Illegal Fishing, which later is known as Task Force 115, through a Presidential Regulation Number 115 of 2015. Task Force 115 was formed with a mandate to execute law enforcement operations to combat illegal fishing. In general, the existence of Task Force 115 brings favourable impacts to the economy, especially from the fisheries sector. It should be noted that, because Task Force 115's main tasks are enforcement related, the impacts to the economy are not direct. The purpose of this study was to analyse the role of the Task Force 115 in IUU fishing eradication activities that occur in the jurisdictional areas of the Republic of Indonesia in terms of the economic fisheries. Efforts of combating illegal fishing does not necessarily generate an increase in fisheries GDP, tax income and exports. Instead, those positive impacts are attributed to a set of policies imposed by the Ministry of Marine Affairs and Fisheries since 2014, which oriented to the responsible and sustainable fisheries. The establishment of Task Force 115 was part of that. Task Force 115's works created deterrence and triggered compliance of fisheries business actors with the prevailing laws and regulations. Compliance eventually brings positive impacts on the economy. In 2015, growth of fisheries GDP, which amounted to 8,37%, surpassed national GDP of 4.79%. The growth of fisheries GDP reached its peak during the fourth quarterly of the year, which is 8,96% from last year's during the same period. In 2016, the growth of fisheries GDP reached 5.15%.

***Keywords**: IUU fishing; economic; Indonesia*

INTRODUCTION

Compared with some countries, combating illegal fishing in Indonesia is far more challenging (Suherman et al., 2020). This is due to the vast area of the Indonesian sea, the abundance of fish resources and the limited capacity of monitoring facilities. In addition, the fact that fisheries resources in some areas outside of Indonesia are already depleted (Sustainable Ecosystems Advanced [SEA] USAID, 2018). Therefore, it is inevitable that efforts to combat illegal fishing in Indonesia should always be prioritized and improved.

Illegal, Unreported and Unregulated Fishing has caused considerable economic, ecological and social impacts (SEA USAID, 2018). It also jeopardizes the country's sovereignty. Some visible negative impacts include:

First, the contribution to GDP from capture fisheries was considerably low. IUU fishing in Indonesian waters undermines the contribution of capture fisheries to the national economy (www.mongabay.co.id). According to Statistics of Indonesia (2018), contribution of capture fisheries to the national GDP in 2013 only amounted to 2,21% (see on Table 1).

Second, IUU fishing affects national incomes from exports. A study by Pramod, et al. (2014) reports that 20 to 35% of tuna, 20-45% of crabs, and 35-50% of snappers caught in Indonesia with the volume of 3,889 to 6,805 tons tuna , 1,783 to 4,011 tons crabs, and 266 to 379 tons snappers were illegally exported to the United States without documentation.

Third, IUU fishing also affects Non-Tax State Revenue (www.mongabay.co.id). Due to IUU fishing practices, fish landing sites are not optimally used, therefore hampering earnings from port activities, as well as state income from other fisheries services. Furthermore, IUU fishing practices, which undermine sustainability considerations, would consequently reduce income of legal fisheries business actors. Although the potential of Indonesian ocean economy is estimated to IDR 70 trillion, Indonesia's Non-Tax State Revenue from the ocean was only IDR 230 billion (KPK, 2014).

Figure 1 provides data of alleged illegal exports of Albacore Tuna Frozen in year of 2000 and 2010. In year of 2000, volume of alleged illegal frozen Albacore Tuna export was 243,901 kgs. In year of 2010, volume of alleged illegal frozen Albacore Tuna export increase significantly to 1,047,255 kgs. As the impact of this issue, found massive gap from regional revenue Maluku Province compared to Thai Union Group (Figure 2).

Table 2 shows that the highest rate of Non-Tax State Revenue from capture fisheries during those years was only 0.3% of the production value. This phenomenon indicates that

the government had not been well present in managing resources in the marine sector. This also shows that the management of resources by the government is still sub optimal. Further analysis (Table 3) shows that the proportion of taxes in state revenue in the marine fisheries sector is only around 11%. It also shows that state revenue in the marine fisheries sector is dominated by Non-Tax State Revenue rather than tax. Whereas in other natural resource sectors, such as forestry and mining, tax revenues tend to be greater than revenues from non-tax.

Table 1. Contribution of Fisheries to National GDP (in billion IDR)

Sector	Year			
	2010	2011	2012	2013
Agriculture, Forestry, and Fisheries	956,119.7	1,058,245.3	1,152,262.1	1,275,048.4
1. Agriculture, Farming, Hunting and Agriculture Services	754,434.4	832,513.6	902,125.9	994,778.4
a. Crops	253,326.6	270,977.4	305,670.5	332,111.9
b. Horticultural plants	110,395.3	125,286.1	125,107.9	137,368.8
c. Plantations	268,207.3	303,402.9	323,361.6	358,172.4
d. Farming	108,399.9	117,256.6	130,614.2	147,981.9
e. Agriculture and hunting services	14,105.3	15,590.6	17,371.7	19,143.4
2. Forestry and logging	58,125.9	62,247.7	65,882.2	69,599.2
3. Fisheries	143,559.4	163,484.0	184,254.0	210,670.8
GDP (Gross Domestic Product)	6,864,133.1	7,831,726.0	8,615,704.5	9,546,134.0
Percentage to the Agriculture, Forestry and Fisheries Sector	15.01	15.45	15.99	16.52
Percentage to National GDP	2.09	2.09	2.14	2.21

Source: BPS (2018)

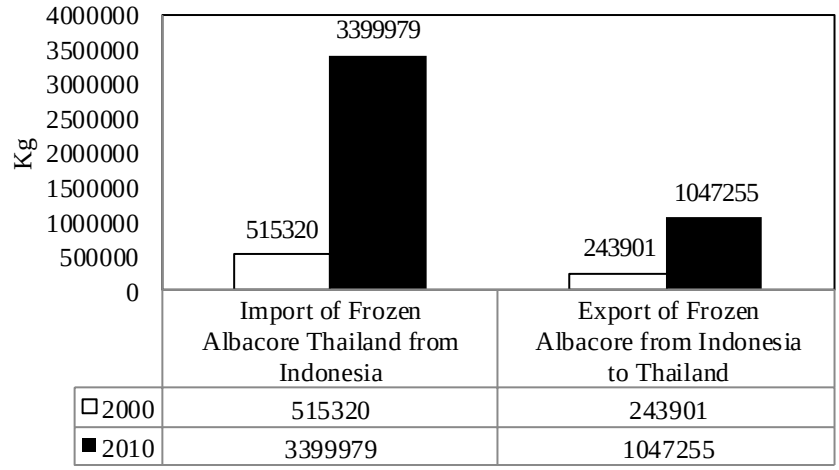

Figure 1. Alleged Illegal Exports of Albacore Tuna Frozen (HS 030341) from Indonesia to Thailand in 2000 and 2010 (Source: Analysed from the UN-Comtrade 2011 Data)

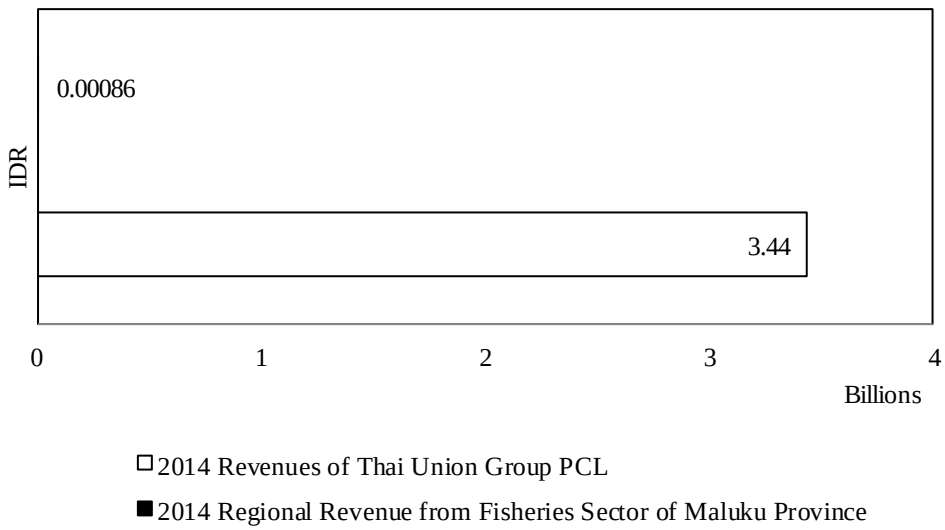

Figure 2. Comparison of Regional Revenue of the Fisheries Sector of Maluku Province with Revenue of Thai Union Group PCL

Table 2. Non-Tax State Revenue and Proportion of Tax in National Income from Marine Fisheries

Year	Value of Production in Marine Fisheries (A)	Non-Tax State Revenue from Marine Fisheries (B)	Proportion of Non-Tax State Revenue in Value of Production (B/A)	Tax (A)	Non-Tax National Income (B)	National Income (C = A+B)	Proportion of Tax in National Income (A/C)
2010	IDR 59.58 trillion	IDR 91.79 billion	0.15%	IDR 31.42 billion	IDR 183.80 billion	IDR 215.22 billion	14.60%
2011	IDR 64.45 trillion	IDR 183.80 billion	0.29%	IDR 61.96 billion	IDR 215.77 billion	IDR 277.73 billion	11.31%
2012	IDR 72.02 trillion	IDR 215.77 billion	0.30%	IDR 54.38 billion	IDR 229.35 billion	IDR 283.73 billion	11.07%
2013	IDR 77.33 trillion	IDR 229.35 billion	0.30%	IDR 98 billion	IDR 289.15 billion	IDR 387.15 billion	25.32%

Source: Ministry of Marine Affairs and Fisheries 2008-2013 & Directorate General of Taxation, 2015

Illegal, Unreported and Unregulated (IUU) Fishing. IUU fishing comprehends all of fishing activities that organized in illegal, unreported and unregulated ways. IUU fishing practices possibly occur in all aspects of fisheries, both on the high seas and in national jurisdictions. The limitation of IUU fishing is not only regarding fishing activities, but covers all stages (see Figure 3, Figure 4, and Figure 5), up to the utilization of fish, and can be related to transnational crime (Ma 2020, FAO 2020). Witbooi et al (2020) stated that anecdotal, scientifical, and example-based evidence of the various manifestations of organized crime in fisheries, its widespread adverse impacts on economies, societies and the environment globally and its potential security consequences is now publicly available. The current state of knowledge on organized crime in the fisheries sector covers facets of organized crime in this sector, including fraud, drug trafficking and forced labour, hinder progress towards the development of a sustainable ocean economy. Lot of activities included in IUU fishing as stated in the International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing or IPOA-IUU are (FAO 2020):

Illegal fishing refers to:

- Activities that organized both by national or foreign vessels in waters under the jurisdiction of a State, without the permission of that State, or in contravention of its laws and regulations.
- Activities that organized by vessels flying the flag of States that are parties to a relevant regional fisheries management organization but operate in contravention of the conservation and management measures adopted by that organization and by which the States are bound, or relevant provisions of the applicable international law.
- Activities that organized by Fishing that violates national laws or international obligations, including those conducted by fishermen from countries that work with regional fisheries management organizations.

Unreported fishing refers to:

- Activities have not been reported, or have been misreported, to the relevant national authority, in contravention of national laws and regulations
- Activities that undertaken in the area of competence of a relevant regional fisheries management organization which have not been reported or have been misreported, in contravention of the reporting procedures of that organization.

Unregulated fishing refers to:

- Activities have been done in the area of application of a relevant regional fisheries management organization that are conducted by vessels without nationality, or by those flying the flag of a State not party to that organization, or by a fishing entity, in a manner that is not consistent with or contravenes the conservation and management measures of that organization; or
- Activities have been done in areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such 3 fishing activities are conducted in a manner inconsistent with State responsibilities for the conservation of living marine resources under international law.

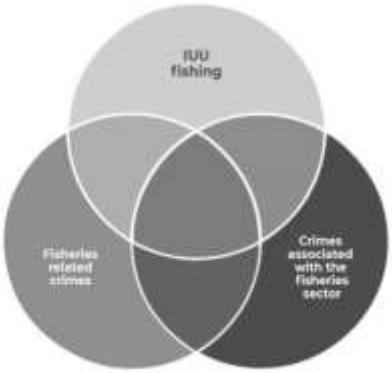

Figure 3. Types of crime related to the fisheries sector
Source: FAO (2020)

IUU fishing practice has become a global problem (Kasim & Widagdo 2019). Destruction of ecosystem in which relate with the damage of natural resources can impact the depletion of fish resources, and also can lead to other criminal acts. The impacts of IUU fishing can occur both in the short term and long term. Based on an environmental perspective, IUU fishing activities include fishing without permission, capturing protected species, using prohibited fishing gear and exceeding the fishing quota (MMFA and SEA USAID, 2018).

Crude estimates indicate that IUU fishing activity in the world was at the level of 11 to 26 million tons of fish per year, with an estimated value of USD 10 to 23 billion (FAO, 2014). It is estimated that Indonesia experiences a loss of USD 2 billion per year due to IUU fishing (West et al 2012). Abundant fish resources with weak patrol surveillance have caused Indonesia to become one of the countries with the highest rate of IUU fishing activities in the world (Petrossian 2015).

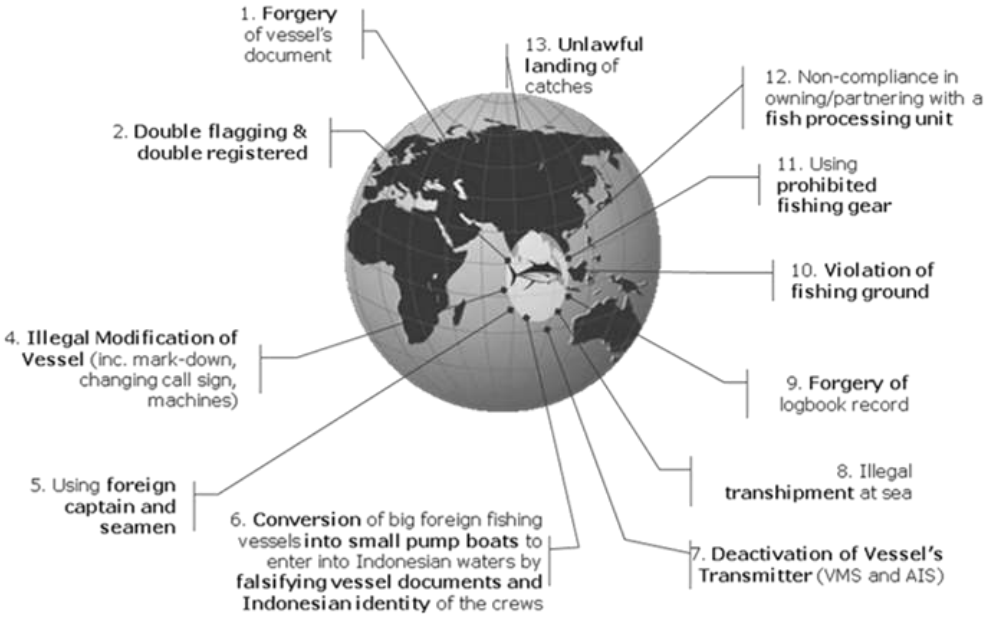

Figure 4. Modus operandi of illegal, unreported and unregulated fishing

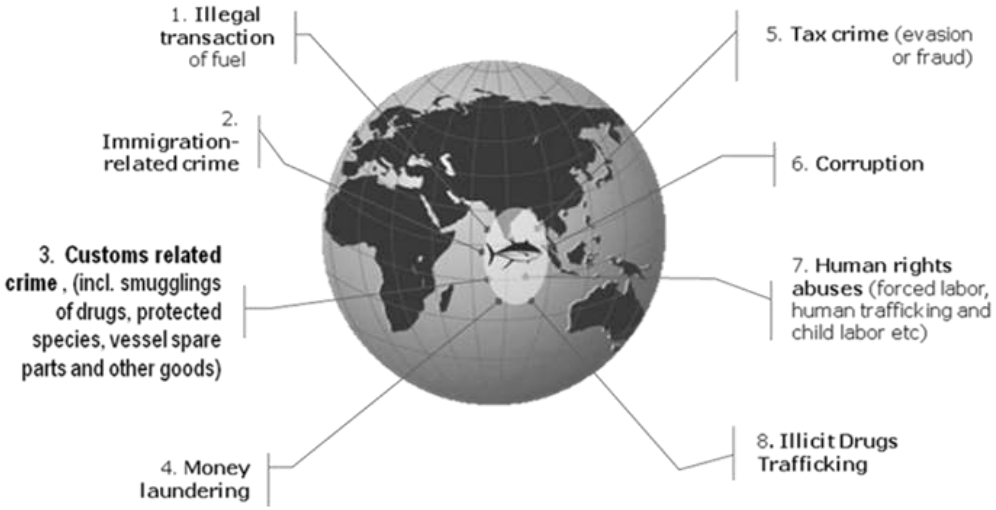

Figure 5. Other crimes related to IUU fishing operations

IUU fishing practices threaten the conservation of marine biodiversity. IUU fishing also harms and discriminates fishermen who act responsibly and comply with the regulations. The IUU fishing practice also targets rare marine biota, making it difficult to restore stock. Scarcity of biodiversity can threaten food availability for the community and damage the livelihoods of local communities (Poling & Cronin 2017).

As IUU Fishing activities massively occur in area of Indonesia, breakthroughs need to be done to eradicate IUU fishing. The Government of Indonesia has established a set of policies to eradicate the IUU fishing, including forming a task force as a first step and quick win. Along with the establishment of the Task Force 115, the Minister of Maritime Affairs and Fisheries at that time imposed several other policies. The first one was issuing Regulation of the Minister of Maritime Affairs and Fisheries Number 56 / PERMEN-KP / 2014 on Moratorium of Fisheries Business Licensing in the Fisheries Management Region of the Republic of Indonesia which applies from 3 November 2014 to 31 October 2015, and then extended through Regulation of the Minister of Maritime Affairs and Fisheries Number 10 / PERMEN-KP / 2015. This regulation aims to stop the exploitation of fish resources by fishing vessels made abroad ('ex-foreign vessels') with sizes of 150 to 400 GT. These vessels generally use fishing gear and methods that damage the marine ecosystem. According to Sari et al (2019), the moratorium policy, together with policy that stops trawl vessels, can improve fish biomass, but it needs to be combined with other policies that aim to increase social and economic benefits.

Beside the formation of Task Force 115, the increase of unreported fishing activities by 'ex-foreign fishing vessels' that conduct transhipment with 'foreign transport vessels', a ban on at-sea transhipment was made by Indonesian Government to resolve this serious problem (Regulation of the Minister of Maritime Affairs and Fisheries Number 57 /

PERMEN-KP / 2014). The handling of IUU fishing needs a collaborative approach from all stakeholders (Kasim & Widagdo 2019). Task Force 115 was formed based on Presidential Regulation 115/2015 on the Task Force on Combating Illegal Fishing, which was signed by President Joko Widodo on 20 October 2015. Task Force 115 was assigned to develop and carry out law enforcement operations in combating illegal fishing effectively and efficiently. In 2015, the President of Indonesia established a Presidential Task Force to Combat Illegal Fishing as an Integrated Criminal Justice System that comprises five fisheries enforcement institutions: Ministry of Marine Affairs and Fisheries, Navy, Marine Police, Coast Guard, and Attorney Generals' Office (Task Force 115, 2019).

One of the policies enacted at that time, which is considered as a breakthrough, is the vessel sinking policy as an optimum penalty to create a strong deterrent. As of October 2019, there are 556 vessels sunk for committing illegal fishing with the below elaboration (Table 4 and Table 5).

Table 4. Vessels Sunk for Committing Illegal Fishing

No.	Flag State	Total (vessels)
1	Vietnam	321
2	Philippines	91
3	Thailand	24
4	Malaysia	87
5	Indonesia	26
6	Papua New Guinea	2
7	China	3
8	Belize	1
9	Stateless	1
	Total (Oct 2014-Oct 2019)	556

Source: *Ditjen PSDKP* (2019)

Table 5. The case of illegal fishing

FMA	Years								Total	Ranking
	2012	2013	2014	2015	2016	2017	2018	2019		
571	12	15	1	15	18	8	10	20	99	3
572	0	0	0	0	3	0	2	1	6	10
573	0	1	0	0	0	1	8	1	11	8
711	59	26	18	51	94	75	33	28	384	1
712	4	0	3	9	1	20	33	26	96	4
713	6	2	0	2	9	0	4	4	27	6
714	3	2	0	0	0	2	0	0	7	9
715	8	8	10	15	1	18	4	8	72	5
716	17	13	4	14	32	7	14	17	118	2
717	3	1	0	2	5	1	1	0	13	7
718	0	0	2	0	0	0	0	2	4	11

Source: *Ditjen PSDKP*, *Direktorat Pemantauan dan Operasi Armada* (2019)

Table 5 data shows that the most vulnerable area for illegal fishing cases is in FMA (fisheries management area) 711, namely in the North Natuna Sea (Figure 6). Cases of illegal fishing in the North Natuna Sea were dominated by foreign fishing vessels from Vietnam.

IUU fishing problem is the major problem around the outer area of Indonesia. As the impact of this problem, conflict between local and foreign fishermen is often occurred. Furthermore, IUU fishing can reduce the productivity of local fishermen. Aside from IUU fishing practices, in areas near the borders, Indonesia is also facing problems in catch marketing, handling poverty of coastal communities and maintaining the sustainability of the environment (Solihin et al 2016). As the establishment of Task Force 115 had been effective in combating the IUU fishing activities, the purpose of this study is to analyse the role of the Task Force 115 in eradicating of illegal, unreported, unregulated (IUU) fishing activities that occur in the jurisdictional waters of the Republic of Indonesia in terms of the economic fisheries aspects.

RESEARCH METHODS

We use descriptive-quantitative methods to analyse data on fisheries economy and correlate it with the works of Task Force 115. Some researchers also use this research method, including: Handayani et al (2016), Daris et al (2019), Kasim & Widagdo (2019) and Syamsuddin, et al (2019).

From the economic perspective, marine fisheries sector is not only the source of livelihood of fishermen, but also a contributor to the state income, especially from tax and non-tax state revenue, as well as contributor to the country's GDP. The indicator that is commonly used to assess the level of prosperity of fishermen is Fishermen Exchange Rate (NTN) and Fishermen Business Exchange Rate (NTUN). Both indicators are assessed and published by Statistics of Indonesia monthly. NTN and NTUN measure the ability of exchange of commodities produced by fishermen and goods and services needed for consumption or production purposes by fishing households. Formally, NTN is calculated as the ratio between

the price index received by fishermen (lt) and the price index paid by fishermen (lb), and is written in percent. If the LB price index contains the index of household consumption and the cost of production and addition of capital goods (BPPBM), the resulting index is the Fishermen Exchange Rate (NTN), while if the LB price index only includes the BPPBM index, the resulting index is the Business Exchange Value Fishermen (NTUN). There are three possibilities of NTN and NTUN values, namely:

- NTN > 100: fishing households experience surplus
- NTN < 100: fishing households experience deficit
- NTN = 100: expenditure equals to income of fishermen households (break-even) (MMFA, 2014)

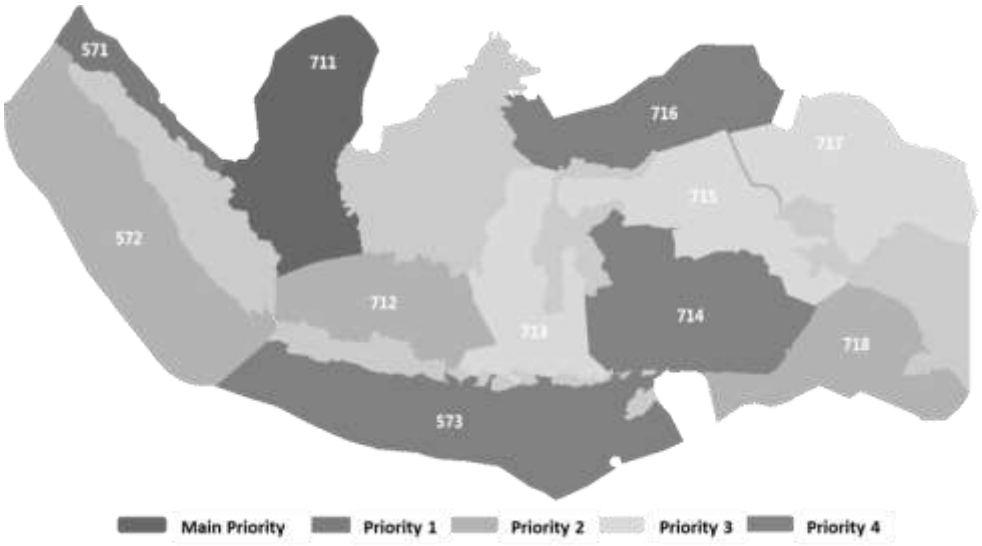

Figure 6. The map of illegal fishing handling priority
Source : Ditjen PSDKP (2019)

RESULT AND DISCUSSION

The Growth of Fisheries GDP

Fisheries Gross Domestic Product (GDP) is the total value added of goods and services produced by the fisheries sector. Economic growth in the fisheries sector is measured by the change in GDP (at constant prices) in the fisheries sector from one period to the next. Fisheries GDP is only based on the primary sectors, which are capture fisheries and aquaculture. The GDP value of fisheries on the basis of Constant Prices (ADHK) continued to increase in 2011-2019 with an average rate of 5.99% per year from IDR 154.545 trillion to IDR 252.405 trillion in 2019 (Figure 7 and Figure 8)

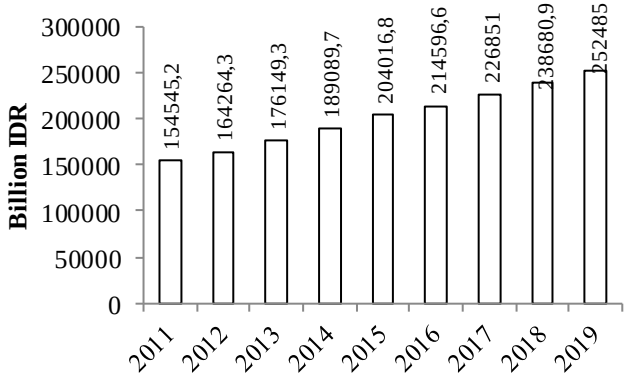

Figure 7. ADHK of Fisheries GDP in 2011-2019

The growth constantly occurs, except in 2016 and 2018 which experienced a slowdown. In 2015, fisheries GDP reached 7.89%, but slowed to 5.19% in 2016 and 5.20% in 2018. The development of quarterly GDP growth y-on-y in the 2014-2017 period shows downtrend. This is caused by the global economy has not yet recovered (BPS, 2018). However, fisheries GDP growth during the five years was still above the average of national GDP growth and agriculture GDP growth.

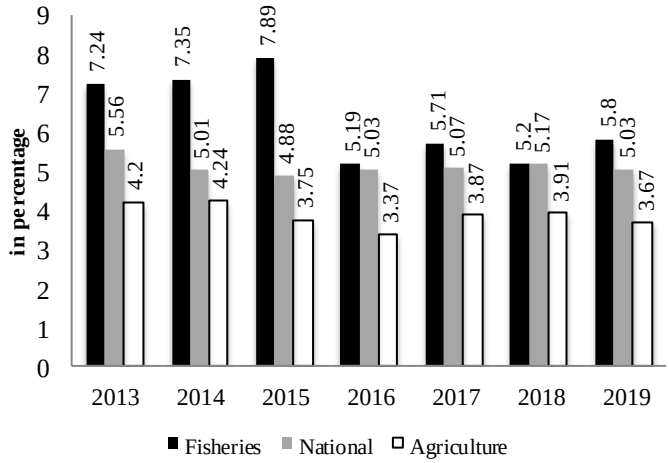

Figure 8. Fisheries GDP Growth in 2013-2019

Increase in Capture Fisheries Production

Along with the constant improvement of Indonesia's ocean ecosystem, national fisheries production has also increased. During 2014-218, capture fisheries production had risen 2.82% per year (Figure 9). The total production of capture fisheries was 6.5 million tons, valued at IDR 108 trillion in 2014, and became 7.2 million tons in 2018, valued at IDR 140 trillion. The target for 2019 is 8.4 million tons. Capture fisheries production achievements are contributed from 100%

domestic vessels. The potential of unreported catches remains, which is estimated at 40% of the reported fisheries production, so that the total production of capture fisheries is estimated to exceed 10 million ton.

The works done by Task Force 115 has also contributed to the increase in national fisheries production. Figure 10 shows an increase in production results, starting from 2016 (around 6.1 million tons), 2017 (6.4 million tons), to 2018 (6.7 million tons). The small decrease from 2015 to 2016 can be caused by, among others, the prohibition of the use of a type of fishing gear called 'cantrang' based on Ministerial Regulation No. 02/2015 & No. 71/2016. The policy is thenstrengthened by a set of other policies to enforce sustainable fishing, including establishment of total allowable catch, prohibition of exploitation of lobster, crab and crab fishing in spawning conditions, the establishment of marine conservation areas, as well as protection of endangered aquatic animal species, which may cause reduce in production within the short term, but will ensure sustainability and increase of production in the long run.

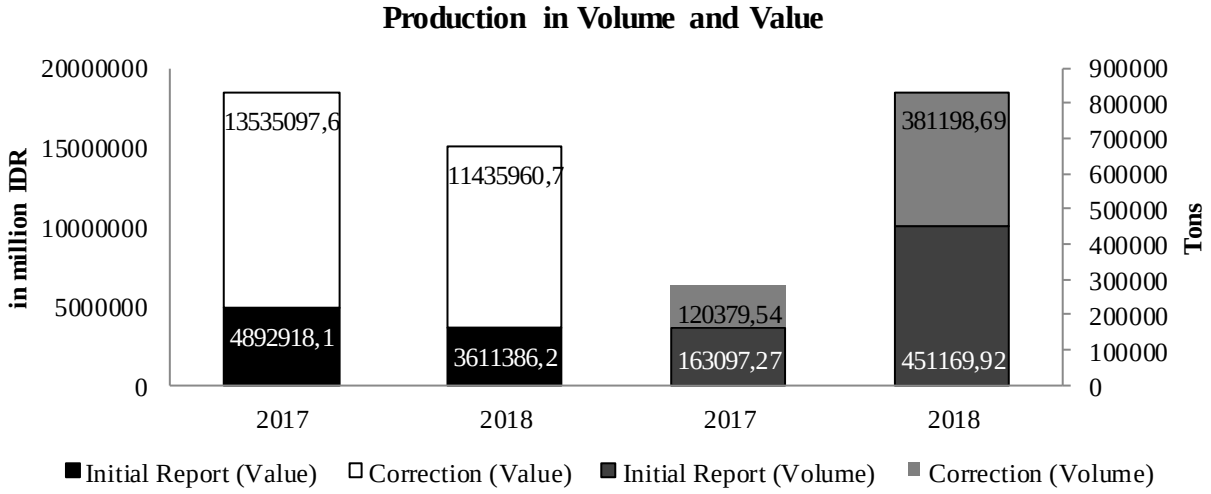

Figure 10. Correction of reports of volume and value of fisheries production
Source: Ministry of Marine Affairs and Fisheries (2019)

Figure 10 shows that in 2017, production volume that was originally reported at the level of 163 thousand tons, was corrected and resulting in an increase of 120.3 thousand tons, or 73.8% of the original value reported. In 2018, the production volume, which was originally reported at 451.17 thousand tons, was corrected and resulting in an increase of 381.19 thousand tons, or 84.49% of the initial reporting value. In the period of 2017 to 2018, the results of reporting corrections have caused an increase in reported production volume of 501,578.23 tons, valued at IDR 15,047,346.90 million. These eventually contributed to the increase of national income in the form of tax.

Fish Consumption Rate

The increase in national fish production has encouraged an increase in the availability of fish for national consumption. The President has ordered Ministers to encourage the public to consume fish through Presidential Decree No. 1 of 2017 on Healthy Community Movement. The Minister of Marine Affairs and Fisheries initiated a program to build nutritional awareness and encourage the public to consume fish. This program is called the Movement to Promote Fish Consumption (GEMARIKAN). This program aims at children and pregnant women. Fish consumption rate in 2015 reached 41.11 kg per capita and rose to 43.94 kg per capita in 2016 (Figure 11). This increase also shows an improvement in the fisheries industry.

Meanwhile by region, the biggest fish consumption rates in 2015 were found in Maluku Province (55.35 kg per capita per year), Southeast Sulawesi Province (52.60 kg per capita per year), Riau Islands Province (52.58 kg per capita per year), North Maluku Province (50.75 kg per capita per year), Gorontalo Province (50.56 kg per capita per year) and West Papua Province (50.18 kg per capita per year). The future targets will be to achieve equitable distribution of fish consumption in areas that are still low.

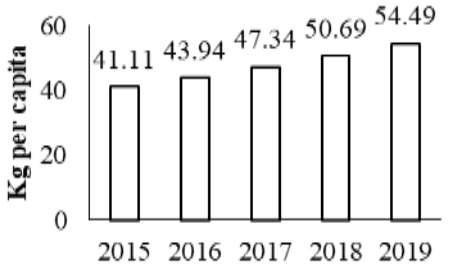

Figure 11. Fish Consumption Rate in 2015-2019

Fisheries Exports

Exports of fisheries products, as shown on Figure 12, have risen 7.23% per year. Exports in 2015 (USD 3.94 billion) was lower than 2014 (USD 4.64 billion). However, during 2015 to 2018, the rate has continued to increase by 7.23% per year, from USD 3.94 billion (2015) to USD 4.86 billion in 2018. The biggest export by value comes from shrimp commodity (USD 1,742.09 billion or 7.45 %) and seaweed by volume (213.01 thousand tons or 11.03%). The biggest export destination country is the United States (USD 1.88 billion or 38.61%).

The increased production of the fisheries sector has an impact on the increase in exports of fisheries products from 2016 to 2018. Figure 10 shows that export volume increased by 4.64% from 2017 (1.078 million tons) to 2018 (1.126 million

tons), while the value of exports increased by 7.44% from 4.52 billion USD (2017) to 4.86 billion USD (2018).

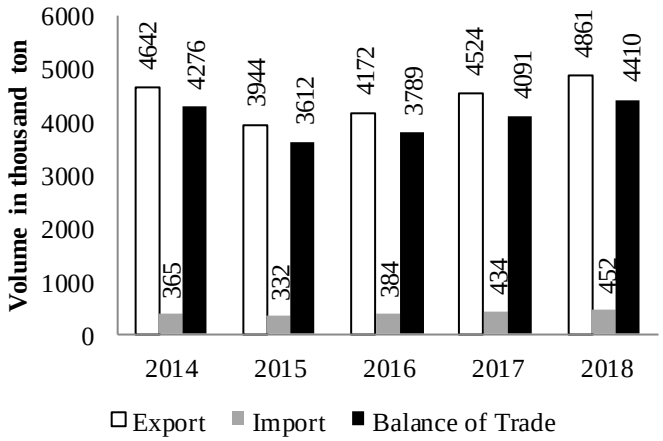

Figure 12. Fisheries Export, Import and Balance of Trade

Exchange Rate

The improvement in the fisheries economy can also be seen from the improvement in the purchasing power of fishermen in the last five years. This can be seen from the increase in 6 exchange rates of the fisheries sector recorded by BPS, as shown in Figure 13.

First, the fisherman exchange rate (NTN) grew by an average of 2.01%, from 104.63 (2014) to 113.28 (2018). This means that purchasing power of fishermen has improved because the index received by fishermen is much greater than the index spent. Since the IUU fishing eradication policies were imposed, Indonesian fishermen have easier access to fish. This is indicated by the shorter time needed by fishermen to fish and the reduction in distance needed by fishermen to fish. Second, the exchange rate of fishing businesses (NTUN) grew 4.25% compared to 2014, from 107.37 (2014) to 123.01 (2018). This means that there has been an improvement in the national fisheries business climate. This is indicated by a significant improvement in the index received by fishermen. Third, the exchange rate of fish farmers (NTPi) experienced a slowdown of 0.15% compared to 2014, from 101.42 (2014) to 100.8% (2018). The decline in NTPi was more due to the high index of household consumption costs of fish farmers. Fourth, the exchange rate of fish cultivation business (NTUPi) grew 1.70%, from 105.9 (2014) to 113.27 (2018). This means that there is an improvement in the climate of the business of fish farmers. Fifth, the fishery exchange rate (NTP) grew 0.80%, from 102.68 (2014) to 105.99 (2015). This means that there is an improvement in the purchasing power of the fishing community. Sixth, the exchange rate of fisheries business (NTUP) grew 2.80%, from 106.45 (2014) to 118.87 (2018). This means that there is an improvement in the fisheries business climate.

The Figure 13 shows the development of NTN and NTUN in the period January 2014 to May 2019. In 2014, it can be observed that NTN fluctuates at intervals of values of around 103 to around 106, while NTUN at intervals of values of around 103 to around 111. Both of these values reached their lowest point in December 2014 at the around 103 level. From the beginning of 2016 to May 2019, drastic and continuous surges can be observed in NTN and NTUN. In January 2016, NTN stood at around 107 (NTUN around 114), and the two values experienced a continuous increase with seasonal variations every approximately six months (lows are expected every October and May). In May 2019, NTN was at 113.08, while NTUN was at 127.25. Within the period of January 2014 to May 2019, NTN was at intervals of values of 106 and 113, while NTUN was at intervals of 114 and 127. Compared to 2014, before the existence of Task Force 115, NTN and NTUN values were lower.

Non-Tax State Revenue and Tax Revenue from Fisheries

One of the direct impacts of IUU fishing practice is suboptimal tax revenue due to underreported and unreported fishing. This practice also can result in low non-tax state revenue as vessels operating without legitimate licenses or other required documents.

Non-Tax State Revenue in 2013 and 2014 were below targets (Figure 14). In 2016, when the Task Force 115 existed, the increase in Non-Tax State Revenue was very significant. It reached IDR 553.57 million with a target of only IDR 74.5 million. In 2017, the Ministry of Marine Affairs and Fisheries set a higher target, which was around IDR 1 billion. However, the Non-Tax St bate Revenue at that year only reached IDR 712.5 million. Nevertheless, it broke the national record of highest Non-Tax State Revenue from the fisheries sector.

In comparison, GDP in 2014 was IDR 189.087 billion, and became IDR 227.278 billion in 2017. Fisheries Non-Tax State Revenue in 2014 was IDR 267 billion, and became IDR 645 billion in 2018.

The policy of sinking vessels engaged in illegal fishing (which amounted to 556 ships as of October 2019) has reaped international appreciation for the Government of Indonesia's full commitment in combating IUU fishing. As Task Force 115 is active in capturing vessels engaged in IUU fishing, which at the same time is complemented with stringent legal regulations in the fisheries sector, improvement in economy for the government of the Republic of Indonesia can be seen from the increased tax and non-tax revenues

Figure 14 demonstrates the increasing trend of tax revenue from fisheries since 2014. Tax revenue increased by IDR 136 billion (or 19%) from 2014 to 2016. The average growth of fisheries sector tax revenue during the 2016-2018 period was 31%, which is improved from 2016-2017 growth, which was 38%, and the growth from 2017 to 2018 was 24%. The contribution of the fisheries sector as a whole has increased since 2016 (0.08%), 2017 (0.10%) to 2018 (0.11%).

Employment in Fisheries

IUU fishing has affected national employment in the fisheries sector. The decreasing supply of fish raw materials is strongly suspected caused by the rise of IUU fishing practices in Indonesia. BPS in 2013 noted that 115 Indonesian seafood exporters had to close their factories. The fact that the fish that have been caught are immediately brought abroad by foreign vessels, it resulted in the decrease of supply of raw materials for Indonesian fisheries exports. One example is the testimony of a crew member from the Philippines in Bitung (2017) who said that the pattern of behaviour of landing practice of most vessels were landing the catches only one time in Bitung and three times in General Santos in the Philippines.

Meanwhile, Statistics of Indonesia shows that the number of fishing households had decreased by 44.9% from 1.6 million to 800 thousand households within the span of ten years (2003 - 2013). Depending their livelihood to fisheries is no longer promising because the fish in the Indonesian ocean are depleting in some areas. This was experienced by fishermen catching *ketinting* and crabs. At the same time, we know that capture fisheries is one of the economic potentials that can absorb high labor.

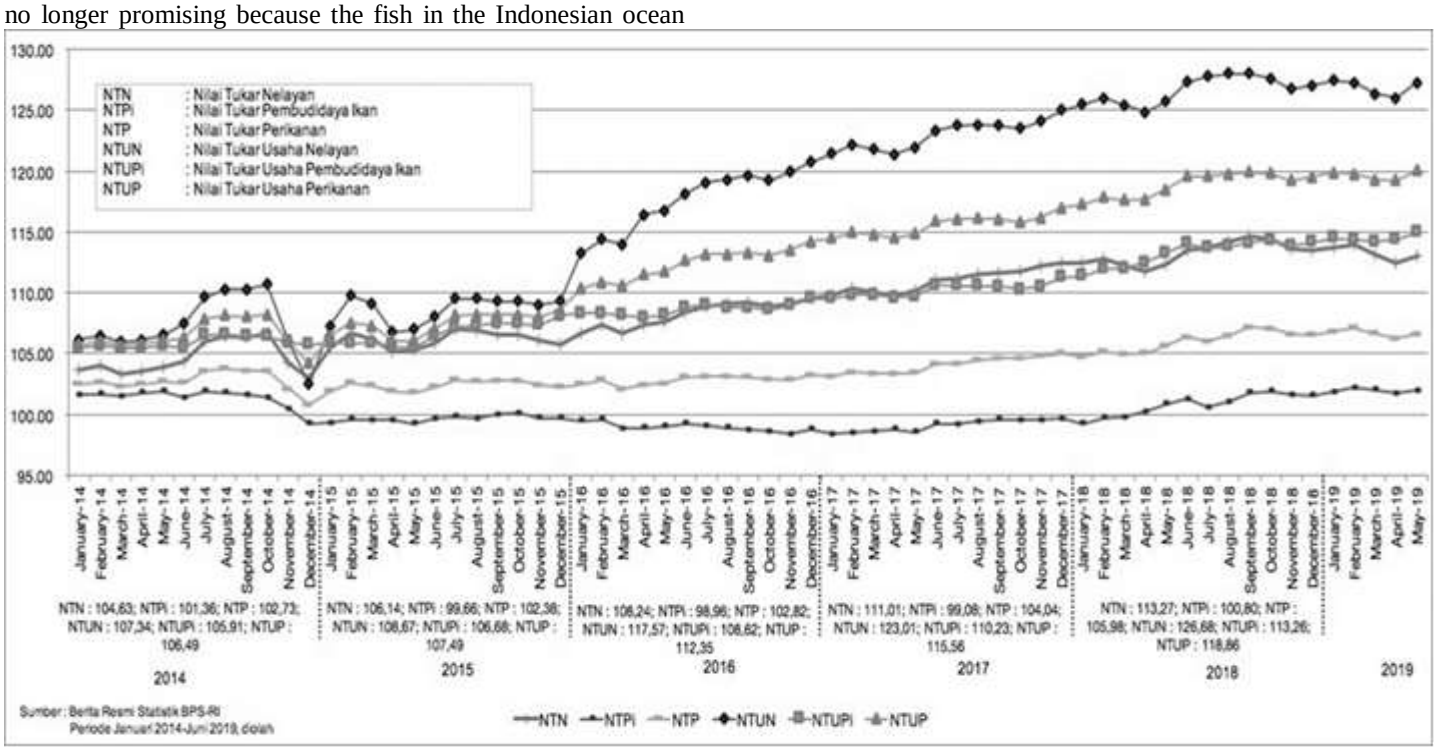

Figure 13. Fisheries Exchange Rate within the period of January 2014 to May 2019

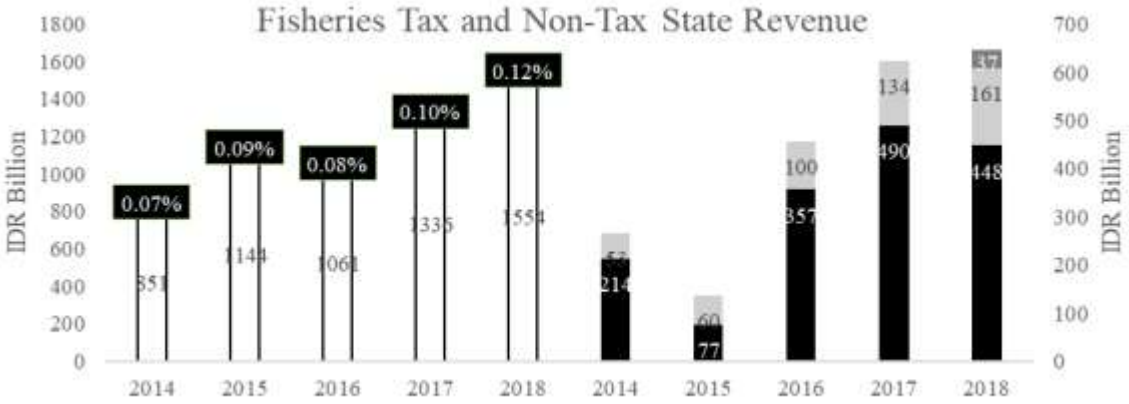

Figure 14. Non-Tax State Revenue and Tax Revenue from Fisheries Sector in 2014 – 2018

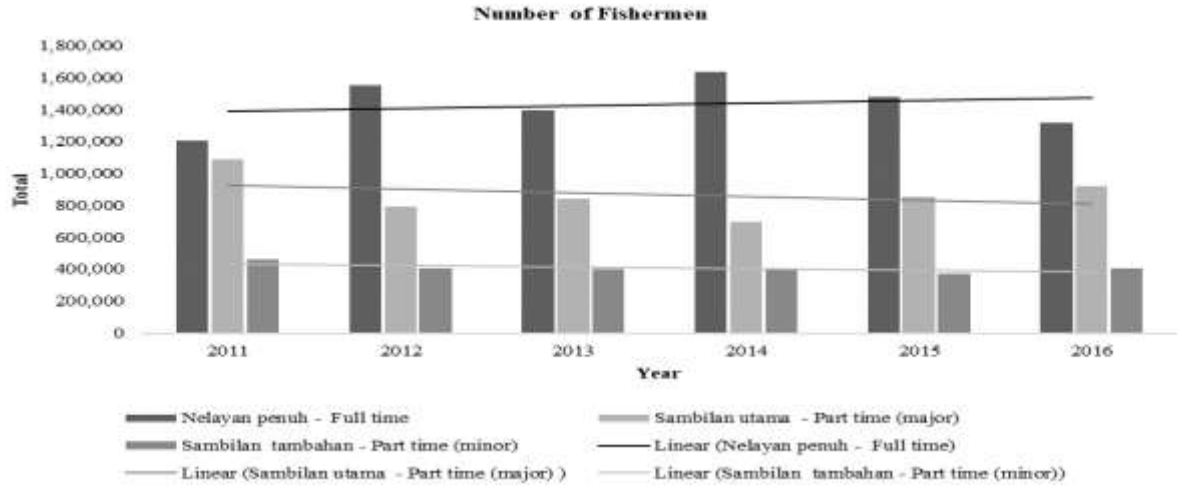

Figure 15. Number of Fishermen in 2011 – 2016

CONCLUSION

The existence of Task Force 115 has a positive impact on the economy. It should be noted that the impact is indirect, bearing in mind that the main task of the Task Force 115 is to eradicate IUU fishing. It does not necessarily lead to an increase in fisheries GDP, state revenues in the form of taxes and exports. Instead, the positive impacts from the economic aspect are attributed to a series of policies enacted by the Ministry of Marine Affairs and Fisheries which have been strengthened since 2014, in order to ensure responsible and sustainable fisheries. Task Force 115 is one of the various instruments to effectively combat IUU fishing, thereby giving a deterrent effect to the perpetrators, and resulting in the compliance of fisheries sector business actors. The level of compliance ultimately results in positive economic impact.

The arguments of this study were supported by the increase in the potential of fish resources in Indonesia from 6.5 million tons in 2013 to 9.93 million tons in 2015. The increase in fish stocks brought direct benefits for Indonesian fishermen. Since policies on IUU fishing eradication has been enacted, Indonesian fishermen have easier access to fish. This is indicated by the shorter time needed by fishermen to fish the reduction in distance needed by fishermen to fish. Per capita fish consumption has increased to 41 kg per capita in 2015 from 28 kg per capita in 2013. It also has resulted in the increase of purchasing power of fishermen, which is seen from the growth of the Fisherman Exchange Rate indicator (NTN) from an average of 104.63 in 2014 to 106.143 in 2015. NTN in August 2016 grew 2.04% compared to the same month in 2015, and 2.47% compared to the same month in 2014.

The eradication of IUU Fishing has increased the contribution of the fisheries sector to the national GDP (gross domestic product). In 2015, the GDP of the fisheries sector grew by 8.37%, higher than the national GDP of 4.79%. The highest GDP growth in the fisheries sector occurred in the 4th quarter, reaching 8.96% compared to the same period the previous year. In 2016, GDP growth in the fisheries sector was 5.15%. Compared with some countries, combating illegal fishing in Indonesia is far more challenging. This is due to the very vast ocean Indonesia has, its abundant marine and fisheries resources which becomes the allure of illegal fishing, limitations in monitoring and surveillance capacity, and the fact that fisheries resources in some areas outside of Indonesia are already depleted. Therefore, it is inevitable that efforts to combat illegal fishing in Indonesia should always be prioritized and improved.

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