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IUU fishing: a gateway to transnational crimes in Jamaica

Judy-Ann Icinda Neil

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IUU FISHING IN JAMAICA: A GATEWAY TO TRANSNATIONAL CRIMES

By

LT CDR JUDY-ANN NEIL
Jamaica

A dissertation submitted to the World Maritime University in partial fulfilment of the requirements for the award of the degree of

MASTER OF SCIENCE
In
MARITIME AFFAIRS
(MARITIME SAFETY & ENVIRONMENTAL ADMINISTRATION)

2018

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Declaration

I certify that all the material in this dissertation that is not my own work have been identified, and that no material is included for which a degree has previously been conferred on me.

The contents of this dissertation reflect my own personal views, and are not necessarily endorsed by the University.

(Signature):

(Date):

Supervised by: Associate Professor Raphael Baumler
Supervisor’s affiliation: World Maritime University
Abstract

Title of Dissertation: IUU Fishing in Jamaica: A Gateway to Transnational Crimes

Degree: Master of Science

Illegal, Unreported and Unregulated (IUU) fishing is one of the major factors that have led to the dwindling fish stocks in Jamaica. It is a threat to the economic, environmental and food security of the island. The reduction in fish stocks is now forcing fishers to find additional sources of income to sustain their livelihoods. The sensitive nature of this study necessitated a qualitative method of research.

The research examined whether IUU fishing is a gateway to Transnational Organized Crimes (TOCs) perpetrated by persons operating fishing vessels. It concluded that fishing vessels are integral to TOCs committed by maritime conveyance. Further, the routes used by IUU fishers from Central and South America, are the same routes they use to engage in drugs and arms trafficking in Jamaica. Thus, IUU fishing in Jamaica has evolved from an ecological crime to a more serious crime.

The research also highlights options to deter fishers from engaging in TOCs; in addition, stricter penalties for large-scale IUU fishing are recommended along with other technical support, to strengthen the maritime security of the island. If left unabated, IUU fishing can lead to the collapse of the fishing industry in Jamaica whilst simultaneously undermining the island’s maritime security. Further research is required on the impacts of drug trafficking organizations in Central and South America on IUU fishing in Jamaica.

KEYWORDS: IUU fishing, fish stocks, TOCs, fishing vessels, maritime security, Jamaica.
Acknowledgements

It is indeed a privilege to be the first female Officer from the Jamaica Defence Force (JDF) to study at the World Maritime University. I am grateful to Rear Admiral Peter Brady and Major General Rocky Meade, for affording me the opportunity to study at this centre of maritime excellence.

Special thanks to my supervisor Associate Professor Raphael Baumler whose continued guidance was integral to the successful completion of this research. His tutelage has transformed my innate flair for writing to the requisite standard of academic prose.

I am also grateful for the assistance that I obtained from the law enforcement agencies in the Cayman Islands and Jamaica. Particularly, the members of the JDF Coast Guard (JDF CG), the Jamaica Constabulary Force (JCF), and all the other relevant stakeholders, who provided data and invaluable information on IUU fishing and transnational crimes.

Bravo Zulu to the members of the Fisheries Division of the Ministry of Industry, Commerce, Agriculture and Fisheries; they willingly provided critical information on the fisheries sector and IUU fishing in Jamaica. In addition, I must commend the fishers from Jamaica and Honduras, who were courageous enough to speak about this sensitive topic.

Finally, I must acknowledge the unwavering support of the captain of my ‘ship’, my husband Lieutenant Commander (Lt Cdr) Ainsley Neil. Thank you for maintaining a steady course during the arduous times of my absence. This research is dedicated to my loving husband Ainsley and my beautiful daughter Chloë.
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<th>Full Form</th>
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<tr>
<td>ATF</td>
<td>Bureau of Alcohol, Tobacco, Firearms and Explosives</td>
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<tr>
<td>CARICOM</td>
<td>Caribbean Community</td>
</tr>
<tr>
<td>CBSI</td>
<td>Caribbean Basin Security Initiative</td>
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<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<tr>
<td>CRFM</td>
<td>Caribbean Regional Fisheries Mechanism</td>
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<tr>
<td>C-TOC</td>
<td>Counter-Terrorism Organized Crime and Investigation Branch</td>
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<tr>
<td>EEZ</td>
<td>Exclusive Economic Zone</td>
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<td>F/V</td>
<td>Fishing Vessel</td>
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<tr>
<td>FAO</td>
<td>Food and Agriculture Organization</td>
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<td>FOC</td>
<td>Flags of Convenience</td>
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<td>ft.</td>
<td>feet</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>GOJ</td>
<td>Government of Jamaica</td>
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<tr>
<td>INCS</td>
<td>International Narcotics Control Strategy</td>
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<tr>
<td>INTERPOL</td>
<td>International Police Organization</td>
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<tr>
<td>IPOA-IUU</td>
<td>International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing</td>
</tr>
<tr>
<td>IPV</td>
<td>Inshore Patrol Vessel</td>
</tr>
<tr>
<td>ITF</td>
<td>International Transport Workers’ Federation</td>
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<tr>
<td>IUU</td>
<td>Illegal, Unreported and Unregulated</td>
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<tr>
<td>JCAA</td>
<td>Jamaica Civil Aviation Authority</td>
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<tr>
<td>JCF</td>
<td>Jamaica Constabulary Force</td>
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<tr>
<td>JDF</td>
<td>Jamaica Defence Force</td>
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<tr>
<td>JDF CG</td>
<td>Jamaica Defence Force Coast Guard</td>
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<tr>
<td>JIS</td>
<td>Jamaica Information Service</td>
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<tr>
<td>kg</td>
<td>kilogram</td>
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km - kilometer
lbs. - pounds
Lt Cdr - Lieutenant Commander
LME - Large Marine Ecosystem
LRMP - Long Range Maritime Patrol
m - metre
MCS - Monitor, Control and Surveillance
MLE - Maritime Law Enforcement
MOCA - Major Organized Crime and Anti-Corruption Agency
MPA - Maritime Patrol Aircraft
MRAG - Maritime Resources Assessment Group
MT - Metric Ton
NEPA - National Environment and Planning Agency
nm - nautical mile
OPV - Offshore Patrol Vessel
PSMA - Port State Measures to Prevent, Deter and Eliminate IUU Fishing
RCIPS - Royal Cayman Island Police Services
RFMO - Regional Fisheries Management Organization
SIDS - Small Island Developing State
SOFIA - State of the World's Fisheries and Aquaculture
SOP - Standard Operating Procedure
STATIN - Statistical Institute of Jamaica
TOC - Transnational Organized Crime
UAV - Unmanned Aerial Vehicle
UK - United Kingdom
UNEP - United Nations Environment Programme
UNODC - United Nations Office of Drugs and Crime
US - United States
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>US CG</td>
<td>United States Coast Guard</td>
</tr>
<tr>
<td>USA</td>
<td>United States of America</td>
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<tr>
<td>USD</td>
<td>United States Dollars</td>
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<tr>
<td>WCR</td>
<td>Wider Caribbean Region</td>
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<tr>
<td>WECAFC</td>
<td>Western Central Atlantic Fishery Commission</td>
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<td>WTTC</td>
<td>Word Travel &amp; Tourism Council</td>
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CHAPTER 1

1.1 Introduction

The Small Island Developing State (SIDS) of Jamaica is being threatened by IUU fishing and other related illegal activities. IUU fishing is a longstanding issue that has evolved from an ecological problem to one that undermines the rule of law by facilitating criminal elements with a source of income (National Intelligence Council, 2016).


IUU fishing is regarded as one of the main threats to fisheries resources in the Wider Caribbean Region (WCR) (FAO, 2015). However, it is not just a threat to sustainable fishing; it is also a threat to economic and food security and it is one of the major factors that has led to the economic vulnerability of fishers (FAO, 2016). The situation is further exacerbated as the coastal waters of Jamaica (Figure 1) are one of the most overfished in the WCR (Waite, Cooper, Zenny, & Burke, 2011).
Furthermore, it is not uncommon for industrial fishers from Central America to engage in large-scale IUU fishing in Jamaican waters, for the high-value marine resources of spiny lobster and queen conch (Aiken, Kong, Smikle, Appeldoorn, & Warner, 2006).

It has also been suggested that an increasing number of local fishers are colluding with these industrial IUU fishers (Aiken et al., 2006). This was confirmed on 4 April 2017, when the Dominican Republic industrial Fishing Vessel (F/V) Almah Rosa and the Jamaican F/V Captain Sammo were in collusion, and were caught engaging in IUU fishing on the Pedro Bank by the JDF CG (The Gleaner, 2017).
Jamaica’s largest fishing bank (Pedro Bank) is located approximately 80 kilometers (km) south-west of the island and covers almost 75% of its land mass (Figure 2). It is the most productive fishing ground in Jamaica as it supplies the majority of the island’s domestic fish supplies and approximately 90% of conch exports (Waite et al., 2011).

Additionally, Pedro Bank is renowned as a major harvesting area for queen conch and spiny lobster in the Caribbean; it is also a common target for large-scale foreign IUU fishers. Consequently, this has resulted in a significant decrease in fish stocks and a corresponding loss in income for the legitimate fishers there (Waite et al., 2011). Thus, the legitimate fishers are now compelled to seek additional sources of income to maintain their livelihoods.

Moreover, Jamaica’s geo-strategic location between North and South America (Figure 1), its extensive coastline coupled with its under-resourced Maritime Law Enforcement (MLE) agencies, have facilitated the growth of transnational maritime crimes (INCSR, 2018). Hence, it comes as no surprise that the island appears to be a logistics hub in the global flow of both licit and illicit seaborne trade.

Jamaica is a transshipment point for cocaine trafficking between South and North America; it is also the primary supplier of home-grown marijuana to its neighboring islands and to the
international markets in the United States of America (USA) and the United Kingdom (UK) (UNDOC, 2018).

1.2 Rationale for Research

Globalization has played a significant role in promoting both the legal and illegal trade of commodities worldwide. Similarly, this paradox is also found in the fishing industry where globalization has increased competition for the limited marine resources between fishers engaged in IUU fishing and legitimate fishers. IUU fishing is one of the main factors that have contributed to the fall in fish stocks globally (SOFIA, 2018); the result of this is the economic vulnerability of fishers (FAO, 2016). Thus, fishers are targeted by criminal networks and they become more susceptible to engaging in TOCs, in order to have a regular source of income (UNODC, 2011).

Consequently, the purpose of this paper is to examine if there is a nexus between IUU fishing and TOCs in the SIDS of Jamaica. It will demonstrate that IUU fishing is no longer just an ecological problem for Jamaica but a serious crime that can undermine the maritime security of the island and restrict its economic growth.

Moreover, the possibility exists for segments of the local fishing industry to collapse if IUU fishing is left unabated. This dilemma would have far-reaching socio-economic consequences for the thousands of Jamaicans who rely on the fishing industry as their primary source of income.

1.3 Definition of the Problem

IUU fishing has negatively impacted the dwindling fish stocks in Jamaica. In addition, there appears to be a symbiotic relationship between IUU fishing and the growth of TOCs via maritime conveyance in the island. Thus, vulnerable artisanal fishers are now being lured to engage in drugs and arms trafficking to maintain their livelihood.

Further, there is a noticeable lack of a penal culture with strict fines in order to effectively deter IUU fishing activities in Jamaica. The Government of Jamaica (GOJ) needs to implement a strict penal culture for IUU fishing whilst simultaneously strengthening the capacity of the MLE agencies to detect and intercept these illicit activities. These measures are critical in taking the
profit out of IUU fishing and its related criminal activities, in addition to protecting and securing the island’s maritime borders.

1.4 Research Questions

The following research questions will be analyzed in this paper:

a. What are the impacts of large-scale IUU fishing in Jamaica?
b. Is there any link between IUU fishing and TOCs in Jamaica?
c. How can Jamaica successfully deter IUU fishing and TOCs at sea?

1.5 Assumptions

The following assumptions have been made:

a. Globalization has bolstered the fishing industry in Jamaica whilst facilitating TOCs committed by maritime conveyance.
b. Persons with knowledge about seamanship and skills in boat operations are being targeted by criminal networks.
c. Not all registered fishers in Jamaica are engaged in TOCs.
d. Large-scale IUU fishing is a threat to the maritime security of Jamaica.

1.6 Methodology

The methodology will be qualitative-in-nature as this is the most appropriate method to extract sensitive information about these illegal activities based on the clandestine nature of IUU fishing and TOCs.

1.6.1 Research Design

Field research consisting of interviews with select members of the Fisheries Division, the JDF, the JDF CG, the JCF, the Major Organized Crime and Anti-Corruption Agency (MOCA), artisanal fishers and other stakeholders was undertaken. The field research was expanded to
include interviews with stakeholders in IUU fishing from the Cayman Islands, Honduras, and South Africa to get a broader perspective on this topical issue.

In addition, journal articles, reports from local and international agencies and statistical datasets from the relevant government agencies were critically examined.

1.6.2 Data Collection and Analysis Procedures

The exploratory phase of the research took approximately 4 weeks during the 2017 Christmas holidays; the data collection process was more tedious and took approximately 6 months because the statistics on TOCs committed via maritime conveyance were not available from one MLE agency. Further, the central repository for crime statistics in Jamaica did not differentiate between maritime drug trafficking and maritime arms trafficking, as both datasets were combined with narcotics and firearms seized on mainland Jamaica. Consequently, this dilemma led to an extension in the data collection process.

The semi-qualitative guided interviews comprised open-ended questions with slight variations based on the background and experience of each interviewee. An audio recording device was used for the interviews via the procedure of consent; this was complemented by written notes. Due to the sensitive nature of the study, the interviewees were afforded the option of anonymity and the right to terminate the interview at any time.

The focal point of the interview was to evaluate IUU fishing in Jamaica and determine if a nexus exists between IUU fishing and TOCs committed by maritime conveyance. The author also sought to examine the reasons why local fishers are more vulnerable now to TOCs. The analysis of the interviews is inserted in the relevant chapters.

Finally, it is noted that there were not many scholarly articles on IUU fishing in Jamaica, but there was an abundance of secondary data and statistics on TOCs committed in the island.
CHAPTER 2

2.1 Literature Review

2.1.1 Global Estimated Loss from IUU Fishing

IUU fishing is a worldwide phenomenon that results in losses of approximately United States Dollars (USD) $23.5 billion annually, which represents about 26 million tons of fishery products (Agnew et al., 2009). This is arguably the most cited estimate for this illegal activity. On the other hand, the United Nations Environment Programme (UNEP) gave a more recent, yet cautious estimate, that globally between USD $11- $30 billion in economic value is lost to IUU fishing every year.

Undoubtedly, IUU fishing has had negative impacts on both developed and developing countries worldwide. Pitcher, Kalikoski, Pramod and Short (2009) argue that it is a fallacy to believe that only SIDS are affected by IUU fishing; indeed, they assert that 30 of the world’s developed countries are almost complicit in their attempts to combat this illegal activity.

Nevertheless, it is usually the countries that are highly dependent on fisheries for food security and as a source of employment for their unskilled labor force, that suffer significant economic losses from IUU fishing (Meere & Lack, 2008).

2.1.2 Economic Drivers of IUU Fishing

IUU fishing is primarily a profit-motivated activity (Gallic & Cox, 2006). It normally thrives in countries where the capacities of MLE agencies are limited, preventing them from effectively protecting their resource-rich fishing banks (Martini, 2013b). There is a general perception that IUU fishing is a lucrative and rewarding, low-risk criminal activity based on the extremely low possibility of being detected and arrested by MLE officials. The main economic causes of IUU fishing are ineffective management regimes, overcapacity and fisheries subsidies (Gallic & Cox, 2006).
Some of the factors that have facilitated IUU fishing include increasing demand for seafood, overcapacity of fishing fleets and dwindling fish stocks, high profit margins and Flags of Convenience (FOC) (Grafton, Hilborn, Squires, Tait, & Williams, 2010). Unfortunately, few environmental violations are heavily penalized (Watson, 2005). Not surprisingly, IUU fishing has become a lucrative option for criminal networks based on its high-profit margins and relatively low chance of being detected and arrested by MLE officials (Telesetsky, 2015).

2.1.3 Low Penalty Driver of IUU Fishing

Telesetsky (2015) went a step further by declaring that the profit needs to be taken out of IUU fishing by classifying it as a ‘serious’ crime in order to create a penal culture around this offence. Deterrence theorists argue that there appears to be an inverse relationship between the severity of the penalty and the likelihood of a person committing the offence (Dilulio, 2003). In the same vein, the severity of the penalty for IUU fishing should serve as a deterrent for the offence (Sumaila, Alder, & Keith, 2006), particularly for repeat offenders of IUU fishing ceteris paribus. Unfortunately, when fishers are arrested and charged for IUU fishing, the penalties are often comparatively small and do not effectively deter the offence (PEW, 2013).

The International Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU) endorses that sanctions for IUU offences must be severe enough to be a deterrence and should deprive the offenders of criminal enrichment (FAO, 2001a). Furthermore, a case study was done which showed that penalties and sanctions for IUU fishing should be increased at least by 24 times the current fines, in order to be a deterrent and take the profit out of this illegal act (Sumaila et al, 2004).

IUU fishing is generally viewed as a minor crime and thus, other national priorities will take precedence over it, resulting in limited government resources being allocated for Monitoring, Control and Surveillance (MCS) activities to deter it (Haenlein, 2017). However, the most effective, yet fair penalties to deter IUU fishing remain to be determined.
2.1.4 TOCs and IUU Fishing

McNulty (2013) declares that cross-border trading with fishing vessels makes fishers more susceptible to illegal activities, as commodities can be easily transported over great distances, with little or no detection from MLE agencies. In the same vein, the 2005 Marine Resources Assessment Group (MRAG) Report cites weak MLE capabilities as being symptomatic of a coastal state’s vulnerability to TOCs that are committed via maritime conveyance. The report further states that fishing vessels are often used as a ruse for these nefarious acts.

Moreover, Wright (2011) argues that there appears to be a link between IUU fishing and TOCs as the former is usually a precursor to drugs and arms trafficking. Haken (2011) concurs that illegal fishing has been linked to other criminal markets, particularly drug and human trafficking.

Decker and Townsend Chapman (2007) posit that fishers and fishing vessels are often very important to maritime drug trafficking operations. This was reinforced in the 2017 International Narcotics Control Strategy (INCS) Report wherein large fishing vessels and go-fast vessels from South America were engaged in mother ship operations, to traffic cocaine with fishing canoes from the coastal state (INCSR, 2017).

In the same vein, the 2011 UNODC Report highlights that forced labor and child labor were being condoned onboard fishing vessels; in addition, these vessels are routinely used for arms, drugs and human trafficking (UNODC, 2011). However, it must be noted that whilst there was an abundance of information available on fishing vessels used in drug trafficking, there was little information available on the smuggling of migrants on fishing vessels.

Human trafficking in the fishing industry usually entails migrant laborers who are forced into employment onboard fishing vessels or in fish processing plants and the exploitation of women and children, particularly via prostitution in fishing ports (UNODC, 2011). The trafficking of persons for forced labor in the fishing industry is often quite difficult to detect and appears to be on the rise as an increasing number of fishers are being coerced to work for long hours in international waters with no compensation (United Nations, 2016).

Albeit, it was noted that the social dimension of IUU fishing and its impact on the vulnerable fishers are often overlooked and/or limited to food security, as the overwhelming emphasis is usually placed on the environmental and economic impacts of this practice.
On the other hand, Österblom, Constable and Fukumi (2011) argue that IUU fishing has evolved into a non-traditional security threat that should be treated similarly to organized crime. They examine the hierarchical structure of criminal networks and the exploitation of marine resources for economic reasons despite the negative effects on legitimate fishing activities. Further, it was highlighted that IUU fishing involves a variety of actors ranging from corrupt public officials to commercial fishers and organized criminal elements (Liddick, 2014).

Nevertheless, Stølsvik (2010) asserts that money laundering from the illicit drug trade can be easily facilitated through IUU fishing via the purchase of fishing vessels and the requisite fishing gear. This point was further reinforced by Anderson & McCusker (2005) who claim that the fisheries sector is perceived as a low-risk criminal activity with high profits and viable overseas markets. Thus, criminal organizations are usually drawn to the high economic gains and low detection rate of engaging in illicit activities within the fishing industry; as a consequence, vulnerable fishers are usually targeted by these criminal elements. However, evidence of criminal networks engaged in commercial IUU fishing is usually anecdotal at best (Telesetsky, 2015).

Indeed, criminal elements can easily maximize their productivity by procuring the most modern equipment to improve the efficiency of their illegal activities, including IUU fishing (Wyler & Sheikh, 2008). This is usually the case as criminal networks do not have the same human or financial resources typically associated with MLE agencies.

### 2.1.5 Deterrents of IUU Fishing

The 2016 Food and Agriculture Organization (FAO) State of the World’s Fisheries and Aquaculture (SOFIA) Report declared that weak governance, scant political will, and weak legislative frameworks were the primary deterrents to the effective handling of IUU fishing (SOFIA, 2016).

Fisheries laws and regulations need to be strengthened to effectively deter IUU fishing and adequate MCS mechanisms must be implemented to ensure compliance (SOFIA, 2018). It was further reported that States are oftentimes found lacking with regard to fulfilling their obligations under Regional Fisheries Management Organizations (RFMOs) and domestic regulations; this
further undermines the overall effort to sustainably manage fisheries resources on a global scale (SOFIA, 2018).

On the other hand, it was noted that the political will exists to combat IUU fishing in the Caribbean. This is evidenced by the enactment of various regional legal instruments by the respective governments *inter alia* the Inter-governmental Agreement establishing the Caribbean Regional Fisheries Mechanism (CRFM, 2003), the Castries Declaration on IUU Fishing (2010), the Western Central Atlantic Fishery Commission (WECAFC) (2014) and the Caribbean Community (CARICOM) Common Fisheries Policy (2014) (FAO, 2015).

However, there is a general problem with the effective implementation of these regional agreements as the legislative process to ratify domestic laws and regulations is painstakingly slow and needs to be modernized. Consequently, this further facilitates the practice of IUU fishing at the expense of the livelihood of the legitimate fishers who are dependent on the dwindling fish stocks as their primary source of income.

### 2.2 Conclusion

As a result of the previous analyses, there is evidence to suggest that some fishers and key players in the fishing industry are actively involved in TOCs, such as guns, drugs and human trafficking, and fishing vessels are being used as a convenient method of perpetrating these illegal activities. It was also noted that the phenomenon of declining fish stocks worldwide due to IUU fishing and overfishing, has resulted in fishers being more economically vulnerable, and thus, more amenable to engaging in TOCs to maintain their livelihoods and sustain their families.

The WCR has demonstrated its commitment to combatting IUU fishing with the establishment of the CRFM, the enactment of the Castries Declaration, WECAFC, and the CARICOM Common Fisheries Policy. Despite this, the ratification and implementation of these regional legal instruments into domestic law is an extremely slow process that must take precedence over other competing government priorities. In the meantime, it is the legitimate fishers who will suffer when their livelihoods are disrupted because of the dwindling fish stocks that are associated with large-scale IUU fishing.
It is worthy to note that there was a lack of empirical data available about criminal networks involved in IUU fishing in the Caribbean and Jamaica, in particular. However, this by no means indicates that these criminal elements are not engaging in this illicit activity.

2.3 Limitations of the Study

There was a noticeable lack of literature and data on the link between fishing and TOCs committed via maritime conveyance in Jamaica. Indeed, this also occurred with the research on IUU fishing by commercial fishing vessels and TOCs, particularly with regard to drug and arms trafficking on the island. Nevertheless, it must be highlighted that not all fishers in Jamaica are engaged in IUU fishing and TOCs. Further, persons who are caught operating fishing vessels whilst committing IUU fishing and TOCs, like drugs and arms trafficking, may not be registered fishers; however, they usually possess the skills and knowledge to operate fishing vessels.

The focal point of this research is on the drugs and arms trafficking committed with fishing vessels in Jamaica and not on the smuggling of other commodities like fuel and cigarettes. Further, it is beyond the scope of this research paper to examine the potential health impacts of IUU fishing on Jamaica.

Finally, the author is a JDF CG Officer with a background in MLE activities; thus, there may be some innate biases based on her 20 years of experience in fisheries protection and MLE operations in Jamaica.
CHAPTER 3

3.1 The Archipelagic State of Jamaica

The Maritime Area Act (1996) proclaimed Jamaica as an archipelagic state with straight baselines that join the outermost points of Pedro Cays to the south and Morant Cay to the south-east of the island (Figure 3). However, based on its proximity to the neighboring islands in the Caribbean, Jamaica is unable to fully claim a 200 nautical miles (nm) Exclusive Economic Zone (EEZ). As a consequence, in 1993, Jamaica negotiated a Joint Regime Area with Colombia around the offshore fishing banks of Seranilla, Bajo Nuevo, Bank and Alice Shoal (UN, 2002b); and the following year, there was the equi-distance delimitation line with Cuba (UN, 2002a). However, no agreement has been reached with Haiti, the UK for the Cayman Islands or Honduras (Figure 4).

Source: https://www.state.gov/documents/organization/57677.pdf

Figure 3. Archipelagic Baseline of Jamaica
3.1.1 Jamaica’s Marine Ecosystem

The Caribbean Sea Large Marine Ecosystem (LME) comprises high levels of biodiversity and endemism (Miloslavich et al., 2010a). Jamaica’s geo-strategic location in the Caribbean Sea has resulted in its inherent tropical marine ecosystems that include mangroves, seagrass beds and coral reefs (Goodbody, 2006). Hence, the island’s marine ecosystems are critical as they not only support fisheries but they also provide goods and services such as tourism and coastal defence against storms and hurricanes (Miloslavich et al., 2010b).
3.2 The Importance of Fishing to Jamaica

Jamaica’s population was estimated to be 2.7 million (STATIN, 2017) and the island’s Gross Domestic Product (GDP) was approximately USD $14.06 billion in 2016 with agriculture, forestry and fisheries accounting for 8%; the manufacturing industry, 23% and the service industry, 69% (World Bank, 2018). In addition, fisheries play a critical role in the socio-economic and cultural lifestyle of many Jamaicans particularly as it relates to food security along with a source of income (World Bank, 2014). This is especially true for the coastal communities who rely on fisheries to sustain their livelihoods.

**Table 1. Per Capita Consumption of Fish in Jamaica 2006 - 2016**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>TOTAL FISH CONSUMPTION (MT)</th>
<th>END OF YEAR POPULATION</th>
<th>PER CAPITA CONSUMPTION (kg/cap)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>48,652.70</td>
<td>2,657,760</td>
<td>18.3</td>
</tr>
<tr>
<td>2007</td>
<td>51,450.72</td>
<td>2,667,202</td>
<td>19.3</td>
</tr>
<tr>
<td>2008</td>
<td>45,204.34</td>
<td>2,676,666</td>
<td>16.9</td>
</tr>
<tr>
<td>2009</td>
<td>44,720.25</td>
<td>2,686,106</td>
<td>16.6</td>
</tr>
<tr>
<td>2010</td>
<td>41,733.88</td>
<td>2,695,543</td>
<td>15.5</td>
</tr>
<tr>
<td>2011</td>
<td>42,523.46</td>
<td>2,704,133</td>
<td>15.7</td>
</tr>
<tr>
<td>2012</td>
<td>39,042.35</td>
<td>2,711,476</td>
<td>14.4</td>
</tr>
<tr>
<td>2013</td>
<td>41,922.35</td>
<td>2,717,862</td>
<td>15.4</td>
</tr>
<tr>
<td>2014</td>
<td>39,430.86</td>
<td>2,723,246</td>
<td>14.5</td>
</tr>
<tr>
<td>2015</td>
<td>28,377.28</td>
<td>2,727,328</td>
<td>10.4</td>
</tr>
<tr>
<td>2016</td>
<td>43,075.78</td>
<td>2,728,969</td>
<td>15.8</td>
</tr>
</tbody>
</table>

Source: Fisheries Division, Ministry of Industry, Commerce, Agriculture and Fisheries, 2018 and Statistical Institute of Jamaica (STATIN), 2018.
3.2.1 Fish – A Source of Protein in Jamaica

The importance of fish and fish products to the diet and food security of the SIDS in the Caribbean cannot be overstated. Jamaica like most SIDS, is dependent on fish as the second most important source of animal protein (GOJ, 2015b); it contains essential amino acids, minerals, and vitamins that are important in maintaining a nutritious diet (SOFIA, 2016). However, years of overfishing and exploitation of marine resources have culminated in decreasing fish stocks in the island; thus, Jamaica is now heavily reliant on the importation of fish to satisfy the local market (FAO, 2013).

According to the FAO, the per capita consumption of fish and fish products of 27.1 kilograms (kg) per year in Jamaica was one of the highest in the Americas (FAO, 2013). However, this figure is well above the current domestic rates calculated in Jamaica, as the per capita consumption rate of fish and fish products has been steadily declining over the 10-year period (Table 1). Nevertheless, one cannot overlook the contribution of small-scale fisheries to the fish consumption rate in the island, as the ad hoc nature of their operations makes their actual values more susceptible to being under-recorded.


*Figure 5. Quantity of Fish Consumed in Jamaica 2006-2016 (MT)*
From 2006 – 2016, there was an overall reduction of 11% in the quantity of fish consumed by the domestic market in Jamaica (Figure 5). It was noted that there was a drastic reduction in 2015; however, no finite explanation can be given for this occurrence. Despite this, the fishing industry in Jamaica and the Caribbean as a whole, is still an important source of sustenance and income generation for many of the SIDS there (Haughton, 2004).

3.2.2 Fishing – A Source of Income

Fishing is not just important for the relatively small-scale food security of Jamaica. It is also a source of income for approximately 40,000 persons who are employed both directly and indirectly in the fishing industry. Fishing sustains the livelihood of more than 200,000 persons island wide in Jamaica (Government of Jamaica, 2008). Moreover, 90% of the registered fishers in the island are artisanal fishers and the remaining 10% are industrial fishers.\(^1\)

However, the continuous exploitation and overfishing of the island’s fish stocks have evolved from an ecological problem to a socio-economic problem. Jamaican fishers are now traveling much farther distances and make more frequent trips to maintain their livelihoods (Jones, 2017).

Additionally, they are forced to use other means of employment like tourism and agriculture to supplement their dwindling incomes (Jones, 2017). The situation is further compounded by a reduction in productivity from the agricultural sector and an increasing dependence on imported food (Beckford, 2012).

3.3 The Economics of Fishing

It can be argued that the economics of fishing relates to the financial management of fishing and entails the production, distribution, and consumption of fish and fish products. Jamaica’s fisheries resources comprise primarily marine capture fisheries and a dwindling aquaculture; recently, there has been an increasing market for imported fish in order for the island to satisfy its domestic consumption rate and maintain its food security.

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\(^1\) Personal communication with the Mr. Andre Kong, Director of the Fisheries Division, Ministry of Industry, Commerce, Agriculture and Fisheries on 28 August 2018.
Over the period 2006 - 2016, there was a general fluctuation in marine finfish production in Jamaica with an overall 2% decline over the 10-year period (Figure 6). Moreover, finfish accounted for approximately 87% of the total fish production in 2016 (Figure 7).


*Figure 6. Annual Marine Finfish Production in Jamaica 2006-2016 (MT)*

*Figure 7. Fish Production in Jamaica 2016*
3.3.1 The Decline of Conch Industry and the Collapse of Shrimp Industry

With regard to industrial conch production, there was also a 23% decline over the same period whilst industrial lobster production had an overall increase of 257% (Figure 8). On the other hand, in 2016, conch and lobster represented 4% and 2% respectively, of the total production of fish in Jamaica (Figure 7). The shrimp industry appears to have collapsed as no shrimp was produced from 2013 – 2016 (Figure 8). This was corroborated in an article in the print media which stated that Caribbean Aquaculture Limited (the last of Jamaica’s 2 shrimp farms) had gone into liquidation and closed down its operations (The Gleaner, 2013).

![Graph showing annual production of conch, lobster, and shrimp (MT) from 2006 to 2016](image)


*Figure 8. Annual Production of Conch, Shrimp and Lobster in Jamaica 2006-2016 (MT)*

3.3.2 The Demise of Aquaculture

Similarly, there was an overwhelming decline of 91% in aquaculture production in Jamaica over the same period (Figure 9); this situation is surprising considering the rising global trends demonstrated by the FAO Report (2016). It may be argued that the aquaculture industry in Jamaica
was on the verge of collapsing; however, from 2015, there was a slight increase of 33% in aquaculture production.

Conversely, aquaculture production in the Caribbean remained relatively stable over this period, whilst there was an overall increase in world aquaculture production levels (SOFIA, 2016). The global increase in aquaculture production levels continued throughout 2017 and 2018 (SOFIA, 2018).

The demise of the aquaculture industry in Jamaica was attributed primarily to increasing energy costs, the unavailability of fish feed locally and competition from cheaper, imported fish (GOJ, 2015a). Furthermore, the constant scarcity of red tilapia seed stock and drought conditions also had a drastic effect on aquaculture production and its profitable operations (Jones, 2017).


Figure 9. Annual Aquaculture Production 2006-2016 (MT)

3.3.3 The Sinking Value of Fish in Jamaica

On the other hand, it was noted that there was a general fluctuation in the value of marine fish produced in Jamaica from 2006 – 2016 (Figure 10). However, at the end of the period, the
value of marine fish had decreased by approximately 6%, whilst aquaculture had declined in value by an alarming 88%.

![Value of Marine Fish and Aquaculture Produced in Jamaica 2006-2016 (USD)](chart.png)


*Figure 10. Value of Marine Fish and Aquaculture Produced in Jamaica 2006-2016 (USD)*

3.3.4 The Import/Export Market for Fish in Jamaica

From 2006 - 2016, the import market for fish and fish products in Jamaica fluctuated with an overall increase of 3% at the end of the period (Figure 11). On the other hand, the export of fish and fish products was relatively stable with an overall decrease of 53% over the same period.

In addition, in 2016, approximately 7.2 MT of fish and fish products were exported from the island whilst 29.9 MT were imported. Further, it appears that even when there is a relatively good year for marine fish production in Jamaica, it is still not enough to satisfy the domestic market. Hence, it may be concluded that in 2016, the island had to import almost 30 times the amount of fish it exported, in order to satisfy the domestic market.
3.4 Jamaica’s Fisheries Sector

The fisheries sector in Jamaica comprises a processing sector and a ‘productive’ sector that includes both capture fish and aquaculture (Figure 12). The fisheries sector is quite dynamic (growing and changing) and consists of recreational fisheries, inland aquaculture, mainland artisanal, offshore artisanal and industrial fisheries.

3.4.1 Fishers and Fishing Vessels

The focal point of this research is on fishers in Jamaica. Three categories of registered fishers are active in Jamaica:²

a. Nearshore artisanal fishers - employ vessels less than 50 feet (ft.) or 15.2 metres (m) primarily on the island’s south coast.

² Personal communication with the Lt Cdr Paul Wright, Chief Executive Officer (CEO) of the Fisheries Division, Ministry of Industry, Commerce, Agriculture and Fisheries on 22 August 2018.
b. Offshore artisanal fishers – employ vessels less than 15.2 m and are based on the offshore cays of Middle Cay and North-east Cay, Pedro Bank.

c. Industrial fishers – employ vessels at least 15.2 m to harvest finfish, conch, sea cucumber and lobster on the Pedro Bank.

The data provided by Fisheries Division shows a constant increase in the number of registered fishers in the island but the preciseness of data cannot show which categories increase more than other(s).


*Figure 12. Jamaica's Fisheries Sector*
Table 2. Total Number of Registered Fishers in Jamaica 2007-2017

<table>
<thead>
<tr>
<th>Year</th>
<th>Male Fishers</th>
<th>Female Fishers</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>16,980</td>
<td>1,087</td>
<td>9</td>
<td>18,076</td>
</tr>
<tr>
<td>2008</td>
<td>17,658</td>
<td>1,127</td>
<td>9</td>
<td>18,794</td>
</tr>
<tr>
<td>2009</td>
<td>18,860</td>
<td>1,182</td>
<td>9</td>
<td>20,051</td>
</tr>
<tr>
<td>2010</td>
<td>19,714</td>
<td>1,226</td>
<td>10</td>
<td>20,950</td>
</tr>
<tr>
<td>2011</td>
<td>20,037</td>
<td>1,263</td>
<td>11</td>
<td>21,311</td>
</tr>
<tr>
<td>2012</td>
<td>20,357</td>
<td>1,294</td>
<td>13</td>
<td>21,664</td>
</tr>
<tr>
<td>2013</td>
<td>20,642</td>
<td>1,328</td>
<td>15</td>
<td>21,985</td>
</tr>
<tr>
<td>2014</td>
<td>21,232</td>
<td>1,378</td>
<td>23</td>
<td>22,633</td>
</tr>
<tr>
<td>2015</td>
<td>21,486</td>
<td>1,415</td>
<td>30</td>
<td>22,931</td>
</tr>
<tr>
<td>2016</td>
<td>21,907</td>
<td>1,447</td>
<td>30</td>
<td>23,384</td>
</tr>
<tr>
<td>2017</td>
<td>22,868</td>
<td>1,468</td>
<td>30</td>
<td>24,366</td>
</tr>
</tbody>
</table>


Over the period 2007 – 2017, there was an overall increase of 40% in the number of registered fishers in the island with 2017 being the year that the highest number of both male and female fishers were registered (Table 2).

Not surprisingly, female fishers accounted for only 6% of the total; fishers who preferred not to identify with a gender were recorded as ‘other’. Figure 13 below shows the progressive increase in registered fishers in Jamaica.
From 2007 – 2017, there was a significant increase in both the number of registered fishers and the number of registered fishing vessels in Jamaica (Figure 13 and Figure 14). Over the period, there was a 40% increase in the number of registered fishers and a dramatic 73% increase in the number of registered fishing vessels.

In addition, it is noteworthy that since 2012, there has been a 21% increase in the number of registered fishing vessels, which points to an overall increase in fishing effort in the island. Thus, based on the increases in both fishers and fishing vessels, there was a commensurate increase in capital investment in the fishing industry in Jamaica over the period.

With the exception of China, there was a general reduction in the number of persons employed as fishers on a global scale, with North America and Europe having the largest reduction in this sector, whilst the Latin America and the Caribbean region had a marginal increase in fishers (SOFIA, 2016).
3.5 Conclusion of the Analysis

The fishing industry in Jamaica is not just an important source of protein for the food security of the island, it is also a source of income for over 200,000 residents who are employed directly or indirectly in the fisheries sector. According to the FAO calculation matrix, the island has one of the highest per capita consumption rates of fish and fish products in the Americas (FAO, 2013). Based on the preceding data analysis, it may be concluded that over the aforementioned 10-year period, there was a:

a. 40% increase in the number of registered fishers
b. 73% increase in the number of registered fishing vessels
c. 2% increase in marine finfish production
d. 257% increase in the capture of lobster
e. Collapse of the shrimp industry
f. 91% decline in aquaculture production
g. 6% decrease in the value of marine fish
h. 88% decrease in the value of aquaculture
i. Large increase in imported fish (30 times more than what was exported in 2016)
The drastic increases in registered fishers and fishing vessels may signify that there are more fishers and fishing vessel owners now competing for the dwindling fish stocks in Jamaica. The increase in registration of fishing vessels shows a commensurate increase in capital investment in the fishing industry. Despite the increase in fishing effort, it is apparent that the quantity of fish captured locally is not enough to satisfy the domestic market, which has resulted in an increased importation of fish.

In the same vein, the reduction in the value of marine fish means that each fisher is earning less now *ceteris paribus*, based on the decreasing value of marine fish and the increasing number of registered fishers and fishing vessels. Thus, with the exception of lobster production, it appears that the profit margin of investment in the fishing industry has been eroded. Nevertheless, each year the number of registered fishers and fishing vessels continues to increase in Jamaica (Figure 13 and Figure 14).

In such a context, it may be possible that fishers and fishing boat owners may seek additional income sources to complement their needs and sustain their livelihoods. This hypothesis needs to be verified and discussed in greater details, which is the aim of the subsequent chapters.

Further, there has been a commensurate increase in capital investment in the fishing industry to facilitate the increasing numbers of fishers and fishing vessels. But, the overwhelming decline in aquaculture production, the collapse of the shrimp industry and the marginal increase in marine finfish production over the stated period are also worrisome trends that warrant prompt intervention from the requisite authorities in the GOJ.
CHAPTER 4

4.1 IUU Fishing

Contrary to popular belief, the notion of IUU fishing is neither new nor is it restricted to developing countries (FAO, 2011). It undermines legitimate fishing activities worldwide in both developed and developing countries and diminishes national and regional initiatives for the sustainable management and development of fish stocks (FAO, 2001a). IUU fishing refers to a complex and wide array of activities that contravene national and/or international fisheries laws that include the harvesting of protected species, fishing during prohibited periods or fishing without any permit or licence. Consequently, the FAO deemed it necessary to separate the definition into 3 distinct parts (Appendix A).

4.1.1 The Rise of IUU Fishing

IUU fishing emerged as a serious problem in the 1990s when consistent overfishing appears to have resulted in a dramatic decline in the actual catches of global fish stocks (National Intelligence Council, 2016). It grew so widespread globally that in 2001, the UN FAO IPOA-IUU was finally adopted (FAO, 2001a).

The response by the international community was generally lukewarm and 15 years later in June 2016, the groundbreaking Agreement on Port State Measures to Prevent, Deter and Eliminate IUU Fishing (PSMA) was entered into force as the inaugural treaty crafted specifically to address illegal fishing (FAO, 2016).³ Furthermore, IUU fishing can negatively impact the

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³ Jamaica is not included in the 29 countries that are signatories to the PSMA.
economic and food security of a country and diminish any domestic initiative to rebuild fish stocks (National Intelligence Council, 2016).

4.1.2 The Global Value of IUU Fishing

The global value of IUU fishing was estimated at USD $10 – USD $23.5 billion per year, which represented between 11 and 26 million tons of fish (Agnew et al., 2009). There is also a general perception that developing countries, particularly SIDS, are more impacted by IUU fishing as they usually lack the requisite institutional capacity and political will to regulate commercial fishing operations in their waters (MRAG, 2005). It must be noted that fishers who commit IUU fishing are usually perceived as criminal, free-loaders who rob legitimate fishers of their livelihood and unwittingly influence them to ignore the law and engage in this illegal activity (FAO, 2016).

4.2 Assessment of IUU Fishing in Jamaica

The CRFM highlighted the following types of IUU fishing that are prevalent in the CARICOM (FAO, 2015):

a. Small-scale to semi-industrial domestic fishers
b. Small-scale to semi-industrial foreign fishers (from neighboring countries)
c. Industrial scale tuna fleets

IUU fishing in Jamaica is committed primarily by the small-scale and artisanal domestic fishers via open canoes powered by outboard engines. These fishers usually overlook the need to acquire the requisite licence and registration to engage in fishing.\(^4\) The proposed 2018 Fisheries Act has made the category of semi-industrial fishers defunct; there are now only two categories of fishers in Jamaica: artisanal fishers (vessels less than 50 ft.) and industrial fishers (vessels 50 ft. in length and greater).

However, it can be argued that the industrial fishers that engage in IUU fishing are contributing to the demise of the fish stocks in Jamaica. This is a result of the sheer size of these vessels and the volume of shell fish and finfish that are captured by them. These industrial fishers

\(^4\) Personal Communication with the Director of the Fisheries Division, Ministry of Industry, Commerce, Agriculture and Fisheries on 19 December 2017.
are usually from Central America, particularly Honduras (Appendix B), Nicaragua and the Dominican Republic (Appendix C). They utilize steel hull vessels in excess of 20 m in length with up to 100 divers onboard (Appendices B and C). These IUU fishers routinely target high-value seafood like queen conch, spiny lobster and sea cucumbers (Appendix D), from the southern coast of Jamaica and in the island’s territorial waters and EEZ.

In addition, minors are often forced to work onboard these foreign industrial vessels; the last documented case was in 2012 with the Honduran F/V Kristen Marie (Appendix B); 95 crew members including 20 minors, were later convicted of illegally fishing in Jamaica (JDF CG, 2018). Prior to this, in 2010, the JDF CG had intercepted another Honduran vessel fishing illegally on the Pedro Bank; the vessel fled the scene and abandoned 48 of its divers including 3 minors (Jamaica Observer, 2010).

4.3 The Challenges Jamaica Face with IUU Fishing

4.3.1 The Lure of Pedro Bank

The Pedro Bank is Jamaica’s largest and most fertile fishing bank (Figure 2); it is located approximately 80 nm south-west of mainland Jamaica and it is almost two-thirds the size of the island’s land mass. It is of great importance to marine biodiversity as it entails the most important reef ecosystem in Jamaica (Baldwin, 2015). Further, it is widely acclaimed as the most productive fishing bank in the island (Burke et al., 2011).

Throughout the Caribbean, the Pedro Bank is renowned as one of the primary fishing banks for queen conch (Aiken et al., 2006); it supplies the majority of the spiny lobster for the island’s industrial lobster fishery (Kong, 2003) and it also supplies a major portion of the island’s domestic fish products. In addition to conch, lobster and fin fish, other high-value marine resources (shark and sea cucumbers) and various protected species are found in abundance on the Pedro Bank.\(^5\) Consequently, it is the prime location for IUU fishing, particularly for the industrial fishers from neighboring countries.

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\(^5\) Personal Communication with: offshore artisanal fishers on 27-28 December 2017 (who wish to remain anonymous) and the Director of the Fisheries Division, Ministry of Industry, Commerce, Agriculture and Fisheries on 19 December 2017.
4.3.2 The Limitations of the JDF CG

The total land mass of Jamaica is 10,991 km² whilst its maritime area of responsibility is 240,000 km² (GOJ, 2018). Hence, this is one of the greatest challenges for the island’s primary MLE agency (the JDF CG); as it lacks the requisite number of surface assets to conduct effective fisheries enforcement patrols of the Pedro Bank (Aiken et al., 2006).

The JDF CG has an offshore outstation at Middle Cay, Pedro Bank (Appendix E) and an Inshore Patrol Vessel (IPV) is permanently assigned there. However, the absence of a jetty at this outstation severely restricts the ability of an Offshore Patrol Vessel (OPV) to maintain a constructive presence on the Pedro Bank to deter IUU fishing.6

Over the period 2015-2016, the US Government via its Caribbean Basin Security Initiative (CBSI) donated 4 IPVs to the JDF CG (INCSR, 2017). It is worthy to note that all the aging OPVs at the JDF CG were recently replaced with 2 new ones (JIS, 2017a). In addition, in 2017, the GOJ approved the acquisition of a Maritime Patrol Aircraft (MPA) to conduct Long Range Maritime Patrol (LRMP) and bolster the surveillance and detection capabilities in the island’s extensive maritime domain (JIS, 2017b).

The GOJ, via the Ministry of Agriculture and Fisheries, underscored its commitment to deter IUU fishing with the procurement of 2 Unmanned Aerial Vehicles (UAVs); the pilot project was completed in 2015, to strengthen the island’s MLE efforts (Jamaica Observer, 2015). The UAV project entailed a collaboration with the Jamaica Civil Aviation Authority (JCAA), the Ministry of National Security, the Fisheries Division and key stakeholders from the private sector. The overall aim of the project was to improve the island’s surveillance and detection capabilities to prevent IUU fishing on the Pedro Bank.

4.3.3 The Lack of a Penal Culture for IUU Fishing

Proponents of the theory of deterrence believe that if the punishment is certain, severe and done with celerity, then the rational person will be deterred from committing a crime as the potential loss will far exceed any gains (Dilulio, 2003). The IUU fishers are well aware of the

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6 Personal Communication with a Ship Captain of the JDF CG on 26 July 2018, who wishes to remain anonymous.
limitations in the MLE capacities of the JDF CG and that there is a very low probability that they will be arrested and prosecuted.

Further, the penalties are perceived as being low and not severe enough to be a deterrence (Phelps Bondaroff & van der Werf, 2015). In addition, if by chance the IUU fishers are prosecuted, their vessels are not usually forfeited (CRFM, 2013). The recent increase in fines and penalties under the 2015 Amendments to the 1975 Fisheries Act (GOJ, 2015c) was quite commendable; however, this incremental gain was not perceived as an adequate deterrence to large-scale IUU fishers.

In 2015, the Spanish government sentenced the captain and 2 crew members of the F/V Thunder to 3 years in prison and fined them €15 million for IUU fishing in the Southern Ocean (Holland, 2018). This infamous vessel was wanted by the International Police Organization (INTERPOL) for over 10 years of IUU fishing. The Spanish government also brought a civil case against the owner of the vessel; he was subsequently banned from fishing for 12 years and fined €8.2 million in 2018 (Holland, 2018).

In the same vein, there is a need to create a stronger penal culture in Jamaica in order to deter IUU fishing, and in particular, the industrial IUU fishers from engaging in this illegal act. The sentiment about stricter fines for industrial IUU fishers was also shared by law enforcement officials in the Cayman Islands and in Jamaica.7

Moreover, IUU fishing has evolved from an ecological crime; it is now being viewed as a criminal act that warrants criminal prosecution (Telesetsky, 2015). There is no consensus yet on classifying IUU fishing as a ‘serious’ crime; however, such a designation runs the risk of vulnerable fishers being classified as criminals and not the real masterminds of the illicit activity.8

4.4 The Impacts of IUU Fishing in Jamaica

The inherent clandestine nature of large-scale IUU fishing makes it extremely difficult to accurately assess its impact on a SIDS like Jamaica. Nevertheless, it is widely acclaimed as one

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7 Personal communication with: Sergeant Neil Mohammed, Deputy Unit Executive Officer of the Air Operations Unit, Royal Cayman Islands Police Services (RCIPS) on 28 August 2018 and a Ship Captain from the JDF CG on 5 September 2018, who wishes to remain anonymous.

8 Personal communication with fisheries crime research expert on 20 August 2018, who wishes to remain anonymous.
of the greatest threats to sustainable fishing and marine biodiversity globally (FAO, 2015). As a consequence, it is also an imminent threat to fisheries resources in the Caribbean and Jamaica in particular.

The ability for Jamaica to successfully achieve its fisheries management goals continues to be impacted by increasing incidents of IUU fishing, particularly by foreign fishers with industrial vessels. IUU fishing ultimately undermines the effectiveness of any domestic or international sustainable plan to preserve fish stocks for future generations.

4.4.1 Food Security and IUU Fishing

Food security occurs when everyone has access to nutritious food in adequate quantities to maintain a healthy lifestyle (FAO, 2001b). Throughout the Caribbean, fishery resources are important sources of animal protein that are critical in preserving the food security of the region (FAO, 2014). This is also the case with Jamaica as the island is dependent on fish as the second most important source of animal protein (GOJ, 2015b).

Nevertheless, there is growing evidence to suggest that IUU fishing has negatively impacted the food security of Jamaica as the country now has to import approximately 30 times more fish than it exports (Figure 11) in order to satisfy the domestic consumption rate for fish products (Table 1). Thus, if the current trend of IUU fishing continues, Jamaica’s fishery resources will eventually collapse and jeopardize the food security of the island.

4.4.2 The Environmental Impacts of IUU Fishing

The techniques used by fishers frequently cause damage to the marine environment based on a combination of destructive fishing practices and inappropriate use of fishing gear (FAO, 2003). Destructive fishing practices in Jamaica include spear fishing, trap or pot fishing, beach seining, cyanide poisoning and dynamite fishing (NEPA, 2011). Further, the inappropriate use of spear, trap or pot fishing on coral reefs and seagrass beds can result in severe damage to their ecosystems and impede the growth of new corals.

In the same vein, IUU fishing damages the fragile marine ecosystems found in coral reefs and breeding grounds for fish in Jamaica. The steady reduction in the island’s herbivorous fishing population, namely the parrotfish, has facilitated the growth of algae on coral reefs throughout the
island (Burke et al., 2011). If the current trend continues, there will be a shift in the ecological balance with widespread growth of algae on the coral reefs. The impacts from this would be far-reaching, not just for the fishing industry but also for the tourism sector.

It is impossible to state definitively the extent of the environmental impacts of IUU fishing in Jamaica. However, there is evidence to show that it has facilitated continual damage to fragile marine ecosystems like coral reefs, and has resulted in the overfishing of high-value species, and the island’s dwindling fish stocks (Waite et al., 2011).

4.4.3 The Economic Impacts of IUU Fishing

IUU fishing is economically motivated due to its high-profit margin and relatively low overhead costs (Schmidt, 2014). The economic impact of IUU fishing in Jamaica is more apparent with the industrial fishers from Central America with their burgeoning crews of up to 100 divers. These illegal fishers place a significant dent in the tax revenues that could be collected by the GOJ via registration, licensing and landing fees.

Further, the island is directly affected by the loss of foreign exchange that could be generated from increased exports of conch, lobster, sea cucumber and finfish, if large-scale IUU fishing was not occurring in Jamaica. Similarly, the reduction in fish stocks from the destructive fishing practices associated with IUU fishing has subsequently reduced the future catching opportunities for these high-value species. This has led to a loss of potential economic rent for conch, lobster, sea cucumber and finfish in Jamaica.

Moreover, the typical Jamaican industrial vessel has between 12 to 15 fishers onboard, and additional divers when they are engaged in conch fishing. Unlike the artisanal IUU fishers in Jamaica, the industrial IUU fishers harvest vast quantities of high-value shell fish and finfish. They have no regard for closed seasons or quotas and seemingly very little chance of detection and interception by the MLE officials in the island. The SIDS of Jamaica loses the economic value of USD $10 million worth of spiny lobster, conch and finfish annually due to foreign industrial fishers who engage in IUU fishing.

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9 Personal communication with the CEO of the Fisheries Division, Ministry of Industry, Commerce, Agriculture and Fisheries on 22 August 2018.

10 Personal communication with the CEO of the Fisheries Division, Ministry of Industry, Commerce, Agriculture and Fisheries on 22 August 2018.
Further, the dwindling fish stocks make it difficult for legitimate fishing activities to be profitable. Hence, some of the offshore artisanal fishers have found it more convenient and cost-effective to rendezvous with foreign illegal fishers on the western side of the Pedro Bank to purchase fin and shell fish from them.\textsuperscript{11} They further facilitate IUU fishing because they find it cheaper to make one trip to buy from the illegal fishers as opposed to making several trips of their own, to even farther distances to yield the same quantity of fish.

On the other hand, marine ecosystems provide Jamaica with a variety of goods and services \textit{inter alia} fisheries, tourism and shore stabilization services (Waite et al., 2011). Coral reefs play a vital role in the economy of Jamaica by providing the requisite nurseries and habitats for fisheries, protecting the island’s white sandy beaches and providing coastal defence from storms and hurricanes.

In 2016, tourism accounted for a total of 30.3\% of Jamaica’s GDP or USD $4.5$ billion and 27.5\% (318,500) of jobs in direct and indirect support of the industry (WTTC, 2017). Further, if the degradation of the coral reefs continues from the pressures of IUU fishing, Jamaica could lose approximately USD $19$ million annually from tourism and reductions in tourist arrivals (Burke et al., 2011).

In the same vein, IUU fishing and its associated destructive fishing practices continue to damage coral reefs in Jamaica (NEPA, 2006). This has weakened the shore stabilization services resulting in greater wave heights and higher water levels inshore which make the island more prone to flooding. As a consequence, IUU fishing can have far-reaching consequences on the future of the tourism industry in Jamaica.

4.4.4 The Socio-Economic Dilemma from IUU Fishing

IUU fishing in Jamaica also has a socio-economic effect on the legitimate industrial and artisanal fishers in the island. As a result of the dwindling fish stocks, the legitimate fishers are now forced to go longer distances and make more frequent trips in order to be gainfully employed (Jones, 2017). Further, there is a growing perception that fishing is no longer a lucrative career

\textsuperscript{11} Personal Communication with offshore artisanal fishers on 27-28 December 2017, who wish to remain anonymous.
choice and some fishers are now actively seeking additional sources of employment to supplement their incomes. There are opportunities for fishers to be employed as: game wardens in the various Marine Protected Areas and fisheries sanctuaries located throughout the island, marine tour guides, boat captains and divers for industrial conch vessels.

Thus, if the current status quo for IUU fishing in Jamaica continues, the domestic fish stocks will decline even further and inevitably prevent the legitimate fishers from remaining gainfully employed in the fishing industry. If left unabated, IUU fishing could lead to the collapse of the fishing industry in Jamaica.

Furthermore, there have been incidents of violent confrontations between some of the offshore artisanal fishers from the Pedro Cays and the illegal foreign fishers from Central America where the latter have resorted to stealing from the lobster pots of the domestic fishers.

4.5 Conclusion of the Analysis

IUU fishing continues to erode legitimate fishing activities in both developed and developing countries worldwide. It became so widespread globally that the IPOA-IUU and the PSMA were adopted in 2001 and 2016 respectively. Noteworthy is that Jamaica is not signatory to the PSMA; it may be argued that the PSMA is not currently on the GOJ’s agenda due to other competing government priorities.

IUU fishing in Jamaica is committed mainly by small-scale artisanal fishers, but the industrial IUU fishers originating mainly from Central America (Appendices B and C) have the greatest impacts on the island’s marine ecosystems and fish stocks. These industrial fishers routinely target high-value seafood like lobster, conch (Appendix D) and the increasingly popular sea cucumbers in vast quantities. This is as a result of the size of the industrial fishing vessels and the correspondingly large number of divers and crews onboard these vessels.

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12 Personal Communication with: offshore artisanal fishers in Jamaica on 27-28 December 2017 (who wish to remain anonymous); the CEO of the Fisheries Division, Ministry of Industry, Commerce, Agriculture and Fisheries on 22 August 2018; Captain (n) Sydney Innis - former Commanding Officer of the JDF CG and current Vice President of Security and Safety, Port Authority of Jamaica on 5 September 2018.
13 Personal Communication with CEO of the Fisheries Division, Ministry of Industry, Commerce, Agriculture and Fisheries on 22 August 2018.
14 Personal Communication with offshore artisanal fishers in Jamaica on 27-28 December 2017, who wish to remain anonymous.
IUU fishing is no longer just an ecological problem as the GOJ loses the economic value of approximately USD $10 million annually due to IUU fishing by industrial fishers.\textsuperscript{15} Further, the food security of Jamaica is at risk now as the island has to import approximately 30 times more fish than it exports (Figure 11), in order to satisfy its domestic consumption market. Thus, IUU fishing has evolved from a purely environmental problem to a clear threat to the economic and food security of the SIDS of Jamaica.

On the other hand, there is now a socio-economic dilemma to IUU fishing in Jamaica as the legitimate fishers are forced to make more frequent trips of longer durations in order to maintain their livelihood (Jones, 2017). Further, there is a growing perception that fishing is no longer a lucrative source of income; thus, fishers are forced to find additional sources of employment to supplement their incomes (Jones, 2017).

Nevertheless, it may be argued that illegal fishing can be used as an open gateway to fisheries and transnational crimes like drugs and arms trafficking based on the low operational risks and high profits involved in this illicit act (UNODC, 2016).

Consequently, the GOJ has bolstered the island’s maritime surveillance and detection capabilities with the acquisition of 2 UAVs to deter IUU fishing on the island’s largest fishing bank - Pedro Bank. In addition, 2 new OPVs are now in service at the JDF CG and the Unit also received 4 IPVs from the US Government. These measures were implemented to demonstrate the GOJ’s commitment to strengthen the security of its borders against large-scale IUU fishing and its related transnational crimes.

\textsuperscript{15} Personal communication with the CEO of the Fisheries Division, Ministry of Industry, Commerce, Agriculture and Fisheries on 22 August 2018.
CHAPTER 5

5.1 The Evolution of Fishing Vessels

Over the years, fishing vessels have evolved in tandem with advances in technology. Thus, the wooden dories were eventually upgraded to sail for propulsion, which was later replaced by steam trawlers. The evolution of fishing vessels commenced with wooden dories and then culminated in the 20th century with motorized fishing vessels comprising inboard and outboard engines (Borgstrom et al., 2018).

Furthermore, the introduction of fishing trawlers and purse seiners was viewed as game-changing for the industry, as larger vessels could now travel longer distances and process their large volume of catch with factory motherships (Borgstrom et al., 2018). This global fleet of factory trawlers led to the gradual exploitation of fish stocks worldwide and increased the competition amongst fishers. In addition, the global fishing effort was reported to have more than tripled from 1950 to 2012 (Bell et al., 2017). Therefore, more fishers are now competing for less fish which is negatively impacting their earning power and livelihoods.

Within the Caribbean, a similar evolution of fishing vessels took place; it commenced with dug-out canoes, which gave way to open sail boats, and finally, motorized fishing vessels with deck house (Parker, 1999). As technology progressed, the size and types of fishing vessels increased along with their propulsion systems. Consequently, fishers in the region, and Jamaica in particular, have the opportunity to travel farther distances in shorter times without the fear of their catch being spoilt as their vessels now had ice-holds in them.

In addition, globalization has resulted in fishers having greater access to modern vessels equipped with the latest navigation and communication systems. This further facilitated Jamaican fishers to travel greater distances and spend progressively more time at sea, in areas with higher fishing densities to increase their overall catch.
5.2 The Globalization of Trade

Globalization has bolstered the trade of both legal and illegal commodities worldwide (UNODC, 2010). Over the last 4 decades, the volume, scale and efficiency of international trade have grown as a result of advances in technology that have reduced the cost of transportation and communication systems worldwide (Rodrigue, 2018). Within the shipping industry, the containerization of goods has significantly increased the volume and efficiency of both legal and illegal commodities (Griffiths & Bromley, 2012). It was cited as the most low-risk and cost effective method of trafficking cocaine to the USA and Europe (INCSR, 2010). As a consequence, traffickers have taken advantage of this initiative by shipping large quantities of drugs and firearms at a very low cost in these same containers. This trend is quite common at the major ports throughout the Caribbean and in Jamaica too. In August 2017, cocaine valued at approximately USD $900,000.00 was found in a container with rice at Kingston Container Terminal (The Gleaner, 2017).

In general, the steady proliferation of transnational crimes is arguably a by-product of the process of globalization. Further, there appears to be a symbiotic relationship between globalization and drug trafficking (Haughton, 2011). Thus, globalization is a paradox that increases legitimate trading activities, whilst it simultaneously fosters illegal activities like drug trafficking.

5.2.1 IUU Fishers, FOC and Tax Havens

FOCs are generally regarded as facilitators of IUU fishing. This legal practice permits States to register foreign fishing vessels in an open registry for a nominal fee to circumvent the vessel’s domestic regulations (Liddick, 2014). It is often difficult to identify the real owners of FOCs vessels due to the high level of confidentiality that is enshrined in FOCs. Hence, commercial IUU fishers often use FOC located in tax havens like the Cayman Islands, based on their lax enforcement of domestic fisheries laws and the minimal taxes that are paid by the owners (Martini, 2013a).

It is quite easy for large-scale IUU fishers to launder money due to the lack of transparency in these tax havens and the complex web of actors involved in the commercial fishing industry.
The profits from large-scale IUU fishing are ‘laundered’ to purchase new fishing vessels, fishing gear and equipment; plus, it is even more difficult to trace the cash sales of fish in ports (Bondaroff, Van Der Werf, & Reitano, 2015).

Essentially, FOCs provide large-scale IUU fishers with the opportunity to undermine their national efforts to efficiently manage marine resources and facilitate tax evasion and money laundering. Further, it is not unusual for IUU fishers to engage in ‘flag hopping’ and change their vessel’s name to avoid being targeted by MLE agencies (Telesetsky, 2015).

5.3 The Transition from Fishing to TOCs

5.3.1 Transnational Crimes

The United Nations Convention Against Transnational Organized Crime (UNTOC) has provided a clear definition of transnational crime (Appendix F). It involves organized criminal groups that perpetrate illegal activities in more than one State whilst the planning and coordination takes place in another State.

Noteworthy is that IUU fishing is not included in UNTOC despite the fact that large-scale IUU fishing fits the definition of a transnational illegal activity orchestrated by organized criminal groups. While IUU fishing is not currently classified as a ‘crime’, fishing vessels and particularly those engaged in IUU fishing, may participate in criminal activities such as drug and arms trafficking. Moreover, the impact of large-scale IUU fishing on halieutic resources as well as its operational structures may eventually trigger regulatory changes regarding its criminalization (UNODC, 2017).

Since 2014, INTERPOL has been a strong advocate for large-scale IUU fishing to be incorporated in the definition of a transnational crime (INTERPOL, 2014). Indeed, the use of fishing vessels in organized criminal networks has been well documented worldwide from the Fulton Fish Market in the USA (Graddy, 2006) to South America, China, Italy and South Africa (Bondaroff et al., 2015).
5.3.2 The Lure of Fishing and TOCs

A complex series of actors is involved in the commercial fishing industry; they include *inter alia* fishing vessel owners, licensing agents, fishers, fish vendors, fish processing workers and fleet suppliers (UNODC, 2017). Thus, criminal offences can occur at any point along this extensive fishery supply chain.

Furthermore, transnational criminal networks are always drawn to the high economic gains associated with IUU fishing. It has become a viable option for criminal organizations based on the relatively low start-up costs, low chance of detection by MLE officials, high profits and lucrative overseas markets (Telesetsky, 2015).

Essentially, the use of fishing vessels to commit IUU fishing may easily lead to opportunities to ‘upgrade’ and engage in TOCs. Thus, it is a gateway to a wide range of other illegal activities including money laundering, tax evasion, drugs, arms and human trafficking and bribery (Bondaroff et al., 2015). Indeed, many States now find it difficult to prevent IUU fishing due to their ineffective MCS of fishing vessels, the socio-economic vulnerability of fishers and the gradual reduction in global fish stocks (UNODC, 2011).

Presently, drug and human trafficking are the major types of TOCs identified in relation to the fishing industry (UNODC, 2017). With regard to arms trafficking, maritime conveyance (e.g. shipping containers) is often used as it is more convenient to bribe corrupt officials and falsify paperwork to ship firearms (UNODC, 2010).

5.3.3 The Growth of Fishing and TOCs

Fishers are no longer daunted by the prospect of traveling long distances and crossing oceans to conduct their trade. Globalization has resulted in advances in technology and communication devices, which have facilitated the cross-border trade of fish and fish products (Arbo & Hersoug, 1997).

Paradoxically, traffickers now have increased access to sea transportation, as well as the capital to invest in modern and sophisticated vessels to enhance their illicit activities

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16 Personal communication with anonymous source from MOCA on 23 August 2018 and the Deputy Unit Executive Officer, Air Operations Unit, RCIPS on 28 August 2018.
Therefore, this ease of mobility from the cross-border trade in fishing has facilitated the growth of illicit markets for drugs, arms and human trafficking (Ahmed, 2016).

5.3.4 Fishers Caught in the Web of TOCs

The fishers who engage in TOCs include both registered fishers and persons who are skilled in operating fishing vessels and pleasure crafts. Indeed, fishing vessel owners/operators and fishers now have more opportunities to engage in TOCs; further, they are frequently recruited by criminal elements based on their knowledge of the sea and boating operations (UNODC, 2011). However, these fishers are generally perceived as pawns and not the actual masterminds of these illicit activities (Telesetsky, 2015).

In Jamaica, the fishers perpetrating TOCs also include registered fishers and boat operators. However, it must be highlighted that not all registered fishers in Jamaica are engaging in TOCs. Moreover, there is strong evidence to suggest that the fishing industry in Jamaica is susceptible to TOCs like drug trafficking due to the dwindling fish stocks and the resultant socio-economic impacts on the vulnerable fishers.

5.4 Trafficking in the Caribbean

5.4.1 History of Trafficking in the Caribbean

The phenomenon of the trafficking of people and goods is not new in the Caribbean. Its genesis began with the indigenous people of the islands (Tainos and Caribs); followed by the colonization of the region by Europeans in the 15th century (Hofman et al., 2018). Thereafter, the trafficking of people and goods in the region was further reinforced with the transatlantic slave trade (Eltis & Richardson, 2013).

The slavery business model provided the wealth needed for the European maritime powers to establish their dominion and spheres of influence in the New World. It was driven by the demand for sugar in Europe and the increasing demand for manpower on the sugar cane plantations in the Caribbean.
Fast forward to the 20th century and illegal migration is the ‘new’ normal in the Caribbean. The USA and Canada are the primary destination countries for illegal migrants whilst Haiti, Cuba and Dominican Republic are the major source countries (Thomas-Hope, 2006). The journey is usually done by vessels ranging from rafts, sail boats, canoes, fishing and go-fast boats that are generally overloaded, unseaworthy and lacking the requisite life-saving appliances (Watts, 2008).

Moreover, intra-Caribbean migration occurs with Bahamas, the Cayman Islands and the Virgin Islands being the major destination countries, whilst Haiti, Jamaica, Dominican Republic, and Guyana are the main source countries (Ferguson, 2003). However, it is not uncommon for Haitians to illegally enter Jamaica by boats (Thomas-Hope, 2006). In 2013, 25 Haitians were repatriated after landing in the island’s north-eastern parish of Portland in a canoe (Jamaica Observer, 2013). In addition, some fishers from the Cayman Islands are using their vessels to smuggle Cuban nationals into Mexico, for onward transport to the USA.17

5.4.2 Narcotics Trafficking in the Caribbean

The Hague International Opium Convention of 1912 initiated a worldwide ban on the production, distribution, and consumption of psychotropic substances. Within the USA, the 1914 Harrison Narcotics Act and the 1937 Marijuana Tax Act were the basis of the criminalization of both cocaine and marijuana usage (Francis & Mauser, 2010). These Acts later became the main catalysts for the trafficking of narcotics from South America via the Caribbean, due to the increasing demand for these prohibited substances in the USA.

Consequently, a negative stigma was associated with the use of these illegal drugs. The stigma continued into the 1970s, when the ‘hippie’ culture emerged in North America, condoning the recreational use of illicit drugs (Wesson, 2011). This resulted in greater demands for both cocaine and marijuana as the drugs became more popular in both North America and the Caribbean.

By the 1980s, the recreational use of cocaine and marijuana became a social norm which further increased their demand (Herd, 2008). This culminated in the rise of drug trafficking

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17 Personal communication with the Deputy Unit Executive Officer, Air Operations Unit, RCIPS on 28 August 2018.
networks in Colombia and in the Caribbean, which led the USA to promptly declare a ‘war on drugs’ (Seelke, Wyler, Beittel, & Sullivan, 2011).

5.5 Jamaica - Trapped in the Web of Drug Trafficking

Jamaica’s geo-strategic location has trapped it between the source countries of cocaine from South America and the demand markets in North America and Europe (INCSR, 2018). Thus, the island became a transshipment point for cocaine trafficking from Colombia. The cocaine would be transported in go-fast vessels to Jamaica and the trip would take less than 48 hours.

The same routes that are used for cocaine trafficking (UNDOC, 2018) are also used to traffic marijuana from Jamaica to the neighboring islands, the Americas and Europe (Figure 15) (INCSR, 2018). The cocaine trafficking routes are represented by the red arrows whilst the black arrows represent the marijuana trafficking routes. Jamaica appears to be at the centre of the web of cocaine and marijuana trafficking in the Caribbean.

In 2015, 3 Jamaicans, a Nicaraguan and a Costa Rican were arrested off the coast of Puerto Limon, Costa Rica, after they were observed jettisoning packages overboard; a total of 35 packages of marijuana were recovered from the sea (Jamaica Observer, 2015).

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18 Personal communication with a source from MOCA on 23 August 2018, who wishes to remain anonymous.
5.5.1 Fishing Vessels and Cocaine Trafficking in Jamaica

Criminal networks have found a niche market in using fishing vessels to engage in drug trafficking in Jamaica waters (INCSR, 2018). Further, some commercial fishing vessels in the Cayman Islands and Honduras are also being used in drug trafficking operations. In addition to fishing vessels, commercial ships, go-fast boats, pleasure crafts, human couriers and private aircraft are also used in drug trafficking operations (INCSR, 2018). Self-propelled semi-submersible vessels are now being used by narco-traffickers from Central and South America; these vessels can transport from 5 – 17 tons of cocaine (Frederick, 2010). However, it must be noted that no semi-submersible vessel has been intercepted yet in the Caribbean. Nevertheless, insufficient MLE resources and the extreme mobility of fishing vessels have facilitated the emergence of enhanced drug passages in the region.

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19 Personal communication with: the Deputy Unit Executive Officer, Air Operations Unit, RCIPS on 28 August 2018 and an artisanal fisher from Honduras on 1 September 2018, who wishes to remain anonymous.
Since 2017, it has been observed that a new market for cocaine has emerged between Haiti and Jamaica, in that marijuana is now being bartered for cocaine in Haiti. Thus, open hull fishing canoes from Jamaica are used to transport anywhere between 350 kg to 1,600 kg of marijuana to Haiti in exchange for cocaine.\textsuperscript{20} The current exchange rate being used in 2018 is 80 pounds (lbs.)\textsuperscript{21} or (36.2 kg) of marijuana for 1 kg of cocaine.

In addition, larger fishing vessels from Central and South America are frequently used to traffic cocaine in the island (INCSR, 2018). Fishing vessels and go-fast boats from Costa Rica (Appendix G), Honduras and Guyana engage in mothership operations to offload the drugs several nm offshore of Jamaica to the local fishing canoes.\textsuperscript{22} These canoes are made of fiberglass which makes them more difficult to detect by the radars from the OPVs of the JDF CG, particularly in choppy seas associated with increased sea state. Further, these fishing canoes also provide logistical support of fuel and supplies to the larger fishing vessels for their return trip.

The marijuana for cocaine trade also exists with fishing vessels from Costa Rica, Honduras and Guyana; the current exchange rate being used in 2018 is approximately 3,500 lbs. or (1,587.5 kg) of marijuana for approximately 45 kg of cocaine.

**Cocaine Seized by the JDF CG 2011-2017**

Over the period 2011-2017, the JDF CG had very little success with cocaine seized at sea. However, there was a drastic increase in 2016 followed by a significant decrease in 2017 (Figure 16). It was noted that the cocaine seizures occurred biennially and there was a marginal increase in quantity with every successive drug interdiction. In addition, no cocaine was seized immediately following the year when the drug interdictions were recorded.

The largest quantity of cocaine that was seized by the JDF CG was recorded in 2016. This drastic increase in the quantity of cocaine seized could be attributed to the 4 IPVs that were donated to the JDF CG over the period 2015-2016, by the US Government via its CBSI (INCSR, 2017).

\textsuperscript{20} Personal communication with a source from MOCA on 23 August 2018, who wishes to remain anonymous.

\textsuperscript{21} Jamaica converted to the metric system in 1998. However, the average Jamaican still uses the Imperial System of measurement.

\textsuperscript{22} Personal communication with a source from MOCA on 23 August 2018, who wishes to remain anonymous.
The JCF Marine Division also benefitted from the CBSI as they obtained 10 small vessels from the US government between 2015 and 2016 (INCSR, 2017).

Nevertheless, there appears to be an alliance between the marijuana and cocaine traffickers in Jamaica. This new normal is evident with Haiti and several countries from Central and South America, that are now using fishing vessels as the primary mode of exchanging cocaine for Jamaican marijuana (INCSR, 2018).

![Cocaine Seized by the JDF CG 2011-2017 (kg)](chart)

**Figure 16. Cocaine Seized by the JDF CG 2011-2017 (kg)**

5.5.2 Fishing Vessels and Marijuana Trafficking in Jamaica

Jamaica is the source country for high-grade marijuana in the Caribbean. The island is surrounded by the demand countries of North, Central and South America, as well as other neighboring islands for its home-grown marijuana. Its strategic location and rugged coastline have facilitated the island’s rise as the major producer and Caribbean supplier of marijuana to the Americas (UNDOC, 2018). Jamaica continues to be largest supplier in the Caribbean of marijuana to the USA and throughout the WCR (INCSR, 2018).

The same routes that are used for cocaine trafficking into the island are also used for marijuana trafficking out of the island (Figure 15). Moreover, marijuana is also trafficked by
fishing canoes (Appendix H) and go-fast vessels to the neighboring islands of the Bahamas, Haiti and the Cayman Islands (INCSR, 2017).

Over the years, the Marine Unit of the RCIPS has arrested several Jamaican nationals and seized their fishing vessels for drug trafficking offences (Appendix I).23 On 7 September 2018, 4 Jamaican men were arrested in the Grand Cayman when they were observed jettisoning packages from their fishing vessel; approximately 513 lbs. of suspected marijuana were recovered from the sea.24

As is the case with cocaine trafficking, container/cargo vessels, pleasure crafts, go-fast boats, and fishing vessels are the main modes of transporting marijuana out of Jamaica, in addition to air freight, private aircraft and human couriers (INCSR, 2017).

Marijuana Seized by the JDF CG 2011-2017

Over the period 2011-2017, there was an overall reduction in the quantity of marijuana (Appendix J) seized by the JDF CG (Figure 17). Unlike the biennial cocaine seizures, marijuana was seized every year from fishing vessels. However, the largest quantity of marijuana was seized in 2013, whilst there was a slight increase in the quantity of marijuana seized by the JDF CG from 2014 - 2016.

The expansion in the number of IPVs at the JDF CG from the CBSI and the corresponding increase in MLE operations could account for the gradual increase in the quantity of marijuana seized from fishing vessels from 2014. The drastic reduction in marijuana seized in 2017 could be attributed to drug traffickers changing their modus operandi in response to the increased MLE presence and operations by the JDF CG.

23 Personal communication with the Deputy Unit Executive Officer, Air Operations Unit, RCIPS on 28 August 2018.
24 Personal Communication with Mr. Mikhail Campbell, Media Relations Officer, RCIPS on 8 September 2018.
In addition, Jamaica suffers from an active ‘marijuana for guns’ trade with Haiti and fishing canoes from Jamaica are the centre of gravity for these operations (Appendix H). They assimilate this illegal activity with the legitimate fishers and benefit from the low rate of detection from the MLE officials.

The ‘drugs for guns’ trade with fishing vessels was so successful in Jamaica that it has evolved into a marijuana for cocaine trade with Haiti, Central and South American countries (INCSR, 2018). Indeed, Costa Rica, Honduras, and Guyana are now involved in the trafficking of cocaine for marijuana with Jamaica.\textsuperscript{25}

5.6 Arms Trafficking in Jamaican Waters

There appears to be a symbiotic relationship between arms and drugs trafficking in the Caribbean, particularly with regard to Jamaica (Griffith, 1997). The high rates of homicides and gang warfare in Jamaica are indicative of this unfortunate alliance between the arms and drug traffickers in the island.

\textsuperscript{25} Personal communication with a source from MOCA on 23 August 2018, who wishes to remain anonymous.
Similarly to drugs trafficking, arms trafficking in Jamaica is primarily done by maritime conveyance along established routes from both North and South America (UNODC & World Bank, 2007).

The major supply countries for illegal firearms in Jamaica are the USA, Haiti and Costa Rica. According to the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), approximately 70% of the illegal firearms that were recovered in Jamaica in 2016, were from US importers and manufacturers (ATF, 2017).

5.6.1 The Jamaican Business Model of ‘Drugs for Guns’ Trade

In 2015, Jamaica had a homicide rate of 43.5 per 100,000 inhabitants and was ranked fourth in the Americas (World Bank, 2016). A total of 73% of all homicides in the island were committed with a firearm (Harriott & Jones, 2016); in addition, gang warfare and illegal firearms were cited as the major factors in the island’s high homicide rates.

There are about 268 gangs operating throughout the island (Leslie, 2010). The increasing demand for illegal firearms to drive the island’s gang warfare has made the ‘drugs for guns’ trade between Haiti and Jamaica flourish over the last 10 years.

Jamaica’s trafficking of its home-grown marijuana has now resulted in a lucrative ‘drugs for guns’ trade with Haiti. This neo-bartering system of marijuana for guns between Jamaica and Haiti has been well documented in the media and various news outlets worldwide. The earliest documented case of this neo-bartering system in the electronic media was in 2007 (The Gleaner, 2007).

The average round-trip from, for example Manchioneal in Jamaica to Les Cayes or Ile de Vache in Haiti may take less than 24 hrs. The fishers usually depart after sunset with around 800 lbs. (362.8 kg) to 3,500 lbs. (1,587.5 kg) of marijuana and arrive just before sunrise in Haiti, where the marijuana is sold for pistols and revolvers.

The trade route became very successful as the fishing canoes would depart the shores of Jamaica under the cover of darkness for Haiti; they could easily blend in with other fishers and they had minimal chance of detection in open seas by the MLE officials. Furthermore, if they

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26 Personal communication with a source from MOCA on 23 August 2018, who wishes to remain anonymous.
were detected at sea, they could quickly jettison their illegal firearms overboard before their vessels were boarded and searched. The ‘drugs for guns’ trade became so profitable that the traffickers have now diversified into bartering cocaine for Jamaican marijuana in Haiti.

Similarly, the business model for the ‘drugs for guns’ trade in Jamaica has now expanded to include industrial fishing vessels from Honduras and go-fast boats from Costa Rica that are used to traffic firearms into Jamaica (INCSR, 2018). Anecdotal evidence suggests that the same routes that these fishers use to engage in illegal fishing, are used to engage in arms trafficking. The firearms that are trafficked from Haiti, Honduras, and Costa Rica by fishing vessels to Jamaica are primarily pistols and revolvers.27

Illegal Firearms Seized in Jamaica 2011-2017

It appears that Jamaica has had little success with disrupting the trafficking of firearms into the island. Over the period 2011-2017, there was a slight decrease in the number of illegal firearms that were recovered by all the law enforcement agencies in Jamaica (Figure 18). A total of 136 firearms were seized which equates to approximately 19 firearms a year. The least number of illegal firearms was seized in 2013.

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27 Personal communication with a source from MOCA on 23 August 2018, who wishes to remain anonymous.
Similarly, the JDF CG efforts to disrupt the ‘drugs for guns’ trade has not yielded the desired results (Figure 18). The Unit seized a total of 3 illegal firearms (2% of the total illegal firearms that were recovered in the island) over the 7-year period. It must be highlighted again how easy it is for the fishers and/or boat operators to jettison illegal firearms overboard if they are detected and intercepted at sea by the JDF CG.

5.7 Human Rights Violations and Trafficking in Jamaica

Any work or service that is coerced with threats and is not done voluntarily may be deemed as forced labor (ILO, 2017). On the other hand, according to the Trafficking Victims Protection Act (TVPA), human trafficking includes the recruitment and transportation of persons for sex trafficking and forced labor via coercion or fraud for involuntary servitude or slavery (US Department of State, 2017).

In 2016, approximately 40.3 million persons worldwide were victims of human trafficking; of this total, 24.9 million persons (more than 50%) were deemed to be in forced labor (ILO, 2017). It is worthy to note that the agriculture and fisheries sector accounted for 11% of workers in forced labor worldwide.
Further, the effects of globalization in the fishing industry coupled with the large factory ships mean that the fishers are now working at sea for longer durations in the hazardous marine environment. Consequently, the fishing industry is vulnerable to abusive labor practices based on the transnational nature of the trade and the lengthy duration of trips in the isolated environment of the open sea (ILO, 2008). Hence, it is no surprise that forced labor is the most common form of human trafficking that is found in the fishing industry (UNODC, 2011).

This is especially true of migrant workers whose freedom of movement is restricted when their identity documents are taken from them and children who are coerced to work onboard fishing vessels (UNODC, 2011). In addition, there is usually not enough data available on human rights violations in the fishing industry as the focal point is normally on sexual exploitation and not on the forced labor aspect of trafficking.

Within the Jamaican context, there is a lack of data available on human rights violations and forced labor in the fishing industry. Nevertheless, the local fishing industry is still vulnerable to abusive labor conditions. It must be noted that children have been found onboard foreign industrial vessels engaged in IUU fishing in Jamaican waters.

The last documented case of this was in 2012, when 20 minors were found amongst the 98 crew members on the Honduran F/V *Kristen Marie* (Appendix B), which was found illegally fishing on the Pedro Bank (JDF CG 2018). Further, 4 undocumented Nicaraguans were found in Jamaican waters on the F/V *Miss Dialin* on 5 February 2018 (Appendix K).

**Persons Arrested in Jamaica for Human Trafficking**

Over the period 2007-2017, there was an overall increase in the number of persons arrested by the JCF for human trafficking offences in Jamaica (Figure 19). Nevertheless, a total of 25 persons have been arrested over the same period and approximately 36% of the traffickers were females.

Jamaica has a Tier 2 ranking for human trafficking as it does not fully meet the minimum standards as required by the TVPA (US Department of State, 2017). In 2018, the GOJ took the initiative to make Jamaica the first SIDS in the Caribbean to join the UNODC’s Blue Heart Campaign against Human Trafficking (UNODC, 2018).
Figure 19. Persons Arrested for Human Trafficking in Jamaica 2007-2017

5.8 Challenges with MLE in Jamaica

The MLE agencies in Jamaica are challenged to effectively monitor maritime drugs and arms trafficking. The island has 1,022 km of rugged and open coastline that makes MLE patrols difficult; also, there are over 300 coves and inlets that can easily facilitate illicit activities (INCSR, 2010). Thus, maritime conveyance is the main mode of transporting illegal drugs into and out of Jamaica; this is usually done by the use of container/cargo vessels, pleasure crafts, go-fast boats and fishing vessels (INCSR, 2017).

Notwithstanding, the GOJ remains committed in bolstering the MCS capacities of its MLE agencies; additional OPVs, IPV, UAVs and an MPA have been procured to improve maritime anti-narcotics and fisheries protection operations in the island. Thus, Standard Operating Procedures (SOPs) for the use of UAVs, MPA, and OPVs must be developed with the relevant government agencies, to formulate a layered approach to the maritime security of the island.

Additionally, the JDF CG and the US Coast Guard (US CG) would routinely participate in ‘Operation Riptide’ which is a joint anti-narcotics operations in Jamaican waters (INCSR, 2010). However, the frequency of these operations has diminished over the years due to other strategic priorities of the US Government.
5.9 Conclusion of the Analysis

Globalization has facilitated the growth of cross-border trade in the fishing industry. Unfortunately, criminal networks have also capitalized on it by using fishing vessels and vulnerable fishers to expand their illicit markets for drugs, arms and human trafficking. Drugs and arms trafficking are the major TOCs committed by fishing vessel operators in Jamaican waters.\textsuperscript{28} Whilst not all registered fishers in Jamaica are engaged in TOCs, this category of workers is usually targeted by criminal elements to engage in TOCs based on their knowledge of boat handling operations and seamanship skills.

Traditionally, Colombia was the source country for cocaine trafficking in Jamaica. The maritime route from South America to North America has always passed through Jamaican waters which is the main reason the island is a transshipment point for cocaine trafficking. However, other countries have now joined the cocaine trade in Jamaica: namely, Costa Rica, Honduras, Guyana and the neighboring island of Haiti.\textsuperscript{29}

The same routes that are used for cocaine trafficking are reversed and diversified for marijuana trafficking out of Jamaica (Figure 15). The island’s geo-strategic location makes it a logistics hub for the global trade of marijuana. Jamaica remains the largest Caribbean supplier of marijuana to the Americas and to the WCR (UNDOC, 2018).

Fishing canoes remain the \textit{centre of gravity} for the trafficking of marijuana to the neighboring islands of Cayman, Haiti and the Bahamas (Appendix H). This mode of transport is especially important for the lucrative ‘drugs for guns’ trade that exists with Haiti. The success of the business model for the ‘drugs for guns’ trade was driven by the growing demand for illegal weapons to fuel gang warfare in Jamaica and the increasing external markets for marijuana. Moreover, larger fishing vessels are usually used to traffic marijuana to the Central and South American countries, particularly Costa Rica, Guyana, and Honduras.

The MLE agencies have had greater success with anti-drugs operations than with firearms trafficking into Jamaica. The canoes that are used in the ‘drugs for guns’ trade with Haiti are very hard to detect at sea and they can easily assimilate with the legitimate fishers when they are operating close to land. Further, it is very easy for them to jettison their illegal firearms into the

\begin{flushright}\footnotesize\textsuperscript{28} Personal communication with a source from MOCA on 23 August 2018, who wishes to remain anonymous. \\
\textsuperscript{29} Personal communication with a source from MOCA on 23 August 2018, who wishes to remain anonymous.\end{flushright}
sea when they are intercepted by MLE agencies. Illegal firearms are also trafficked into the island by industrial fishing vessels coming from Central and South America countries.

It is widely accepted that the global fishing industry is vulnerable to forced labor, human rights violations and human trafficking. This sentiment is also relevant to the fishing industry in Jamaica. Despite the lack of data available to substantiate the claims, there are documented cases of minors found onboard foreign vessels illegally fishing in Jamaican waters.

It may be concluded that criminal networks have infiltrated segments of the fishing industry and have capitalized on the cross-border trading opportunities and knowledge of fishers. Essentially, overfishing and destructive fishing practices associated with IUU fishing have reduced the fish stocks in the island. Consequently, fishers are now more susceptible to committing TOCs due to the economic fallout from the dwindling fish stocks.

Finally, it was noted that the same routes that are used for large-scale IUU fishing, are used for drugs and arms trafficking by fishers and boat operators from Central and South America. In addition, it appears that the countries that are traditionally associated with illegal fishing (Honduras and Costa Rica), have now diversified their illegal operations in Jamaica to include drugs and arms trafficking. Similarly, it can be argued that the success of the ‘drugs for guns’ trade between Haiti and Jamaica has encouraged the criminal elements to expand their operations to cocaine trafficking.
CHAPTER 6

CONCLUSION

Perpetrators of IUU fishing

The coastal waters of Jamaica are regarded as one of the most overfished waters in the WCR (Burke et al., 2011). IUU fishing is one of the main factors that have led to the reduction of reef fisheries and overall fish stocks in the island. Contrary to popular belief, it is not only the industrial fishers from Honduras, Costa Rica, and the Dominican Republic, who are the main perpetrators of IUU fishing. Rather, the main perpetrators (in numbers) seem to be the small-scale domestic artisanal fishers who routinely and sometimes unknowingly engage in IUU fishing.

Nevertheless, the greatest impact of IUU fishing is felt from the industrial fishing fleet. The large crews from this fleet sometimes number up to 100 (Appendix B) and they employ destructive fishing practices to capture seafood (e.g. setting multiple traps or pots on coral reefs). These IUU fishers target the high-value marine species of conch, lobster, sea cucumber and finfish on the Pedro Bank in Jamaica. They are not averse to catching protected species like turtles either, as they have little or no regard for fishing laws and regulations or observing closed seasons and minimum size of mesh on fishing gear.

Impacts of IUU Fishing in Jamaica

Food Security

It may be argued that the most glaring evidence of IUU fishing is seen in its negative impact on food security. In general, fish is regarded as a healthy food choice and it is the second most
popular source of animal protein in the diet of Jamaicans (GOJ, 2015b). Nevertheless, the island is not self-sufficient and now has to import approximately 30 times more fish than it exports (Figure 11), in order to satisfy its domestic consumption rate.

**Environmental Impacts**

It is quite difficult to ascertain the full extent of the environmental impacts of IUU fishing in Jamaica. What is certain is that the combination of destructive fishing practices (e.g. spear-fishing and dynamite fishing) and the inappropriate use of fishing gear (e.g. beach seining and fish traps on coral reefs) by IUU fishers have resulted in continual damage to the island’s fragile reefs and its marine ecosystems services. Consequently, fisheries habitats and nurseries are destroyed, which further diminishes fish stocks. Moreover, shore stabilization services are weakened and make the island more prone to flooding in coastal areas due to increased wave heights inshore.

**Economic Impacts**

On the other hand, the economic growth of Jamaica is hampered from IUU fishing as it robs the government coffers of tax revenues from the requisite registration, licensing and landing fees. Further, every year the island loses at least USD $10 million in economic value from the illegal fishing of conch, lobster and finfish.30 Hence, there is also the potential loss of economic rent for these high-value species, as IUU fishing reduces the future catching opportunities for them.

In the same vein, Jamaica is liable to lose USD $9 million every year from the reduction in the arrival of tourists, if the degradation of the coral reefs continues and the island is no longer a top destination for vacations (Burke et al., 2011).

**The Economic Dilemma of Fishing**

Artisanal fishing is no longer perceived as a lucrative career choice in Jamaica. Nevertheless, approximately 90% of the registered fishers in Jamaica are nearshore artisanal

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30 Personal communication with the CEO of the Fisheries Division, Ministry of Industry, Commerce, Agriculture and Fisheries on 22 August 2018.
Overfishing and IUU fishing have resulted in a continuous reduction in fish stocks; thus, the artisanal fishers are finding it more expensive to engage in routine fishing as they have to make longer and more frequent trips to catch fish. This makes them more susceptible to engaging in drugs and arms trafficking, in order to supplement their dwindling incomes from fishing.

Over the last 10 years, there has been a 6% decrease in the value of marine fish, and an 88% decrease in the value of aquaculture (Figure 10); furthermore, the shrimp industry has collapsed in Jamaica (Figure 8). Within the same period, there was a 40% increase in registered fishers (Figure 13) and a 73% increase in registered fishing vessels (Figure 14). Thus, more fishers are now competing for the dwindling fish stocks, whilst the value of marine fish is declining. It means that the legitimate fishers are earning less now *ceteris paribus*. Consequently, they are being compelled to find alternative means of employment to supplement their incomes. However, what is more apparent is that despite the declining value of marine fish, persons still deem it lucrative to invest their capital in the purchase and registration of fishing vessels.

**IUU Fishing: A Gateway to TOCs**

IUU fishing is no longer perceived as just an ecological problem; it has evolved into a gateway to TOCs in Jamaica. In addition, criminal networks have capitalized on globalization and are using fishing vessels to diversify their illegal trade in drugs, arms and human trafficking. The industrial IUU fishers from Honduras (Appendix B), Costa Rica, Nicaragua and the Dominican Republic (Appendix C) are routinely entering Jamaican waters to illegally fish for conch, lobster, sea cucumber and finfish (JDF CG, 2018). These same routes are then used to engage in drugs and firearms trafficking with their counterparts in Jamaica.

Furthermore, Jamaica’s geo-strategic location between the source countries for cocaine in South America and the consumption markets in North America, has transformed the island in a transshipment point for international cocaine trafficking (Figure 15). Go-fast vessels from Colombia are the major mode of maritime conveyance used to transport the cocaine into Jamaica, followed by container/cargo vessels (INCSR, 2018).

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31 Personal communication with the Director of the Fisheries Division, Ministry of Industry, Commerce, Agriculture and Fisheries on 28 August 2018.
However, industrial fishing vessels originating from Costa Rica, Honduras, and Guyana are now being used to traffic cocaine into the island.\(^{32}\) These larger fishing vessels would then engage in mothership operations offshore; the cocaine would then be offloaded to fishing canoes that also act as logistics vessels. The trend of using fishing canoes to provide logistics support to the larger fishing vessels engaged in drug trafficking also occurs in Honduras.\(^{33}\)

Moreover, there is also a thriving ‘drugs (marijuana) for guns’ trade between Haiti and Jamaica; noteworthy is that fishing canoes (Appendix H) are the *centre of gravity* for these operations as well. The business model for this ‘drugs for guns’ trade became so successful that Costa Rica, Honduras, and Guyana industrial fishers are now engaging in arms trafficking with Jamaica.\(^{34}\)

There is currently insufficient data to substantiate the extent of human trafficking and forced labor in the fishing industry in Jamaica. However, the industry remains susceptible to both human trafficking and forced labor, especially with regard to child labor on fishing vessels.

**Jamaica’s Maritime Security Strategy**

The GOJ has demonstrated its commitment to strengthening its MLE capacities and its maritime security to deter IUU fishing and its associated transnational crimes by:

a. Procuring 2 UAVs to improve the island’s offshore MCS capabilities.

b. Replacing the aging OPV fleet at the JDF CG with 2 new OPVS.

c. Finalizing the procurement of an MPA so that LRMPs can be conducted at the Pedro Bank.

d. Augmenting the MLE capabilities of both the JDF CG and the JCF Marine Division with a total of 14 IPVs.

e. Commencing the legislative process to amend the Fisheries Act to incorporate stricter penalties for large-scale IUU fishing.

\(^{32}\) Personal communication with a source from MOCA on 23 August 2018, who wishes to remain anonymous.

\(^{33}\) Personal communication with an artisanal Honduran fisher on 1 September 2018, who wishes to remain anonymous.

\(^{34}\) Personal communication with a source from MOCA on 23 August 2018, who wishes to remain anonymous.
RECOMMENDATIONS

The following are recommended in the short term:

a. Diversification training programs targeting vessel operators and vulnerable youths to give them alternative and legitimate sources of income. They may be employed as game wardens in the various Marine Protected Areas and fisheries sanctuaries, marine tour guides, boat captains and divers for industrial conch vessels.
b. Public awareness programs about the dangerous fishing practices in Jamaica and their impacts on the marine environment.
c. Public awareness and sensitization programs about the dangers of IUU fishing and its related transnational crimes on the various fishing beaches in Jamaica.
d. Incentive schemes to encourage fishers and boat operators to report large-scale IUU fishing to the relevant MLE agencies.
e. Programs to foster greater cooperation and trust between law enforcement officers and fishers to collect data and develop an early warning system for large-scale IUU fishers.
f. Development of SOPs for the use of UAVs, OPVs and the MPA to coordinate a layered approach to the maritime security of the island.
g. Increased MCS operations on the Pedro Bank and along the routes used in the ‘drugs for guns’ trade with Haiti.
h. Financial incentives for information leading to the arrest of persons engaged in the ‘drugs for guns’ trade and fishing vessel operators and owners involved in drug trafficking.
i. The GOJ accedes and ratifies the PSMA.

The following are recommended in the long term:

a. Programs aimed at empowering fishers and boat operators that they are:
   i. Important to the food security of Jamaica.
   ii. Vital in deterring small and large-scale IUU fishing and they should break the culture of silence and work with MLE agencies to stop IUU fishing.
Being targeted by criminal networks to be used as pawns to commit drugs and arms trafficking.

b. Technical support programs in fishing communities to deter fishers from engaging in TOCs.

c. Implementation of a national policy to monitor fishing vessel registration and their associated fishing efforts.

d. Stricter fines and penalties for large-scale IUU fishing; special emphasis must be placed on prosecuting the boat owners and not just the crew members.

e. Mandatory forfeiture of fishing vessels found engaged in large-scale IUU fishing.

f. Increased fines and penalties for fishers, boat operators and owners engaged in drugs, arms and human trafficking in Jamaica.

g. The provision of fishing subsidies and grants to revitalize the fledgling aquaculture industry.

h. Procurement of coastal radar stations to strengthen the Maritime Security Strategy of the island.

Further Research

There is a need for more empirical research to be done on the drug trafficking organizations in Central and South America and their influence on IUU fishing in the Caribbean, particularly in Jamaica. However, this is easier said than done based on the clandestine nature of these illegal activities.

Moreover, there is also a need for empirical research to be conducted on whether the depleting fish stocks in Jamaica have played a decisive role in influencing the younger generations away from pursuing artisanal fishing as a lucrative career choice. Also, more research is needed to determine the reasons why more fishers are resorting to TOCs like drug and arms trafficking, as opposed to using their skills in other industries in Jamaica.
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Appendices

Appendix A - Definition of IUU Fishing

IUU Fishing may be defined into 3 distinct parts (FAO, 2011):

a. Illegal fishing is any fishing activity done by:
   i. 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;
   ii. Vessels flying the flag of states that are parties to a relevant Regional Fisheries Management Organization (RFMO) 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;
   iii. Vessels in violation of national laws or international obligations, including those undertaken by cooperating states to a relevant regional fisheries management organization. This includes but is not limited to: fishing out of season; harvesting prohibited species; using banned fishing gear; catching more than the set quota; and fishing without a licence.

b. Unreported fishing is fishing that has not been reported, or has been misreported, to the relevant national authority or RFMO in contravention of national laws, regulations or reporting procedures.

c. Unregulated fishing means fishing activities in:
   (i) The area of application of a relevant RFMO 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
   (ii) Areas or for fish stocks in relation to which there are no applicable conservation or management measures and where such fishing activities are conducted in a manner inconsistent with state responsibilities for the conservation of living marine resources under international law.
Appendix B - Honduran IUU Fishing Vessel Seized in Jamaica

**Honduran F/V Kristen Marie**

On 14 December 2012, the JDF CG caught the Honduran F/V *Kristen Marie* and her 95 crew members (including 20 minors) fishing illegally on Walton Bank (JDF CG, 2018). The catch comprised over 100 lbs. of lobster, 10 lbs. of conch, 60 lbs. crab, 14 lbs. octopus and a turtle. They were later found guilty of all charges.

Source: Operations Department, JDF CG 2018
Appendix C - Dominican Republic IUU Fishing Vessel Seized in Jamaica

**F/V Almah Rosa**

On 4 April 2017, the Dominican Republic registered F/V *Almah Rosa* and her 59 crew members were arrested by the JDF CG for IUU fishing on the Pedro Bank (The Gleaner, 2017). All the crew members were later found guilty; the catch (7,565 lbs. of finfish) and the fishing equipment were forfeited to the GOJ. They were arrested along with the Jamaican F/V *Captain Sammo* that they were in collusion with whilst engaging in IUU fishing (The Gleaner, 2017). The 16 crew members of F/V *Captain Sammo* were also found guilty of IUU fishing; in addition to aiding and abetting persons to illegally fish in Jamaica.

Source: Operations Department, JDF CG 2018
Appendix D - Conch and Lobster Seized from Industrial IUU Fishing Vessels in Jamaica

Lobster Tail and Berried Lobster$^{35}$

Source: Operations Department, JDF CG 2018

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$^{35}$ Female lobster carrying eggs attached to its tail.
Conch

Source: Fisheries Division, Ministry of Industry, Commerce, Agriculture and Fisheries, 2018

Bags of Finfish

Source: Operations Department, JDF CG 2018
Appendix E – JDF CG Station Pedro Cay

Source: Operations Department, JDF CG 2018
Appendix F – Definition of Transnational Crime

According to the UNTOC, transnational crime is committed in (United Nations, 2000):

a. More than one State; but a substantial part of its preparation, planning, direction or control takes place in another State;
b. One State but involves an organized criminal group that engages in criminal activities in more than one State;
c. One State but has substantial effects in another State.
Appendix G – Costa Rican Go-fast Boat Seized for Cocaine Trafficking in Jamaica

M/V Artemisa

Source: Operations Department, JDF CG 2018

The go-fast boat *Artemisa* and 1,345 lbs of marijuana were seized the JDF CG in Jamaican waters on 13 February 2018. All of the 5 Costa Rican crew members were arrested and charged (JDF CG, 2018).
Appendix H – Fishing Vessels Seized in Jamaican Waters for Marijuana Trafficking

**F/V Neptuno Azul**

Source: Operations Department, JDF CG 2018

F/V *Neptune Azul* was seized in a joint operation with the JDF CG and the Narcotics Division (JCF) on 29 July 2016. A total of 470 lbs of marijuana were found onboard the vessel (JDF CG, 2018).

**F/V The Exit**

Source: Operations Department, JDF CG 2018
F/V Exit was seized and a total of 699.9 lbs of marijuana were found onboard the vessel on 12 September 2013 (JDF CG, 2018).

**F/V Blue Whale**

![Blue Whale image](image)

Source: Operations Department, JDF CG 2018

F/V Blue Whale was seized by the JDF CG on the 3 May 2018, after the crew was caught jettisoning packages of marijuana in the coastal waters of Jamaica (JDF CG, 2018).
Appendix I – Jamaican Fishing Vessels Seized for Drug Trafficking in the Cayman Islands

Source: Joint Marine Unit, RCIPS 2018

Source: Joint Marine Unit, RCIPS 2018
Source: Joint Marine Unit, RCIPS 2018
Appendix J – Marijuana and Cocaine Seized Onboard Fishing Vessels in Jamaica

Marijuana

Source: Operations Department, JDF CG 2018

Source: Operations Department, JDF CG 2018
Cocaine

Source: Operations Department, JDF CG 2018
Appendix K – F/V Miss Dialin Seized with Undocumented Persons in Jamaican Waters

F/V Miss Dialin was intercepted in Jamaican waters by the JDF CG on 5 February 2018. The 4 undocumented crew members onboard the vessel claimed to be Nicaraguans; they were later arrested by the police (JDF CG, 2018).

Source: Operations Department, JDF CG 2018
INTERVIEW QUESTIONS
ILLEGAL, UNREPORTED AND UNREGULATED (IUU) FISHING &
TRANSNATIONAL ORGANISED CRIMES IN JAMAICA

Name: ..........................................................................................................................
Occupation: ........................................................................ Date: ..............................

1. Is fishing a lucrative career choice in Jamaica? Please provide an
   explanation.

2. Does Jamaica have a problem with Illegal, Unregulated and Unreported
   (IUU) fishing?

3. What type of fisher is more likely to engage in IUU fishing in Jamaica?

4. Is it easy to engage in illegal fishing in Jamaican waters?

5. Where in Jamaica does illegal fishing mostly occur?

6. What type of fish (fin or shell) is targeted by fishers who engaged in IUU
   fishing in Jamaica?

7. Have you ever witnessed or heard of illegal fishing being done in
   Jamaican waters? Please give a brief explanation.

8. How can the Government of Jamaica (GOJ) prevent or deter IUU fishing?

9. Do you think the current fines for illegal fishing is a deterrent?

10. Are you aware of any fisher who is engaged in drugs, weapons or human
    trafficking in Jamaica?

11. Why are more fishers engaging in transnational crimes like drugs and/or
    weapons trafficking now in Jamaica?

12. What type of fishers is more likely to engage in drugs trafficking and/or
    the guns for drug trade in Jamaica?

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36 The questions were modified based on the background and experience of each interviewee.
13. How easy is it to transition from illegal fishing to drugs trafficking or weapons trafficking in Jamaica?

14. How can the GOJ deter fishers from engaging in drugs, weapons or human trafficking?

15. Is it possible for foreign fishers who illegally fish in Jamaican waters to also engage in human, drugs and weapons trafficking there?

16. Do you think that illegal fishing should be classified as a serious crime?

17. Are you aware of any fisher who is engaged in the drugs for gun trade, human or drug trafficking?

18. Do you know of any incident involving local fishers who are colluding with foreign fishers who fish illegally in Jamaican waters? If so, kindly provide a brief description of it?

19. Are you aware of any incident involving Jamaican fishers who have been engaging in human, drugs or arms trafficking? If so, please provide a brief explanation of it.

20. Is there anything else you wish to say about IUU fishing and transnational crimes in Jamaica?