THE PARIS CLIMATE CHANGE AGREEMENT AND THE REGULATION OF INTERNATIONAL MARITIME TRANSPORTATION

By

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ABSTRACT

International maritime transport is a significant source of anthropogenic greenhouse gas (GHG) emissions, particularly CO_2. As such, it is a substantial contributor to global warming. The sector's share of CO_2 is expected to increase considerably if efforts are not made to limit its contribution of GHG emissions. This issue has been on the international climate change regulatory agenda for over two decades now. Nonetheless, the regulation of emissions from international maritime transport is visibly absent in the 2015 landmark Paris Agreement. This thesis attempts to understand the reasons for the non-regulation of international shipping under the Paris agreement. To understand the reasons for the situation, three questions were asked: 1. What is the history of the debate around the inclusion or exclusion of the regulation of the international maritime transport in the international climate regime prior to the Paris Agreement? 2. What has been the role of International Maritime Organization (IMO) in regulating emissions from international maritime transport? 3. What are the driving factors for the exclusion of the regulation of maritime transportation within the Paris Agreement and who are the actors involved? Using a qualitative content analysis of secondary data collected predominantly from online databases and websites, the thesis revealed that the domestic economic and political interest of China, US, and India were the main contributing factors for the non-regulation of international shipping under the Paris climate change agreement. This was facilitated by their structural positions in international politics. These parties exploited the complexities in allocating international shipping emissions to parties to advance their domestic interests. Again, it was discovered that the adoption of secret meetings with powerful actors to achieve tradeoffs on contentious issues among actors, which shrouded the negotiation process augmented the ability of these nations to exert their influence. Hence, this thesis argues that parties' domestic interests play an important role in shaping international regulations. This argument represents an empirical contribution that advances the field of international environmental regulations by showing how powerful domestic economic and political interests shape agreements at the global level.

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To God be the glory

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LIST OF ABBREVIATIONS AND SYMBOLS

ADP	Ad hoc Working Group on the Durban Platform for Enhanced Action
AGBM	Ad hoc Group on the Berlin Mandate
AWG	KP Ad hoc Working Group on further commitments for Annex I Parties under the Kyoto Protocol
AWG-LCA	Ad hoc Working Group on Long-term Cooperative Action under the Convention
CBDR	Common but Differentiated Responsibilities
CDM	Clean Development Mechanism
CFCs	Chlorofluorocarbons
CH4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
COP	Conference of Parties
EC	European Commission
EU	European Union
GHG	Green House Gas
HFCs	Hydrofluorocarbons
ICCT	International Council on Clean Transportation

ICSU	International Council of Scientific Unions
IEA	International Energy Agency
IMO	International Maritime Organization
INC	Intergovernmental Negotiating Committee
INDCs	Intended Nationally Determined Contributions
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
MIT	Massachusetts Institute of Technology
N2O	Nitrous oxide
NAS	National Academy of Sciences
NF3	Nitrogen trifluoride
NGO	Non-governmental Organization
NOX	nitrogen oxides
NRC	National Research Council
PFCs	Perfluorocarbons
SF6	Sulfur hexafluoride
SOX	sulfur oxides
TPES	total primary energy supply

UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
US	United States of America
WMO	World Meteorological Organization
WTO	World Trade Organization
MSC	Maritime Safety Committee
MEPC	Marine Environment Protection Committee
SBSTA	Subsidiary Body for Scientific and Technological Advice

CHAPTER ONE: INTRODUCTION

1.1 Background

International maritime transport (or international shipping) is a fast growing sector responsible for about 90% of the world's trade goods, and it is vital to the functioning of the global economy (Hulme, 2009; Lam & Van De Voorde, 2011; WTO 2008). The growth of the sector has been primarily due to an increase in globalization and the relatively low cost involved in transporting through this medium instead of alternative means (Gilbert, 2006). Despite the crucial role of the sector in the world's economic development, it has been cited as unsustainable, and this is due to its role in climate change (Cristea, Hummels, Puzzello, & Avetisyan, 2013). Investigations suggest that emissions from the maritime transport sector account for a significant portion of total emissions, with carbon dioxide (CO_2) emissions from shipping activities estimated to account for over 3% of the global total (Miola, Ciuffo, Giovine, & Marra, 2010; Smith et al., 2015a). What is even more alarming is its projected increase in emissions between 50% and 250% by 2050 (Hackmann, 2012; Heine, Gäde, Dominioni, Martinez Romera, & Pieters, 2015; Smith et al., 2015a). CO_2 is the principal Greenhouse Gas (GHG), based on empirical research, which is triggering climate change (Li & Hewitt, 2008).

Despite the substantial percentage of emissions by this sector (with a size large enough to place as sixth largest if it was a country in 2015 [Obergassel et al., 2015; Olmer et al., 2017]), international shipping is virtually unregulated by the Paris Agreement – an agreement under the international climate change regime dealing with the mitigation, adaptation, and finance of greenhouse gas emissions (Dimitrov, 2016; Heine et al., 2015; Obergassel et al., 2015; Romera, 2016). International shipping emissions are excluded from any emissions inventories under the

climate regime because of the international nature of the shipping industry (Heitmann & Khalilian, 2011). International shipping involves shipping activities between ports across borders which does not include military and fishing vessels (Anderson & Bows, 2012; Hackmann, 2012; Heitmann & Khalilian, 2011). Emissions from international shipping are classified as "international emissions," and as such not assigned to countries under the climate change regime (Strong, 2011:2).

The international climate change regime comprises mainly the 1992 United Nations Framework Convention on Climate Change (UNFCCC), the 1997 Kyoto Protocol and the recent 2015 Paris Agreement (Hackmann, 2012; Heine et al., 2015; Romera, 2016). The Kyoto Protocol does not directly regulate emissions from international shipping; it rather calls on developed countries to pursue their limits through the International Maritime Organization (IMO), the United Nations specialized agency responsible for regulating the shipping industry (UNFCCC, 1998; Strong, 2011). Unfortunately, IMO measures to curb GHG emissions over the years has been weak and yielded no substantial results. Hence, there were talks of including the sector into subsequent agreements to provide a step towards its regulations (Obergassel et al., 2015). The Paris Agreement of 2015, however, did not include the shipping sector. The exclusion of the sector in the Paris Agreement, despite acknowledgement of a need by actors such as European Union (EU) and the Environmental Integrity Group[1] (Dimitrov, 2016; Obergassel et al., 2015) and the failure of previous measures in Kyoto, necessitates a deeper understanding of the reasons for the continuous neglect. The thesis examines the issues around the exclusion of the international shipping sector in the Paris Agreement, in an attempt to bring forth important findings and conclusions that will influence further climate change agreements.

[1] The environmental integrity group includes Liechtenstein, México, Monaco, the Republic of Korea and Switzerland (Obergassel, et al., 2015: 252).

The thesis argues that political and economic domestic interest of influential countries in international governance led to the exclusion of international shipping from Paris Agreement. This was reinforced by the structural positions of the countries in different aspects of global politics, and the power they wield because of their influences. To advance these arguments, the processes and specific activities and discussions, with the respective stands of the powerful nations towards the Paris Agreement, are emphasized throughout this thesis.

1.2 Problem Statement

In December 2015, under the auspices of the UNFCCC, about one hundred and ninety–six parties adopted the Paris Agreement at the UN Climate Change Conference in Paris as a successor to the Kyoto protocol (Bodansky, 2016; Christoff, 2016; Ciplet et al., 2015; Clémençon, 2016; Doelle, 2015; Falkner, 2016). The Paris agreement was, according to some analysts, built on a more steady foundation than its successor with hopes to aid in the realization of keeping emissions below a level that would result in a rise of global temperatures by 2 degrees Celsius (Bodansky, 2016; Christoff, 2016; Dimitrov, 2016; Falkner, 2016; Obergassel et al., 2015). However, some studies conducted on the Intended Nationally Determined Contributions (INDCs) submitted by countries under this Agreement suggest that this "below 2 degrees" target by the Agreement is unattainable (Bodansky, 2016; Rogelj et al., 2016). The studies revealed that the INDCs was good for the achievement of median warming of 2.6-3.1 degrees by 2100, meaning the world could expect 2.7 degree Celsius at best (Bodansky, 2016; Rogelj et al., 2016). Meanwhile, one of the significant emitters of GHG, international shipping is not regulated by this Agreement.

Several studies (Christoff, 2016; Clémençon, 2016; Dimitrov, 2016; Falkner, 2016; Grasso, 2017; Obergassel et al., 2015; Spash, 2016; Young, 2016) have explored and analyzed international climate agreements, notably the Paris Agreement, and the possibilities of

implementation. However, these studies have at best discussed international climate change regime, and occasionally highlighted the position of maritime transport. Nonetheless, the questions surrounding the continuous neglect of international maritime transport in climate agreements, including the Paris Agreement, is still open to debates and further inquiry. Even though there have been some discussions of this issue in gray literature, there has been insufficient peer-reviewed academic studies (Romera, 2016) to examine the factors accounting for the exclusion of shipping from the international climate agreements, particularly the recent Paris Agreement, despite estimated increases in shipping emissions. Thus, this study seeks to address the knowledge gap by examining the issues around the exclusion of the sector in the Paris Agreement.

1.3 Purpose Statement

Most policymakers and scholars view the Paris Agreement as the 'turning point' in the multilateral fight against climate change yet the agreement was without reference to the regulation of international maritime transport, which is one of the significant sources of global CO_2 emissions. The purpose of this study, therefore, is to examine the factors leading to the exclusion of the international shipping in the Paris Agreement, which has hitherto received scant attention.

1.4 Research Questions

This study seeks to answer the following questions;

1. What is the history of the debate around the inclusion or exclusion of the regulation of international maritime transport in the international climate regime prior to the Paris Agreement?
2. What has been the role of International Maritime Organization (IMO) in regulating emissions from international maritime transport?

3. What are the driving factors for the exclusion of the regulation of maritime transportation within the Paris Agreement and who are the actors involved?

1.5 Research Objectives

The research seeks to achieve the following objectives;

1. Reconstruct and examine the issues around inclusion or exclusion of international maritime transport in international climate policy, prior to the Paris Agreement.
2. Examine the role of IMO in regulating international maritime transport emissions; and
3. Explore the driving factors for the exclusion of the regulation of maritime transportation within the Paris Agreement.

1.6 Methodology

Research methodology is simply defined as "a way to systematically solve the research problem" (Kothari, 2004: 8). This involves all the steps a researcher uses in solving the research problem including the underlying philosophy and methods or strategies employed (Ibid). This section highlights the research design, data collection, and data analysis that were used to undertake this research.

1.6.1 Research Design

This thesis is largely qualitative. Qualitative research methods emerged as the most suitable method for data collection and analysis for this thesis. Qualitative research design has the characteristics of unearthing information, interpretation and understanding as its hallmark (Yilmaz, 2013). Considering the study is document-focused, qualitative approach, which has been employed by previous studies (Bowen, 2009; Spencer & Ritchie, 2002), provides a strong

foundation for this research. The choice of this method is hinged on the type of questions explored, which are open with no specific hypothesis. The study seeks to openly explore the issues surrounding the exclusion of maritime transport in the Paris Agreement, which makes the qualitative design appropriate due to its strength in revealing nuances in socio-political phenomenon. The ability of the approach to work with extensive text data (Thomas, 2006), the main data source for this research, also influenced the choice. This data helps in examining potential factors in the exclusion of international shipping from the Paris Agreement, such as the behavior of member states of the UNFCCC particularly the four largest emitting parties i.e. China, US, India, and EU.

1.6.2 Data Collection

This research made use of predominantly secondary sources of data. Secondary sources of data collection were employed to explore this sensitive topic with an elusive population (Long-Sutehall, Sque, & Addington-Hall, 2011). However, primary texts and videos, which include country submissions, draft decisions, position statements, and final agreements, mostly from the UNFCCC website and the International Maritime Organization (IMO), were used. Secondary sources of data were from journal articles, websites such as the UN website, IPCC website, IMO website, governments and international documents from international databases, newsletters, press releases, newspaper reports and reports by conference participants. Speeches and interviews, conference reports and declarations, reports of Governmental and Intergovernmental Organizations were also consulted. Much of the data was obtained from online sources employing search engines like Google Search, Google Scholar, and MUN One Search. However, the Grenfell Library was also consulted to obtain data towards this thesis.

1.6.3 Data Analysis

This study is a qualitative study; hence, it employed qualitative data analysis techniques. It specifically employed the qualitative content analysis with the help of the NVIVO 11 software for the analysis. Qualitative content analysis according to Mayring (2000) is an "approach of empirical, methodological controlled analysis of texts within their context of communication, following content analytical rules and step by step models, without rash quantification" (p. 5). This analysis was done inductively considering the openness of the research questions (Hsieh and Shannon, 2005; Mayring, 2000). This is also in tune with what Hsieh and Shannon (2005) call the conventional content analysis.

Practically, data was processed and analyzed in stages. First, the researcher identified articles and grey literature from internet and library sources. All relevant potential materials were downloaded with the help of Zotero referencing software, to make referencing easy and to facilitate organization of materials. An initial scan was carried on these materials to sort relevant ones for onward processing in Nvivo. Materials were scanned, and key points highlighted within the Zotero set-up. This was to ensure easy coding in later stages of the analysis and to help identify key themes. Materials were then moved to Nvivo, where the writer carefully read and picked out ideas based on pre-informed and emerging themes. Pre-informed themes were created based on the main objectives and research questions that guide the research, to ensure that outputs were consistent with the study. However, it is important to note that even though the study had pre-informed themes, it was largely inductive as the research questions allowed for identification of key ideas

from the data. After the researcher generated the themes in Nvivo, key points in text that addressed the themes were moved to Microsoft Office to guide final write-up of this thesis.

1.6.4 Discussion of Ethical Issues

Since the researcher employed secondary sources of data, there was no submission of ethical clearance to the Grenfell Campus Research Ethics Board for review. However, all other forms of ethical issues as far as research writing is concerned were adhered.

1.7 Significance of the Study

Climate change has been one of the topical issues globally. The call for climate change adaptation and mitigation has led to the formation of climate change regime which includes the recent Paris climate Agreement. This Agreement, which seeks to cut down on emissions through sector regulations, omitted the international maritime transportation sector responsible for a significant amount of global CO_2 emissions from the regulations. It is, therefore, imperative in the light of the above that studies be conducted to ascertain the factors that led to the exclusion of international maritime transport from emission regulation in the Paris Agreement.

The findings of the study could serve as a basis of information for countries and international organizations in policymaking decisions about emissions regulations and climate change policy in general. The study will also add to the body of literature on international climate regimes as well as international maritime transportation. This will serve as the basis for future research to academics, researchers and scholars.

1.8 Organization of the Study

The study is organized into six main chapters. Following a general overview in chapter one, chapter two bring to fore the key conceptual basis of the research. For a better appreciation of the context of international climate change regulations and agreements, the second chapter reviews literature on the climate change problem. The chapter defines the concept of climate change and explores the issue of anthropogenic GHG emissions, which is the major cause of climate change and its impacts. It also explores the role of the maritime sector, particularly international maritime transport, in the emission of GHGs.

International regime theory is reviewed in the third chapter of this thesis to provide a better description of understanding and explaining the international climate change regime. The chapter also explores how the international climate change regime emerged from the days where the issue was in the domain of scientists during the 1970s, to this point where it is an international policy issue. The developments made after the emergence of the international climate change regime over the past two decades are also discussed.

Chapter four, which sets in the empirical discussion of this thesis, examines the issues of regulation and non-regulation discussed under the international climate change regime. It reviews the allocation options provided by the Subsidiary Body for Scientific and Technological Advice (SBSTA) as well as the issues around regulation of international shipping that emerged during the different conference of parties (COPs) organized over the years. The regulation of international shipping under the International Maritime Organization (IMO), the international organization responsible for limiting GHG emissions from international shipping under the Kyoto protocol, is also explored in this chapter of this thesis. Here the IMO and its mandate, as well as the measures and attempts it has made to limit GHG emission from international shipping are explored.

The fifth chapter attempts to explain why the Paris Agreement does not regulate international shipping. To achieve that, the chapter explores the negotiations before and at the Paris conference that led to the adoption of the agreement. It also examines the four largest emitting parties, China, US, India, the EU, and their role in this issue of non-regulation of international shipping.

The final chapter presents a summary of the findings emerging from the investigations, and then some conclusions are offered at the end. All these chapters attempt to enlighten readers about international climate change regime and the reduction of GHG emissions in general. It most importantly explains why international shipping, a very important sector as far as GHG emission and climate change is concerned, is not regulated under the Paris Agreement.

CHAPTER TWO: THE CLIMATE CHANGE PROBLEM AND MARITIME TRANSPORT

2.1 Introduction

The first chapter provided a background to the research. This background sets the tone to understanding the subsequent chapters of this thesis. Among some of the issues raised in the chapter was the nexus between climate change and international maritime transport. This chapter expands this issue to provide a detailed perspective on the background to the two areas. To appreciate the need to limit greenhouse gas (GHG) emissions from international maritime transport, it is important to know the meaning and effects of climate change as well as the role the maritime transport industry plays in this change in climate. This chapter explores the issue of climate change with specific emphasis on the role of the maritime transport sector.

2.2 What is Climate Change

Climate change is one of the worst problems facing the world in the twenty-first century. The Intergovernmental Panel on Climate Change (IPCC) defines climate change broadly as encompassing any change in climate over time, whether due to natural variability or because of human activity (IPCC, 2001: 2). This definition is broad as it encompasses both the natural and artificial, or human-activities that lead to a change in the climate. However, the main global inter-governmental initiative created to address climate change, the UNFCCC, defines the term in a narrower way to encompass only the later. The UNFCCC defines climate change as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over

comparable time periods".[2] This definition reflects what has come to be known as anthropogenic climate change. Human influences have over the past six decades been the prevailing visible influence on climate change (Karl, 2003). There is a scientific consensus that human activities are affecting the earth's climate (IPCC, 2001).

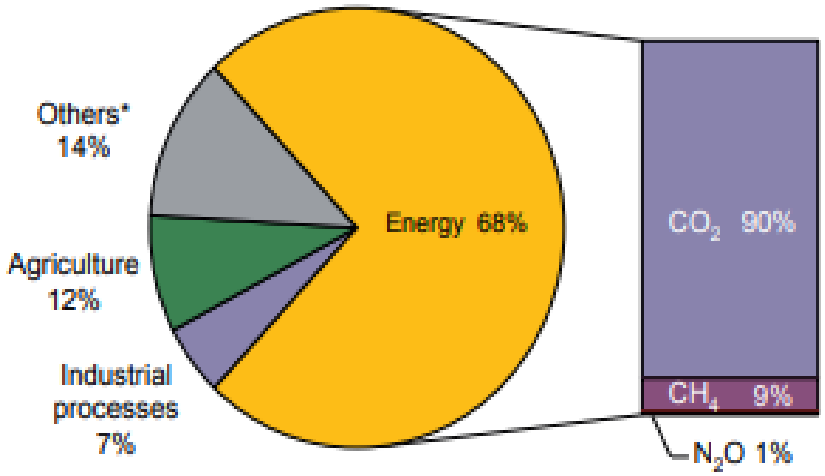
Humans directly or indirectly interfere with the natural flows of energy through changes in atmospheric composition. The changes in atmospheric composition occur as a result of emissions of greenhouse gases[3] which is the principal factor contributing to climate change (Karl, 2003). The main GHGs are carbon dioxide (CO_2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF6), and nitrogen trifluoride (NF3) (Shi, 2012).

The principal sources of these anthropogenic GHG emissions are the production of energy from coal, gas and other industrial processes not associated with energy, as well as agriculture, and related activities. Energy production, which is the largest source of anthropogenic GHG, produces mainly CO_2 emerging from the oxidation of carbon in fuels during combustion (IEA, 2017). For instance, CO_2 is trapped into the earth atmosphere by burning fossil fuels such as coal, natural gas, and oil.[4] Likewise, agricultural activities such as domestic livestock and rice cultivation generate mostly CH4 and N2O, while industrial practices not linked to energy generate largely fluorinated gases and N2O (IEA, 2017) (see Figure 1 for details on anthropogenic activities).

[2]See UNFCCC (1992). UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE retrieved from http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf on November 3 2017.

[3]The UNFCCC defines Greenhouse gases as those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation retrieved from http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf

[4] Ibid



* Others include large-scale biomass burning, post-burn decay, peat decay, indirect N_2O emissions from non-agricultural emissions of NO_x and NH_3, Waste, and Solvent Use.

Source: based on IEA estimates for CO_2 from fuel combustion and EDGAR version 4.3.2 for CO_2, CH_4 and N_2O emissions and 4.2FT2010 for the F-gases; based on 100-year Global Warming Potential (GWP).

Figure 1: Estimated Shares of Global Anthropogenic GHG, 2014

Source: International Energy Agency (2017)

According to the International Energy Agency (IEA), there has been an increase in world energy demand since the industrial revolution, which started in the 18th Century. As shown in Figure 2, there has been a rise in energy demand globally as measured by total primary energy supply (TPES) by nearly 150% between 1971 and 2015. Even though in recent times there have been efforts to use non-fossil fuel-based energy sources, in 2015, fossil-based sources accounted for 82% of the global TPES, thereby leading to an increase in CO_2 emissions (IEA, 2017).

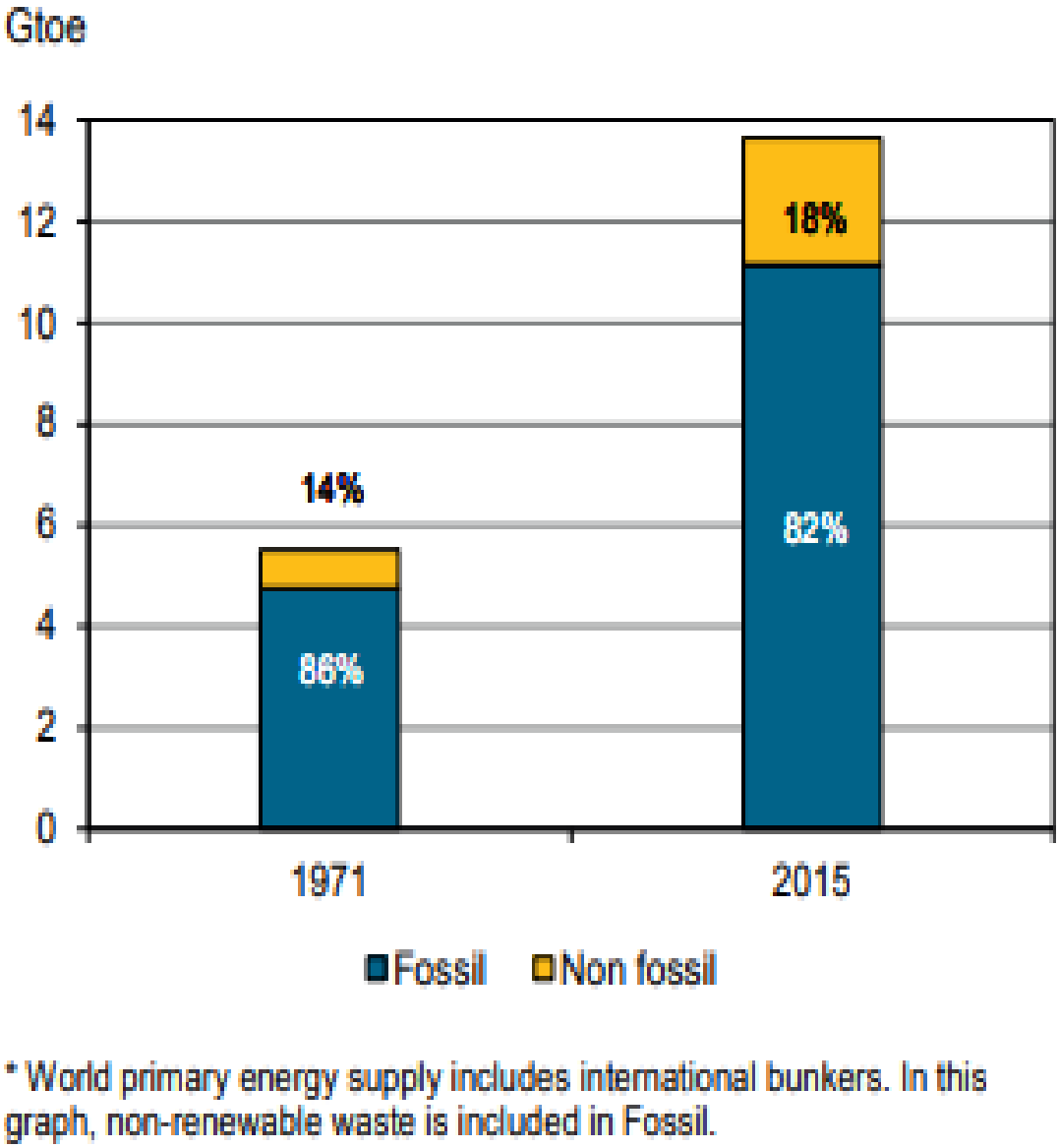


Figure 2: World Primary Energy Supply

Source: International Energy Agency (2017)

The rapid increase of carbon dioxide in the atmosphere appears to be fundamentally human-induced (IEA, 2017; Wong, 2015). There has been an enormous increase in the average carbon

dioxide concentration in the atmosphere since the industrial revolution (Wong, 2015). See Figure 3.

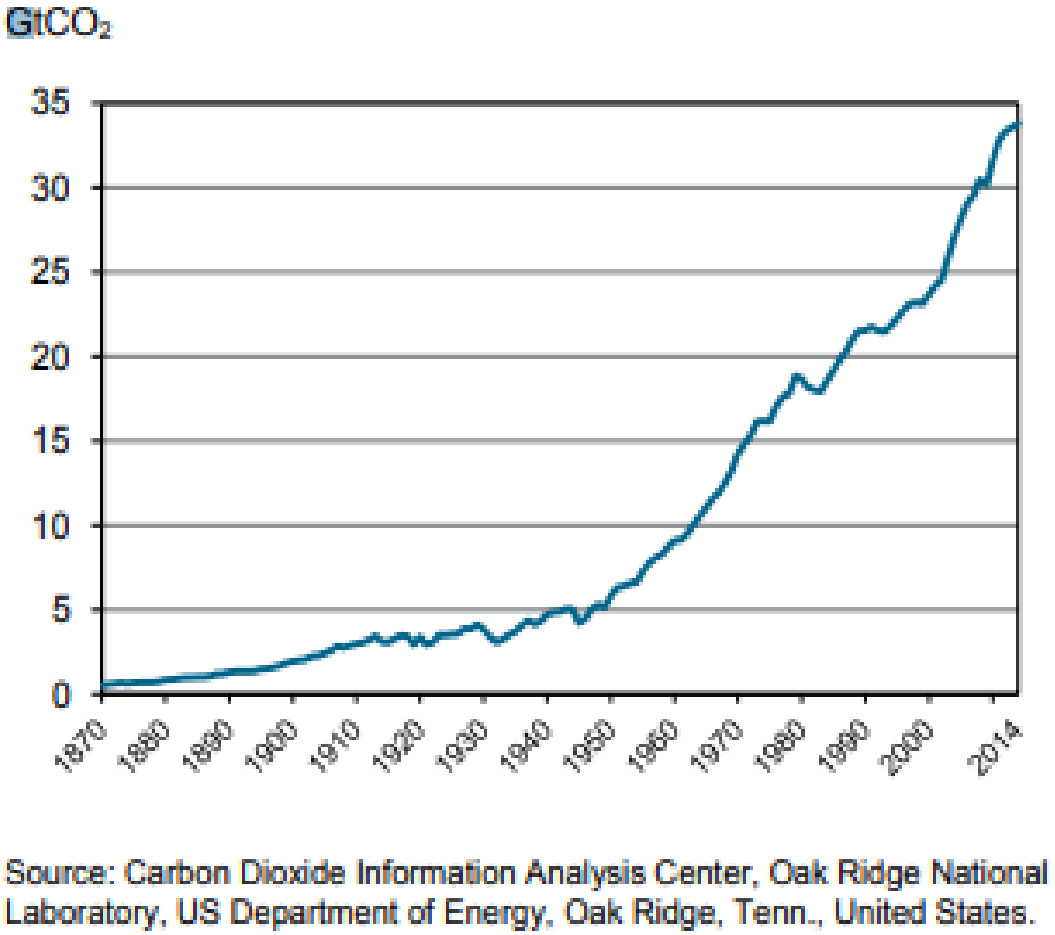


Figure 3: Trend in CO_2 Emissions from Fossil Fuel Combustion, 1870-2014

Source: International Energy Agency (2017)

2.3 Impacts of Climate Change

The continual accruing of CO_2 on the earth's atmosphere has numerous consequences on the earth. There has been an upsurge in surface air and subsurface ocean temperatures in recent decades, which leads to sea level rise (Harley et al., 2006; IPCC, 2001; NRC, 2001:1; Wong, 2015). Research shows that the rate of increase in sea level in the past ten years is twice the rate compared to the preceding 100 years (Wong, 2015). Apart from the increase in temperature, there are extreme weather events caused by distress of the climate balance since the 1950s and even worse in recent decades (IPCC, 2001; Wong, 2015). The presence of heat waves, droughts, hurricanes, tornadoes, and other hostile weather phenomena, as well as ice melts, are testaments to this fact (Wong, 2015).

2.4 Maritime Transport and CO_2 Emissions

International maritime transport is a fast-growing sector which is essential to the functioning of the global economy (Hulme, 2009; Lam & Van De Voorde, 2011; WTO 2008). The growth in the sector is driven by globalization and its relative low cost (Gilbert, 2006). However, its growth has come at a cost to environmental integrity due to its role in GHG emissions. According to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, there are different types of shipping; international, domestic, military and fishing (IPCC, 2006). For the purposes of this study, I would distinguish between international shipping and domestic shipping. International shipping has been defined as shipping between ports of different countries, or across borders, or simply put associated with international trade, except military and fishing vessels (Anderson & Bows, 2012; Hackmann, 2012; Heitmann & Khalilian, 2011). In contrast, domestic shipping is defined as shipping between ports of the same country or, in other words, local shipping activities except military and fishing vessels (Hackmann, 2012; Heitmann & Khalilian, 2011).

2.4.1 GHG Emissions from the Maritime Transport Sector

Notwithstanding the critical role of the sector in global economic development, the maritime shipping sector has been mentioned as unsustainable because of the part it plays in climate change (Cristea et al., 2013). Shipping is a substantial source of greenhouse gases, mainly because they use "bunker fuel," the degraded residues of the fossil-fuel refining process. Because 50% of the operating cost of a ship goes to fuel oil, most ship-owners in their bid to save on cost tend to use this bunker fuel in marine power plants (Lin & Lin, 2006). These bunker fuels contain high levels of chemicals such as asphalt, carbon residues, sulfur and metallic compounds, which comes out through the burning process of marine diesel engines, incinerators and boilers (Lin & Lin, 2006). In the end, substantial amounts of gases such as particulate matter, nitrogen oxides (NOX), sulfur oxides (SOX), carbon monoxide (CO) and most importantly carbon dioxide (CO_2) are emitted into the atmosphere (Lin & Lin, 2006). The primary source of emissions from ships is CO_2 based on both the quantity of emissions as well as its potential for global warming (IMO, 2009). CO_2 emissions from ships "lead to positive radiative forcing (a metric of climate change) and long-lasting global warming" (Buhaug et al., 2009:1)

At the moment, the International Maritime Organization has conducted three studies on the emissions of GHG from ships[5]. All three studies conducted by the IMO (IMO, 2000[6]; 2009[7];

[5] IMO is a UN specialized agency responsible for setting global standard for the safety, security and environmental performance of international shipping and the prevention of marine pollution by ships.

[6] See IMO adopted resolution 8 on "CO2 emissions from ships". This resolution invited, inter alia, the IMO to study emission of GHG from ships for establishing the amount and relative percentage of GHG emissions from ships as part of the global inventory of GHG emissions. As a follow-up to the above resolution, the IMO Study of Greenhouse Gas Emissions from Ships was completed and presented to the forty-fifth session of the MEPC (MEPC 45) in June 2000, as document MEPC 45/8. Page 2. See also Skjølsvik, K. O., Andersen, A. B., Corbett, J. J., & Skjelvik, J. M. (2000). Study of Greenhouse Gas Emissions from Ships (MEPC 45/8 Report to International Maritime Organization on the outcome of the IMO Study on Greenhouse Gas Emissions from Ships), MARINTEK Sintef Group. *MARINTEK Sintef Group, Trondheim, Norway*.

[7] MEPC 55 (October 2006) agreed to update the "IMO Study of Greenhouse Gas Emissions from

2014[8]) hinged on the role of shipping in GHG emissions and the need to limit it to prevent future disaster (Bodansky, 2016). According to the latest IMO report, the shipping sector contributes about one billion metric tons of carbon dioxide per year, representing about 3% of global CO_2 emissions. Out of the one billion, international shipping contributes about nine hundred million tonnes, accounting for approximately 2.6% of global CO_2 emissions (Bodansky, 2016; IMO, 2015). See Table 1 for shipping CO_2 emissions compared with global CO_2 emissions for the period under the IMO study, 2007-2012.

Table 1: Shipping CO_2 Emissions Vis a Vis Global CO_2 Emissions

Source	3rd IMO GHG Study (million tonnes)						ICCT (million tonnes)		
	2007	2008	2009	2010	2011	2012	2013	2014	2015
Global CO_2 emissions*	31,959	32,133	31,822	33,661	34,726	34,968	35,672	36,084	36,062
International shipping	881	916	858	773	853	805	801	813	812
Domestic shipping	133	139	75	83	110	87	73	78	78
Fishing	86	80	44	58	58	51	36	39	42
Total shipping	1,100	1,135	977	914	1,021	942	910	930	932
% of global	3.5%	3.5%	3.1%	2.7%	2.9%	2.6%	2.5%	2.6%	2.6%

* *Global CO_2 estimates include CO_2 from fossil fuel use and industrial processes (EDGAR, 2017).*

Source: Olmer et al. (2017)

Ships" from 2000 to provide a better foundation for future decisions and to assist in the follow-up to Resolution A.963(23). MEPC 56 (July 2007) adopted the Terms of Reference for the updating of the study, which has been given the title "Second IMO GHG Study 2009". See also Buhaug, et al. (2009).

[8] See Smith et al. (2015).

It is evident from the IMO studies, as seen in Table 1, that international shipping contributes a larger portion of the maritime sector's CO_2 emissions. For instance, the IMO studies recorded 1100 million tons of emissions in 2007, representing about 3.5% of global CO_2 emissions, out of which 881 million tons were from international shipping. In addition, in 2012, total shipping emissions were approximately 942 million tons, accounting for 2.6% of global CO_2 emissions with international shipping emissions representing about 805 million tons.

A study on the emissions of CO_2 from the sector from 2013-2015 by the International Council on Clean Transportation (ICCT) also attests to this fact (see Figure 4). The study indicates that the shipping sector emitted 2.6% of global CO_2 emissions from fossil fuel use and industrial processes in 2015. Out of this percentage, about 87% were from international shipping (see Figure 5) which makes it the sixth biggest emitter if treated as a country (see Olmer et al., 2017).

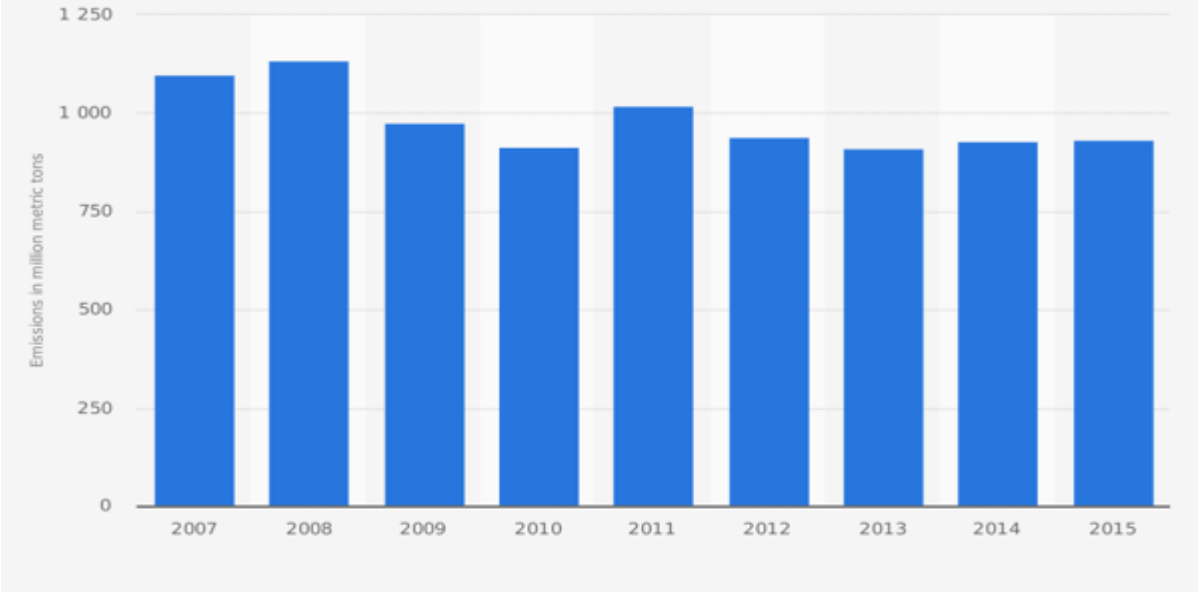


Figure 4 Carbon Dioxide Emissions from Shipping Worldwide from 2007-2015 in Million Metric Tons.

Source: Olmer et al., (2017) and Statista (2018)

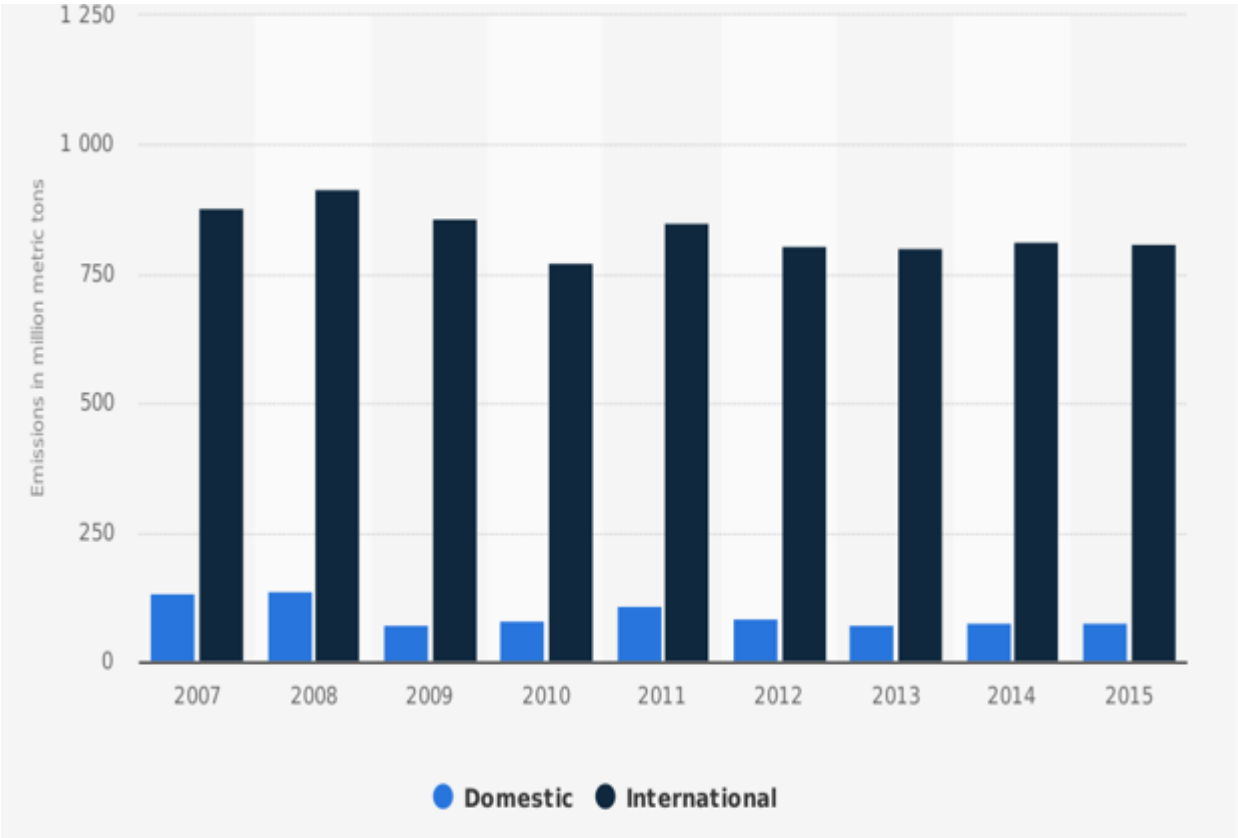


Figure 5 : Carbon Dioxide Emissions from Domestic and International Shipping Worldwide from 2007-2015 in Million Metrics

Source: Olmer et al., (2017) and Statista (2018)

Even though the IMO studies show a decrease in CO_2 emissions from 2007 to 2012, the study also estimates that CO_2 emissions from international shipping has the potential to grow by between 50% and 250% by 2050, depending on future economic growth and energy developments (Bodansky, 2016; Olmer et al., 2017; Smith et al., 2015a) which is a cause for worry.

2.4.2 Different Classifications of Shipping Emissions

This section of the chapter looks at CO_2 emissions through different classification lenses. These classifications are made based on the ship fleet, vessel categories and flag state. A study by the International Council on Clean Transportation asserts that ships emitted 932 million tonnes of CO_2, fleet wide in 2015 (Olmer et al., 2017). Below is a pictographic description of the distribution of CO_2 emissions from global shipping (international + domestic + fishing) for 2015 the world over.

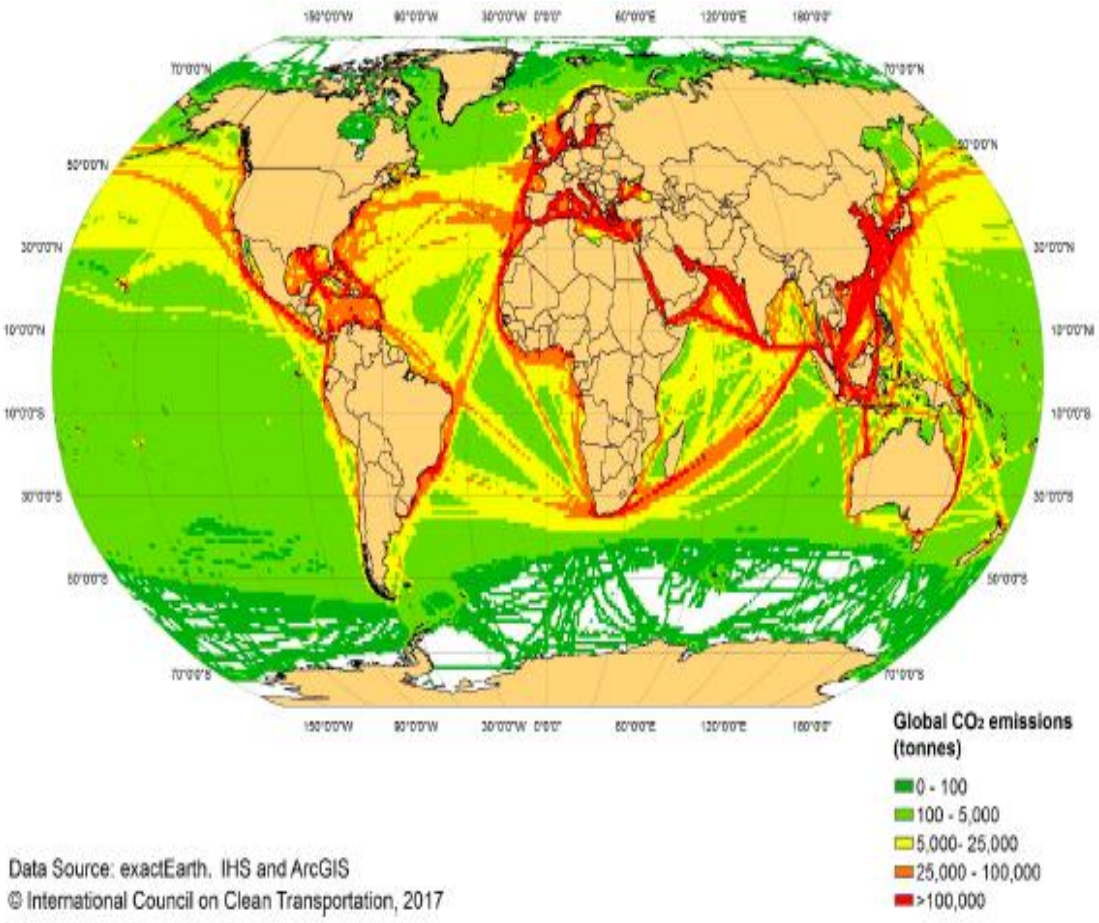


Figure 6: Global Distribution of Shipping CO_2 Emissions, 1°x 1°, 2015

Source: Olmer et al., (2017)

Regarding ship classes, studies show that most of the emissions from the shipping sector emanate from three types of ships: container ships, bulk carriers, and oil tankers (Bodansky, 2016; Olmer et al., 2017). In the ICCT studies, Olmer et al., (2017) established that three ship classes accounted for 55% of the total CO_2 emissions from shipping. Container ships accounted for 23%, bulk carriers accounted for 19%, and oil tankers accounted for 13%. See Figure 7 for the share of CO_2 emissions by ship class.

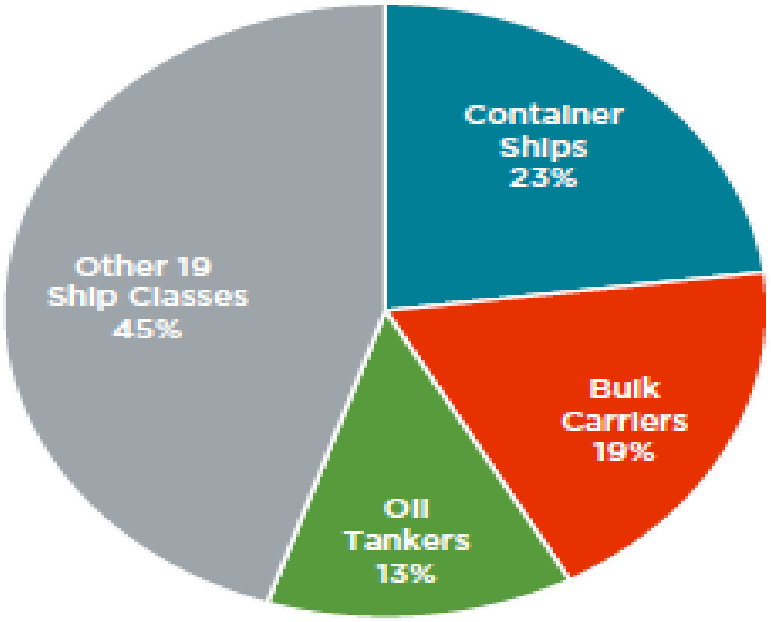


Figure 7: Share of CO_2 Emissions by Ship Class from 2013 to 2015

Source: Olmer et al., (2017)

Furthermore, classification of emissions in the maritime sector regarding flag state by the ICCT study identified six main countries (Panama, China, Liberia, Marshal Islands, Singapore and Malta) as distinct in the emission of CO_2 by ships globally. Out of these countries, Panama and China were the two largest emitting countries responsible for fifteen and eleven percent respectively of shipping CO_2 emissions globally (see Figure 8).

It is important to note that in the registration of ships, the ship-owner may not necessarily be a resident of the flag state under which the ship may sail. These ships are said to be sailing under a flag of convenience, which Panama, Liberia and Bahamas are cited as famous examples (Olmer et al., 2017).

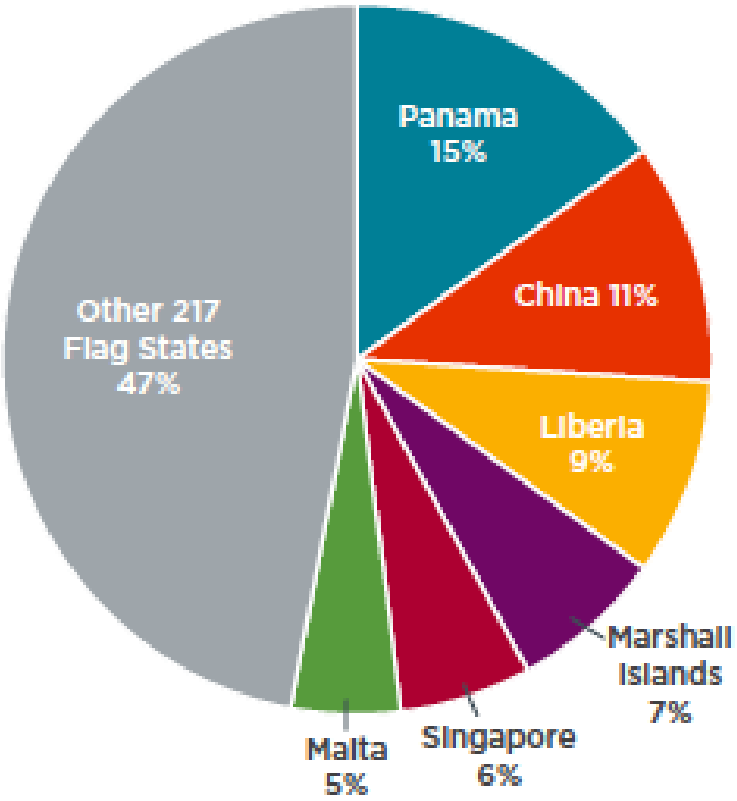


Figure 8: Shipping CO_2 Emissions by Flag State from 2013 to 2015

Source: Olmer et al., (2017)

2.5 Conclusion

This chapter has discussed the issue of climate change and has shown the changes that have occurred around the globe in the last century. Evidence of climate change as revealed in academic and non-academic literature was discussed. In the chapter, it has been established that the world

climate is changing, and that is happening at a rapid pace. The change is influenced by many factors, either natural or human-induced.

The chapter established the fact that the maritime sector especially international maritime transportation contributes a substantial amount of CO_2 emissions globally. Such that the share of the sector's CO_2 emissions in 2015 makes it the sixth largest emitter if treated as a country. To curb this climate change problem, the need for regulating anthropogenic GHG emissions from all sectors including international shipping is prudent. The problem of GHG emissions is a global issue hence, the search for solutions to this problem has been through the United Nations. The next chapters explore the international response to the climate change problem in general and the regulation of international shipping in particular.

CHAPTER THREE: INTERNATIONAL REGIME THEORY AND THE EVOLUTION OF INTERNATIONAL CLIMATE CHANGE REGIME

3.1 Introduction

In the preceding chapter, the issue of climate change was introduced. Highlights about its manifestations, causes, and potential impacts were provided. The degree to which the shipping sector contributes to climate change through GHG emissions was also explored. The chapter concluded by arguing that the effects of climate change are enormous, and human actions and industries, including the shipping industry are integral to the process, therefore there is the need to regulate these actions.

The current chapter picks up from that argument, to understand the issue of regulation of climate change, albeit from the international perspective. This chapter is divided into two main sections. The first section provides discussions on international regime theory. This discussion revolves around the various definitions advanced by scholars, the criticisms levelled against them and the common themes that run through the literature. The section also explores three schools of thought of international regimes. The second section delves into the international climate change regime. The section reviews literature on the evolution of the international climate change regime. The issues and processes that have led to the formation of the international climate change regime and the various mechanisms that have shaped the regime over the years are discussed. The section specifically looks at the developments of the regime since the establishment of the UNFCCC in 1992.

3.2 International Regime Theory

The international regime theory provides a state-based explanation of how climate regimes have formed and evolved. The thesis draws on the international regime theory to explain the behavior of parties in the negotiation process in general and on the regulation of international shipping in particular. There has been a constant debate around the definition of the concept of international regime in the regime literature. The etymology of the concept of regime is from the Latin word “regimen, a form of the word regere,” meaning "to rule" in English (Rowlands, 1992: 25). However, the term takes on a different meaning when the term international is added to it. Krasner “in his article Structural Causes and Regime Consequences: Regimes as Intervening Variables” attempts to provide a consensus definition to the concept. He defines international regimes “as principles, norms, rules, and decision-making procedures around which actor expectations converge in a given issue-area” (Krasner, 1982:3). Krasner (1982) clarifies these characteristics by defining them. He defines principles as “beliefs of fact, causation, and rectitude, norms as standards of behavior defined in terms of rights and obligations, rules as specific prescriptions or proscriptions for action and decision-making procedures as prevailing practices for making and implementing collective choice” (Krasner, 1982:4).

At least two broad areas of agreement exist among scholars on this definition. The first agreement is that the definition “treats regimes as social institutions in the sense of stable sets of rules, roles, and relationships” (Levy, Young, & Zurn, 1995:270). The next is that it portrays regimes as “issue-area specific in contrast to the broader or deeper institutional structure of international society as a whole” (Levy et al., 1995:270). Hence, this definition is consistent with other definitions of international regimes. For instance, According to Rowlands, an international

regime is said to "exist when the patterned behavior of states' leaders facilitates the resolution of collective action problems in a given issue-area of international relations (Rowlands, 1992:62).

However, this definition of international regime has also been criticized on two main grounds. The first criticism revolves around the struggle in distinguishing the four components of regimes espoused by Krasner (See Haggard & Simmons, 1987; Levy et al., 1995). While the second criticism is the description of the definition as "vague because it does not resolve differences among those who study international regimes regarding the boundaries of the universe of cases" (Levy et al., 1995:270). In their bid to address these criticisms levelled against the consensus definition, Levy et al., (1995) provide a more inclusive definition that allows for meaningful comparisons among sets of regimes defined in diverse manner. In their paper "The Study of International Regimes," international regime is defined as social institutions consisting of agreed upon principles, norms, rules, procedures and programs that govern the interactions of actors in specific issue-areas (Levy et al., 1995:274).

The regime theory is premised on the fact that international policy regimes are collective responses to transnational problems that cannot be accomplished effectively in a unilateral way. The transnational nature of the problem is defined by its cross-border or transboundary causes and/or consequences (Dimitrov, 2003). Simply put regimes are regarded as a medium through which challenges that are global (for instance climate change) are responded. Krasner admonishes that regimes be viewed as "something more than temporary arrangements that change with every shift in power or interests" in contrast to agreements as "the purpose of regimes is to facilitate agreements" (Krasner, 1982:187). States in their bid to respond to the climate change problem discussed in the second chapter of this thesis came together to form a regime known as the

international climate change regime. The Paris agreement, the subject under discussion, is part of this international climate change regime.

Three schools of thought, namely realism, neoliberalism and cognitivism, have shaped international regime theory discussions. The key variable of the realist school of thought is power relations, the maximization of power by state actors (Evans & Wilson, 1992; Hasenclever, Mayer & Rittberger, 1997). The realist school of international regime theory emphasizes the centrality of power in cooperation just like discord among nations (Hasenclever, Mayer & Rittberger, 2000). According to the school, power and considerations of relative power position influence the content and define the effectiveness and strength of international regimes (Hasenclever et al., 1997; 2000). International regimes are "merely arenas for acting out power relationships" (Evans & Wilson, 1992:330). That is, regimes are a reflection of states with the greatest power in the system.

The neoliberal school of thought centers its analysis on collections of interests (Hasenclever et al., 1997). Here states (actors) are depicted as rational egoists who only care for their own (absolute) gains (Hasenclever et al., 1997; 2000). Neoliberals portray the creation, maintenance and demise of international regimes as being accounted for from the perspective of strategically rational but otherwise mutually indifferent actors (Ibid).

The realist and neoliberal schools of thought both ascribe to the concept of rationalism which, depicts states as "self-interested, goal-seeking actors whose behavior can be accounted for in terms of maximization of individual (state) utility" (Hasenclever et al., 1997:23). However, while realists stress the importance of power for the formation, the content and the impact of international regimes, neoliberals portray it from an interest-based lens.

The last school of thought, Cognitivism, highlights knowledge dynamics, communication, and identities (Hasenclever et al., 1997; 2000). Cognitivists criticize both realist and neoliberal schools of thought for downplaying a substantial source of disparity in international behavior. According to cognitivists, realism and neoliberalism regard "actors' preferences and (perceived) options as exogenous 'givens', i.e. as facts which are either assumed or observed, but not theorized about" (Hasenclever et al., 2000:10). At the heart of cognitivism is the assumption that "cooperation cannot be completely explained without reference to ideology, the values of actors, the beliefs they hold about the interdependence of issues, and the knowledge available to them about how they can realize specific goals" (Haggard & Simmons, 1987:510). Hasenclever et al. (2000) distinguishes between two kinds of cognitivism, that is, weak and strong cognitivism. According to them, weak cognitivists emphasize the intellectual foundations of international institutions while strong highlight the social character of international relations. However, they both stress on the role of actors' knowledge in international regimes (Hasenclever et al., 2000).

From the discussions above, it is evident that each school of thought expresses distinct interpretations on the origins, robustness, and significances of international regimes (see Table 2 for a summary of the features of the three schools of thought). This thesis employs these different schools of thought in international regime theory to explain the inadequate regulation of international shipping emissions particularly under the Paris climate change agreement.

Table 2: Schools of Thought in the Study of International Regimes

	Realism	Neoliberalism	Cognitivism (especially "strong cognitivism")
Central variable	power	interests	knowledge
"Institutionalism"	weak	medium	strong
Meta-theoretical orientation	rationalistic	rationalistic	sociological
Behavioral model	concerned with relative gains	absolute gains maximizer	role-player

Source: Hasenclever et al., (1997)

3.3 The International Climate Change Regime

While the issue of climate change has been a topical issue in the international scene within the last two to three decades, it has not always been the case. The phenomenon has been one of the most contentious in the history of the world as there have been issues surrounding whether or not the issue is real. This issue, as apparent from the latest turn of events, especially on President Trump's reasons for pulling the US out of the Paris agreement (the latest climate change agreement which will be discussed further in this thesis), may not be fixed.

The current surge in global support for climate action has been the result of various developments over the years (Bodansky, 2001; Franz, 1997; Cameron & Zillman, 2001). This section of the thesis reviews literature on the emergence of the international climate change regime. The issues and processes that have led to the formation of the international climate change regime and the various mechanisms that have shaped the regime over the years are reviewed. The section

explicitly explores the developments of the regime since the creation of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992.

3.3.1 The Evolution of International Climate Change Regime

From the prior discussions, the social and economic impact of greenhouse gases should not be underemphasized. The need for a global response to this global climate change issue has been on the lips of scholars and scientists alike since the emergence of this problem. Hence, climate change issues have been of international concern in recent decades. To this end, in 1992, there was a concerted effort by international organizations and world leaders to establish a climate change regime. However, the road to the birth of this international climate change regime has not been a smooth one. Climate change did not emerge as a mainstream issue on the international political scene until the later part of the 1980s (Rowlands, 1992). Bodansky (2001:23) has categorized this period that led to the regime formation into the following:

1. Foundational period, advancement of scientific concern about climate change;
2. The agenda-setting phase, from 1985 to 1988;
3. Climate change as a policy issue;
4. A pre-negotiation period from 1988 to 1990, substantial government presence; and
5. The formal intergovernmental negotiations phase, culminating to the adoption of the FCCC in May 1992.

Before the late 1980s, climate change was more of a distress warning by the scientific community (Bodansky, 1993, 2001; Rowlands, 1992). The late 1980s and the early 1990s saw a shift from a scientific to a policy or political issue (Bodansky, 1993, 2001; Franz, 1997; Rowlands, 1992; Cameron & Zillman, 2001). Specifically, 1988 and 1990 saw a very significant change in

the fight against climate change since there was heavy governmental presence. Their involvement led to the negotiations which gave birth to the UNFCCC, the institutional foundation of international climate change regime, in 1992 (Bodansky, 1993; Franz, 1997; Rowlands, 1992; Cameron & Zillman, 2001).

The efforts of the World Meteorological Organization (WMO) set the tone for international scientific response to climate change when it organized the First World Climate Conference on February 1979 in Geneva (Rowlands, 1992). This conference gave birth to what became the catalyst for international political response to climate change. The issues and research findings that emerged from the meetings, such as 1985 Villach and 1987 Villach /Bellagio conferences organized by WMO and other International organizations such as United Nations Environment Programme (UNEP), were very instrumental (Franz, 1997; Rowlands, 1992). This conclusion is based on the fact that "the assessments conducted during this time by UNEP, WMO and ICSU made political judgments about scientific facts which resonated with other initiatives on the environment" (Franz, 1997:37). As such proposals and initiatives to approach the climate change problem from a policy perspective emanated from these meetings (Franz, 1997).

From the above discussion, it was evident from the meetings that the search for a sustainable coexistence between humans and their environment calls for an integrated global policy response. Meanwhile, most of these actors at the conferences before 1988 were scientists that notwithstanding, climate change evolved as an intergovernmental issue (Bodansky, 2001).

Global warming first appeared on the international political agenda as a significant issue in 1988 leading to the first major international political conference on 'The Changing Atmosphere: Implications for Global Security' in Toronto (Bodansky, 2001; Franz, 1997; Rowlands, 1992). This period marks the transition from climate change being on an international science agenda to an

international policy or political agenda. The conference was highly represented with over three hundred scientists and policymakers around the world gracing the occasion with their presence. The conference specifically "brought together 341 delegates, including 20 politicians and ambassadors, 118 policy and legal advisors and senior government officials; 73 physical scientists, 50 industry representatives and energy specialists; 30 social scientists and 50 environmental activists". Attendees came from 46 countries, both developed and developing (Franz 1997:32). This heavy representation at this very first conference of its kind I believe signified hope for an international political approach to acknowledging and solving global warming.

Franz (1997), in her article "The Development of an International Agenda for Climate Change: Connecting Science to Policy", views this conference as epitomizing a key policy declaration on global warming as it called for a 20% reduction in global CO_2 emissions by the year 2005. A more elaborate conclusion from the summit was that it "urges immediate action...to counter the ongoing degradation of the atmosphere...An Action Plan for the Protection of the Atmosphere needs to be developed, which includes an international framework convention, encourages other standard-setting agreements and national legislation to provide for the protection of the global atmosphere" (Franz 1997:34).

Moreover, in 1988, an intergovernmental body known as the Intergovernmental Panel on Climate Change (IPCC) was established by the WMO and the United Nations Environment Programme (UNEP) as a response to the growing concern of politicians on the uncertainties surrounding climate change (global warming) (Franz, 1997; Rowlands, 1992; Cameron & Zillman, 2001). The initial responsibility of the IPCC was to provide a comprehensive review and recommendations concerning:

(a) The state of knowledge of the science of climate and climatic change

(b) Programmes and studies on the social and economic impact of climate change, including global warming

(c) Possible response strategies to delay limit or mitigate the impact of adverse climate change

(d) The identification and possible strengthening of relevant existing international legal instruments having a bearing on climate

(e) Elements for inclusion in a possible future international convention on climate.[9]

Specifically, the IPCC working group 1 was responsible for establishing the scientific basis for understanding the causes and consequences of climate change. The scientific grounds for understanding climate change are embedded in the Intergovernmental Panel on Climate change (IPCC) report released in 1990. The IPCC's first assessment report stated that:

> Emissions resulting from human activities are substantially increasing the atmospheric concentrations of the greenhouse gases carbon dioxide, methane, chlorofluorocarbons (CFCs) and nitrous oxide. These increases will enhance the greenhouse effect, resulting on average in an additional warming of the Earth's surface.[10]

The IPCC is regarded as the scientific pillar/body behind the UNFCCC process (Bodansky, 2001; Rowlands, 1992; Schipper, 2006, Cameron & Zillman, 2001). Rowlands (1992) attributes the entrenchment of the global warming or climate change issue on the international political agenda to the findings of the IPCC. The UN General Assembly by 1990, had formed an Intergovernmental Negotiating Committee (INC) for a framework convention on climate change,

[9] UN General Assembly Resolution 43/53 (A/RES/43/53) 70th plenary meeting, 6 December 1988 http://www.un.org/documents/ga/res/43/a43r053.htm

[10] IPCC working group one

which commenced its meetings in early 1991 (Franz, 1997). The work of this committee led to the establishment of UNFCCC, the institutional pillar of the international climate change regime, in 1992. These historical antecedents cannot be summarized any better than Franz did;

> An issue that had been the domain of climatologists, oceanographers, and scientific bureaucracies moved rapidly into the domain of international policy analysts, the public, environment ministers, presidents and prime ministers (Franz, 1997:7).

3.3.2 The UNFCCC (Rio Earth Summit, 1992)

The absence of a customary international law that addresses in detail specific climate change issues necessitated a new legal action; hence the negotiation of a new treaty was imminent (Bodansky, 1993). According to Bodansky, two models emerged to be deliberated on; "a general framework agreement on the law of the atmosphere, modeled on the 1982 UN Law of the Sea Convention, which would recognize the interdependence of atmospheric problems and address them in a comprehensive manner; and a convention specifically on climate change, modeled on the Vienna Ozone Convention" (Bodansky, 1993:31). There was overwhelming support for the latter option, which is having a climate change convention on its own.

The Intergovernmental Negotiating Committee (INC), established by the UN General Assembly[11] to offer solutions to the temperature rise threats posed by emissions in the atmosphere, commenced its negotiation for a framework convention on climate change in early 1991

[11] The United Nations is an international organization founded in 1945 with currently 193 Member States. See about the UN retrieved from http://www.un.org/en/about-un/index.html on June 25, 2018. The UN General Assembly is one of the six main organs of the United Nations is the only universally representative body of the UN as all the 193 Member States are represented and have equal representation: one nation, one vote. The general Assembly is a forum that discuss wide array of international issues covered by the UN Charter, such as development, peace and security, international law, environment etc. see General Assembly of the United Nations, retrieved from http://www.un.org/en/ga/ on June 25, 2018

(Bodansky, 1993; Franz, 1997). Even though the negotiations started early, it was not until the final months prior to the conference in Rio de Janeiro that governments were open to proper negotiations (Bodansky, 1993; Franz, 1997). Even at the conference, it took a compromise text by the INC chair and numerous late night sessions for parties to reach an agreement on the final day of negotiation (Bodansky, 1993). On the 9th of May 1992, the international community adopted the UNFCCC, a global legal policy framework, as a form of acknowledgement and response to the need to limit anthropogenic greenhouse gas (GHG) emissions (Bodansky, 1993; Cameron & Zillman, 2001; Falkner, Stephan, & Vogler, 2010; Schipper, 2006,). This convention was successfully commissioned at the UN Conference on Environment and Development at the Rio Earth Summit in 1992, in Rio de Janeiro, Brazil (Falkner et al., 2010; Cameron & Zillman, 2001).

The framework is regarded by most climate change scholars as the cornerstone of international climate politics as it has to its credit the creation of a "norm of global climate stabilization and the principle of 'common but differentiated responsibilities" which have reinforced international climate politics to date (Bernstein, Betsill, Hoffmann, & Paterson, 2010; Bodansky, 1993; Falkner et al., 2010). The convention seeks to decrease greenhouse gases development, with the "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system" at its core (Boykoff & Boykoff, 2004; Cameron & Zillman, 2001; UNFCCC, 1992)

Despite these very distinct and promising features of the framework, it was very ambiguous with an absence of binding commitments to parties of the UNFCCC to reduce emissions (Bernstein et al., 2010; Bodansky, 2001). This development, according to Bernstein et al., (2010) was mainly due to resistance from the United States of America (US). The US resistance to setting legally binding timelines for stabilizing emissions under the UNFCCC was largely a domestic economic

interest. According to the US, "it had already committed itself to an action plan to reduce GHG emissions by 7-10% from what they would otherwise have been in the year 2000, and it felt it would be unwise to support environmental programs at the expense of the domestic economy" (Meakin, 1992:17).

Based on the absence of legally binding timelines in the Convention, Article 4(2) of the UNFCCC calls for an assessment of the suitability of the obligations under the UNFCCC at the very first Conference of the Parties (COP) to the convention. The UNFCCC received ratification by fifty parties, hence the Convention was operational on March 21, 1994, with the normative commitments by countries or states carved into a legal document (Bodansky, 2001; Falkner et al., 2010). See Appendix 1 for a list of countries that ratified the Convention.

In 1995, a year after the ratification of the UNFCCC, there was a first meeting by the Conference of Parties, the highest decision making body of the UNFCCC, called COP-1 in Berlin (Bäckstrand & Elgström, 2013; Bodansky, 2001; Breidenich, Magraw, Rowley, & Rubin, 1998). At this conference, the realization that the obligations under the UNFCCC is not sufficient to reach the objective of the Convention hit the parties (Breidenich et al., 1998). Breidenich et al. (1998: 319) advances three main reasons leading to this conclusion by parties at the COP;

1. National projections of GHG emissions, which showed that the emission reductions targets for 2000 were unlikely to be met by most Annex I countries,
2. The lack of provision in the Convention regarding GHG emissions for the period after 2000, and
3. The acknowledgement that "stabilization of GHG emissions at 1990 levels" would not be sufficient to alleviate GHG concentrations in the atmosphere.

Accordingly, the parties decided to establish a process to strengthen the obligations under the UNFCCC, which became known as the Berlin Mandate. A body known as the Ad Hoc Group on the Berlin Mandate (AGBM) was established to take center stage in the negotiation of a protocol or other legal instrument by 1997 containing additional commitments for industrialized countries for the post-2000 period (Bodansky, 2001; Breidenich et al., 1998). The group was also tasked with the responsibility of expounding policies and measures regarding emission reductions (Breidenich et al., 1998). This Mandate, therefore, set the stage for or launched the dialogues that finally led to the adoption of the Kyoto Protocol, which is discussed in the next section. In the same year, the IPCC released even much clearer evidence of climate change in its second assessment report, a report that Cameron and Zillman (2001) believe contains the general thrust of the scientific argument of the climate change problem. It was considered the "most comprehensive and authoritative assessment of the science of climate change" at the time (Bodansky, 2001: 35). From the report, "the balance of evidence suggested a discernible human influence on global climate."[12] It also specifies that the continued rise in GHG concentrations would lead to dangerous interference with the climate system (Bodansky, 2001: 35). The report thus reinforced the growing international perception of the need for stronger commitments than the ones at Rio.

Furthermore, in July 1996, COP-2 was organized in Geneva where there was a ministerial declaration known as the Geneva declaration. This declaration reiterated the need for legally binding commitments and as such instructed delegates to accelerate negotiations on a legally binding instrument. Notably, due to lack of consensus emanating from opposition by states such

[12] IPCC Second Assessment, Climate Change 1995 retrieved from https://www.ipcc.ch/pdf/climate-changes-1995/ipcc-2nd-assessment/2nd-assessment-en.pdf on April 18, 2018

as Saudi Arabia, Russia and Australia COP 2 did not adopt the declaration; it just took note of the declaration and appended it to the final report (Bodansky, 2001).

3.3.3 The Kyoto Protocol

The UNFCCC, specifically, the first and second COPs paved the way for the negotiation of a precise protocol with requisite commitments, the Kyoto Protocol. Through the eight meetings by the ad hoc group on the Berlin Mandate, which were to discuss and develop the overall framework and precise provisions of the new instrument, a draft text to begin the negotiation process at COP3 was created (Breidenich et al., 1998:319).

Following ten days of intense negotiation with this draft text provided by the group, Parties at the third COP at Kyoto, Japan, on December 11, 1997 adopted the Kyoto Protocol (Bodansky, 2001; Boyd, Corbera, & Estrada, 2008; Breidenich et al., 1998; Grubb, 2004; Grubb & Yamin, 2001). The Protocol was "hailed as the greatest achievement of modern environmental diplomacy" by some observers (Grubb and Yamin 2001: 262). At the heart of this Protocol are differentiated commitments (legally binding targets) by industrialized (Annex 1) countries to decrease their GHG emissions by 5.2 per cent with 1990 as the base year (Falkner et al., 2010; Grubb & Yamin, 2001; Lecocq & Ambrosi, 2007). This was premised on principles of equity and social justice related to both their disproportionally large historical and current contributions to atmospheric GHG concentrations as well as the fact that the enormous wealth and technological capacity they possess place them in a better position to take on GHG mitigation goals (Rajamani, 2008).

These quantitative emission targets did not include developing countries, in other words, developing countries were not assigned quantifiable emission targets under the protocol; it only slightly builds upon the existing commitments of these countries that existed under the UNFCCC

(Grubb & Yamin, 2001). This is congruent with the decision in the Berlin Mandate at COP-1 that "no new commitments would be negotiated for developing countries as part of the process" (Breidenich et al 1998:319). Although the divide between developing and developed counties epitomized the principle of common but differentiated responsibility (CBDR), which is at the core of UNFCCC, the sharp divide failed to address significant future mitigation issues by emerging emitters who at the time were still classified as developing countries (Falkner et al., 2010). This issue partly caused US non-ratification of the protocol and would even come back to bite the regime in COP 15 at Copenhagen (Ibid).

The negotiations of the Kyoto Protocol, both among the parties and the public at large, were very political. The Kyoto Protocol reflects a more rules-based approach, as opposed to the US-recommended voluntary approach (Bodansky & Diringer, 2014; Dubash & Rajamani, 2010). The US has been against legally binding emission reductions right from the formation of the UNFCCC. The US stance on the legally binding timeline during the Kyoto negotiations was no different from the negotiation of the convention in Rio. The US was consistent with its stance that legally binding targets of limiting GHG would undermine domestic growth (Grubb & Yamin, 2001; Sicurelli, 2016). In contrast, the EU has always insisted that a legally binding approach is the right way to get parties to commit to the cause of reducing global GHG emissions (Cameron & Zillman, 2001; Sicurelli, 2016). This is evident in the idea behind the legally binding nature of the protocol, which is that "without the element of multilateral legal constraint, the sovereign states of the globe are unlikely to make any significant progress in addressing the problem of climate change" (Cameron & Zillman, 2001:3).

This protocol also has what Grubb & Yamin (2001) call "Sophisticated Market-based mechanisms" such as emissions trading, Joint Implementation (JI) and the Clean Development

Mechanism (CDM) (which has been nicknamed the Kyoto surprise see Lecocq & Ambrosi, 2007) which are geared towards the reduction of compliance cost of industrialized countries (Bernstein et al., 2010; Grubb & Yamin, 2001; Lecocq & Ambrosi, 2007). This feature was included in the protocol at the persistence of the US, and over the vociferous oppositions of the EU, many developing countries and environmentalists (Ibid). The US, in 1997, called for the inclusion of these market mechanisms in the Kyoto protocol to relieve developed countries of some of the burden the Kyoto targets lay on them (Bernstein et al., 2010; Grubb & Yamin, 2001; Lecocq & Ambrosi, 2007; Sicurelli, 2016). The CDM, for instance, permitted the implementation of emission reduction projects in developing countries by developed countries so as to "earn certified emission credits" which would aid developed states to meet the Kyoto targets (Sicurelli, 2016). The EU initially opposed this proposal on the grounds that the US wanted to avoid climate policy cost. However, the EU upon realizing the US dissatisfaction with the Kyoto timelines compromised by accepting the US proposal to prevent them from withdrawing (Sicurelli, 2016).

The short-term nature of its emission targets, the ability of countries to withdraw from the Protocol and a fragile market-oriented compliance mechanism have been some of the limitations of the design of the Kyoto protocol (Falkner et al., 2010:255). After the adoption of the Kyoto Protocol in COP 3, successive COPs were organized to strengthen and facilitate the implementation of the protocol. COP 4 was organized a year after the adoption of the protocol in Buenos Aires. This COP was initiated to discuss the details of the flexibility mechanisms. Therefore, a work plan to advance comprehensive rules for the flexibility mechanisms was approved by the parties in this COP (Bodansky, 2001).

The fifth COP organized in Bonn from 22 October to 5 November 1999 was also very instrumental in shaping the Protocol. At the conference, parties made decisions on measures for

technology transfer and capacity building to developing countries as well as draft resolutions for COP 6 to define the flexibility mechanisms to augment the vision of the protocol (Cameron & Zillman, 2001).

The Sixth Conference of the Parties (COP 6) in the Hague, from 13th to 24th November 2000 resulted in an impasse in negotiations (Cameron & Zillman, 2001; Grubb & Yamin, 2001). Nearly ten thoUSnd delegates attended the opening of the Hague conference and as such, Grubb and Yamin describe it as a "fanfare" (Grubb and Yamin 2001:262). This conference was portrayed as the conference that would put the final changes to the Kyoto Protocol, and consequently allow major countries to start ratifying the agreement (Grubb and Yamin 2001). The flexibility mechanism rules developed by the action plan of COP 4 were intended to be adopted at this conference (Bodansky, 2001). However, COP 6, which was initiated in part to finalize the provisions of the Protocol, was instead an impediment to its ratification as the conference ended with nothing to show (Cameron; Grubb and Yamin 2001). Some scholars attribute this collapse mainly to structural tensions (legally binding versus voluntary targets) between actors (Cameron & Zillman, 2001; Grubb and Yamin 2001). Cameron & Zillman (2001) explicitly attributes it to the lack of compromise on the opposing views of the EU and the US on the absorption of GHG by sinks.

The chaos at the conference described by (Grubb & Yamin, 2001) in their article "Climatic Collapse at The Hague: What Happened, Why, and Where Do We Go from Here?" was unpleasant. An attempt to iron out the differences between the EU and the US and come to a consensus or some deal led to a secret bilateral negotiation between the UK and US. This UK-US secret meeting led developing countries led by Nigeria to also have their own meeting where they agreed to "examine the merits of any joint EU-US deal, should one be agreed", thereby distorting the whole

process of negotiation (Grubb & Yamin, 2001: 261). In the end, no deal emerged out of the EU-UK meeting and unfortunately the ministerial negotiations had to come to an end with "no agreement on issues relating to finance, technology transfer, adaptation and compliance-issues" (Grubb and Yamin 2001:264). Complacency has also been mentioned as contributing to the collapse (Ibid). In effect, the efforts of the negotiators before the conference were wasted.

In the end, the US in 2001 announced its intention not to ratify the protocol (McGee, 2011; Sicurelli, 2016). This non-ratification stance was taken by not only the US but also Australia and was a blow to the international community especially because the COP 6 was a disaster (McGee, 2011). However, the rest of the world, especially the EU, made sure that it did not impede the rest of the development and implementation of the protocol (Bäckstrand & Elgström, 2013; McGee, 2011; Sicurelli, 2016). Thus in 2001, in Marrakesh, Morocco, at COP 7, full implementation rules for the Protocol known as the Marrakesh Accords were adopted (Bäckstrand & Elgström, 2013; Cameron & Zillman, 2001). This development has been attributed to the EU's leadership role in the negotiations (Bäckstrand & Elgström, 2013).

COP 8 adopted the Delhi Ministerial Declaration, which focused on the role of climate change in development policy (Schipper, 2006). One very distinct feature of this declaration is its call for the transfer of technology by developed countries to developing countries to reduce their climate change impact. The massive developing country support for the Delhi Ministerial Declaration on Climate Change and Sustainable Development is therefore not surprising (Schipper, 2006). COP 9 and 10, held in Milan in 2003 and Buenos in 2004 respectively, among others continued in talks on sustainability and adaptation that COP 8 started through the Delhi Declaration.[13]

[13]See UNFCC (2003) Ninth session of the Conference of the Parties (COP 9) https://unfccc.int/news/ninth-session-of-the-conference-of-the-parties-cop-9 and UNFCCC (2004)Tenth Session of the Conference of the Parties

On February 16, 2005, the Kyoto Protocol entered into force with Russia's ratification being the deal maker (Bäckstrand & Elgström, 2013; Rajamani, 2008). As part of EU's mission to save the Kyoto Protocol, it embarked on developing a bargain with Russia involving Russia backing the EU WTO membership candidacy, to ensure their ratification (Bäckstrand & Elgström, 2013).

Later that year, 28 November to 9 December, COP 11 was organized in Montreal, Canada, and discussions commenced on how the climate regime might be designed after 2012 (Rajamani, 2008). These discussions were consistent with articles in the protocol that a second commitment period should begin by 2005 (Bäckstrand and Elgström 2013:1378). COP 12 took place in Kenya Nairobi, the following year in November.

In 2007, on 15 December, parties under the UNFCCC launched an action plan in COP 13 in Bali, known as the Bali Action Plan. The Plan involved a process in developing the future climate regime (Bäckstrand & Elgström, 2013; Dimitrov, 2009; Rajamani 2008). The Bali Action Plan is a "legal mandate for formal negotiations that requires governments to produce an agreement containing four building blocks: mitigation, adaptation, financial and technological support for developing country actions" (Christoff, 2010; Dimitrov, 2009:4).

The Bali Action Plan launched two distinct processes, a 'two-track negotiation approach', specifically the Ad Hoc Working Group on Further Commitments for Annex 1 Parties under the Kyoto Protocol (AWG-KP), and the Ad Hoc Working Group for Long-Term Cooperative Action (AWG-LCA) under the Convention (Bäckstrand & Elgström, 2013:1378; Bodansky, 2010; Christoff, 2010; Rajamani, 2008). It is important to note that the dialogue on long-term cooperative action encompassed actions by both developed and developing parties, but it was not mandatory

(COP 10) https://unfccc.int/news/tenth-session-of-the-conference-of-the-parties-cop-10-statement-at-the-high-level-segment-by retrieved on April 18, 2018.

nor was it sanctioned to open negotiations, which will lead to new commitments (Ibid). Therefore, some observers viewed the establishment of this working group as some concession. In the sense that "whilst it would not launch negotiations on a future regime or call for an agreed outcome, it would permit discussions on future climate actions to continue and it would keep non-Parties to the Kyoto Protocol, such as the United States, at the table" (Rajamani 2008:914). According to Rajamani (2008), the Bali Action plan proposed the alternative of "killing Kyoto softly" as there was no prescribed level of ambition or any specific legal form or content the COP decision should take in 2009, as the process was slated to end in 2009 at COP 15 in Copenhagen (Rajamani 2008:911). Hence, the parties deferred the hard and contentious questions on the nature and legal status of the new treaty to COP 15 (Bäckstrand and Elgström, 2013).

3.3.4 Copenhagen Accord

In December 2009, COP 15 was organized in Copenhagen. The COP was attended by 125 Heads of State and government, and almost 40,000 participants (Dubash & Rajamani, 2010; Rajamani, 2010:845). Following the Bali Conference in 2007, parties adopted a roadmap to lead to the adoption of a successor to the Kyoto protocol. Therefore, the Copenhagen negotiations were expected to provide an "agreed outcome" to address climate change (Dubash, 2009:9). As such, this conference was projected to produce the next international climate agreement, that would address the post-2012 climate change issues after the end of the first commitment period of the Kyoto Protocol (Bodansky, 2010; R. S. Dimitrov, 2010; Fisher, 2010)

Notwithstanding the two years of negotiations, the aftermath of this conference saw decisions to continue negotiations under the UNFCCC and Kyoto Protocol and most importantly the contentious Copenhagen Accord (Rajamani 2010:825). Both the planning and outcome of the

conference has attracted contending views. The opening of the COP was mired with contention on the legal character of the agreement, the global stabilization goal, mitigation obligations; whether commitments from developing countries should be measurable, reportable and verifiable (MRV) and "the size of adaptation funding for developing states" (Christoff, 2010:639; Dubash, 2009; Rajamani, 2010). All of this mirrors the fundamental tension over the differential treatment of developed and developing countries (Dubash, 2009).

Consequently, the negotiation process of COP 15 was very complicated and cumbersome such that according to Bernstein et al., (2010:162) "students and academics" clustered in small groups trying to comprehend it. Progress at this COP was oddly slow and "hampered by walk-outs and procedural filibustering" (Christoff, 2010:639). In fact, numerous days of the COP were wasted on "procedural bickering" and animosity against smaller group discussions by the G-77 in favor of consensus building (Dimitrov, 2010:809). This contention evolved into a key political theme that shaped the conference, which is "the tension between the UN principle of global democracy and the pragmatic need for problem-solving" (Dimitrov, 2010:809). Parties engaged in rigid negotiation in pursuit of narrow self-interest, a situation which Bernstein et al. refer to as "a return to realpolitik" such that on the final day of the COP, no meaningful decision had emerged from these multilateral negotiations (Bernstein et al., 2010; Falkner et al., 2010). "Never before had an international negotiation attracted 125 heads of state and government, and expended as much political capital, yet failed to deliver in quite so spectacular a fashion" (Dubash and Rajamani 2010:593).

On the final day, hundreds of State leaders and lead negotiators were disenfranchised when a 25 member state meeting initiated by the Danish Prime minister was held secretly towards the end of the conference (Bernstein et al., 2010; McGregor, 2011; Rapp, Schwägerl, & Traufetter, 2010).

This secret meeting, unfortunately, failed to produce any document (Rapp et al., 2010:2; McGregor 2011:4). The secret meeting, according to McGregor (2011), represents the stalemate on a draft agreement. The then US president, President Obama, acknowledging this deadlock in the mini-summit, joined forces with the leaders of China, India, Brazil and South Africa (without inviting the EU which was the global leader of climate action at the time) to draft an agreement which became known as the Copenhagen Accord (McGregor, 2011; Roberts, 2011). This meeting marked the beginning of a weakened EU leadership in climate action (Roberts, 2011). However, a group of developing countries including Tuvalu, Venezuela, Cuba, and Sudan vehemently opposed the adoption of the accord mainly on procedural grounds (McGregor, 2011). Based on the lack of consensus at the conference the parties did not adopt the Accord they just took note of it.

The Copenhagen Accord is a 12 paragraph document, which encompasses the pillars of the Bali Action Plan, which includes commitments to a shared vision, mitigation, adaptation, finance and technology (Ciplet, Roberts, & Khan, 2015; Rajamani, 2010). The Copenhagen Accord included a long-term environmental target of 2 degrees Celsius and ambitious 1.5 degrees Celsius. It also acknowledged the essentials for the peaking of global and national emissions and therefore made official the submission of Intended Nationally Determined Contributions (INDCs) for the mitigation purposes (Bodansky, 2010; Dubash, 2009; Dubash & Rajamani, 2010; Neuhoff, 2009; Rajamani, 2010). The accord also mentions the issue of climate finance, by recognizing the pledges of developed countries to contribute $30 billion a year for 2010-2012 and $100 billion a year by 2020 to the plan (Bernstein et al., 2010; Ciplet et al., 2015; Dubash, 2009; Dubash & Rajamani, 2010; Rajamani, 2010). Moreover, it accommodates a review system, to assess the implementation by 2015 (Dubash & Rajamani, 2010; Rajamani, 2010).

The Copenhagen Accord has been described as a weak agreement intended to disguise the fact that the summit was a complete political disaster (Dimitrov, 2010; Dubash, 2009; Rapp et al., 2010; Winkler & Beaumont, 2010). It is believed to be "rich in promise and limited in detail", as it does not do much to warrant substantial actions towards addressing climate change (Bernstein et al., 2010; McGregor, 2011; Rajamani, 2010:829). The ambiguous legal status of the Accord, coupled with the resultant challenges in its operationalization, as well as the disguise of political dissonance of the Accord, have been mentioned as some of the devastating problems associated with the outcome (Dubash & Rajamani, 2010; Rajamani, 2010)

Notwithstanding the holes punched in the content of the accord, some scholars view it as a useful foundation to build future discussions (Dubash & Rajamani, 2010; Rajamani, 2010). Notably, the Copenhagen Accord paved the way for the Paris Agreement as it laid the foundation for the more decentralized policy design embodied in the Paris agreement, what some climate change governance scholars call "hybrid multilateralism" (Bäckstrand et al., 2017:563). The core of the Paris Agreement, the 2 degrees target and ambitious 1.5 degree Celsius as well as INDCs emanated from this accord (Dubash & Rajamani, 2010; Rajamani, 2010).

Another significant characteristic of the COP 15 was the emergence of the BASIC (Brazil, South Africa, India and China group of countries, also known as the G4) as a distinct geopolitical bloc coupled with the leadership role they exuded, especially China (Dubash & Rajamani, 2010; Parker, Karlsson, & Hjerpe, 2015; Rapp et al., 2010).

A year after the collapse of the COP 15, another COP was organized in Cancun. Surprisingly, in Cancun (COP16) the content of the Copenhagen Accord, which generated many controversies among the parties, was no longer a bone of contention, as the main content of the Accord integrated into the Cancun Agreements were "nearly unanimously adopted" (Ciplet et al., 2015:2)

An Ad Hoc Working Group on the Durban Platform for Enhanced Action (ADP), was launched by parties to the UNFCCC during COP 17 in Durban, South Africa, in 2011 to negotiate a new climate agreement by 2015 (Bodansky, 2012; Rajamani 2016). This new agreement was to be operational from 2020 and was expected to serve the purpose of "governing, regulating and incentivizing the next generation of climate actions" (Bodansky, 2012; Rajamani 2016:494). The areas that needed special emphasis under the platform were Mitigation, adaptation, finance, technology development and transfer, transparency of action and support, and capacity building. These areas have come to be branded as the Durban 'pillars' (Rajamani 2016:495). However, the platform was not clear on what form the new 2015 agreement should take as it only indicated that the new round of negotiations, by the platform, aims at developing "a protocol, another legal instrument or an agreed outcome with legal force" for the post-2020 period (Bodansky, 2012; Rajamani, 2012; 2016).

The COP 19 otherwise known as the Warsaw Conference in 2013, requested parties to prepare to submit their INDCs in 2015, representing a very significant moment in the negotiations. This was significant because it marked a turning point in the conflict between parties who preferred a Kyoto-style mandatory approach and parties who prefer a Copenhagen-style voluntary approach, which existed before the conference (Bodansky & Diringer, 2014; Rajamani 2016). The decision at Warsaw positively postulated the voluntary approach, in that, the framing of national contributions is entirely based on the decision of states (Bodansky & Diringer, 2014; Rajamani 2016). The Lima Conference, (COP 20) organized in 2014, offered tentative direction on the information that parties had to supply in their INDCs. This specification or guidance bears the semblance of a mandatory approach (Bodansky & Diringer, 2014; Rajamani 2016).

Table 3: Milestones in the Climate Regime

1988	*UN General Assembly* characterises climate change a 'common concern of mankind'
1990	*Intergovernmental Panel on Climate Change* issues first assessment report, estimating that global mean temperature likely to increase by about. 0.3° C per decade, under business-as-usual emissions scenario
1990	*UN General Assembly* establishes Intergovernmental Negotiating Committee to negotiate a climate change convention
1992	Framework Convention on Climate Change (FCCC) opened for signature at Rio Summit
1994	FCCC enters into force
1995	First Conference of Parties to the FCCC adopts Berlin Mandate authorising negotiations to strengthen FCCC commitments
1997	Third Conference of Parties to the FCCC adopts the Kyoto Protocol introducing GHG targets for developed country Parties for the first commitment period from 2008 to 2012
2001	Seventh Conference of Parties to the FCCC adopts Marrakesh Accords, spelling out the detailed rules, in particular, for the operationalisation of the Kyoto mechanisms (Joint Implementation, Clean Development Mechanism, and Emissions Trading) as well as for a Compliance mechanism for the Kyoto Protocol
2005	Kyoto Protocol enters into force
2005	First Meeting of Parties to the Kyoto Protocol launches negotiations towards a second commitment period for Kyoto
2007	Thirteenth Conference of Parties to the FCCC adopts the Bali Action Plan, initiating a new round of negotiations towards an 'agreed outcome'
2009	Fifteenth Conference of Parties takes note of the Copenhagen Accord, reached between 28 Heads of States, containing voluntary mitigation pledges
2010	Sixteenth Conference of Parties adopts the Cancun Agreements, incorporating elements of the Copenhagen Accord into the FCCC process, including by taking note of the mitigation pledges under the Copenhagen Accord, housed in information documents
2011	Seventeenth Conference of Parties adopts the Durban Platform, launching negotiations with a scheduled end in 2015 towards an agreement to take effect from 2020
2012	Eighth meeting of Parties to the Kyoto Protocol extends the Kyoto Protocol for a second commitment period from 2012 to 2020
2013	Nineteenth Conference of Parties in Warsaw invites Parties to prepare and submit 'intended nationally determined contributions' in the context of a 2015 agreement
2014	Twentieth Conference of Parties arrives at the Lima Call to Climate Action, setting the stage for the 2015 agreement, and providing cautious guidance on the 'intended nationally determined contributions'
2015	Parties begin to submit their 'intended nationally determined contributions' in the context of the 2015 agreement

Source: Rajamani, L. (2015)

3.4. Conclusion

The chapter opened with a section with discussions on international regime theory. In this section, the concept of international regime was examined, looking at different definitions and how other scholars have analyzed them. The section also explored three schools of thought namely realism, neoliberalism and cognitivism, which have fashioned international regime theory discussions. This helps us to understand actors' behavior in climate change negotiations.

The next section of this chapter discussed the evolution of the international climate regime. The chapter has chronologically presented how international climate regimes have shifted over time. The chapter argues that to find solutions to anthropogenic GHG emissions in the world, an international climate change regime has been formed. This international regime was formed in the early part of 1990's after scientists agreed that the climate was changing and with its projected debilitating effect on both humans and the environment in future, needed an international policy response. Thus, the role of these environmentally-orientated scientists through WMO, UNEP and ICSU in creating awareness on the emerging scientific knowledge about global warming through conferences as expounded by the cognitive school of thought led to the formation of international climate change regime (Rowlands, n.d.).

The development of the UNFCCC, as well as its Kyoto Protocol and recent Paris Agreement (which is discussed in detail in chapter five) are at the core of this international climate change regime. However, other international climate change dialogues and conferences characterize the regime. The discussions have shown that the different developments in the climate change regime are fraught with different degrees of successes and failures, which are influenced by factors embedded in international political scenes. The politics involved in these processes also brings forth power tensions by the diversity of actors in the international scene, and how their interests

shape outcomes of agreements. These power tensions and interests that shape international climate change regime corroborates the realists and the neoliberals explanations of international regimes. This power and interest-based tension in the international climate regime help set the context for understanding similar issues in the international regulation of maritime transport, which is discussed in the next chapter. It also reveals potential power dynamics behind the sector that have shaped its regulation.

CHAPTER FOUR: THE REGULATION OF INTERNATIONAL SHIPPING EMISSIONS: THE ROLE OF INTERNATIONAL CLIMATE CHANGE REGIME AND IMO

4.1 Introduction

As discussed in the second chapter of this thesis, there are compelling environmental reasons to limit GHG emissions from international shipping. The regulation of this sector is imperative given its significant emissions. However, the regulation of GHG emissions from international shipping has been very complex because of its global nature and because of the challenges of how the sector might become embedded in the politics of regulations as revealed in Chapter Three. Currently, the regulation of international shipping is mainly in the preserve of the UNFCCC (including its various COP decisions, the Kyoto Protocol and the recent Paris Agreement) and the International Maritime Organization (IMO) (Shi, 2016a). This chapter explores the issues on the regulation of international shipping under the UNFCCC before the Paris Agreement.

4.2 International Climate Change Regime and the Regulation of International Shipping

4.2.1 Kyoto Protocol and the Regulation of International shipping

After the adoption and ratification of the UNFCCC in 1992 and 1994 respectively, the issue of international bunker fuels was presented on the agenda in Berlin at COP 1 (Den Elzen, Olivier, Berk, & den Elzen, 2007; Hackmann, 2012). Actors such as the EU, New Zealand and Switzerland were very instrumental in putting international bunkers on the Kyoto agenda. Proposals presented by these actors on limiting anthropogenic GHG emissions included provisions regarding policies and measures to address marine bunker fuels, with explicit reference to the role of IMO (Depledge,

2000). The EU also proposed the prospect of taxation in these sectors. Unfortunately, the reference to taxation did not find itself in the final draft of the Kyoto Protocol (Ibid).

The allocation of maritime fuel emissions limits to different countries has been the critical struggle in regulating international shipping under the UNFCCC (Heitmann & Khalilian, 2011; Shi, 2016a). Therefore, the Subsidiary Body for Scientific and Technological Advice (SBSTA) was given the task of addressing the distribution and regulation of emissions targets from international bunker fuels at COP 1 in 1995, and to report on this work to COP 2 in 1996 (Den Elzen et al., 2007; Hackmann, 2012). This task was intended to include international shipping emissions in the state-based Kyoto Protocol (Shi, 2016). At the conference in Geneva, eight allocation options proposed by the SBSTA were then presented to parties of the UNFCCC (Den Elzen, Olivier, Berk, & den Elzen, 2007; Hackmann, 2012; Heitmann & Khalilian, 2011; Shi, 2016a). The eight allocations[14] included the following;

1. No allocation.
2. Allocation to Parties in proportion to their national emissions.
3. Allocation to Parties according to the country where the bunker fuel is sold.
4. Allocation to Parties according to the nationality of the transporting company, or to the country where the ship is registered, or to the country of the operator.
5. Allocation to Parties according to the country of departure or destination of a vessel. Alternatively, the emissions related to the journey of a vessel could be shared between the country of departure and the country of arrival.

[14] See SUBSIDIARY BODY FOR SCIENTIFIC AND TECHNOLOGICAL ADVICE (SBSTA), Third session Geneva, 9-16 July 1996 retrieved from http://unfccc.int/cop3/resource/docs/1996/sbsta/09a01.htm on February 4, 2018.

6. Allocation to Parties according to the country of departure or destination of a vessel. Alternatively, the country of departure and the country of arrival could share the emissions related to the journey of a vessel.
7. Allocation to Parties according to the country of origin of passengers or owner of cargo.
8. Allocation to the Party of emissions generated in its national space.

The SBSTA advised that five of these proposals (options 1, 3, 4, 5 and 6) be considered as the foundation for further work on allocations (Heitmann & Khalilian, 2011; Shi, 2016a). Unfortunately, this effort by the SBSTA did not make headway as it failed in realizing consensus among parties (Shi, 2016a). Two main reasons have been advanced as contributing to this failure. First is the unrealistic nature of its domestic implementation and second, the threat it posed to countries that would have been allocated significant aggregates of emissions from bunker fuels as far as international trade is concerned (Shi, 2016a)

Owing to the impasse on the issue of allocation during the second COP, the regulation of emissions from international shipping was delegated to the IMO by the UNFCCC under its Kyoto Protocol, which was adopted in December, 1997 at COP 3 (Bodansky, 2016; Heitmann & Khalilian, 2011; Shi, 2016a; Strong, 2011). The regulation of international shipping is therefore embedded in article 2 of the Kyoto Protocol. The second paragraph of Article 2 states that "the Parties included in Annex I shall pursue limitation or reduction of emissions of greenhouse gas emissions not controlled by the Montreal Protocol from aviation and marine bunker fuels, working through the International Civil Aviation Organization (ICAO) and the IMO, respectively" (UNFCCC, 1998:2). In effect, the Protocol charged the IMO with the responsibility of regulating GHG emissions from international shipping under this article.

4.2.2 Post Kyoto and the Regulation of International shipping

In the interim, the regulation of international shipping was also discussed by the Ad Hoc Working Group for Long-Term Cooperative Action (AWG-LCA) in the Bali Action Plan (Hackmann, 2012; Shi, 2016a), specifically sub-item 1b(iv) on cooperative sectoral approaches and sector-specific actions (Hackmann, 2012; Shi, 2016a). That notwithstanding, no significant outcome had emerged from the discussions of parties on the regulatory principles before the termination of the AWG-LCA at the Doha Climate Change Conference in 2012 (Heitmann & Khalilian, 2011; Shi, 2016a). Hence the regulation of international shipping was left in the hands of the IMO (Hackmann, 2012; Lister, Poulsen, & Ponte, 2015; Shi, 2016a).

Attempts to address the issue of regulation of international shipping was premised on a new method of global debate which has some traces in Copenhagen conference in 2009 but is deeply rooted in the Cancun conference in 2010. Strong has described this new form of global debate of maritime bunker fuel emissions discussions as mitigation interest and finance interest (Strong, 2011:65). The mitigation interest hinges on the need to include international shipping emissions into a binding mechanism while the finance interest revolves around the desire to advance a mechanism that imposes taxes on shipping as a prospective source of stable revenue for adaptation or mitigation purposes (Strong, 2011).

Non-Governmental Organizations (NGOs) have advanced this two-fold discussion (mitigation and finance interest) as the way to address the conflict of principles between the UNFCCC and the IMO. In Cancun, the NGOs gave this their best shot as they admonished the "UNFCCC to invite the IMO to develop the market-based mechanism that would apply equally to all ships, but that the UNFCCC would be handed the revenue to distribute in a differentiated manner" (Strong,

2011:66). Thus, both the IMO's principle of 'no more favorable treatment' as well as the UNFCCC's Common but Differentiated Responsibilities would be achieved.

Notwithstanding the crafty nature of this pitch by the NGOs, parties did not accept this position, as developed countries viewed the proposal as a way to use the industry to make money while developing countries viewed it as an imposition of an unwarranted burden on them (Strong, 2011). In effect, both developed and developing parties did not favor this proposal. It was therefore not surprising that President Espinoza's attempt to incorporate this proposal in his released draft text on bunker fuels at the end of the first week of negotiations did not make headway as it never found its way into the final draft (Strong, 2011). Hence, the Cancun agreement does not refer to international shipping or the IMO.

4.3 IMO and the Regulation of International Shipping Emission

The IMO is a specialized agency of the United Nations and "the global standard-setting authority for the safety, security and environmental performance of international shipping"[15]. The IMO has the mandate of regulating international shipping due to its complexities, which make it difficult for a single nation to oversee. Over the years, the IMO has played diverse roles in the regulation of shipping, both with successes and with failures. This section explores the regulation of international shipping by the IMO. It specifically examines what the organization is, their mandate and role in the regulation of the maritime sector. It also examines the existing regulations that are in place, to ascertain the pros and cons. It finally examines some of the reasons advanced by scholars as contributing to the delay in regulating GHG emissions from the international maritime transportation sector.

[15] See Introduction to IMO retrieved from http://www.imo.org/en/About/Pages/Default.aspx on paragraph 1

4.3.1 International Maritime Organization (IMO)

Owing to the difficulty in allocating emissions limits from international shipping to a specific nation, under the Kyoto Protocol, the UNFCCC does not directly regulate international shipping, but gives the mandate to the IMO. This section of the thesis discusses the role IMO has played in regulating and limiting GHG emissions from international shipping. Before this examination, it is prudent to give a brief history of the IMO.

The IMO is a UN specialized organization established in 1948 with the initial mandate of encouraging international shipping and safeguarding maritime safety (Bodansky, 2016; Hackmann, 2012). This mandate is embedded in Article 1(a) of the IMO Convention, which is,

> to provide machinery for cooperation among Governments in the field of governmental regulation and practices relating to technical matters of all kinds affecting shipping engaged in international trade, to encourage and facilitate the general adoption of the highest practicable standards in matters concerning maritime safety, efficiency of navigation and prevention and to control of marine pollution from ships.[16]

Thus the organization is responsible for the enhancement of safety and efficiency of navigation and to support government regulation associated with technical matters (Hackmann, 2012). The IMO now has 173 Member States with Armenia as the latest member state joining in 2018.[17] The organization also has three Associate Members, Hong Kong – China, Macao-China and Faroes Islands who joined the IMO in 1967, 1990 and 2002 respectively[18]. It is important to note that the

[16] See Brief History of IMO retrieved at http://www.imo.org/en/About/HistoryOfIMO/Pages/Default.aspx on May 4, 2018.

[17] See IMO Membership retrieved at http://www.imo.org/en/About/Membership/Pages/Default.aspx on May 4, 2018

[18] Ibid

membership of the IMO is not limited to member states. The organization gives opportunities to NGOs and intergovernmental organizations (IGOs) who satisfy their requirements to attain observer status and consultative status respectively.[19]

The IMO comprises an Assembly, a Council, and five principal Committees: The Maritime Safety Committee (MSC), the Marine Environment Protection Committee (MEPC), the Legal Committee, the Technical Co-operation Committee, and the Facilitation Committee.[20] The MEPC consist of all member states and is responsible for the reduction of GHG emissions from international shipping (Shi, 2012). Among these, the IMO has "adopted 53 conventions", as well as numerous guidelines and codes (Bodansky, 2016:8) with the conventions covering three significant areas: maritime safety; prevention of marine pollution; and liability and compensation.[21]

The key international treaty responsible for addressing the prevention of pollution by ships is the International Convention for the Prevention of Pollution from Ships (MARPOL).[22] The IMO member states adopted the Convention with its protocol in 1973 and 1978 respectively and it entered into force in 1983.[23] MARPOL represents the legal framework upon which IMO regulations reside and now has six technical annexes, which revolves around regulations on the control and prevention of pollution from different types of ships[24].

[19] Ibid

[20] See Brief History of IMO retrieved at http://www.imo.org/en/About/HistoryOfIMO/Pages/Default.aspx on May 4, 2018.

[21] See IMO Conventions retrieved from http://www.imo.org/en/About/Conventions/Pages/Home.aspx on May 4, 2018

[22] International Convention for the Prevention of Pollution from Ships (MARPOL) http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx

[23] ibid

[24] ibid

There has been an ongoing debate about the mandate of regulating GHG emissions from international shipping by the IMO. Two schools of thought have emerged from this debate. The first school points to IMO's mandate on this matter as emanating from the IMO Convention and United Nations Convention on the Law of the Sea (UNCLOS) citing Articles 1(a) and 59 of the IMO Convention and Articles 211 and 212 of the UNCLOS as the basis. The second school rather see the IMO's mandate as emanating from the Kyoto Protocol (See Shi, 2012). Shi, (2012) in his article "The challenge of reducing greenhouse gas emissions from international shipping: assessing the international maritime organization's regulatory response" gives some clarity to this debate. According to author, "the IMO Convention and the UNCLOS provide the IMO with general competence to regulate this type of issue, while the Kyoto Protocol provides the IMO with a specific mandate in regulating this matter" (Shi, 2012:6) This thesis largely concerns the IMO's specific mandate stipulated in the Kyoto protocol.

4.3.2 Regulation of International Shipping by the IMO

Since the mandate was given to IMO by the Kyoto protocol, both the organization and its member states have made attempts to limit GHG emissions from international shipping (Hackmann, 2012; Lister et al., 2015). In fact, the work of the IMO in regulating GHG emissions from international shipping officially began when IMO member states adopted the Resolution 8 on CO_2 emissions from ships at the MARPOL Conference. This resolution entreated the IMO to commence a study on GHG emissions from ships and consider realistic CO_2 reduction strategies (Shi, 2016b). The study discovered that shipping contributed 1.8% of the world's total CO_2 emissions in 1996 (Skjølsvik et al., 2000). Therefore, the study, after careful evaluations of policy alternatives available to limit GHG in the maritime sector, proposed the following strategy for policy implementation:

- *Explore the interests for entering into voluntary agreements on GHG emission limitations between the IMO and the ship owners, or to use environmental indexing.*
- *Start working on how to design emission standards for new and possibly also for existing vessels.*
- *Pursue the possibilities of credit trading from additional abatement measures implemented on new and possibly also on existing vessels* (Skjølsvik et al., 2000:9)

Again, the IMO Assembly in 2003 adopted a resolution (A.963 (23)) on IMO policies and practices related to the reduction of greenhouse gas emissions from ships (Olmer et al., 2017; Shi, 2016b). This resolution implored the MEPC to develop legally binding measures to limit GHG emissions from international shipping.[25] Subsequently, the IMO through its MEPC meetings have been negotiating and discussing these issues. The work and discussions of the IMO on the issue at hand has followed three main directions market-based measures, technical measures and operational measures (Shi, 2016b). Both the technical and operational measures are energy efficiency-based.

4.3.2.1 Market Based Regulations

Several attempts at limiting GHG emissions have been centered on discussions of market-based measures (MBMs) since the IMO was mandated to cut down anthropogenic GHG emissions from the maritime sector (Lister et al., 2015; Shi, 2016b). MBMs in the forms of emission trading schemes or bunker levies to cut emissions have been proposed at different MEPC sessions, yet no consensus has been reached among different countries (Lister et al., 2015; Shi, 2016b).

[25] See IMO POLICIES AND PRACTICES RELATED TO REDUCTION OF GREENHOUSE GAS EMISSIONS FROM SHIPS retrieved from http://rise.odessa.ua/texts/A963_23e.php3 on May 4, 2018

Consequently, at the IMO's 65th MEPC meeting in 2013, the discussion on MBMs was suspended (Shi, 2016b).

4.3.2.2 Energy Efficiency Regulations

In July 2011, the first mandatory regulation to reduce GHG emissions from international shipping was adopted by the IMO (Keen & Parry, n.d.; Lister et al., 2015; Olmer et al., 2017). At its 62nd Marine Environment Protection Committee (MEPC) session at London in July 2011, Parties to IMO's MARPOL Annex VI adopted two energy efficiency measures. This amendment was achieved by adding a new chapter on Regulation on energy efficiency for ships to the MARPOL Annex VI (Keen & Parry, n.d.; Lister et al., 2015; Olmer et al., 2017). This new chapter, which is Chapter 4, makes mandatory the Energy Efficiency Design Index (EEDI) and the Ship Energy Efficiency Management Plan (SEEMP)[26].

The EEDI offers technological measures for ships to meet the minimum design prerequisites for energy efficiency. These prerequisites are obligatory for specific categories of new ships. However, because of the non-prescriptive nature of this performance-based mechanism, industries can decide on which technologies to utilize in a specific ship design if the energy efficiency prerequisite is achieved[27]. The SEEMP is a binding document, which stipulates operational initiatives to improve energy for all ships (both existing and new) in operation (Anderson & Bows, 2012; Keen & Parry, n.d.; Lister et al., 2015; Olmer et al., 2017).

The primary objective behind these measures is the minimization of GHG emissions from shipping by reducing fuel consumption (Shi, 2016b). Hence, the EEDI and SEEMP signify very

[26]See July 15, 2011 Mandatory energy efficiency measures for international shipping adopted at IMO environment meeting retrieved from http://www.imo.org/en/MediaCentre/PressBriefings/Pages/42-mepc-ghg.aspx#.WuoB1KQvzIU

[27] ibid

essential technical and operational measures for endorsing energy efficiency in the shipping sector. A monitoring device known as The Energy Efficiency Operational Indicator (EEOI) is mostly used in creating benchmarks associated with the energy efficiency of ships voluntarily (Shi, 2016b). The IMO in their bid to ensure an even and smooth implementation of these measures adopted four main guidelines (Shi, 2014):

- 2012 Guidelines on the Method of Calculation of the Attained Energy Efficiency Design Index for New Ships (EEDI Calculation Guidelines)[28]
- 2012 Guidelines for the Development of A Ship Energy Efficiency Management Plan (SEEMP Guidelines)[29]
- 2012 Guidelines on Survey and Certification of the Energy Efficiency Design Index (EEDI Survey and Certification Guidelines)[30]
- 2012 Guidelines for Calculation of Reference Lines for Use with the Energy Efficiency Design Index (EEDI Reference Lines Guidelines)[31]

These amendments and guidelines led to the establishment of "four-phase implementation and two-stage survey and verification process of the EEDI"(Shi, 2014:16) which were geared towards affording the industry ample time for preparations and smooth implementation of the EEDI. Additionally, on the operational front, the amendments establish a "four-step approach" (planning, implementation, monitoring, and self-evaluation and improvement) through the SEEMP to advance a ship's energy efficiency (Shi, 2014:16).

[28] See Resolution MEPC.212(63), Doc MEPC 63/23 Annex 8 on 2 March 2012
[29]See Resolution MEPC.213(63), Doc MEPC 63/23 Annex 9 (2 March 2012);
[30] See Resolution MEPC.214(63), Doc MEPC 63/23/Add.1 Annex 10 (2 March 2012);
[31] See Resolution MEPC. 215(63), Doc MEPC 63/23/Add.1 Annex 11 (2 March 2012).

It is worth noting that these regulations were met with opposition by large developing countries such as China and India with the premise being the lack of integration of the CBDR principle in the EEDI and SEEMP (Shi, 2014). Therefore unlike the usual decision by consensus enjoyed by the IMO in its decision making, this regulation was adopted based on the majority vote (Shi, 2014).

The EEDI and the SEEMP, notwithstanding its opposition by some parties, entered into force in 2013 and is estimated to reduce emissions annually by about 10 percent or more below baseline levels by 2020 (Keen & Parry, n.d.; Lister et al., 2015; Shi, 2016b). However, the EEDI does not include some categories of new ships, and the SEEMP requirements have also been criticized as being ambiguous (Shi, 2016b). Both of these energy efficiency measures are expected to only slow down growth in emissions in the decades to come (Lister et al., 2015). In the face of projected growth in emissions in absolute terms from international shipping emanating from an anticipated global rise in demand for shipping, a more effective regulation is imminent (Lister et al., 2015; Shi, 2016b; Smith et al., 2015b).

From the above discussion, meaningful measures to curb emissions from international shipping have been woefully inadequate. Unfortunately, no comprehensive, legally binding agreement has been reached (Hackmann, 2012; Lister et al., 2015). The sluggishness of action by the IMO is arguably a product of the different principles of the IMO, which treats members equally, and the UNFCCC that gives developing countries preferential treatment as they are the victims of climate change caused disproportionately by the activities of industrialized countries (see Hackmann, 2012; Strong, 2011). For instance, as the chapter mentions earlier, China's resistance of the regulations by IMO is primarily based on the refusal of the IMO to apply the principle of differentiation in the regulations. The result is diverging views regarding the principles to guide the process leading to a lack of consensus on regulations (Hackmann, 2012).

4.4 Conclusion

The chapter has positioned international shipping in the context of climate regime regulation. It explored how international shipping regulations have been advanced since the Kyoto protocol. The chapter has shown that the Kyoto Protocol attempts by the international climate change regime to limit GHG from international shipping prior to the new agreement proved futile. International shipping is not directly regulated by the UNFCCC. Hence creators of GHG emissions from international shipping are relieved from obligations under the Kyoto Protocol (Shi, 2016a). However, the COP admonished the SBSTA to further elaborate on the addition of emissions from the international bunkers in the general GHG inventories of Parties (Depledge, 2000). One question emanates from the findings of the chapter. That is if there is an organization responsible for the regulation and prevention of GHG emissions from international shipping, why has it been difficult to do so for a long time? This question relates to the IMO, the organization tasked with controlling maritime activities on the globe.

To understand the dynamics, the chapter also discussed the IMO and how it has influenced the regulation of the maritime transport. The chapter argues that the fight to limit GHG emissions by international shipping by the IMO has proven to be a hard nut to crack. Up until the time of writing, the only binding regulations that existed to curb this problem had been towards energy efficiency, which unfortunately has yielded no meaningful results owing to the lack of universal acceptability by member states. This slowness on the part of the IMO to deliver has been attributed to the differences in principles between the IMO and UNFCCC, which is the foundation for the resistance of regulations from countries such as China and India. Consequently, there have been calls by some parties, including the EU and some climate change advocates for international shipping emissions regulation to be incorporated into the overall climate change regime. The calls have

resonated among some stakeholders who view the role of shipping in climate change as an issue to be addressed. These calls have formed part of the discussions around main climate change agreements over the years and should have yielded results if well managed. However, the discussion on shipping and regulation under agreements appear unending, even after the recent global climate change agreement: The Paris agreement. So, why has it been challenging to incorporate shipping in regulations even in the current contexts when there is universal agreement on its role in climate change? The next chapter employs this point of entry to examine how shipping was positioned in discussions leading to the Paris Agreement.

CHAPTER FIVE: PARIS AGREEMENT AND REGULATION OF INTERNATIONAL SHIPPING EMISSIONS

5.1 Introduction

After Kyoto and the inadequate performance of the IMO in regard to maritime regulation, there was a concerted push by parties such as EU for international maritime transport to be regulated under the UNFCCC's Paris Agreement (Obergassel et al., 2015). This push was mainly because of the inability of the IMO, the UN organization charged with the responsibility of limiting GHG emissions in this sector, to adequately perform this task. From the analysis in chapter four, several reasons have been cited as contributing to the inadequate regulation of international shipping by the IMO. That notwithstanding, the bottom line is that the international organization charged with the responsibility of regulating GHG emissions from international shipping has not sufficiently undertaken the task of effectively overseeing the reduction of GHG emissions from the shipping industry.

Meanwhile, the Paris Agreement, which was expected by some actors, including the EU, to regulate emissions from international shipping was adopted without reference to regulations of emissions from the sector (Dimitrov, 2016; Obergassel et al., 2015; Shi, 2016a). In as much as the Agreement was met with jubilation and praises from the international community, the disappointment of some scholars and environmentalists regarding the exclusion of shipping from the agreement was significant. To explain the reasons behind this non-regulation, the contributions of China, US, India and the EU, the four largest emitting parties, are explored. In the pages that follow, I discuss the issues surrounding the international shipping in the Paris Agreement. To emphasis why this is worth a discussion, the first part of the chapter details out the origin, elements,

and the discussions on the Paris Agreement. The detailed discussion earlier on is to help readers understand the relevance and the position of the Agreement in the climate change regime discussion, a way to highlight why exclusion of shipping in such a landmark policy merits the attention.

5.2 Paris Agreement

The UN Climate Change Conference of December 2015 in Paris attracted international political elite to launch humankind's latest response to climate change. Most scholars view the conference as the largest conference in the history of global diplomacy: One hundred and ninety- six (196) parties, representing one hundred and ninety-five (195) countries and the European Union, came together in the sprawling aerospace complex under the leadership of the French government to negotiate a deal that would influence the future of both the environment and the people that live in it (See Christoff, 2016; Falkner, 2016). The road to Paris was not a straightforward one. It started right after the conference in Copenhagen failed to meet its expectation of producing an outcome, a global response to dealing with the climate change problem that plagues our world. This failure resulted in another round of negotiation which ultimately led to Paris (Ciplet et al., 2015; Doelle, 2015).

Notably, the voluntary approach that was introduced in Copenhagen was institutionalized over the next six years of negotiations, culminating in Paris in late 2015 and changes in international climate governance (Ciplet & Roberts, 2017:148). Hence, the Agreement adopted in Paris marked the end of a decade-long transition from a legally binding regime based on industrialized country mitigation to a voluntary agreement on climate change architecture that comprises both industrialized and developing countries (Ciplet & Roberts, 2017; Doelle, 2015). This transition is premised on the notion that voluntary commitments are more likely to be met than legally binding

ones (Doelle, 2015; Falkner, 2016). In effect, the COP 21, or the Paris Conference negotiations, epitomized the culmination of years of negotiations which officially took off in COP 17 in 2011.

The final day of the Paris conference, December 12, 2018, was crowned with much celebration at the adoption of the Paris agreement, with excitement and pictures bearing the semblance of a rock concert (Christoff, 2016; Ciplet & Roberts, 2017). Some observers and parties have hailed the approach and outcome of the conference (Clémençon, 2016; Dimitrov, 2016; Rajamani 2016). The UN Secretary-General at that time, Ban Ki-moon, described it as a 'monumental triumph' (Rajamani 2016:493). Among parties, it was also been described as "revolutionary" by Venezuela, "a tremendous collective achievement" by the EU, "a marvelous act" by China, "a resounding triumph of multilateralism" by St. Lucia, a "new era of global climate governance" by Egypt, and "a tremendous victory for the planet" by the US (Dimitrov, 2016). In effect, almost all parties hailed the outcome of this conference as marking a landmark moment in multilateralism.

Parties attended the conference with differing national circumstances, interests and perspectives. The United States came with domestic political constraints, the BASIC group (Brazil, South Africa, India and China) with future development constraints, Small Island States with increasingly vulnerable existence and Organization of the Petroleum Exporting Countries (OPEC) with threatened economic stability away from fossil fuels (Doelle, 2015:17). The fact that amidst all these differences as well as other political issues, an agreement was reached have led some scholars of the international climate regime to follow in the jubilation. The Paris Agreement has been described as representing "a historic achievement in multilateral diplomacy" (Rajamani 2016:493), "a political success in climate negotiations and traditional state diplomacy," (Dimitrov, 2016:1) and "the most ambitious outcome possible in a deeply discordant political context" (Rajamani 2016:494).

Even though Nicaragua was the only country which openly criticized the outcome of the COP 21, during the closing plenary (Doelle, 2015), other criticisms have been leveled against the agreement by some scholars and other environmentalists even though some of the scholars hit harder than others (Christoff, 2016; Ciplet & Roberts, 2017; Clémençon, 2016; Falkner, 2016; Rajamani, 2016; Spash, 2016). Christoff (2016) has described it as a promissory note with unclear value. Clémençon (2016) in his paper "The Two Sides of the Paris Climate Agreement: Dismal Failure or Historic Breakthrough?" intimates that the cautious buoyancy that the world exuded during the plenary closing of the Paris conference cannot hide the fact that the challenges moving forward are disheartening (Clémençon, 2016). Spash (2016) takes an extreme position; he suggests that the Paris Agreement changes nothing as it refuses to take into consideration the reality of the climate change problem. To him, the Agreement is a "fantasy which lacks any actual plan of how to achieve the targets for emissions reductions" (Spash 2016:930).

To appreciate these differing views, it is prudent to discuss the content of the agreement and the criticisms leveled against it. One of the vital components of the Paris Agreement are the ambitious target to keep a global temperature rise well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature rise to 1.5 degrees Celsius (UNFCCC, 2015). Others are the Intended Nationally Determined Contributions (INDCs), significant funding for developing countries, 5 year stock-taking and review, heightened transparency, and a method of implementation and compliance (Christoff, 2016; Clémençon, 2016; Dimitrov, 2016; Doelle, 2015; Obergassel et al., 2015; Rajamani, 2016).

The agreement has to its credit inclusiveness. According to Obergassel et al. (2015), it is the first time in over two decades of climate regime negotiations that an agreement requires climate

action by both developed and developing parties. To most people, it represents the resuscitation of international climate diplomacy, which was almost dead.

With regards to mitigation, the Paris Agreement in Article 2 has the ambitious goal of holding "the increase in the global average temperature to well below 2°C above preindustrial levels and pursuing efforts to limit the temperature increase to 1.5°C" (UNFCCC, 2015:3). To achieve this, parties are to submit their Intended Nationally Determined Contributions (INDCs) on how they intend to cut down their GHGs nationally to help reach the global target set (Ibid). The agreement also recognizes the fact that the consequences of global warming are independent of the origin of the GHG, as such some countries may bear the consequences of global warming caused by others, hence the need for a coping mechanism known as adaptation (Robbins, 2016). To this end, the agreement provides technical and financial support to developing countries through the US$100 billion to be provided by developed countries annually by 2020 (UNFCCC, 2015).

The Agreement also provides for a five-year stock taking process as well as an implementation and compliance mechanism. Article 14 clause 2 of the Agreement states that "the Conference of the Parties serving as the meeting of the Parties to this Agreement shall undertake its first global stock take in 2023 and every five years thereafter unless otherwise decided by the Conference of the Parties serving as the meeting of the Parties to this Agreement" (UNFCCC, 2015:19). The Agreement also makes provisions for implementation and compliance in Article 15 (UNFCCC, 2015).

That notwithstanding, the Paris Agreement has been criticized as highly ambiguous for its targets and promises having no connection with climate science requirements or socio-economic reality (Jayaraman, 2015; Spash, 2016; Sprinz et al., 2016). The absence of an explicit formula for bridging the mitigation gap represented by the current INDCs has been cited as one of the reasons

behind this. Therefore mitigation efforts for sustainability are the onus of the individual Parties (both developed and developing countries) and other multilateral efforts (Doelle, 2015).

However, some scholars do not view the presentation of developed countries with the alternative of taking nationally determined mitigation actions in the climate regime as the best source of action to mitigate climate change (Clémençon, 2016; Jayaraman, 2015; Rajamani 2008). For instance, Rajamani argues that having countries to determine their own mitigation actions is like "gratifying their opposition to global answer to the climate change problem built on cooperation, solidarity and mutual aid" (Rajamani 2008:940). It also relegates equity and environmental justice concerns guiding multilateral cooperation (Clémençon, 2016; Jayaraman, 2015). It propagates "the low levels of climate action thus far undertaken by the developed nations while offering little concrete assistance to the less-developed nations" (Jayaraman, 2015:42). In reality, the Paris Agreement is a "compilation of nationally determined intended contradictions" (Spash 2016:932). Furthermore, the Agreement was arguably reached by eliminating almost all fundamental issues regarding the causes of human-induced climate change and suggests no secure plans of action (Spash, 2016). One of such substantive issues is emissions from international shipping under the UNFCCC, which is the subject of discussion under this thesis (Dimitrov, 2016; Doelle, 2015; Obergassel et al., 2015).

Even though the Agreement makes provisions for compliance, it provides for a very weak compliance mechanism. Article 15 provides for the implementation and compliance mechanism, which "shall consist of a committee that shall be expert-based and facilitative in nature and function in a manner that is transparent, non-adversarial and non-punitive. The committee shall pay particular attention to the respective national capabilities and circumstances of Parties" (UNFCCC, 2015:19). This means that this expert committee responsible for compliance has

virtually no power under the Agreement to punish. It cannot bite as it has "no teeth" and therefore can do little about non-compliance (Spash, 2016:930).

Again, the Agreement provides an option for parties to withdraw from the agreement without any sanctions (Spash, 2016; UNFCCC, 2015). Article 28 of the Agreement states that "at any time after three years from the date on which this Agreement has entered into force for a Party, that Party may withdraw from this Agreement by giving written notification to the Depositary" (UNFCCC, 2015:25).

In effect, although the Paris Agreement has been widely lauded as a great success for the global governance of climate change, there is an indication that the contents of the Agreement reached are highly ambiguous and do little to limit anthropogenic GHG emissions as stipulated in the UNFCCC.

5.3 No Regulation of International Shipping under the Paris Agreement: Understanding the Why

Going into COP-21 in Paris in 2015, the controversy over the regulation of international bunkers was palpable. The issue of the regulation of international shipping was one of the complex sub-issues encountered in the negotiation of the mitigation aspect of the Agreement during the negotiation stage (Obergassel et al., 2015). The complexity revolved around whether to have specific provisions addressing emissions from international shipping or not (Obergassel et al., 2015:8).

The negotiating text for the first draft of the Agreement included an option of regulating international shipping (Dimitrov, 2016; Obergassel et al., 2015; Shi, 2016a). Intrinsic to the

negotiation of the Paris Agreement, Parties agreed on a Negotiating Text[32] for the Agreement at the Geneva Climate Change Conference based on the elements stipulated in the Lima call for climate action[33]. From the text, "in meeting the 2 °C objective, Parties agree on the need for global sectoral emission reduction targets for international aviation and maritime transport and on the need for all Parties to work through the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) to develop global policy frameworks to achieve these targets"[34]. The text sanctioned not only the setting of reduction targets but also the creation of a levy system for the international maritime sector (Shi, 2016a)

According to Obergassel et al. (2015) in their paper "Phoenix from the Ashes —An Analysis of the Paris Agreement to the United Nations Framework Convention on Climate Change", the initial draft of the Paris Agreement, submitted on 5 December 2015, encompassed an equivalent formulation. Article 3.20 of the initial draft "requested the Parties to pursue their efforts through the International Maritime Organization (IMO)." It went further, suggesting that the organization "should develop procedures for incorporating emissions from international marine bunker fuel into low-emission development strategies" (Obergassel et al., 2015:10).

Even though this clause did not necessarily mean a direct regulation of international shipping, the sentence "should develop procedures for incorporating emissions from international marine bunker fuel into low-emission development strategies" (Ibid) denotes a sense of obligation to the IMO, which had the potential of keeping the organization on its toes.

[32] Negotiating text, FCCC/ADP/2015/1 (25 February 2015) (Geneva Negotiating Text) retrieved from https://unfccc.int/resource/docs/2015/adp2/eng/01.pdf on April 9 2018

[33] Decision 1/CP.20, 'Lima Call for Climate Action' FCCC/CP/2014/10/Add.1 (2 February 2015) (Lima Call for Climate Action) Annex: 'Elements for a draft negotiating text'. https://unfccc.int/resource/docs/2014/cop20/eng/10a01.pdf

[34]Negotiating text, FCCC/ADP/2015/1 (25 February 2015) (Geneva Negotiating Text) retrieved from https://unfccc.int/resource/docs/2015/adp2/eng/01.pdf on April 9 2018, 2page 18

The presence of the clause on the regulation of international maritime shipping in the first draft of the Agreement produced two distinct groups among the parties. The first group, which is the supporting group, comprised predominantly of "the EU and the environmental integrity group (comprising Liechtenstein, Mexico, Monaco, the Republic of Korea, and Switzerland)" (Obergassel et al., 2015:10) and favored the option to keep that clause in the Agreement. However, there was another group composed of China, US, India and others, which is the contrary group that advocated for the elimination of the references to international bunker regulation in the text.

In the final Agreement, the US and the BASIC countries achieved their call for the elimination of the regulation of the bunker fuels from the Agreement. Explicitly, the regulation of bunker fuels was ruled out of the final draft of the Paris Agreement. Thus the clause died a premature death as "it was ultimately dropped from the draft early in the second week of negotiations" (Obergassel et al., 2015:10; Shi, 2016a). Hence, maritime transportation is not given a mention in the Paris Agreement.

To develop a better understanding of the issues of regulation of international maritime shipping, the thesis examines the four largest GHG emitters, China, US, India and EU, and their role in the negotiation and subsequent adoption of the Paris Agreement. China, US, India and EU were vital actors in the UNFCCC negotiations that climaxed in the adoption of a worldwide climate Agreement in Paris on December 12, 2015. The crucial role of these countries is embedded in their share of global GHG emissions. Since these four countries are the four largest emitters, they possess structural power. This power and influence are derived in part from the countries' structural positions, meaning that without them an agreement would be worthless or unproductive (Biedenkopf, 2016). The decision to examine these four largest GHG emitters is premised on the assumption by the realist school of thought that "any actor that has access to the open access

resource (or the ability to destroy that resource) could equally influence international outcomes" (Rowlands, n.d.:34). This suggests that China, US and India and the EU has the ability to exert substantial authority during the negotiations based on their role as world largest emitters of GHGs.

5.3.1 China

China's rapid economic growth has made it a key player in the global economy and as such a force to be reckoned with (Li & Hewitt, 2008). This rapid economic growth has mainly been export-led as it is one of the leading export countries in the world, hence significant in global trade (Li & Hewitt, 2008; Lin & Sun, 2010). For instance in 2008, goods and service exports accounted for about one-third of China's GDP (Lin & Sun, 2010). To keep up with the developed world, China as an emerging country needs access to intangible goods such as technology and capital. Hence the country depends heavily on the manufacture of basic consumer goods for developed countries in exchange for these intangible goods (Lin & Sun, 2010). Much of this export-oriented trade depends on maritime transportation.

Consequently, the maritime sector has undergone developments to augment this economic growth process. China has a vast shipping sector with more than 18 000 km of coastline and over four hundred (400) ports (Li et al., 2017; Zhang et al., 2017). Over the past few years, the sector has experienced swift development to the extent that the center of international shipping is expected to be located in China (Shanghai) by 2020 (Li et al., 2017; Zhang et al., 2017). The country recognized that the advancement of efficient (container) port facilities was necessary for growth in shipping and the economy. It is therefore not surprising that in 2015, China was the citadel of 7 out of the top ten (10) world container ports in the world (Li et al., 2017; Zhang et al., 2017). These seven ports are Shanghai (first), Shenzhen (3rd), Ningbo-Zhoushann (4tth), Hong

Kong (5th), Qingdao (7th), Guangzhou (8th) and Tianjin (10th) ports[35]. This is as a result of the increase in demand for maritime transportation in China since the adoption of the reform and opening policy which promotes more open trade (Yang, Ma, & Xing, 2017). The country accounts for the most significant portion of maritime transportation demand with regards to the import of oil, iron ore, coal, and chemicals and the export of basic manufactured products to the developed world (Lin & Sun, 2010; Yang et al., 2017; Yunfeng & Laike, 2010). The demand for international shipping to and from China in 2015 contributed roughly 25% of the overall world trade by volume at 2682 million tons (Yang et al., 2017). This demonstrates how pivotal this sector is in China's economy.

China's new role in the global economy has placed it in a position as the world's largest carbon emitter since 2005 (See Figure 9). China has overtaken the US as the world's largest GHG emitter. Along with the rapid expansion of emissions from economic development, the rapid development of the maritime sector in the country has culminated into a substantial surge in GHG emissions in the sector (Li et al., 2017; Yang et al., 2017; Zhang et al., 2017). From 2013 to 2015, China was the second largest share (11%) source of shipping CO_2 emissions by flag state (Olmer et al., 2017) (See figure 8). China's share of anthropogenic GHG emissions in the world, as well as in international shipping sector, plays a very significant role in China's position on the exclusion of regulation of international shipping from the Paris agreement.

China's domestic issues, especially regarding the economy, have always informed its negotiation position in the international climate change regime. China came to the Copenhagen conference in 2009 with a negotiation position that would preserve its emission space and made

[35] See TOP 50 WORLD CONTAINER PORTS retrieved from http://www.worldshipping.org/about-the-industry/global-trade/top-50-world-container-ports on May 11, 2018

sure that any targets that would put too much burden on the country would be rejected (Bodansky, 2010; Christoff, 2010:648; Shum, 2014). Specifically, "China's negotiating stance is in part conditioned by the demands and pressures for internal development, the effects of its pre-eminence as the global economy's foremost manufacturing hub, and its aspirations to be a global superpower" (Christoff, 2010:646). Observers watched in amazement as China aggressively maintained this position throughout the conference (Christoff, 2010; Bodansky, 2010; Dimitrov, 2010). In the end, this position had a great deal of influence on the outcome of the negotiations to which the content of the Copenhagen Accord testifies.

The situation was not too different in Paris as China ensured that any targets would not affect the economic growth of the country. China was worried that regulation of international shipping under the agreement would hurt the country's economy. It is therefore not surprising that China, together with its allies, was compelled to drop the article on the regulation of international maritime sector since it is one of the cornerstones of the country's economy (See Obergassel et al., 2015). Overall, China has been reluctant to allow global agreements to inhibit its autonomy to participate in the "delicate political balancing act" that domestic economic progress necessitates (Christoff, 2010:648).

5.3.2 United States of America (US)

The influence of the United States in international climate change negotiations is significant. This is to some extent grounded in its position as the largest economy and the second largest emitter of GHG emissions. The economy of the US is heavily reliant on imports from other countries and as such plays a significant role in international maritime transport and its consequent emissions of GHG. According to the World Trade Organization (WTO), the US is the leading

world importer and the second leading exporter (through other means as well).[36] This makes maritime emission regulations a matter of concern for the US as it has the potential of jeopardizing the US economic interest.

The US came to Paris with two fundamental non-compromising stances. The first stance concerns the definition of the concept of Common But Differentiated Responsibilities (CBDR) and the legal nature of the Paris agreement (Biedenkopf, 2016). The principle of CBDR as explained in earlier chapters ensured a clear-cut responsibility between developed and developing countries with developed countries bearing the largest share of climate change mitigation. The US stance of not wanting China and other emerging economies to have fewer responsibilities than itself, a position which goes as far back as 1997, was still persistent and continued to be important for US domestic politics (Biedenkopf, 2016; Sicurelli, 2016).

Furthermore, the US government is captive to its political institutions which is evident in its history of non-ratification of climate deals resulting from Senate refUSl of ratification (Biedenkopf, 2016; Christoff, 2010). With the presence of a Republican Senate majority who had categorically stated that it would not ratify an international treaty that would bind the United States to GHG emission reduction targets, the US government was likely to reject any treaty that would be binding (Biedenkopf, 2016; Christoff, 2010; Sicurelli, 2016). The Obama administration tried not to risk contesting "the still popular Bush-era doctrine of rejecting the Protocol as a threat to US economic competitiveness and jobs", a decision based on the 1997 Byrd-Hagel resolution (Christoff, 2010:650). For this reason, the United States ensured the drafting of a global climate agreement that presented a binding procedure but no tangible mitigation or financing obligations

[36] World Trade Organization, International Trade and Market Access Data. Retrieved from http://tinyurl.com/market-access-data on May 5, 2018.

(Biedenkopf, 2016). Unfortunately, this did not prevent the current withdrawal of the US from the Agreement by Trump administration.

These two fundamental issues led the US to participate in bilateral diplomacy and coalition building (Biedenkopf, 2016). Its bilateral diplomacy with China in November 2014 is viewed as "a watershed moment that generated momentum" for reaching the Paris Agreement (Obergassel et al. 2016: 7). Through this agreement, China developed a more relaxed stance on differentiation on the level of stringency of the commitments instead of legal applicability of the Paris Agreement which they otherwise championed (Biedenkopf, 2016).

In effect, since the US is consistent with protecting its economic interest at the expense of global climate outcomes, it is not surprising that it was among the brains behind the exclusion of the regulation of the maritime sector emissions. The bilateral diplomacy with China, whose economy relies heavily on the maritime sector, also helped in that direction.

5.3.3 India

Just like China, maritime transport plays an essential part in India's economic development. The maritime sector in India encompasses ports, shipping, shipbuilding and ship repair, and inland water transport systems[37]. The maritime transport sector is responsible for about 95% of India's trade by volume and 70% by value and India is ranked as part of the top 20 foremost countries with higher numbers of merchant fleets globally[38]. Over the last decade, India's maritime transport has practically doubled concerning both fleet size and gross registered tonnage (Pandey &

[37] See Export-Import Bank of India (2010) INDIAN SHIPPING INDUSTRY: A CATALYST FOR GROWTH, OCCASIONAL PAPER NO. 142 retrieved from https://www.eximbankindia.in/Assets/Dynamic/PDF/Publication-Resources/ResearchPapers/Hindi/25file.pdf on May 16, 2018

[38] Ibid

Venkataraman, 2014). The fact that in 2010 Gross Tonnage (GT) under the Indian flag was 10.1 million GT with about 1029 ships in operation[39] attest to this.

India has 12 major ports namely Kolkata and Haldia Port, Chennai Port, Cochin Port, Jawahar Lal Nehru Port, Kamarajar Port, Kandla Port, Mormugao Port, Mumbai Port, New Mangalore Port, Paradip Port, V.O Chidambaranar Port and Vishakhapatnam Port, as well as 187 minor ports to its credit[40]. Moreover, the presence of shipbuilding and ship repair industries, which has a potential for growth,[41] makes the maritime sector an essential source of economic growth in the country. India is part of the BASIC group, which emerged in the Copenhagen conference through the influence of China. This group is well known for their resistance to any international climate agreements that would withhold their right to economic development (See Bodansky, 2010; Christoff, 2010). At the Paris conference, India maintained this active defense of its economic growth interest by supporting the elimination of the regulation of international shipping from the Paris agreement since maritime transport is one of, if not, the main sectors responsible for the economic growth of the country (Obergassel et al., 2015).

5.3.4 European Union (EU)

The EU is the fourth largest emitter of CO_2 in the world and hence plays a very vital role in the fight to limit GHG emissions in the world. The EU has been a strong advocate for regulation of

[39] Ibid

[40] See Government of India (2015), Major Ports in India retrieved from https://community.data.gov.in/major-ports-in-india/ on May 16, 2018; see also Export-Import Bank of India (2010) INDIAN SHIPPING INDUSTRY: A CATALYST FOR GROWTH, OCCASIONAL PAPER NO. 142 retrieved from https://www.eximbankindia.in/Assets/Dynamic/PDF/Publication-Resources/ResearchPapers/Hindi/25file.pdf on May 16, 2018

[41] See Export-Import Bank of India (2010) INDIAN SHIPPING INDUSTRY: A CATALYST FOR GROWTH, OCCASIONAL PAPER NO. 142 retrieved from https://www.eximbankindia.in/Assets/Dynamic/PDF/Publication-Resources/ResearchPapers/Hindi/25file.pdf on May 16, 2018

international shipping right in the history of international climate regime (Den Elzen et al., 2007; Depledge, 2000). The support of the EU is not surprising as they were one of the initiators of the regulation of international bunker fuels in the first place. The EU was one of the parties who brought the issue to the Kyoto agenda and has since then made efforts to champion this cause (See Depledge, 2000).

The EU indicated in its 2004 Environmental Council decision that international bunker emissions ought to be encompassed in climate policy measures for the post-2012 period (Den Elzen et al., 2007). The EU commitment to limiting GHG emissions from the maritime sector is not just lip service but rather backed by action. In their 2011 White Paper on transport, the European Commission committed to at least a 40% reduction of their CO_2 emissions from maritime transport from 2005 levels by 2050, and if feasible by 50%[42].

The European Commission (EC) has registered their displeasure at the slow pace of international shipping regulation by the IMO and has on some occasions issued a threat of regional regulations, which is currently underway or being applied (Lister et al., 2015). In the decisions adopted jointly by the European Parliament and the Council on 23 April 2009, the following statement or threat was made regarding international shipping emission regulations:

> In the event that no international agreement which includes international maritime emissions in its reduction targets through the International Maritime Organization has been approved by the Member States or no such agreement through the UNFCCC has been approved by the Community by 31 December 2011, the Commission should

[42]See Reducing emissions from the shipping sector retrieved from https://ec.europa.eu/clima/policies/transport/shipping_en on May 6, 2018

make a proposal to include international maritime emissions in the Community reduction commitment with the aim of the proposed act entering into force by 2013[43].

This threat was not an empty threat after all since the threat of regional regulations by the EU is currently underway (Lister et al., 2015) through efforts to enhance monitoring activities. The EC is currently embarking on an obligatory scheme for monitoring, reporting and verification (MRV) of CO_2 emissions for ships calling at European ports (Lister et al., 2015). In June 2013, the EC issued a legislative proposal to establish a system for monitoring, reporting and verifying (MRV) (this includes fuel consumption and distance travelled) CO_2 emissions from large ships using European Union (EU) ports, which came into force in July 2015 (Lister et al., 2015).

The enthusiasm of the EU to continue to fight for the inclusion of the regulation of the international bunkers was evident in a media interview of the EU Energy and Climate Commissioner. Commissioner Miguel Arias Canete, in an interview in Paris (when parties realized that that clause on international bunkers was no longer in the draft) described this omission as a step backwards and as such, the EU was "fighting for it to be put back in."[44] Unfortunately, this fight yielded no results. As already indicated, the parties adopted the Agreement with no mention of regulation of international shipping.

[43] See Recital 2 of DECISION No 406/2009/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020 retrieved at http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009D0406&from=EN on May 9, 2018

[44] See UPDATE 1-Off the radar? Shipping, aviation dropped from Paris climate text ASSESED AT https://www.reuters.com/article/climatechange-summit-transport-idUSL8N13Y3S720151209 on May 10, 2018

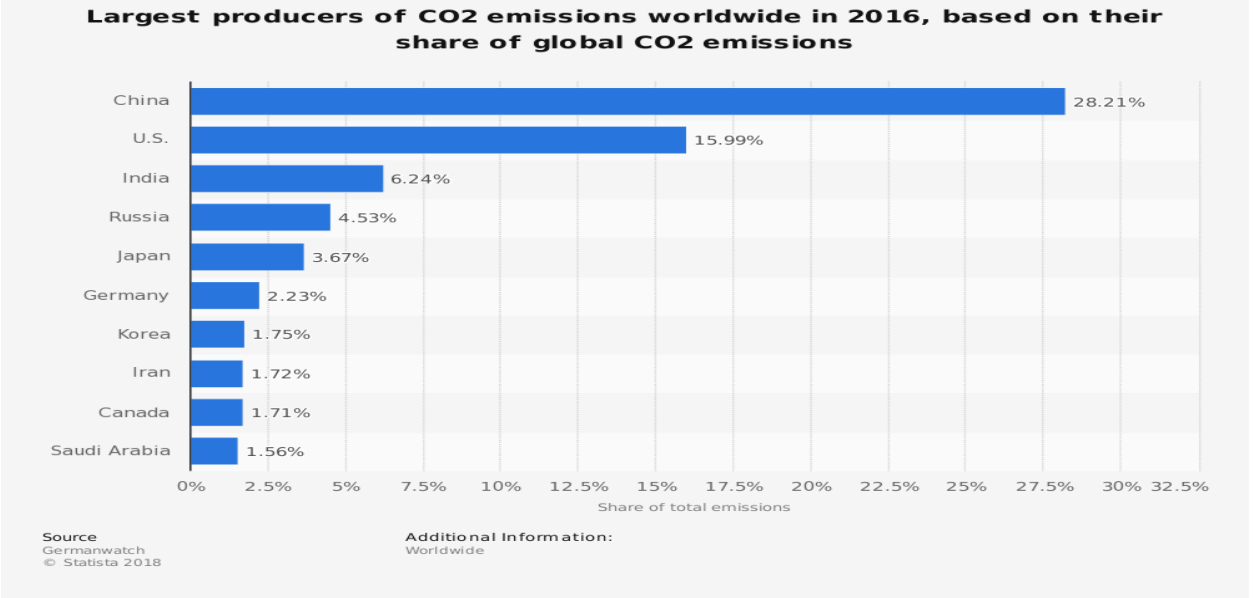


Figure 9: Largest CO_2 Emitters Globally

Source: Olmer et al., (2017) and Statista (2018)

5.4 Conclusion

In this chapter, the specific context of why international shipping was not included in the Paris Agreement is examined. The chapter argues that the non-regulation of international shipping under the Paris Agreement was largely based on the domestic economic interest of the three largest emitters of GHG in the world, China, US and India. It is evident that China, US and India had significant economic interests in the establishment of an agreement that appears to suit their separate needs without recourse to its future consequences. Negotiating outcomes were dominated by practical concerns in China, US and India over the capacity of their economies to maintain growth and competitiveness. Moreover, political interests also dominated the negotiation stance of these parties, particularly US. Based on past experiences, the US felt the need to overrule anything that would require senate to ratify the Agreement before it can be implemented in the US. In effect, these countries who were captives of domestic economic and political pressures

achieved their aim to exclude international shipping regulation from the Paris Agreement. These major powers successfully prevented the regulation of International shipping for their domestic economic and political interests as the realist and neoliberalist schools of thought suggest.

The EU, on the other hand, could not prevent this non-regulation even though the union was vehemently against it. Even though according to the realist school, the EU had an equal chance of influencing the negotiation outcomes, the combined forces of the three superpowers, China, US and India made it impossible. The heavy use of secrecy and tradeoffs employed by the French government in the negotiation process assisted this outcome (See Dimitrov, 2016). According to Dimitrov (2016), in an attempt to legitimatize this secrecy, "the French Presidency made genuine efforts to accommodate everyone's central interests through reciprocal trade-offs" which mostly took place in private consultations (Dimitrov, 2016:6). The EU had to trade quantitative global emission targets and restrictions on bunker fuels from international shipping for the issue of transparency, finance, and loss and damage (Dimitrov, 2016). These constellations of factors provide an explanation as to why international shipping was not regulated under the Paris Agreement. The arguments raised in the chapter brings into the research and governance spheres the role countries play in shaping international regulations. It advances the field of knowledge about international regulations by showing how powers are employed to shape agreements.

CHAPTER SIX: SUMMARY AND CONCLUSIONS

6.1 Introduction

This chapter begins with a summary of the findings and substantive contributions of this thesis. It then discusses the limitations of this thesis, identifies opportunities, and needs for further research.

6.2 Substantive Contributions

This thesis examined the regulation of international shipping in the international climate regime, notably the Paris Agreement. Various issues were explored to address the research questions and objectives. These were presented in four chapters that have discussed issues around climate change and the role of international maritime transport in this change, the global response to climate change problem and most importantly the reasons behind the exclusion of international shipping in the Paris Agreement. These discussions reveal findings that are important in advancing knowledge, and particularly in answering the research questions raised in Chapter One.

Evidence of anthropogenic GHG emissions and the role the maritime sector plays in this emission were explored in the second chapter of this thesis. The chapter established that the maritime sector plays a very significant role in CO_2 emissions as it contributes over 3% of the global CO_2 emissions. The sector's share of CO_2 emissions in 2015 made it the sixth largest emitter if treated as a country. Unfortunately, according to the IMO, CO_2 emissions from the maritime sector are expected even to increase exponentially if measures are not put in place to limit emissions from the sector.

The third chapter discussed the international regime and its three schools of thought, namely realism, neoliberalism and cognitivism, upon which this thesis is built. It went ahead to explore

the evolution of the international climate change regime and its developments over the years. The adoption of the UNFCCC as well as its Kyoto Protocol and recent Paris Agreement are at the core of this international climate change regime. The discussions disclosed that the various agreements are fraught with different degrees of successes, which are influenced by factors entrenched in international political scenes. The chapter brings to the fore power dynamics by the different actors in the international climate change regime and how these powers and interests shape the climate regime. The evolution and development of the international climate regime supported the assumptions by all the three schools of thought (realism, neoliberalism and cognitivism) in international regime theory. The assumption of the cognitivists on the influence of knowledge in regimes was prominent at the formation stage of the climate regime. However realists and neoliberals assumption that major powers and interests influence the negotiation outcomes of the climate regime manifested in the entire climate regime history.

Chapter four explored how international shipping regulation has been addressed in the international climate change regime since the adoption of the UNFCCC. The chapter emphasized that the Kyoto Protocol does not directly regulate international shipping. It only called upon developed states to limit their emissions of GHGs through the IMO. Attempts by the international climate change regime to limit GHG from international shipping prior to the new agreement proved futile. Furthermore, the chapter highlighted that there had been a discrete lack of action to mitigate GHG emissions from international shipping since the Protocol put the IMO at the helm of affairs. The literature suggested that the Organization has not lived up to expectation of the mandate the Protocol gave it. Even though the IMO was reporting progress to the COP, it was not until 2011 that the organization made some headway. In 2011, the organization adopted the first binding regulations advanced to reduce GHG emissions from international shipping in the form of

energy efficiency measures. The IMO projected these measures to reduce CO_2 significantly, but they have unfortunately yielded little results owing to the lack of universal acceptability by member states. Other market-based mechanisms have been unsuccessful as well. This slowness on the part of the IMO to deliver has been attributed to the conflicting institutional principles between the IMO, which favors equal treatment and the UNFCCC, which favors preferential treatment to developing countries. A practical example is China and other developing countries lack of support for the EEDI on the grounds of disregard for differentiation. In effect, the lack of support was because the interest of these countries was not met by the IMO.

The fifth chapter of the thesis answered the question of non-regulation of international shipping in the landmark Paris agreement. The chapter established that the non-regulation of international maritime transport under the Paris agreement is primarily based on the national economic interest of the three largest greenhouse gas emitters in the world: China, the US and India. China, US and India had a basis for the establishment of an agreement that appears to suit their separate needs without thinking about the future implications to the climate. The EU, in contrast, could not prevent this non-regulation despite their resistance because of the power China, US and India had together with the heavy use of secrecy and tradeoffs employed by the French government in the negotiation process. Hence, international maritime transport is not regulated under the new agreement, the Paris Agreement, which is expected to be the roadmap to limiting GHG emissions to the barest minimum in the world. A confirmation of the influence of major powers and their interests in international negotiations hypothesized by the realist and neoliberal schools of thought.

The revelations in this thesis shows the complexity of politics of international negotiations and how dominant powers can exert their influence. The arguments put forward reflects how nuanced international agreements can be influenced by factors with domestic bearings, like in the case of

domestic socio-economic interest of dominant countries. The neglect of maritime transport in Paris agreement, just like the previous ones, further emphasis the difficulties in navigating solutions to international issues like climate change. The lack of consensus on complex international problems could help explain this difficulty, but the role of deliberate sabotage for individual interest is equally relevant as shown in this thesis. New methods of navigating through complex international issues built on trade-offs could help increase consensus in future, but this approach could also be hindered by lack of strong bargaining elements from weaker parties. In effect, the issues explored in this thesis brings to the fore the power of domestic situations especially political and economic interest in shaping international regimes. Hence, domestic interests and international relations cannot be devoid of each other. It also exhibits the fact that international regime outcomes are not necessarily the result of consensus among parties as we view it, but it is the result of power relations and dynamics where the superpower (s) tend to win(s). Thus, international climate agreements are largely the reflections of the interests of the superpower(s) as depicted by the realist and neoliberal schools of thought in international regime theory.

6.3 Limitations and Further Studies

This research examined the discussions around the non-regulation of international shipping in the Paris Agreement. The study relied on peer-reviewed articles and international reports from international websites such as the UNFCCC, IPCC and the IMO to understand the discussions around the issue. The use of these methods helped to enrich the contents and provided insights. However, further research can build on this study by complementing such methods with field work by interviewing actors and participants in COPs, IMO events and other climate change conferences. Such an approach will help probe and push further some of the issues and further test and or clarify some of the arguments raised in this thesis.

Again, the thesis focused on the role of states in the lack of regulation of international shipping under the Paris Agreement. Future research should consider more closely the role of industries and other interest groups in this lack of regulation as industries and other interest groups have the potential of lobbying governments of states to do their bidding. Unearthing the hands behind parties' behavior at international climate change regime negotiations would be an interesting study.

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APPENDICES[45]

APPENDIX 1: The UNFCCC, 1992 and a List of its signatories New York, 9 May 1992. The UNFCCC entered into force on 21 March 1994, in accordance with article 23(1). See https://treaties.un.org/Pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXVII-7&chapter=27&Temp=mtdsg3&clang=_en

APPENDIX 2: The Kyoto Protocol, 1997 and a list of its signatories 11 December 1997.The Protocol entered into force on 16 February 2005, in accordance with article 25(1) and article 25 (3). See https://treaties.un.org/pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-7-a&chapter=27&lang=en

APPENDIX 3 The Paris Agreement, 2015 and a list of its signatories. The Paris Agreement entered into force on 4 November 2016, in accordance with article 21(1). See https://treaties.un.org/pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-7-d&chapter=27&lang=en

[45] Because of the bulky nature of the materials, the researcher provides links to the websites where the documents are located instead of the documents themselves.