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The Law of Shared Hydrocarbon Resources and the Question of Shared State Responsibility for Environmental Harm Arising from Their Cooperative Management

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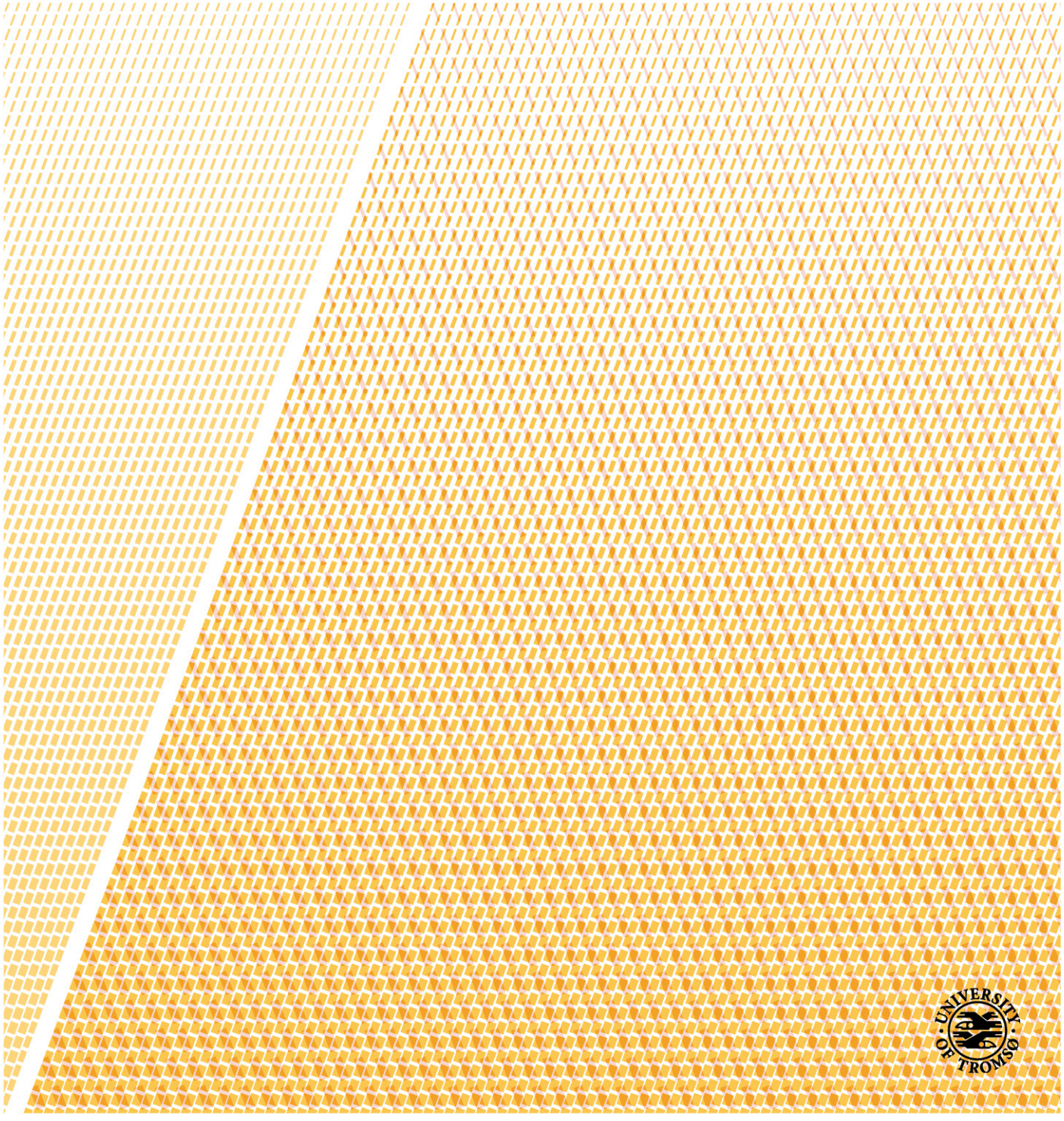
A dissertation for the degree of Philosophiae Doctor – January 2019



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Abstract

This thesis deals with the law of shared hydrocarbons – a body of general rules of international law governing the management of two categories of shared, common hydrocarbon resources: (a) hydrocarbon resources situated in maritime areas of overlapping claims, and (b) hydrocarbon resources straddling maritime boundaries between neighboring States.

This thesis examines the rights and obligations of coastal States that share hydrocarbon resources. It also addresses the issue of shared State responsibility in the context of shared hydrocarbons with particular emphasis on harm to the marine environment originating from activities undertaken in cooperation with respect to these resources.

This doctoral thesis is for the degree of Philosophiae Doctor (Ph.D.)
K. G. Jebsen Centre for the Law of the Sea
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Tromsø, January 2019

To my family

ACKNOWLEDGMENTS

"Дорогу осилит идущий"[1]

Writing a doctoral thesis is a long journey that is difficult without the advice and support of a broad range of persons. While apologizing to those whom I inadvertently overlooked, I take this opportunity to express my sincere gratitude to the following persons.

I am very appreciative of my supervisors, Professor Alex Oude Elferink and Professor Tore Henriksen. Alex, thanks for always being available to read the thesis, for providing the comments at the speed of light and for taking your time to discuss my challenges and doubts. Tore, thanks for your valuable feedback concerning the structure and substance of the thesis. Throughout my work on the thesis, I have constantly felt moral support from both of you. I have truly enjoyed working with you both and have greatly benefited from your sharp minds.

I would like to thank Professor Nigel Bankes for being a source of inspiration and assistance in searching for clarity in situations where it was difficult to find any clarity. I am also grateful to Professor Rachael Lorna Johnstone for being the external reader during my midterm review and providing valuable comments.

I wish to thank Glen Jeffries for his assistance in the language editing of this thesis.

My colleagues at the Faculty of Law and particularly at the K. G. Jebsen Centre for the Law of the Sea have also contributed to the completion of this thesis. You all have created a good academic and social environment. In particular, I would like to acknowledge the assistance provided by Christin Skjervold in dealing with numerous administrative and other issues.

While writing the acknowledgments, I have realized how many wonderful people located in different parts of the world I met on my way behind the walls of the Law Faculty; the people that are willing to cooperate and share their knowledge, experience, and findings.

Special thanks go to my family, both in Russia (especially, to my parents Elena and Nikolai) and Norway, which supported me all the way. There are two persons who suffered the most: my husband Thomas and my daughter Margrethe. Thomas, thanks for your presence on the good and (mainly) bad days, your support and encouragement, and steel patience. Margrethe, thanks for always managing to distract me from my work and preventing my transformation into a 'Ph.D. zombie'. Margarita, your Master (here: Master of Laws (LL.M.) in the Law of the Sea) has a dream to become a Doctor.[2] This thesis is dedicated to my family.

Natalia Ermolina

18th January 2019

[1] "The path is made by walking".
[2] "The Master and Margarita" is a novel written by Mikhail Bulgakov.

CONTENTS

PART II – THE LEGAL REGIMES GOVERNING SHARED HYDROCARBONS

CHAPTER 2. THE BASIC PRINCIPLES APPLICABLE TO SHARED HYDROCARBONS

CHAPTER 3. THE REGIME GOVERNING DISPUTED HYDROCARBONS

CHAPTER 4. THE REGIME GOVERNING TRANSBOUNDARY HYDROCARBONS

LIST OF ACRONYMS AND ABBREVIATIONS

ACHPR	African Commission on Human and Peoples' Rights
AGC	Agence de Gestion et de Coopération entre le Sénégal et la Guinée-Bissau (Management and Cooperation Agency between Senegal and Guinea-Bissau)
AP	draft Articles on Prevention of Transboundary Harm from Hazardous Activities, 2001
ARIO	draft Articles on the Responsibility of International Organizations, 2011
ARSIWA	draft Articles on Responsibility of States for Internationally Wrongful Acts, 2001
BAT	Best Available Technology
Bbl/d	Barrels per day
BEP	Best Environmental Practices
BIICL	British Institute of International and Comparative Law
CAA	Commercial Arrangement Area (between Malaysia and Vietnam)
CCS	Convention on the Continental Shelf, 1958
CEC	Commission for Environmental Cooperation between Canada, Mexico and the United States of America
CIZ	Common Interest Zone (between Angola and the DRC)
CLCS	Commission on the Limits of the Continental Shelf
CMATS	Treaty on Certain Maritime Arrangements in the Timor Sea between Australia and East Timor, 2006
CS	Continental Shelf
CZ	Common or Cooperation Zone
DA	Designated or Development Authority
DOALOS	Division for Ocean Affairs and the Law of the Sea
DRC	Democratic Republic of the Congo
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
EIF	Entry into Force
EITI	Extractive Industries Transparency Initiative
EU	European Union

FSA	Fish Stocks Agreement, 1995
GB	Guinea-Bissau (in Chapter 6, 'GB' means 'Governance Board' established pursuant to the Timor Sea Boundary Treaty of 2018)
GOP	Good Oilfield Practice
HSE	Health, Safety and Environment
IACHR	Inter-American Court of Human Rights
ICJ	International Court of Justice
ICSID	International Centre for Settlement of Investment Disputes
ILC	International Law Commission
ILM	International Legal Materials
IMB	International Maritime Boundaries (book)
IMO	International Maritime Organization
IO	International Organization
ISA	International Seabed Authority
ITLOS	International Tribunal of the Law of the Sea
JC	Joint Commission
JDA	Joint Development Area[3]
JDZ	Joint Development Zone
JMA	Joint Management Area (between Mauritius and the Seychelles)
JPDA	Joint Petroleum Development Area (between Australia and Timor-Leste)
JRA	Joint Regime Area (between Jamaica and Colombia)
km	kilometre
LNG	Liquefied Natural Gas
MC	Ministerial Commission or Council
MoU	Memorandum of Understanding
MTJA	Malaysian-Thai Joint Authority
NAAEC	North American Agreement on Environmental Cooperation, 1993
nm	nautical mile
NPD	Norwegian Petroleum Directorate

[3] In the literature, one can found other meaning of the term 'JDA': 'joint development agreement/arrangement' or 'joint development authority'.

NPMA	National Petroleum and Minerals Authority of Timor-Leste
NSTPJDA	Nigeria-São Tomé and Príncipe Joint Development Authority
OCA	Overlapping Claims Area (between Thailand and Cambodia)
OPOL	Offshore Pollution Liability Association Ltd. (the UK)
OPRC	International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990
PAL	draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising out of Hazardous Activities, 2006
PCA	Permanent Court of Arbitration
PCIJ	Permanent Court of International Justice
PMC	Petroleum Mining Code
PNZ	Partitioned Neutral Zone (between Saudi Arabia and Kuwait)
PRs	Petroleum Regulations
PSA	Petroleum Safety Authority (in Norway)
PSC	Production Sharing Contract
RFMO	Regional Fisheries Management Organization
SC	Special Chamber of the International Tribunal of the Law of the Sea
SDC	Seabed Disputes Chamber of the International Tribunal of the Law of the Sea
SRA	Special Regime Area (between Australia and Timor-Leste)
STP	São Tomé and Príncipe
TOCCA	Tripartite Overlapping Continental Claim Area (between Malaysia, Thailand and Vietnam)
TST	Timor Sea Treaty between Australia and East Timor, 2002
T&T	Trinidad and Tobago
UA	Unitization Agreement
UK	United Kingdom of Great Britain and Northern Ireland
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea, 1982
UNEP	United Nations Environment Program
UNGA	United Nations General Assembly
UNGAOR	United Nations General Assembly Official Records
US	United States of America

UNTS	United Nations Treaty Series
USSR	Union of Soviet Socialist Republics
VCLT	Vienna Convention on the Law of the Treaties, 1969
WTO	World Trade Organization

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Questions relating to the Obligation to Prosecute or Extradite (Belgium v. Senegal), Provisional Measures Order, 28 May 2009, ICJ Reports 2009, p. 139/ https://www.icj-cij.org/files/case-related/144/144-20090528-ORD-01-00-EN.pdf	
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Agreement between Norway and Iceland concerning transboundary hydrocarbon deposits, Reykjavik, 03 November 2008, EIF: 03 October 2011, 2888 UNTS 1	Norway-Iceland Agreement of 2008
Agreement between Norway and Iceland on Fishery and Continental Shelf Questions, Reykjavik, 28 May 1980, EIF: 13 June 1980, 2124 UNTS 223	Norway-Iceland Agreement of 1980
Agreement between Norway and Iceland on the continental shelf between Iceland and Jan Mayen, Oslo, 22 October 1981, EIF: 2 June 1982, 2124 UNTS 262	Norway-Iceland Agreement of 1981
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Agreement between the Government of Canada and the Government of the French Republic relating to the Exploration and Exploitation of Transboundary Hydrocarbon Fields, Paris, 17 May 2005, EIF: not in force (only France ratified the Agreement), reproduced in N. Bankes, "Canada-France", Report Number 1-2 (2), in: C. G. Lathrop (ed), *International Maritime Boundaries*, 2017, pp. 16-44	Canada-France Agreement
Agreement between the Government of Malaysia and the Government of the Kingdom of Thailand on the Constitution and Other Matters relating to the Establishment of the Malaysia-Thailand Joint Authority, Kuala Lumpur, 30 May 1990, EIF: N/A, reproduced in J. I. Charney and L. M. Alexander (eds), *International Maritime Boundaries*, vol. 1, 1993, pp. 1111-1123	Malaysia-Thailand Agreement
Agreement between the Government of the Democratic Republic of the Sudan and the Government of the Kingdom of Saudi Arabia relating to the joint exploitation of the natural resources of the sea-bed	Saudi Arabia-Sudan Agreement

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Agreement between the Government of the State of Israel and the Government of the Republic of Cyprus on the delimitation of the exclusive economic zone, Nicosia, 17 December 2010, EIF: 25 February 2011, 2740 UNTS 55	
Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Norway Relating to the Delimitation of the Continental Shelf Between the Two Countries, London, 10 March 1965, EIF: 29 June 1965, 551 UNTS 213	UK-Norway delimitation agreement of 1965
Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Norway relating to the exploitation of the Frigg Field Reservoir and the transmission of gas therefrom to the United Kingdom, London, 10 May 1976, EIF: 22 July 1977, 1098 UNTS 3	Frigg UA
Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Norway relating to the exploitation of the Murchison Field Reservoir and the offtake of petroleum therefrom, Oslo, 16 October 1979, EIF: 30 January 1981, 1249 UNTS 173	Murchison UA
Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Norway relating to the exploitation of the Statfjord Field Reservoirs and the offtake of petroleum therefrom, Oslo, 16 October 1979, EIF: 30 January 1981, 1254 UNTS 379	Statfjord UA
Agreement between the Governments of the Kingdom of Belgium, the Kingdom of Denmark, the European Union, the federal Republic of Germany, the French Republic, the Kingdom of the Netherlands, the Kingdom of Norway, the Kingdom of Sweden and the United Kingdom of Great Britain and Northern Ireland for cooperation in dealing with pollution of the North Sea by oil and other harmful substances, Bonn, 13 September 1983, EIF: 1 September 1989, 1605 UNTS, registration number 28022	Bonn Agreement
Agreement between the Government of the Kingdom of the Netherlands and the Government of the United Kingdom of Great Britain and Northern Ireland relating to the exploitation of single geological structures extending across the dividing line on the continental shelf under the North Sea, London, 6 October 1965, EIF: 23 December 1966, 595 UNTS 107	
Agreement between the Hellenic Republic and the Italian Republic on the Delimitation of the Respective Continental Shelf Areas of the two States, Athens, 24 May 1977, EIF: 12 November 1980, 1275 UNTS 428	
Agreement between the Kingdom of Denmark and the Kingdom of Norway concerning the Delimitation of the Continental Shelf in the Area between Jan Mayen and Greenland and concerning the Boundary between the Fishery Zones in the Area, Oslo, 18 December 1995, EIF: 18 December 1995, 1903 UNTS 177	

Agreement between the Kingdom of Saudi Arabia and the Government of Bahrain, Riyadh, 22 February 1958, EIF: 26 February 1958, 1733 UNTS 8	Saudi Arabia-Bahrain Agreement
Agreement between the Kingdom of Saudi Arabia and the State of Kuwait concerning the submerged area adjacent to the divided zone, Kuwait, 2 July 2000, EIF: 31 January 2001, 2141 UNTS 251	Saudi Arabia-Kuwait Agreement of 2000
Agreement between the Kingdom of Saudi Arabia and the State of Kuwait on the Partition of the Neutral Zone, Al-Hadda, 7 July 1965, EIF: 25 July 1966, 1750 UNTS 48	Saudi Arabia-Kuwait Agreement of 1965
Agreement between the Kingdom of the Netherlands and the United Kingdom of Great Britain and Northern Ireland relating to the delimitation of the continental shelf under the North Sea between the two countries, London, 6 October 1965, EIF: 23 December 1966, 595 UNTS 113	UK-Netherlands delimitation agreement of 1965
Agreement between the Kingdom of the Netherlands and the United Kingdom of Great Britain and Northern Ireland relating to the exploitation of the Markham Field reservoirs and the offtake of petroleum therefrom, The Hague, 26 May 1992, EIF: 3 March 1993, 1731 UNTS 155	Markham UA
Agreement between the Republic of Cyprus and the Arab Republic of Egypt on the Delimitation of the Exclusive Economic Zone, Cairo, 17 February 2003, EIF: 7 March 2004, 2488 UNTS 8	
Agreement between the United Mexican States and the United States of America concerning transboundary hydrocarbon reservoirs in the Gulf of Mexico, Los Cabos, 20 February 2012, EIF: 18 July 2014, N/A UNTS, registration number 52496	US-Mexico Agreement
Agreement concerning Delimitation of the Continental Shelf between Iran and Bahrain, Manama, 17 June 1971, EIF: 14 May 1972, 826 UNTS 234	
Agreement concerning Delimitation of the Continental Shelf between Iran and Oman, Tehran, 25 July 1974, EIF: 28 May 1975, 972 UNTS 274	
Agreement concerning the boundary line dividing the continental shelf between Iran and Qatar, Doha, 20 September 1969, EIF: 10 May 1970, 787 UNTS 172	
Agreement concerning the sovereignty over the islands of Al-'Arabiyah and Farsi and the delimitation of the boundary line separating submarine areas between the Kingdom of Saudi Arabia and Iran, Teheran, 24 October 1968, EIF: 29 January 1969, 696 UNTS 212	
Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, New York, 4 August 1995, EIF: 11 December 2001, 2167 UNTS 3	FSA
Agreement of Cooperation between the United Mexican States and the United States of America Regarding Pollution of the Marine Environment by Discharge of Hydrocarbons and Other Hazardous Substances, Mexico City, 24 July 1980, EIF: 30 March 1981, 1241 UNTS 235	US-Mexico Agreement of Marine Cooperation

Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic, Kiruna, 15 May 2003, EIF: pending, reproduced in K. Schönfeldt (ed), *The Arctic in International Law and Policy*, 2017, document No. 254, pp. 1251-1258	
Agreement on the Exploration and Production of Hydrocarbons in the Common Interest Zone between the Democratic Republic of the Congo and the Government of the Republic of Angola, Luanda, 30 July 2007, EIF: 23 July 2008, reproduced in D. C. Smith, "Angola-Democratic Republic of the Congo", Report No. 4-15, in: D. A. Colson and R. W. Smith (eds), *International Maritime Boundaries*, vol. VI, 2011, pp. 4277-4280	Angola-DRC Agreement
Convention between Spain and Italy on the Delimitation of the Continental Shelf between the two States, Madrid, 19 February 1974, EIF: 16 November 1978, 1120 UNTS 362	
Convention between the Government of the French Republic and the Government of the Spanish State on the delimitation of the continental shelves of the two States in the Bay of Biscay (Golfe de Gascogne/Golfo de Vizcaya), Paris, 29 January 1974, EIF: 5 April 1975, 996 UNTS 344	France-Spain Convention
Convention between the Government of the French Republic and the Government of the Spanish State on the delimitation of the territorial sea and the contiguous zone in the Bay of Biscay, Paris, 29 January 1974, EIF: 5 April 1975, 996 UNTS 356	
Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, Cartagena, 24 March 1983, EIF: 11 October 1986, 1506 UNTS 157	Cartagena Convention
Convention for the Protection of the Marine Environment of the North-East Atlantic, Paris, 22 September 1992, EIF: 25 March 1998, 2354 UNTS 67	OSPAR Convention
Convention on Environmental Impact Assessment in a Transboundary Context, Espoo, 25 February 1991, EIF: 10 September 1997, 1989 UNTS 309	Espoo Convention
Convention on the Continental Shelf, Geneva, 29 April 1958, EIF: 10 June 1964, 499 UNTS 311	CCS
Convention on the Law of the Non-navigational Uses of International Watercourses, New York, 21 May 1997, EIF: 17 August 2014, UNGA's resolution 51/229, annex, Official Records of the General Assembly, Fifty-first Session, Supplement No. 49 (A/51/49)	Watercourses Convention
Convention on the Prevention and Punishment of the Crime of Genocide, Paris, 9 December 1948, EIF: 12 January 1951, 78 UNTS 277	Genocide Convention
Exclusive Economic Zone Co-operation Treaty between the State of Barbados and the Republic of Guyana concerning the exercise of jurisdiction in their exclusive economic zones in the area of bilateral overlap within each of their outer limits and beyond the outer limits of the exclusive economic zones of other States, London, 2 December 2003, EIF: 5 May 2004, 2277 UNTS 201	Barbados-Guyana Treaty
Framework Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government	UK-Norway Framework Agreement

of the Kingdom of Norway concerning Cross-Boundary Petroleum Co-operation, Oslo, 4 April 2005, EIF: 10 July 2007, 2491 UNTS 3	
Framework Agreement between the Republic of Cyprus and the Arab Republic of Egypt Concerning the Development of Cross-median Line Hydrocarbon Resources, May 2006, EIF: N/A (ratified by Egypt in 2013), available at http://extwprlegs1.fao.org/docs/pdf/bi-110369.pdf (last accessed January 2019)	Cyprus-Egypt Framework Agreement
Framework Treaty relating to the unitisation of hydrocarbon reservoirs that extend across the delimitation line between the Republic of Trinidad and Tobago and the Bolivarian Republic of Venezuela, Caracas, 20 March 2007, EIF: 16 August 2010, 2876 UNTS, registration number 50196	Venezuela-T&T Framework Treaty
International Convention on Oil Pollution Preparedness, Response and Cooperation, London, 30 November 1990, EIF: 13 May 1995, 1891 UNTS 78	OPRC
Kuwait Regional Convention for Co-operation on the Protection of the Marine Environment from Pollution, 24 April 1978, EIF: 1 July 1979, 1140 UNTS 155	
Management and Cooperation Agreement between the Government of the Republic of Senegal and the Government of the Republic of Guinea-Bissau, Dakar, 14 October 1993, EIF: 21 December 1995, 1903 UNTS 64	GB-Senegal Agreement
Maritime Delimitation Treaty between Jamaica and the Republic of Colombia, Kingston, 12 November 1993, EIF: 14 March 1994, 1776 UNTS 17	Colombia-Jamaica Treaty
Memorandum of Understanding between Malaysia and the Kingdom of Thailand on the Establishment of The Joint Authority for the Exploitation of the Resources of the Sea Bed in a Defined Area of the Continental Shelf of the Two Countries in the Gulf of Thailand, Chiang Mai, Thailand, 21 February 1979, EIF: 24 October 1979, reproduced in J. I. Charney and L. M. Alexander (eds), *International Maritime Boundaries*, vol. 1, 1993, pp. 1107-1111	Malaysia-Thailand MoU
Memorandum of Understanding between Malaysia and the Socialist Republic of Vietnam for the Exploration and Exploitation of Petroleum in a Defined Area of the Continental Shelf Involving the Two Countries, Kuala Lumpur, 5 June 1992, EIF: 4 June 1993, reproduced in J. I. Charney and L. M. Alexander (eds), *International Maritime Boundaries*, vol. 3, 2004 pp. 2341-2344	Malaysia-Vietnam MoU
Memorandum of Understanding between the Royal Government of Cambodia and the Royal Thai Government regarding the Area of their Overlapping Claims to the Continental Shelf, Phnom Penh, 18 June 2001, EIF: N/A, reproduced in D. A. Colson and R. W. Smith (eds), *International Maritime Boundaries*, vol. 5, 2005, pp. 3743-3744	Thailand-Cambodia MoU
Protocol between the Republic of Angola and the Republic of the Congo on the Unitization of Prospects 14K and A-IMI, Luanda, 10 September 2001, EIF: N/A (Angola ratified on 21 May 2002, no record of the Republic of Congo's ratification), reproduced in D. C. Smith and C. Dolan, "Angola-Republic of Congo", Report No. 4-16, in: D. A. Colson and R. W. Smith (eds), *International Maritime Boundaries*, vol. 6, 2011, pp. 4289-4295	Angola-Congo Unitization Protocol

Protocol on Implementation of Article 6.2 of the Treaty between the Federal Republic of Nigeria and the Republic of Equatorial Guinea Concerning their Maritime Boundary, Abuja, 2 April 2002, EIF: 29 June 2002, 2220 UNTS 410	Nigeria-Equatorial Guinea Unitization Protocol
Protocol to the Agreement between the Republic of Guinea-Bissau and the Republic of Senegal Concerning the Organization and Operation of the Management and Cooperation Agency Established by the Agreement of 14 October 1993, Dakar, 12 June 1995, EIF: 21 December 1995, 1903 UNTS 66	Protocol to the GB-Senegal Agreement
Timor Sea Treaty between the Government of East Timor and the Government of Australia, Dili, 20 May 2002, EIF: 2 April 2003, *termination expected*, 2258 UNTS 3	Timor Sea Treaty or TST
Treaty between Australia and East Timor on certain maritime arrangements in the Timor Sea, Sydney, 12 January 2006, EIF: 27 June 2006, *terminated on 10 April 2017*, 2483 UNTS 359	CMATS Treaty
Treaty between Australia and the Democratic Republic of Timor-Leste Establishing Their Maritime Boundaries in the Timor Sea, New York, 6 March 2018, EIF: not in force, available at http://dfat.gov.au/geo/timor-leste/Documents/treaty-maritime-arrangements-australia-timor-leste.pdf (last accessed January 2019)	Timor Sea Boundary Treaty
Treaty between Australia and the Independent State of Papua New Guinea concerning sovereignty and maritime boundaries in the area between the two countries, including the area known as Torres Strait, and related matters, Sydney, 18 December 1978, EIF: 15 February 1985, 1429 UNTS 207	Australia-Papua New Guinea Treaty
Treaty between the Federal Republic of Nigeria and the Democratic Republic of São Tomé and Príncipe on the Joint Development of Petroleum and other Resources, in respect of Areas of the Exclusive Economic Zone of the Two States, Abuja, 21 February 2001, EIF: 16 January 2003, reproduced in J. I. Charney, D. A. Colson and L. M. Alexander (eds), *International Maritime Boundaries*, vol. 5, 2005, pp. 3649-3682	Nigeria-STP Treaty
Treaty between the Federal Republic of Nigeria and the Republic of Equatorial Guinea concerning their Maritime Boundary, Malabo, 23 September 2000, EIF: 3 April 2002, 2205 UNTS 325	
Treaty between the Government of Australia and the Government of New Zealand Establishing Certain Exclusive Economic Zone Boundaries and Continental Shelf Boundaries, Adelaide, 25 July 2004, EIF: 25 January 2006, 2441 UNTS 235	
Treaty between the Government of the United Mexican States and the Government of the United States of America on the delimitation of the continental shelf in the western Gulf of Mexico beyond 200 nautical miles, Washington, 9 June 2000, EIF: 17 January 2001, 2143 UNTS 417	US-Mexico delimitation treaty of 2000
Treaty between the Kingdom of Denmark and the Federal Republic of Germany concerning the delimitation of the continental shelf under the North Sea, Copenhagen, 28 January 1971, EIF: 7 December 1972, 857 UNTS 120	
Treaty between the Russian Federation and the Kingdom of Norway concerning maritime delimitation and cooperation in the Barents Sea	Norway-Russia Treaty

and the Arctic Ocean, Murmansk, 15 September 2010, EIF: 7 July 2011, 2791 UNTS 36	
Treaty between Trinidad and Tobago and Venezuela on Delimitation of Marine and Submarine Areas, Caracas, 18 April 1990, 1654 UNTS 293	
Treaty concerning the Joint Exercise of Sovereign Rights over the Continental Shelf in the Mascarene Plateau Region between the Government of the Republic of Mauritius and the Government of the Republic of Seychelles, Vacoas, 13 March 2012, EIF: 18 June 2012, Law of the Sea Bulletin No. 79, 2013, pp. 26-40	
Treaty concerning the Joint Management of the Continental Shelf in the Mascarene Plateau Region between the Government of the Republic of Mauritius and the Government of the Republic of Seychelles, Vacoas, 13 March 2012, EIF: 18 June 2012, Law of the Sea Bulletin No. 79, 2013, pp. 41-52	Seychelles-Mauritius Treaty
Treaty on maritime boundaries between the United Mexican States and the United States of America, Mexico City, 4 May 1978, EIF: 13 November 1997, 2143 UNTS 405	
Treaty on the zone of cooperation in an area between the Indonesian province of East Timor and Northern Australia, Canberra, 11 December 1989, EIF: 9 February 1991, *replaced by the Timor Sea Treaty*, 1654 UNTS 105	Timor Gap Treaty
Treaty to resolve pending boundary differences and maintain the Rio Grande and Colorado River as the international boundary between the United Mexican States and the United States of America, Mexico City, 23 November 1970, EIF: 18 April 1972, 830 UNTS 55	
United Nations Convention on the Law of the Sea, Montego Bay, 10 December 1982, EIF: 16 November 1994, 1833 UNTS 397	UNCLOS
Unitisation Agreement for the exploitation and development of hydrocarbon reservoirs of the Loran-Manatee field that extends across the delimitation line between the Republic of Trinidad and Tobago and the Bolivarian Republic of Venezuela, Caracas, 16 August 2010, EIF: 16 August 2010, 2876 UNTS, registration number 50197	Loran-Manatee UA
Vienna Convention on the Law of Treaties, Vienna, 23 May 1969, EIF: 27 January 1980, 1155 UNTS 331	VCLT

GLOSSARY OF KEY TERMS[4]

Term	Definition	Synonym(s)
Decommissioning	All work required in respect of the abandonment of the facilities used for exploration and exploitation of hydrocarbons	
Exploitation	Activities that take place following discovery and delineation of commercial quantities of hydrocarbons and that aim at the extraction of discovered hydrocarbons from a reservoir, including, but not limited to, drilling of development wells, construction, placing and operation of all necessary facilities, injection, reinjection, treatment and storage of hydrocarbons and their transportation	
Exploration	Search for hydrocarbons, including, but not limited to, such activities as surveys where magnetic, gravity, seismic reflection, coring or other systems are used to detect or imply the existence of hydrocarbons, and any drilling conducted for the purpose of finding commercial quantities of hydrocarbons and delineating a hydrocarbon reservoir in order to decide whether or not to proceed with its exploitation	
Facility	Any equipment, installation and other accessory used for hydrocarbon activities, including, but not limited to, drilling vessels and rigs, fixed or floating platforms, storage units, flotels, well heads, intrafield pipelines[5] and cables, but excluding supply and support vessels, ship that transport hydrocarbons, other pipelines and cables	
Hydrocarbons	Natural organic compounds containing carbon and hydrogen and found in crude oil and natural gas, regardless of form (solid, liquid or gaseous), including any mixture thereof	Petroleum/oil and gas (resources)
Hydrocarbon activities	All activities associated with hydrocarbons, including, but not limited to, exploration for and exploitation of hydrocarbons, decommissioning, as well as the planning and preparation for such activities	Petroleum activities/operations
Indemnity	A situation where one party undertakes to compensate damage instead of the other party	

[4] This Glossary is based on an examination of the relevant agreements and arrangements relating to shared hydrocarbon resources. See Appendix I.

[5] 'Intrafield pipeline' means any pipeline installed or to be installed for the purpose of exploiting a transboundary hydrocarbon field, connecting installations in the same transboundary field. See, for example, Markham UA, art. 1 (f); Canada-France Agreement, art. 1, para. 6.

	and, hence, protects the other party from liability/responsibility arising from such damage	
License	An authorization or permit issued by a competent authority (e.g., governmental department or agency) to carry out hydrocarbon activities in a given block	
Licensee	An entity holding a right given by a coastal State to carry out hydrocarbon activities in a specific block	Company, private/non-State entity or actor, contractor
Operator	A company which, on behalf of licensees operating in the same block, is in charge of the day-to-day management of petroleum activities	
Reservoir	A single structure of hydrocarbons in a geological unit limited by rock, water or other substances without pressure communication through liquid or gas to another structure of hydrocarbons	Deposit, field, accumulation, resource, pool, reserve
Shared hydrocarbons	Transboundary hydrocarbon reservoirs and hydrocarbons located in undelimited maritime areas	
Transboundary reservoir	Any reservoir which extends across the maritime boundary between neighboring States and which is exploitable in whole or in part from both sides of that maritime boundary	Cross-border, cross-boundary, straddling
Unitization agreement	An agreement concluded between neighboring States for the joint exploitation of a discovered transboundary hydrocarbon reservoir[6]	
(Unit) operating agreement	An agreement concluded between the licensees for the purpose of carrying out hydrocarbon activities with respect to a transboundary hydrocarbon deposit	

[6] It is worth noting that some agreements dealing with transboundary hydrocarbon resources define the term 'unitization agreement' as an agreement between the licensees pertaining to a transboundary hydrocarbon field. See, for example, Canada-France Agreement, art. 5 (while an agreement between the States is called 'exploitation agreement' (*ibid.*, art. 4)); Cyprus-Egypt Framework Agreement, art. 4 (at the same time, article 10 refers to a unitization agreement as an agreement between the Parties).

PART I – SETTING THE SCENE

CHAPTER 1. INTRODUCTION

1.1 Background to the research

Through the impetus given to maritime boundary delimitation by the United Nations Convention of the Law of the Sea (UNCLOS),[7] many States have either agreed on the delimitation of the territorial sea, the exclusive economic zone (EEZ) and the continental shelf (CS) with their neighboring States, or resolved this issue by resorting to some form of dispute settlement procedure.[8] Although the number of established maritime boundaries steadily increases, there are many cases where a maritime delimitation dispute between neighboring States remains unsettled.[9] A large range of intricate legal (as well as political and technical) issues arise when there are proven or suspected offshore oil and gas resources that either straddle an already established maritime boundary between States or lie within an area of overlapping maritime claims. This thesis shall employ the common term 'shared (offshore) hydrocarbon resources' in relation to these instances.[10]

One of the key legal questions in each instance of shared hydrocarbon resources concerns the rights and obligations of States that derive from the (possible) existence of a shared hydrocarbon resource. The International Law Commission (ILC) has discontinued its effort to develop the rules applicable to shared oil and gas resources.[11] This thesis, however, argues that there are certain rights and obligations flowing from the presence of a hydrocarbon deposit shared by several States.

Facing the presence of shared hydrocarbon resources, many coastal States have preferred to enter into cooperative arrangements and agreements in order to make the exploitation of those

[7] United Nations Convention on the Law of the Sea, Montego Bay, 10 December 1982, EIF: 16 November 1994, 1833 UNTS 397.

[8] *Ibid.*, arts. 15 (delimitation of the territorial sea), 74 (delimitation of the exclusive economic zone) and 83 (delimitation of the continental shelf) and Part XV (settlement of disputes). It is important to note that this thesis does not discuss the legal regime of every maritime zone in the law of the sea nor the methods of delimitation of maritime zones between opposite or adjacent coastal States.

[9] C. Sim, "Investment disputes arising out of areas of unsettled boundaries: Ghana/Côte d'Ivoire", *Journal of World Energy Law and Business*, 2018, vol. 11 (1), p. 1: "[t]here are currently more than 150 unresolved interstate disputes concerning international boundaries on land or at sea". Y. van Logchem, "The Status of a Rule of Capture Under International Law of the Sea with Regard to Offshore Oil and Gas Resource Related Activities", *Michigan State International Law Review*, 2018, vol. 26 (2), p. 210: "[e]stimates, although there is a significant measure of variation between them, place the number of open maritime boundaries at around 200".

[10] Chapter 2.2 examines the notion of shared hydrocarbon resources in detail. It is also important to note that this thesis uses synonyms to the terms 'hydrocarbon' and 'resource' (see Glossary of key terms).

[11] Chapter 2 discusses the work of the ILC.

resources possible and uncontested.[12] However, this does not safeguard States from the emergence of new legal difficulties in the pursuit of cooperative exploration and exploitation, particularly in case of (environmental) damage caused by these activities. This thesis explores whether the scenario in which multiple States involved in cooperative hydrocarbon activities contribute, through either their actions or omissions, to a harmful outcome that international law seeks to prevent, including damage to the environment, thus implies that they share responsibility in this respect.

1.2 Research questions and their topicality

This research addresses two questions:

- What rights and obligations do States that share offshore hydrocarbon deposits have towards each other under international law?
- Under what circumstances can States that have agreed to cooperate in exploring and exploiting shared offshore hydrocarbon deposits incur shared international responsibility for (marine) environmental harm[13] that results or may result from these activities?

The general rules governing the rights and obligations of neighboring States in shared hydrocarbon deposits are frequently discussed in the academic literature.[14] However, while the main attention in the literature is paid to the duty to cooperate, its (emerging) customary status and how the lessons learned from the application of this duty in one geographical region may be applied in another region,[15] other relevant rules, including the rule of fair apportionment[16]

[12] See Chapters 3 and 4, and particularly Chapters 6 and 7.
[13] The terms 'harm' and 'damage' are used interchangeably in this thesis. See in detail Part III of the thesis.
[14] See, for example, R. Lagoni, "Oil and Gas Deposits Across National Frontiers", *American Journal of International Law*, 1979, vol. 73, pp. 215-243; A. Szekely, "The international law of submarine transboundary hydrocarbon resources: legal limits to behavior and experiences for the Gulf of Mexico", *Natural Resources Journal*, 1986, vol. 26 (4), pp. 733-768; D. M. Ong, "Joint Development of Common Offshore Oil and Gas Deposits: "Mere" State Practice or Customary International Law?", *American Journal of International Law*, 1999, vol. 93 (4), pp. 771-804; J. L. Weaver and D. F. Asmus, "Unitizing oil and gas fields around the world: a comparative analysis of national, laws and private contracts", *Houston Journal of International Law*, 2005, vol.28 (1), pp. 3-197; P. Cameron, "The Rules of Engagement: Developing Cross-Border Petroleum Deposits in the North Sea and the Caribbean", *The International and Comparative Law Quarterly*, 2006, vol. 55 (3), pp. 559-586; A. E. Bastida et al., "Cross-border Unitization and Joint Development Agreements: an International Law Perspective", *Houston Journal of International Law*, 2007, vol. 29 (2), pp. 355-422; V. Becker-Weinberg, *Joint Development of Hydrocarbon Deposits in the Law of the Sea*, Heidelberg: Springer, 2014; G. J. G. Sanchez and R. J. McLaughlin, "The 2012 Agreement on the Exploitation of Transboundary Hydrocarbon Resources in the Gulf of Mexico: Confirmation of the Rule or Emergence of a New Practice?", *Houston Journal of International Law*, 2015, vol. 37 (3), pp. 681-788.
[15] *Ibid.*
[16] See, for example, W. T. Onorato, "Apportionment of an International Common Petroleum Deposit", *International and Comparative Law Quarterly*, 1968, vol. 17 (1), pp. 85-102; W. T. Onorato, "Apportionment of

and different aspects of the no-harm rule,[17] are largely in shadow. Moreover, the features of the general rules applicable to shared oil and gas resources inherent to each category that falls under the concept of shared hydrocarbons have not been sufficiently discussed in the literature.[18]

There is some literature on how to design an agreement dealing with shared hydrocarbons based on the structure of similar agreements that are already in place.[19] However, when it comes to the issue of environmental protection as an important matter when negotiating and framing such an agreement, the literature is limited and mainly focuses on undelimited maritime areas.[20]

Clearly, the topic of shared international responsibility is only beginning to see development in both the academic literature and in practice. The major contributions have been made by the SHARES project, which focused on shared responsibility in international law.[21] This project looked at different scenarios in which shared responsibility (between multiple States and/or non-State actors) might arise, including within the law of the sea.[22] Some legal commentators

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an International Common Petroleum Deposit", *International and Comparative Law Quarterly*, 1977, vol. 26 (2), pp. 324-337; T. A. Reynolds, "Delimitation, Exploitation, and Allocation of Transboundary Oil & Gas Deposits between Nation-States", *ILSA Journal of International & Comparative Law*, 1995, vol. 1 (1), pp. 135-170; R. E. Swarbick, "Oil and Gas Reservoirs Across Ownership Boundaries: The Technical Basis for Apportioning Reserves", in: G. H. Blake (ed), *The Peaceful Management of Transboundary Resources*, Graham & Trotman/Nijhoff Press, 1995.

[17] See Chapter 2.6 in this regard.

[18] Chapter 2.2 identifies two categories of shared hydrocarbon resources.

[19] See, for example, H. Fox et al., *Joint Development of Offshore Oil and Gas: A Model Agreement for States for Joint Development with Explanatory Commentary*, London: British Institute of International and Comparative Law, 1989; D. Lerer, "How to negotiate and structure a joint development agreement", *Oil & Gas Journal*, 8 September 2003, vol. 101 (34), pp. 38-40; C. B. Okafor, "Model Agreements for Joint Development: a Case Study", *Journal of Energy & Natural Resources Law*, 2007, vol. 25(1), pp. 58-102; P. Cameron, "The design of joint development zone treaties and international unitization agreements", in: P. Daniel, M. Keen et al. (eds), *International Taxation and the Extractive Industries*, Routledge, 2017, pp. 242-263.

[20] See P. Birnie, "Protection of the Marine Environment in Joint Development" and A. D. Read, "Protection of the Marine Environment: A View from Industry", in: H. Fox (ed), *Joint Development of Offshore Oil and Gas*, London: British Institute of International and Comparative Law, vol. II, 1990, pp. 202 and 223; D. M. Ong, "The Progressive Integration of Environmental Protection within Offshore Joint Development Agreements", in: M. Fitzmaurice and M. Szuniewicz (eds), *Exploitation of Natural Resources in the 21st Century*, Kluwer Law International, 2003, pp. 113-141; C. A. Low, "Marine Environmental Protection in Joint Development Agreements", *Journal of Energy & Natural Resources Law*, 2012, vol. 30 (1), pp. 45-74; Q. Hongdao and H. Mukhtar, "Joint Development Agreements: Towards Protecting the Marine Environment under International Law", *Journal of Law, Policy and Globalization*, 2017, vol. 66, pp. 164-171; S. Wartini, "The Role of the Coastal States to the Protection of Marine Environment in Joint Development Agreement", *Indonesian Journal of International Law*, vol. 14 (4), 2017, pp. 433-455.

[21] This project, which ended in 2015, had been carried out by the Amsterdam Center for International Law of the University of Amsterdam and resulted in a number of books, articles and doctoral theses. See, for example, A. Nollkaemper and I. Plakokefalos (eds), *Principles of Shared Responsibility in International Law: An Appraisal of the State of the Art*, Cambridge University Press, 2014; A. Nollkaemper and D. Jacobs (eds), *Distribution of Responsibilities in International Law*, Cambridge University Press, 2015; A. Nollkaemper and I. Plakokefalos (eds), *The Practice of Shared Responsibility in International Law*, Cambridge University Press, 2017. See more on the SHARES's website: http://www.sharesproject.nl (last accessed January 2019).

[22] See, for example, Chapters 11-17 in A. Nollkaemper and I. Plakokefalos (eds), *The Practice of Shared Responsibility in International Law*, Cambridge University Press, 2017.

affirm that the context of shared hydrocarbons is one of the scenarios of shared responsibility.[23] However, the aspects of shared responsibility in that context remain unexplored.[24] Given the fact that the number of cooperative arrangements and agreements relating to shared hydrocarbons[25] constantly increases, more attention should be paid to the question of shared State responsibility in particular because States play a primary role in authorizing joint activities with respect to shared hydrocarbon deposits and they are the principal bearers of international obligations.[26] It is also true that the topic of international responsibility of a State when exploring and exploiting its offshore hydrocarbon resources, outside the context of shared hydrocarbons, is poorly discussed. This research aims at filling these gaps.

The following Chapters of the thesis will also explain the practical significance of the research questions identified in this section.[27]

1.3 Research methodology and methodological challenges

This research involves an analysis of the current state of the law of shared hydrocarbons and the regime of (shared) State responsibility in the context of shared hydrocarbons. The foundation of this research is the doctrinal approach, which seeks to determine the *lex lata* by interpretation of all the applicable sources of law listed in the next section of this Chapter.[28]

[23] See C. Redgwell, "Shared International Responsibility for Transboundary Harm Arising from Energy Activities", in: L. Barrera-Hernández et al. (eds), *Sharing the costs and benefits of energy and resource activity: Legal change and impact on communities*, Oxford University Press, 2016, pp. 59-73; C. Redgwell, "Energy", in: A. Nollkaemper and I. Plakokefalos (eds), *The Practice of Shared Responsibility in International Law*, Cambridge University Press, 2017, pp. 1071-1096; Y. Tanaka, "State responsibility for marine pollution from seabed activities within national jurisdiction in the marine Arctic", in: V. Ulfbeck et al. (eds), *Responsibilities and liabilities for commercial activity in the Arctic: the example of Greenland*, Routledge, 2016, pp. 93-118. See also Chapter 5 of this thesis.

[24] See Chapter 5.

[25] *Supra* note 12.

[26] See Chapter 5.

[27] See, for example, Introduction to Part III.

[28] See, for example, T. Hutchinson, "Doctrinal research: researching the jury", in: D. Watkins and M. Burton (eds), *Research Methods in Law*, Routledge, 2013. It is important to note that the term 'dogmatic' is usually used in Norway. See E.-M. Svensson, "Boundary-Work in Legal Scholarship", in: Å. Gunnarsson, E.-M. Svensson and M. Davies (eds), *Exploiting the Limits of Law: Swedish Feminism and the Challenge to Pessimism*, Ashgate, Aldershot, 2007. This term is also employed in a number of doctoral theses: S. V. Busch, *Third State Involvement in the Context of Establishing the Outer Limits of the Continental Shelf*, Doctoral thesis, UiT The Arctic University of Norway, 2014, p. 10; K. Svendsen, *Compensable damage ex delicto as a result of harm in the Barents Sea caused by petroleum spills from offshore installations: A Norwegian and Russian comparative legal analysis of conflict of laws, the concept of harm, losses suffered by third parties, and environmental damage and its valuation and calculation, caused by petroleum spills from offshore oil rigs and installations in the Barents Sea*, Doctoral thesis, UiT The Arctic University of Norway, 2015, p. 33. This thesis uses the terms 'dogmatic' and 'doctrinal' as synonyms.

State practice plays an important role in this respect. State practice may clarify the content of the general rules applicable in the context of shared hydrocarbons, provide evidence of their status under customary international law[29] and assist in answering specific questions raised by this research (e.g., is there any common procedure to determine whether a hydrocarbon deposit is transboundary?[30]). Regarding the study of relevant State practice, the world is divided into a number of geographical regions. Each geographical region corresponds to a maritime space (e.g., a sea or gulf) adjacent to several coastal States.[31] The methodological approach used for identifying relevant State practice is "inductive"[32] meaning that State practice is identified based on that referred to in the proceedings of formal dispute settlement (e.g., awards, judgments, advisory opinions, memorials submitted to international courts and tribunals, pleadings); included in databases (e.g., the United Nations Treaty Series (UNTS) and the Division for Ocean Affairs and the Law of the Sea (DOALOS)); discussed in the legal literature (e.g., volumes of International Maritime Boundaries (IMB)); and, particularly for contemporary State practice, reported in news media and other secondary sources.[33]

The study of State practice is limited to materials available in English. While most relevant materials examined in this thesis are published in English (being the original language of a document or the language of official translation), there are examples where this author has not been able to fully understand the content of some documents published in a language other than that which the author has good command of (namely, beyond the English, Russian and Norwegian languages).[34] A striking example is the Advisory Opinion on the Environment and Human Rights delivered by the Inter-American Court of Human Rights (IACHR) in Spanish.[35]

[29] See Chapter 1.4.2 in this regard.
[30] See in detail Chapter 4.
[31] See Chapter 1.4.6 in this regard.
[32] Report on the Obligations of States under Articles 74 (3) and 83 (3) of UNCLOS in respect of Undelimited Maritime Areas, The British Institute of International and Comparative Law, June 2016, p. 40, para. 135, available at https://www.biicl.org/documents/1192_report_on_the_obligations_of_states_under_articles_743_and_833_of_unclos_in_respect_of_undelimited_maritime_areas.pdf?showdocument=1; Report on the Use of Force in relation to Sovereignty Disputes over Land Territory, The British Institute of International and Comparative Law, 23 May 2018, p. 17, para. 29, available at https://www.biicl.org/documents/1961_territorial_disputes_web_ready_version.pdf?showdocument=1 (last accessed January 2019).
[33] *Ibid.* UNTS's website: https://treaties.un.org/pages/Content.aspx?path=DB/UNTS/pageIntro_en.xml. DOALOS's website: http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/index.htm (last accessed January 2019).
[34] The author would like to thank her colleagues that assisted in translation of some texts available in French and Spanish, particularly Eva Romée van der Marel and Maria Madalena das Neves.
[35] Advisory Opinion on the Obligations of States in Relation to the Environment in the Context of the Protection and Guarantee of the Rights to Life and to Personal Integrity – Interpretation and Scope of Articles 4 (1) and 5 (1) of the American Convention on Human Rights, available at

At the same time, this has not significantly affected the examination of the research questions outlined earlier in this Chapter because most of the key legal sources are available in English.

It is important to emphasize that the English text of a treaty may be one of the treaty's authentic texts (usually, when a treaty is concluded between an English-speaking country and a country having other official language(s) than English)[36] or may be an official translation of the treaty's text originally made in other languages.[37] In the latter situation of translation, the English texts are considered with caution, with reference made to the authentic texts where possible and necessary. It is also worth noting that there may be interpretation difficulties related to a treaty authenticated in two or more languages.[38] However, these difficulties in interpretation are not a significant barrier in dealing with the research questions relating to international law.

Apart from the linguistic challenges, the non-accessibility of some applicable agreements is an issue that limits the compilation of a comprehensive list of relevant State practice concerning shared hydrocarbons, even in the geographical regions selected for study.[39] The main reasons why these agreements are not available in the public domain are: (a) they are recently reached and not yet in force; and (b) they are protected from disclosure because of their commercial value for the Parties and licensees. For the latter reason, a number of this author's requests to the official authorities for access to relevant agreements (particularly agreements dealing with transboundary hydrocarbons), including their supporting regulatory framework, were rejected (some of the requests were left unanswered). At this point, it is worth noting that applicable agreements that are not publicly available amount to a relatively small portion of the total number of available agreements.[40] Moreover, one could argue that relevant provisions of the

http://www.corteidh.or.cr/docs/opiniones/seriea_23_esp.pdf (last accessed January 2019). See the summary M. L. Banda, "Inter-American Court of Human Rights' Advisory Opinion on the Environment and Human Rights", American Society of International Law, 10 May 2018, available at https://www.asil.org/insights/volume/22/issue/6/inter-american-court-human-rights-advisory-opinion-environment-and-human (last accessed January 2019).

[36] See, for example, Canada-France Agreement, art. 21; US-Mexico Agreement, art. 25. However, there are example where non-English-speaking countries have concluded a treaty in the English and X languages where both texts are equally authoritative: for instance, Venezuela-T&T Framework Treaty, art. 23, and Norway-Iceland Agreement of 2008, art. 10. See Chapter 1.4.6 in this respect.

[37] For example, Norway-Russia Treaty is concluded in the Norwegian and Russian languages having an official translation in English. See Chapter 1.4.6 in this respect.

[38] See, for example, I. Fodchenko, "Legal Aspects of the Russian–Norwegian Model for Cross-Border Unitization in the Barents Sea and Arctic Ocean", *Ocean Development and International Law*, 2018, vol. 49 (3), pp. 265-268. Article 33 (1) of the VCLT stipulates that the text of a treaty done in two or more languages is "equally authoritative in each language, unless the treaty provides or the Parties agree that, in case of divergence, a particular text shall prevail" (see, for example, Norway-Iceland Agreement of 2008, art. 10, in this respect). If the treaty does not provide that one of the texts prevails, article 33 (4) of the VCLT applies.

[39] See Chapters 1.4.6, 6 and 7 in this regard.

[40] See, for example, Appendix I.

agreements that are not publicly available are framed similarly to those included in the agreements that are already available in the public domain.[41] As shown further in this thesis, the non-availability of some relevant agreements has not been a substantial obstacle in establishing a clear picture regarding the first research question. However, the non-availability of a regulatory framework in addition to the relevant agreement in a number of instances has had an impact on the consideration of the second research question: namely, this has hampered the analysis of the character of the due diligence standard that is crucial for determining the likelihood of shared State responsibly in the context of shared hydrocarbons.[42]

This research does not only focus on the *lex lata*, but also on *de lege ferenda*. The research seeks to identify gaps in the current legal framework and discusses what the law might be.[43]

This thesis addresses some technical aspects of offshore oil and gas resource activities, which may contribute to shedding light on relevant legal questions. For example, Chapter 3 will discuss the question of what form of hydrocarbon activity might cause a serious physical modification of the marine environment and the considerations of this form that determine whether the activity is contrary to international law.

1.4 Applicable legal sources

The legal framework governing shared hydrocarbons is a "multi-layered framework of law".[44] Broadly, the layers are:

- sources of international law, including cooperative arrangements and agreements between States;
- private contracts between the licensees involved; and
- national laws and regulations.[45]

This thesis primarily examines the first layer of this multi-layered legal framework for a number of reasons. First, the research questions raised in this thesis are considered from an international law perspective. Second, an examination of the last two layers across the globe is difficult within the scope of this research for the reasons outlined in the section above (namely, linguistic

[41] The following Chapters of this thesis explain that each new agreement is generally based on an already existing agreement, particularly between the same States.
[42] See Chapters 6 and 7.
[43] See, for example, Chapter 5.
[44] Weaver and Asmus, *op. cit.*, p. 9.
[45] *Ibid.*

limitations and more significant challenges with access to relevant documents than those that exist in relation to the first layer).[46]

Article 38 (1) of the Statute of the International Court of Justice (ICJ's Statute) is widely accepted as a formulation of the sources of international law.[47] According to this article, there are three principal sources of international law: international conventions, international customs and general principles of law recognized by civilized nations. Article 38 (1) contains no indication of a hierarchy between these sources. Judicial decisions and doctrinal teaching are mentioned as subsidiary means,[48] and they are to be applied in a subsidiary manner because they do not generate rules of law, but rather provide evidence of their existence.[49] As noted by Thirlway, "the judge, or the author of the textbook, will not assert that the rule stated is law because he has stated it; he will state it because he considers that it derives from one of the three principal sources indicted in paragraph (a) to (c) of Article 38".[50]

It is worth noting that article 38 of the ICJ's Statute does not provide an exhaustive list of the sources of international law. Therefore, this thesis looks at additional sources. These additional sources include a number of outputs produced by the ILC.[51]

1.4.1 International conventions

The Convention on the Continental Shelf (CCS)[52] and particularly the UNCLOS are the starting point for most discussions relating to shared hydrocarbons. This thesis also examines other relevant international conventions (e.g., Convention on the Law of the Non-navigational Uses of International Watercourses and Convention on Environmental Impact Assessment in a Transboundary Context)[53] that are able to shed light on specific questions.[54] The Vienna

[46] Weaver and Asmus (*ibid.*) have examined the last two layers to some extent (twelve countries).
[47] Statute of the International Court of Justice, 26 June 1945, EIF: 24 October 1945, 33 UNTS 993. This is by no means an undisputed issue. For example, according to Trindade, article 38 is not and never had the intention to be a mandatory and exhaustive formulation of the sources of international law, but only a guide for the ICJ's judicial operation (A. A. C. Trindade, *International Law for Humankind: Towards a New Jus Gentium*, Leiden/Boston: Martinus Nijhoff Publishers, 2010, pp. 114-115). Nevertheless, the practice of States has not endorsed any new approach (see H. Thirlway, "The Sources of International Law", in: M. D. Evans (ed), *International Law*, New York: Oxford University Press, 2010, p. 99).
[48] ICJ's Statute, art. 38 (1) (d).
[49] A. da Rocha Ferreira et al., "Formation and Evidence of Customary International Law", *UFRGSMUN: UFRGS Model United Nations Journal*, 2013, p. 185.
[50] Thirlway 2010, *op. cit.*, p. 110.
[51] See Chapter 1.4.5 in this regard.
[52] Convention on the Continental Shelf, Geneva, 29 April 1958, EIF: 10 June 1964, 499 UNTS 311.
[53] Convention on Environmental Impact Assessment in a Transboundary Context, Espoo, 25 February 1991, EIF: 10 September 1997, 1989 UNTS 309; Convention on the Law of the Non-navigational Uses of International Watercourses, New York, 21 May 1997, EIF: 17 August 2014, UNGA's resolution 51/229, annex, Official Records of the General Assembly, Fifty-first Session, Supplement No. 49 (A/51/49).
[54] See, for example, Chapter 2 of this thesis.

Convention on the Law of Treaties (VCLT) is used throughout this thesis as the means of interpretation of relevant treaties.[55]

1.4.2 Customary international law

The value of customary international law is that it applies to all States, as opposed to treaties, which apply only to States parties to them. In other words, a State, which is not a party to the UNCLOS (e.g., Colombia and the United States of America (US)),[56] may nevertheless be bound by a UNCLOS-based obligation that also reflects customary international law.

International courts and tribunals have identified a number of norms as customary international rules that are relevant to this research. For example, the ICJ, in its *Nuclear Weapons* Advisory Opinion, affirmed that "[t]he general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment".[57] In *Ghana/Côte d'Ivoire*, the Special Chamber (SC) of the International Tribunal of the Law of the Sea (ITLOS) stated that draft article 1 of the draft Articles on the Responsibility of States for Internationally Wrongful Acts (ARSIWA) reflects customary international law.[58] Nevertheless, the problem is that international courts and tribunals usually declare customary international law without engaging in an examination of State practice and *opinio juris*.[59] State practice and *opinio juris* are the two elements of an international custom. These two constituent elements must be present to give rise to a customary rule: first, there must be a general State practice and, second, this practice must follow from the belief that such practice reflects international law.[60]

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[55] Vienna Convention on the Law of Treaties, Vienna, 23 May 1969, EIF: 27 January 1980, 1155 UNTS 331, arts. 31-33. The term 'treaty' is defined in article 2 (1) (a) of the VCLT.

[56] As discussed in below in this Chapter, Colombia and the US have concluded agreements with Jamaica and Mexico, respectively, concerning the management of shared hydrocarbon resources.

[57] *Legality of the Threat or Use of Nuclear Weapons*, Advisory Opinion, 8 July 1996, ICJ Reports 1996, para. 29. The ICJ reaffirmed this conclusion in *Case concerning the Gabčíkovo-Nagymaros Project (Hungary v. Slovakia)*, Judgment, 25 September 1997, ICJ Reports 1997, para. 53. See Chapter 5 in detail.

[58] *Dispute concerning Delimitation of the Maritime Boundary between Ghana and Côte d'Ivoire in the Atlantic Ocean (Ghana/Côte d'Ivoire)*, Case No. 23, ITLOS Judgment, 23 September 2017, para. 558. Article 1 of the ARSIWA provides that "[e]very internationally wrongful act of a State entails the international responsibility of that State". The SC also held that several draft articles of the ARSIWA "are considered to reflect customary international law", although without specifying which draft articles it had in mind. See the Chapter below.

[59] For example, Talmon has stated that simple assertion is the ICJ's usual methodology for determining the content of customary international law. See S. Talmon, "Determining Customary International Law: The ICJ's Methodology between Induction, Deduction and Assertion", *European Journal of International Law*, 2015, vol. 26 (2), pp. 434-440.

[60] ICJ's Statute, art. 38 (1) (b). See also A. Cassese, *International Law*, New York: Oxford University Press, 2005, p. 156.

However, the process of identification of customary international law is not a straightforward task. At this point, it is worth noting the ongoing work of the ILC on the topic of "Identification of customary international law".[61] Draft conclusion 5 adopted by the ILC provides that "State practice consists of conduct of the State, whether in the exercise of its executive, legislative, judicial or other functions".[62] The requirement that State practice must be general means that it "must be sufficiently widespread and representative, as well as consistent".[63] The general State practice "must be undertaken with a sense of legal right or obligation" (*opinio juris*).[64] The text of the ILC's draft conclusions also provides a list of forms of State practice and *opinio juris*, including, but not limited to, diplomatic correspondence, decisions of national courts, legislative acts and official statements.[65] The principal form of State practice analyzed in this thesis consists of physical acts, namely treaties between States.[66] It should however be borne in mind that State practice may take a form of inaction.[67] For example, Chapter 3 will discuss the question of whether an obligation to exercise restraint in undelimited maritime areas found in article 74 (3) and 83 (3) of the UNCLOS also reflects customary international law.

This thesis considers many documents adopted by the United Nations (UN) system, including resolutions of the United Nations General Assembly (UNGA).[68] UNGA resolutions can be evidence of, or be relevant to, customary law as they reflect the views of member States.[69] At the same time, resolutions rarely receive unanimous support among all States. The usual situation is that while an overwhelming number of member States votes in favor of adoption of a resolution, some States either vote against the resolution or abstain from voting.[70] A positive

[61] Draft Conclusions on Identification of Customary International Law, Report of the ILC on the Work of its Seventieth Session (30 April-1 June and 2 July-10 August 2018), UN Doc. A/73/10, Chapter V, pp. 144-148, available at http://legal.un.org/docs/?path=../ilc/reports/2018/english/a_73_10_advance.pdf&lang=E (last accessed January 2019). See also the guide to this topic at http://legal.un.org/ilc/guide/1_13.shtml.
[62] *Ibid.*
[63] *Ibid.*, draft conclusion 8.
[64] *Ibid.*, draft conclusion 9.
[65] *Ibid.*, draft conclusions 6 and 10.
[66] See Chapter 1.4.6.
[67] *Supra* note 61, draft conclusion 6 (1).
[68] See Chapter 2.
[69] See, for example, *Military and Paramilitary Activities in and against Nicaragua (Nicaragua v. United States of America)*, Judgment, 27 June 1986, ICJ Reports 1986, p. 14, para. 188, and *Nuclear Weapons*, para. 70: "[resolutions of the UNGA] can, in certain circumstances, provide evidence important for establishing the existence of a rule or the emergence of an *opinio juris*". See also draft Conclusions on Identification of Customary International Law, *supra* note 61, draft conclusion 12.
[70] For example, Resolution on Cooperation in the Field of the Environment concerning Natural Resources Shared by Two or More States, UNGA Resolution 3129 (XXVIII) of 13 December 1973 was adopted with 77 votes in favor, 5 votes against (mostly Latin American countries) and 43 abstentions (industrialized countries). See Lagoni 1979, *op. cit.*, p. 234. Charter on Economic Rights and Duties of States, UNGA Resolution 3281 (XXIX) of 12 December 1974 was adopted with 120 votes in favor, 6 votes against (Belgium, Denmark, Germany, Luxembourg, the UK and the US) and 10 abstentions (Austria, Canada, France, Ireland, Israel, Italy, Japan, the Netherlands,

vote of a State may imply the willingness of that State to act in conformity with the resolution, even though it is not legally bound to do so.[71] Thereby, the resolution can be regarded as a desire of a large part of the international community to acknowledge a particular norm. However, it remains unclear whether States who either cast a negative vote or abstained should adhere to the view of the majority.[72] It does not appear that such States share the attitude of the majority of States.[73] A separate section of this Chapter will consider the role of the ILC in the development of customary international law.[74]

1.4.3 General principles of international law

There are a number of principles that are referred to in the literature as emerging or soft law principles.[75] Those principles include the precautionary principle, the common but differentiated responsibility principle and the requirement of environmental impact assessment (EIA).[76] As emphasized by Low, these principles ought to be considered in the negotiation of arrangements and agreements relating to shared hydrocarbons.[77] This thesis, particularly Chapter 2, considers the principle of sovereign rights, the no-harm principle, the principle of good faith and the principle of equity. It is worth noting that an obligation under (customary) international law may also be regarded as a specific application of a certain general principle or a number of principles.[78]

1.4.4 Case law and doctrinal writings

As alluded to earlier, case law is a subsidiary source for the determination of rules of law.[79] Even though judicial decisions are "not governed by the principle of *stare decisis*"[80] meaning that a decision of a court or tribunal is binding only on the parties to a case and in connection to that particular case,[81] case law plays a significant role as authoritative evidence of the state

Norway and Spain). See C. N. Brower and J. B. Tepe, Jr., "The Charter of Economic Rights and Duties of States: A Reflection or Rejection of International Law", *International Lawyer*, 1975, vol. 9 (2), p. 295. See Chapter 2 in this respect.

[71] M. Dixon, *Textbook on International Law*, Oxford University Press, 7th edition, 2013, p. 51.

[72] J. Klabbers, *An Introduction to International Institutional Law*, Cambridge University Press, 2nd edition, 2009, p. 190.

[73] *Ibid.*, pp. 190-191.

[74] See Chapter 1.4.5 in detail.

[75] Low 2012, *op. cit.*, p. 56.

[76] *Ibid.*, referring to other legal sources.

[77] *Ibid.*

[78] See, for example, Chapter 2 in this regard.

[79] ICJ's Statute, art. 38 (1) (d).

[80] Bastida et al., *op. cit.*, p. 362, referring to P. D. McHugh, "International Law-Delimitation of Maritime Boundaries", *Natural Resources Journal*, 1985, vol. 25, p. 1032.

[81] *Ibid.* ICJ's Statute, art. 59.

of the law.[82] International courts and tribunals invariably invoke previous jurisprudence in rendering a decision.

Bastida et al. have summarized international case law (as of 2007) relevant for the law of shared hydrocarbons.[83] This thesis refers to this case law and supplements it by subsequent judicial decisions.[84] An analysis of the relevant case law serves different functions. For instance, case law may throw light on the customary status of a rule of international law (however, as noted above in this Chapter, some findings in that respect might be questionable)[85] and may clarify the content of a treaty obligation[86] or a rule of customary international law. In certain fields, case law has an even larger impact. For example, the law of maritime boundary delimitation has been mostly developed through case law.[87] As discussed in Chapter 3, case law has contributed to the development of the legal requirements that must be met to prescribe provisional measures.

It is also important to emphasize that the weight of a judicial decision depends on many factors, including whether the decision is unanimously adopted, whether the decision is consistent with the previous application of law, and whether the decision is clearly formulated.[88] This thesis gives attention to dissenting and separate opinions to relevant judgments/awards.[89] Moreover, this thesis considers other outputs of judicial bodies such as advisory opinions: for example, the ITLOS's Advisory Opinion of 2011 dealing with responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area,[90] and the ITLOS's Advisory Opinion of 2015 addressing a request submitted by the Sub-regional Fisheries Commission.[91]

[82] I. Brownlie, *Principles of Public International Law*, Oxford University Press, 2008, 7th edition, p. 19.
[83] Bastida et al., *op. cit.*, Part III (A).
[84] See Table of Cases.
[85] *Supra* notes 57 and 58.
[86] See, for example, Chapter 3.
[87] See, for example, S. Fietta and R. Cleverly, *Practitioner's Guide to Maritime Boundary Delimitation*, Oxford University Press, 2016; A. Oude Elferink et al. (eds), *Maritime Boundary Delimitation: The Case Law, Is It Consistent and Predictable?*, Cambridge University Press, 2018.
[88] Busch 2014, *op. cit.*, p. 20.
[89] See Chapter 3 in this regard.
[90] *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area (Request for Advisory Opinion submitted to the Seabed Disputes Chamber)*, Advisory Opinion, 1 February 2011, ITLOS Reports 2011, p. 10 (ITLOS's Advisory Opinion of 2011).
[91] *Request for an Advisory Opinion Submitted by the Sub-regional Fisheries Commission (SRFC)*, Advisory Opinion, 2 April 2015, 54 ILM 893 (ITLOS's Advisory Opinion of 2015). See also *supra* note 57.

Another subsidiary source is "teaching of the most highly qualified publicists".[92] This thesis mainly uses relevant legal academic literature for the purpose of argumentation and assistance in establishing customary international law.[93]

1.4.5 The ILC's outputs as a source of international law

Outputs produced by the ILC are usually considered to be a "subsidiary means for the determination of rules of law" pursuant to article 38 (1) (d) of the ICJ's Statute.[94] This section considers the validity of this assertion, particularly in light of the status of the Commission within the UN system.

As noted above in this Chapter, an attempt of the ILC to deal with the issue of shared oil and gas resources has ended in failure.[95] Efforts made by the ILC to establish general rules governing other fields of international law, including the law of State responsibility, were more successful. This thesis examines a number of final outputs produced by the ILC that have direct relevance to the topic, particularly to the second research question identified in Chapter 1.2. For example, it takes into account the draft Articles on the Responsibility of States for Internationally Wrongful Acts (ARSIWA),[96] draft Articles on the Responsibility of International Organizations (ARIO)[97] and draft Articles on Prevention of Transboundary Harm from Hazardous Activities (AP).[98] This Chapter earlier referred to the ILC's draft conclusions on Identification of Customary International Law.[99]

1.4.5.1 The ILC's mandate

In 1947, two years after the foundation of the UN, the UNGA adopted a resolution establishing the ILC as a permanent subsidiary organ.[100]

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[92] ICJ's Statute, art. 38 (1) (d).
[93] See Bibliography, which includes the literature.
[94] See, for example, I. Brownlie, *Principles of Public International Law*, Oxford University Press, 2003, 6th edition, p. 24; D. D. Caron, "The ILC Articles on State Responsibility: the Paradoxical Relationship between Form and Authority", *American Journal of International Law*, 2002, vol. 96 (4), p. 867; M. Peil, "Scholarly Writings as a Source of Law: A Survey of the Use of Doctrine by the International Court of Justice", *Cambridge Journal of International and Comparative Law*, 2012, vol. 1 (3), pp. 148–149.
[95] *Supra* note 11.
[96] Draft Articles on the Responsibility of States for Internationally Wrongful Acts, Report of the ILC on the Work of its Fifty-third Session, UNGAOR, UN Doc. A/56/10, 2001.
[97] Draft Articles on the Responsibility of International Organizations, Report of the ILC on the Work of its Sixty-third Session, UNGAOR, UN Doc. A/66/10, 2011.
[98] Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, Report of the ILC on the Work of its Fifty-third Session, UNGAOR, UN Doc. A/56/10, 2001.
[99] *Supra* note 61.
[100] Establishment of an International Law Commission, UNGA Resolution 174 (II) of 21 November 1947.

The ILC's Statute defines its goals as promoting the progressive development and codification of international law.[101] Formally, the ILC's Statute considers these goals to be distinct and thereby treats them differently. While codification means "the more precise formulation and systematization of rules of international law in fields where there already has been extensive State practice, precedent and doctrine", progressive development is defined as "the preparation of draft conventions on subjects which have not yet been regulated by international law or in regard to which the law has not yet been sufficiently developed in the practice of States".[102] Furthermore, the ILC's Statute underscores the distinction between codification and progressive development by establishing different procedural rules for performing these tasks. Since such a distinction has proven to be elusive in practice, the ILC has proceeded on the basis of a consolidated procedure for codification and progressive development.

Once the work on a particular topic is completed, the ILC submits its developed materials to the UNGA with a recommendation on what (if any) future actions concerning the texts should be taken. Article 23 of the ILC's Statute provides the Commission with four options. The ILC may propose to the UNGA to: (a) take no action; (b) take note of or adopt the report by resolution; (c) recommend the completed draft to Member States with a view to the conclusion of a convention; or (d) convene a diplomatic conference to conclude such a convention. Ultimately, the UNGA has the final word on the fate of the Commission's final documents.

1.4.5.2 The form of the ILC's final outputs and their authority

Throughout its history, the final outputs of the ILC were mainly packaged as 'draft articles'.[103] Indeed, many sources considered in this thesis take the form of draft articles.[104] As alluded to earlier, the UNGA makes a decision concerning an outcome of the ILC's work by taking into consideration a recommendation of the ILC. Thus, any further actions in respect of the completed draft articles initially depend on the ILC's recommendation submitted to the UNGA.

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[101] Statute of the International Law Commission, adopted by UNGA Resolution 174 (II) of 21 November 1947 and amended by UNGA Resolutions 485 (V) of 12 December 1950, 984 (X) of 3 December 1955, 985 (X) of 3 December 1955 and 36/39 of 18 November 1981, the current version available at http://legal.un.org/docs/?path=../ilc/texts/instruments/english/statute/statute.pdf&lang=EF (last accessed January 2019).

[102] *Ibid.*, art. 15.

[103] Although draft articles are typical "products" of the ILC, the Commission has produced a number of 'draft conventions', 'draft codes', 'draft principles' and other documents. See J. Katz Cogan, "The Changing Form of the International Law Commissions' Work", in: R. Virzo and I. Ingravallo (eds), *Evolutions in the Law of International Organizations*, 2015, p. 276.

[104] See Bibliography. Except for the draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising out of Hazardous Activities, Report of the ILC on the Work of its Fifty-eighth Session, UNGAOR, UN Doc. A/61/10, 2006 (PAL), and Draft Conclusions on Identification of Customary International Law, *supra* note 61.

For most of its history, the ILC reported the draft articles to the UNGA with a recommendation to elaborate a convention (either by the Assembly or by a conference convened by the UNGA) based on them.[105] However, over the last 15 years, the ILC's practice has shifted away from 'legislative' codification of international law in favor of 'non-binding' codification.[106] The current trend of the Commission is, almost without exception, to not recommend that its draft articles be transformed into treaties in the near future.[107]

Among the draft articles examined in this thesis, only two were recommended by the ILC for drafting into a convention.[108] In relation to other draft articles, the ILC recommended to the UNGA to "take note" of the draft articles in a resolution and to "consider, at a later stage, […] the possibility of convening an international conference […] with a view to concluding a convention on the topic".[109] Except for the draft Articles on the Law of Non-navigational Uses of International Watercourses, no multilateral convention has yet arisen from other draft articles and principles.[110] The UNGA has repeatedly taken note of the ARSIWA,[111] AP and PAL,[112] and ARIO.[113] Consequently, this elicits the question of the authority of the draft articles adopted by the ILC.

As noted earlier in this section, draft articles completed by the ILC are traditionally considered to be a "subsidiary means for the determination of rules of law" in the sense of article 38 (1)

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[105] Katz Cogan, *op. cit.*, pp. 277-278.

[106] See in detail F. L. Bordin, "Reflections of Customary International Law: the Authority of Codification Conventions and ILC Draft Articles in International Law", *International and Comparative Law Quarterly*, 2014, vol. 63 (3), pp. 538-546; L. R. Helfer and T. Meyer, "Evolution of Codification: A Principal-Agent Theory of the International Law Commission's Influence", *Duke Law Scholl Public Law & Legal Theory Series*, No. 2015-16, pp. 9-16; Katz Cogan, *op. cit.*

[107] Katz Cogan, *op. cit.*, p. 283.

[108] There are the draft Articles on the Law of the Non-navigational Uses of International Watercourses, Report of the ILC on the Work of its Forty-sixth Session, UNGAOR, UN Doc. A/49/10, 1994, pp. 88-89, para. 219, and the AP, *supra* note 98, para. 94, p. 370.

[109] As regards the ARSIWA, *supra* note 96, paras. 72-73, p. 42. The same approach was used when the ILC completed its projects on the ARIO, *supra* note 97, para. 85, p. 53, and the draft Articles on the Law of Transboundary Aquifers, Report of the ILC on the Work of its Sixtieth Session, UNGAOR, UN Doc. A/63/10, 2008, para. 49, p. 18. In the latter situation, the ILC additionally recommended "to States concerned to make appropriate bilateral or regional arrangements for the proper management of their transboundary aquifers on the basis of the principles enunciated in these articles" (*ibid.*, para. 49 (b)).

[110] Watercourses Convention, *supra* note 53.

[111] Responsibility of States for internationally wrongful acts, UNGA Resolutions: A/Res/56/83 of 12 December 2001; A/Res/59/35 of 2 December 2004; A/Res/62/61 of 6 December 2007; A/Res/65/19 of 6 December 2010; A/Res/68/104 of 18 December 2013; and A/Res/71/133 of 13 December 2016.

[112] Consideration of prevention of transboundary harm from hazardous activities and allocation of loss in the case of such harm, UNGA Resolutions: A/Res/56/82 of 12 December 2001; A/Res/61/36 of 4 December 2006; A/Res/68/114 of 16 December 2013; and A/Res/71/143 of 13 December 2016.

[113] Responsibility of international organizations, UNGA Resolutions: A/Res/66/100 of 9 December 2011; A/Res/69/126 of 10 December 2014; and A/Res/72/122 of 7 December 2017. See also the UNGA Resolutions concerning the draft Articles on the Law of Transboundary Aquifers: for example, UNGA Res. A/Res/68/118 of 16 December 2013 and UNGA Res. A/Res/71/150 of 13 December 2016.

(d) of the ICJ's Statute.[114] At first glance, this characterization seems to be logical. The Commission is composed of 34 members elected by the UNGA on account of their recognized expertise in the field of international law.[115] Hence, the ILC's draft articles should pertain to the "teaching of the most highly qualified publicists of the various nations".[116] This affirmation may nevertheless be called in question by virtue of the ILC's legal status. As a UN organ, the work of the ILC has more authority than the work of those non-governmental professional associations that are also involved in the codification process, such as the International Law Association and the *Institut de droit international*.[117] Thus, by this treatment of the ILC's draft articles as scholarly writings, it is important to acknowledge that they thus occupy a higher standing within this category of sources of law.

However, by revisiting the distinction between progressive development of international law and its codification,[118] it appears that a draft article, which falls under the latter category of codification, would amount to an international custom. The difficulty is that the ILC does not usually identify which provision falls into which of these categories.[119] As mentioned above, the Commission is guided in its work by a "composite notion" of progressive development of international law and its codification.

International courts and tribunals have addressed this issue. For example, they have proclaimed that many provisions of the ARSIWA reflect customary international law.[120] Nevertheless, as noted above in this Chapter, international judicial bodies often abstain from undertaking an examination of State practice and *opinio juris*. One possible explanation might be that these bodies trust the ILC's extensive review of State practice and *opinio juris.*[121] However, the ILC's

[114] *Supra* note 94.
[115] ILC's Statute, *supra* note 101, arts. 2 and 3.
[116] Article 38 of the ICJ's Statute lists judicial decisions and the teaching of the most highly qualified publicists of the various nations among subsidiary means for the determination of rules of law. See also Chapter 1.4.4.
[117] Bordin, *op. cit.*, pp. 558-559.
[118] See Chapter 1.4.5.1 in this regard.
[119] There are some exceptions. For example, in accordance with the commentary to the ARSIWA, draft article 48 (2) (b) has been incorporated as a measure of progressive development of law, commentary 12 to this draft article.
[120] See, for example, *Noble Ventures. Inc. v. Romania*, Award, ICSID Case No. ARB/01/11, 12 October 2005, para. 69: "[w]hile [the ARSIWA] are not binding, they are widely regarded as a codification of customary international law"; *Archer Daniels Midland Company and Tate & Lyle Ingredients Americas, Inc. v. the United Mexican States*, Award, ICSID Case No. ARB (AF)/04/05, 21 November 2007, para. 116: "[the ARSIWA] represent in part the "progressive development" of international law – pursuant to its UN mandate – and represent to a large extent a restatement of customary international law regarding secondary principles of state responsibility"; ITLOS's Advisory Opinion of 2011, paras. 169 and 178. See also *supra* note 58.
[121] S. Villalpando, "On the International Court of Justice and the Determination of Rules of Law", *Leiden Journal of International Law*, 2013, vol. 26 (2), p. 247. Villalpando noted that "the Court's finding that [the ILC's draft articles'] provisions reflect customary international law is as brief and categorical as its own autonomous determinations of the rules of law, which apparently indicates an increasing trust placed by the Court on the Commission".

task is not limited to the codification of existing rules of customary international law. Talmon has noted that in the cases where the ICJ has found a draft article of the ILC to reflect customary international law, the Court did not enquire "whether the Commission was actually codifying international law or whether it was not perhaps progressively developing international law".[122]

There are also cases where international courts and tribunals referred to the ILC's draft articles without touching upon their customary status.[123] Although the usage of the draft articles and principles can be criticized, it is worth emphasizing that another credible alternative does not exist, particularly in relation to the law of State responsibility. As a result, the draft articles and principles produced by the ILC apply as a *de facto* source of international law to an issue once it arises before a court or tribunal. Part III of this thesis looks at a number of the ILC's draft articles and principles that are relevant when examining the second research question outlined earlier in this Chapter.[124]

1.4.6 State practice concerning shared hydrocarbons

State practice plays a pivotal role when considering the research questions indicated in Chapter 1.2. It is important to analyze not only how a treaty obligation or a rule of customary international law has been applied and interpreted by international courts and tribunals and academic scholars, but also how States behave in practice. State practice can provide information on how States conceive the substance of the rules of international law applicable to shared hydrocarbons and (shared) State responsibility. As noted above, multi- and bilateral treaties between States are the principal form of State practice in the context of shared hydrocarbons.[125]

Relevant State practice includes maritime boundary delimitation treaties. This research does not aim at compiling a complete list of all existing delimitation treaties in the world. The delimitation treaties selected for study in this thesis are intended to represent a cross-section of many of those treaties currently in force.[126] This thesis principally refers to a list of delimitation

[122] Talmon 2015, *op. cit.*, p. 437.
[123] See, for example, ITLOS's Advisory Opinion of 2015, para. 144.
[124] Chapter 5 also discusses the difference between draft articles and draft principles, and the consequences attached to that.
[125] See also Comments and Observations Received from Governments, Shared Natural Resources, Doc. A/CN.4/607 and Add.1, 2009, available at http://legal.un.org/ilc/documentation/english/a_cn4_607.pdf, and Doc. A/CN.4/633, 2010, available at http://legal.un.org/docs/?path=../ilc/documentation/english/a_cn4_633.pdf&lang=ESX (last accessed January 2019). It is also important to bear in mind that the absence of State activity is also relevant. See Chapters 3 and 4 in this regard.
[126] See Chapter 4 in detail.

agreements contained in Annex II of the BIICL's Report on Undelimited Maritime Areas because that list is sufficient for the purpose of this study.[127] The thesis places special emphasis on delimitation agreements that go beyond the mere establishment of a maritime (EEZ and/or CS) boundary between the Parties and elaborate on the issue of shared hydrocarbons.[128]

Relevant State practice also includes arrangements and agreements that are specifically concluded to deal with the topic of shared hydrocarbons. Whereas the succeeding Chapters of this thesis, including Appendix I, are based on forms of cooperative arrangements and agreements reached by States with respect to shared hydrocarbons (i.e., provisional arrangements in undelimited maritime areas, framework and unitization agreements),[129] this section of Chapter 1 is organized around a number of geographical regions each of which is covered by different forms of such arrangements and/or agreements.[130] This is done for two main reasons. First, the systematization of arrangements and agreements concerning shared hydrocarbons according to their forms does not provide information about the relevant region as a whole that can help, *inter alia*, to identify regional customs[131] or establish more general patterns existing in this region. Second, the following Chapters will directly rely on the introduction to the relevant arrangements and agreements given in this section without describing them and their origin in detail.

1.4.6.1 The North Sea

The delimitation agreement between the United Kingdom (UK) and Norway concluded in 1965 is the first agreement to include a special provision on transboundary mineral resources.[132] Based on this provision, the UK and Norway arrived at a number of unitization agreements[133]

[127] BIICL's Report on Undelimited Maritime Areas, *op. cit.*, Annex II, pp. 121-166.
[128] See Chapter 4.
[129] See in particular Chapters 3 and 6, and Chapters 4 and 7.
[130] See also Chapter 1.3.
[131] Customs may be general (general customs are binding upon the international community as a whole) or regional/local (these customs apply to a group of States or two States). See, for example, V. Lowe, *International Law*, Oxford University Press, 2007, p. 54; A. Kaczorowska, *Public International Law*, 4th edition, Routledge, 2010, p. 35. See also Chapter 1.4.2.
[132] Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Norway Relating to the Delimitation of the Continental Shelf Between the Two Countries, London, 10 March 1965, EIF: 29 June 1965, 551 UNTS 213, art. 4. See also Protocol supplementary to that Agreement, Oslo, 22 December 1978, EIF: 20 February 1980, 1202 UNTS 363. See Chapter 4.
[133] The meaning of the term 'unitization agreement' (UA) is considered in Chapter 4 in detail.

dealing with a number of transboundary hydrocarbon reservoirs including Frigg,[134] Statfjord[135] and Murchison.[136] In addition to these reservoirs, the Boa, Playfair, Enoch, Blane and Flyndre fields have been found to straddle the delimitation line between Norway and the UK.[137]

In 2005, the UK and Norway signed a framework agreement addressing the issue of cross-border hydrocarbon cooperation (UK-Norway Framework Agreement).[138] The UK-Norway Framework Agreement is the first in a series of similar agreements that adopted the 'framework' approach.[139] It allowed the discovered straddling hydrocarbon resources to be tied to existing infrastructure on either side of the UK-Norway delimitation line.[140] The UK-Norway Framework Agreement has been supplemented with a set of joint Guidelines for Development of Transboundary Oil and Gas Fields (UK-Norway Guidelines).[141] It is important to note that the UK-Norway Framework Agreement does not only apply to transboundary petroleum

[134] Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Norway relating to the exploitation of the Frigg Field Reservoir and the transmission of gas therefrom to the United Kingdom, London, 10 May 1976, EIF: 22 July 1977, 1098 UNTS 3. The Agreement was amended by the Agreement of 25 August 1998 concluded in Stavanger, EIF: 30 June 2000, 2210 UNTS 94, and the Exchange of Notes of 21 June 2001, Oslo, EIF: 21 June 2001, UK Treaty Series No. 43 (2001) Cmnd 5258. The Frigg field's development was shut down in 2004.

[135] Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Norway relating to the exploitation of the Statfjord Field Reservoirs and the offtake of petroleum therefrom, Oslo, 16 October 1979, EIF: 30 January 1981, 1254 UNTS 379. The Agreement was amended by the Exchange of Notes of 24 March 1995, Oslo, EIF: 24 March 1995, 1914 UNTS 509. The Statfjord field is still producing.

[136] Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Norway relating to the exploitation of the Murchison Field Reservoir and the offtake of petroleum therefrom, Oslo, 16 October 1979, EIF: 30 January 1981, 1249 UNTS 173. The Murchison field's development was shut down in 2014.

[137] Exchange of notes, Oslo, 30 September 2004 and 4 October 2004, 2309 UNTS 217 (as regards the Boa and Playfair fields). See also a detailed map of Norwegian Petroleum Directorate (NPD) over the fields, available at http://factpages.npd.no/FactPages/default.aspx?nav1=field&nav2=PageView%7cAll&nav3=43658 (last accessed January 2019).

[138] Framework Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Norway concerning Cross-Boundary Petroleum Co-operation, Oslo, 4 April 2005, EIF: 10 July 2007, 2491 UNTS 3. The UK-Norway Framework Agreement's origins lie in a joint industry-government report entitled "Unlocking Value through Closer Relationships" and prepared by Pilot and Kon-Kraft groups (the UK-Norway Report), August 2002, available at https://www.regjeringen.no/globalassets/upload/kilde/oed/rap/2002/0005/ddd/pdfv/159318-report_uk-norway_workgroup_-final.pdf (last accessed January 2019). See UK-Norway Framework Agreement, Preamble, para. 7.

[139] See also Chapters 4 and 7.

[140] Unlike the Enoch, Blane and Flyndre fields (which were tied to existing infrastructure), the Governments of the UK and Norway agreed that the Boa field falls entirely within Norwegian jurisdiction and the Playfair field entirely within UK jurisdiction. See Cameron 2017, *op. cit.*, p. 257.

[141] Guidelines for Development of Transboundary Oil and Gas Fields, 2010, available at https://www.ogauthority.co.uk/media/2721/transboundary-fields-1016.pdf (last accessed January 2019).

deposits. This Framework Agreement also applies to oil and gas resources located within a "co-operation corridor" 60 km either side of the UK-Norway delimitation line (Illustration No. 1).[142]

The UK-Norway exemplar was adopted by the UK and the Netherlands with respect to the Markham gas field.[143] In 1992, the UK and the Netherlands concluded an agreement concerning that transboundary field (Markham UA).[144] The Markham field's production ceased in 2016 and decommissioning of some facilities has started.[145]

1.4.6.2 The Norwegian Sea

In 1981, following a Conciliation Commission's Report,[146] Norway and Iceland concluded a delimitation agreement (Norway-Iceland Agreement of 1981) according to which a joint development zone (JDZ) of approximately 45,470 km^2 was created.[147] The JDZ is located on both the Norwegian and the Icelandic side of the delimitation line (Illustration No. 2).[148] In 2008, the two States signed an agreement on transboundary hydrocarbon deposits (Norway-Iceland Agreement of 2008).[149] The latter agreement aims at elaborating on article 8 of the

[142] UK-Norway Report, *op. cit.*, p. 10. See also N. Bankes, "Recent Framework Agreements for the Recognition and Development of Transboundary Hydrocarbon Resources", *The International Journal of Marine and Coastal Law*, 2014, vol. 29 (4), p. 670.

[143] See the map available at https://ogauthority.maps.arcgis.com/apps/webappviewer/index.html?id=adbe5a796f5c41c68fc762ea137a682e (last accessed January 2019).

[144] Agreement between the Kingdom of the Netherlands and the United Kingdom of Great Britain and Northern Ireland relating to the exploitation of the Markham Field reservoirs and the offtake of petroleum therefrom, The Hague, 26 May 1992, EIF: 3 March 1993, 1731 UNTS 155.

[145] See, for example, Markham ST-1 Decommissioning Programmes, 3 November 2015, available at https://www.centrica.com/sites/default/files/ep/decommissioningprogrammes_ceu-dcm-gma0025-rep-0010.pdf; Markham ST-1 Decommissioning Environmental Impact Assessment, 16 February 2016, available at https://www.centrica.com/sites/default/files/ep/envimpactassessment_ceu-hseq-gma0025-rep-0002.pdf; the detailed video is available at https://www.youtube.com/watch?time_continue=173&v=gC6ojNiberY (last accessed January 2019). All these documents are related to the decommissioning of facilities located on the CS of the UK.

[146] Conciliation Commission on the Continental Shelf Area between Iceland and Jan Mayen: Report and Recommendations to the governments of Iceland and Norway, decision of June 1981 (Report of the Norway-Iceland Conciliation Commission), 37 UNRIAA, pp. 1-34, available at http://legal.un.org/riaa/cases/vol_XXVII/1-34.pdf (last accessed January 2019). There is also Agreement between Norway and Iceland on Fishery and Continental Shelf Questions, Reykjavik, 28 May 1980, EIF: 13 June 1980, 2124 UNTS 223.

[147] Agreement between Norway and Iceland on the continental shelf between Iceland and Jan Mayen, Oslo, 22 October 1981, EIF: 2 June 1982, 2124 UNTS 262, art. 2; Report of the Norway-Iceland Conciliation Commission, *op. cit.*, section VII (1) and (2). See also Agreed Minutes concerning the right of participation pursuant to Articles 5 and 6 of the Agreement of 22 October 1981 between Norway and Iceland on the continental shelf between Iceland and Jan Mayen, Reykjavik, 03 November 2008, EIF: 03 November 2008, 2959 UNTS, registration number 37026.

[148] Report of the Norway-Iceland Conciliation Commission states that 72 % of the JDZ lies on the Norwegian side and 27 % on the Icelandic side of the delimitation line, *op. cit.*, section VII (2). In the literature the proportion 61%:39% has been provided, see, for example, C. Schofield, "Defining areas for joint development in disputed areas", in: W. Shicun and N. Hong (eds), *Recent Development in the South China Sea Dispute: The Prospect of a Joint Development Regime*, Routledge, 2014, p. 81.

[149] Agreement between Norway and Iceland concerning transboundary hydrocarbon deposits, Reykjavik, 03 November 2008, EIF: 03 October 2011, 2888 UNTS 1.

Norway-Iceland Agreement of 1981 and applies to a hydrocarbon deposit that straddles: (a) the common EEZ/(outer) CS boundary; (b) the JDZ and the Icelandic shelf beyond the JDZ; and (c) the JDZ and the Norwegian shelf beyond the JDZ. The Norway-Iceland Agreement of 2008 addresses these scenarios first by developing the rules for (a) and then stipulating that these rules apply *mutatis mutandis* to the (b) and (c).[150]

While Iceland has already issued a number of exploration and production licenses in its part of the JDZ (known as the Dreki/Dragon Area),[151] Norway is in the process of opening the Norwegian part of the JDZ.[152]

1.4.6.3 The Barents Sea

In 2010, Norway and Russia signed a delimitation treaty in the Barents Sea (Norway-Russia Treaty),[153] which ended a 40-year dispute related to the specific coordinates of any such delimitation line and lifted the moratorium on exploration and exploitation of the CS. Although this Treaty is mainly aimed at establishing a maritime boundary between the two States, it also addresses the issue of straddling hydrocarbon resources.[154] To date, no such resources have been discovered in the Barents Sea. However, there is a high probability that hydrocarbon deposits may straddle the established maritime boundary (Illustration No. 3).[155]

[150] *Ibid.*, art. 8. See also N. Bankes, "The Regime for Transboundary Hydrocarbon Deposits in the Maritime Delimitation Treaties and Other Related Agreements of Arctic Coastal States", *Ocean Development & International Law*, 2016, vol. 47 (2), pp. 148-149.

[151] According to the information on the Icelandic National Energy Authority's webpage, there are no active licenses. The three issued licenses were relinquished in 2015, 2017 and 2018, respectively, available at http://www.nea.is/oil-and-gas-exploration/oil--gas-licensing/licences/ (last accessed January 2019). See also D. Fjærtoft et al., "Unitization of petroleum fields in the Barents Sea: Towards a common understanding?", *Arctic Review on Law and Politics*, 2018, vol. 9, p. 82.

[152] According to the information provided by the Norwegian Petroleum Directorate on its webpage, Norway currently collects geological data relating to the area around Jan Mayen. See, for example, publication dated 2 July 2013, available at http://www.npd.no/en/Publications/Resource-Reports/2013/Chapter-7/ (last accessed January 2019).

[153] Treaty between the Russian Federation and the Kingdom of Norway concerning maritime delimitation and cooperation in the Barents Sea and the Arctic Ocean, Murmansk, 15 September 2010, EIF: 7 July 2011, 2791 UNTS 36.

[154] *Ibid.*, art. 5 and Annex II.

[155] In the report submitted by the Norwegian Ministry of Petroleum and Energy to the Parliament (white paper No. 36 2012-2013) concerning the opening of the southeast part of the Barents Sea for petroleum activities, the Ministry gave an example of the Fedinsky High, which is likely to be a cross-border and mainly gas reservoir. Meld. St. 36 (2012-2013), Nye muligheter for Nord-Norge – åpning av Barentshavet sørøst for petroleumsvirksomhet, available at https://www.regjeringen.no/no/dokumenter/meld-st-36-20122013/id725083/ (last accessed January 2019).

1.4.6.4 The Caribbean Sea

In 2007, Trinidad and Tobago (T&T) and Venezuela entered into a framework treaty dealing with the issue of transboundary hydrocarbon deposits (Venezuela-T&T Framework Treaty).[156] Subsequently, they concluded a unitization agreement concerning the Loran-Manatee transboundary reservoir (Loran-Manatee UA).[157] Besides the Loran-Manatee reservoir, there are also the Kapok-Dorado and Manakin-Cocuina fields that extend across the delimitation line (Illustration No. 4). In February 2015, a unitization agreement concerning the Manakin-Cocuina field was signed.[158] Text of this agreement is not publicly available. There is no information as to whether Venezuela and T&T have been able to reach a unitization agreement with respect to the Kapok-Dorado field. The only information is that the two States have authorized studies, which are being conducted by the Kapok-Dorado Joint Reservoir Technical Working Group.[159] As of the end of 2018, production from the cross-border hydrocarbon reservoirs has not yet commenced.[160]

The delimitation treaty between Jamaica and Colombia (Colombia-Jamaica Treaty)[161] is worth mentioning briefly. Apart from establishing a Joint Regime Area (JRA) where the Parties were unable to agree on delimitation, this Treaty also drew a delimitation line (Illustration No. 5).[162]

[156] Framework Treaty relating to the unitisation of hydrocarbon reservoirs that extend across the delimitation line between the Republic of Trinidad and Tobago and the Bolivarian Republic of Venezuela, Caracas, 20 March 2007, EIF: 16 August 2010, 2876 UNTS, registration number 50196.
[157] Unitisation Agreement for the exploitation and development of hydrocarbon reservoirs of the Loran-Manatee field that extends across the delimitation line between the Republic of Trinidad and Tobago and the Bolivarian Republic of Venezuela, Caracas, 16 August 2010, EIF: 16 August 2010, 2876 UNTS, registration number I-50197.
[158] K. Ramnarine, "Natural Gas in Trinidad and Tobago", the post is published in the KBH Energy Center blog, 19 October 2016, available at https://www.kbhenergycenter.utexas.edu/2016/10/19/natural-gas-in-trinidad-and-tobajo/. See also information on the webpage of Equinor, available at https://www.equinor.com/no/where-we-are/venezuela.html (last accessed January 2019).
[159] See, for example, Press Release of the Ministry of Energy and Energy Industries of T&T, 8 November 2017, available at http://www.energy.gov.tt/wp-content/uploads/2017/11/MEEI-Hosts-Meeting-with-officials-from-the-Ministry-of-the-People%E2%80%99s-Power-for-Petroleum-Venezuela..pdf (last accessed January 2019).
[160] According to the information available (*ibid.*), the companies on both sides of the delimitation line agreed on a draft Unit Operating Agreement, which is required under article 3.4 of the Venezuela-T&T Framework Treaty and subject to the Parties' approval. However, pursuant to article 3.6 of the Framework Treaty, production from any cross-border reservoir cannot commence until a unit operator appointed by the Unit Operating Agreement will submit a development plan for the cross-border reservoir.
[161] Maritime delimitation treaty between Jamaica and the Republic of Colombia, Kingston, 12 November 1993, EIF: 14 March 1994, 1776 UNTS 17.
[162] *Ibid*., arts. 1 and 3.

Another treaty concluded in the Caribbean Sea is a treaty between Barbados and Guyana (Barbados-Guyana Treaty).[163] This treaty created a cooperation zone in an area of overlap between the EEZs of the Parties (Illustration No. 6).[164]

1.4.6.5 The Gulf of Mexico

The US and Mexico signed a number of treaties establishing the maritime boundaries between them.[165] There are two "gaps" of the CS beyond 200 nm: a "western gap" and an "eastern gap" (Illustration No. 7). In 2000, the US and Mexico concluded a treaty delimiting the extended CS in the western gap.[166] This treaty recognized the possible existence of transboundary hydrocarbon reservoirs and established a 2.8 nm area (1.4 nm on each side of the boundary line) within which neither drilling nor exploitation had to be conducted during a period of 10 years.[167] The Parties had also committed themselves to seek to reach an agreement for the efficient and equitable exploitation of such transboundary reservoirs.[168] In 2012, the US and Mexico adopted a legal framework dealing with transboundary hydrocarbon reservoirs (US-Mexico Agreement).[169] It is important to note that the US-Mexico Agreement applies not only to hydrocarbon fields straddling the delimitation line in the western gap, but also to hydrocarbon deposits which extend across the maritime boundaries outside this gap, including the future boundary in the eastern gap.[170] To date, no hydrocarbon reservoirs are determined to be transboundary in the terms of the US-Mexico Agreement.[171]

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[163] Exclusive Economic Zone Co-operation Treaty between the State of Barbados and the Republic of Guyana concerning the exercise of jurisdiction in their exclusive economic zones in the area of bilateral overlap within each of their outer limits and beyond the outer limits of the exclusive economic zones of other States, London, 2 December 2003, EIF: 5 May 2004, 2277 UNTS 201.

[164] *Ibid.*, Preamble and art. 2.

[165] There are Treaty to resolve pending boundary differences and maintain the Rio Grande and Colorado River as the international boundary between the United Mexican States and the United States of America, Mexico City, 23 November 1970, EIF: 18 April 1972, 830 UNTS 55, and Treaty on maritime boundaries between the United Mexican States and the United States of America, Mexico City, 4 May 1978, EIF: 13 November 1997, 2143 UNTS 405.

[166] Treaty between the Government of the United Mexican States and the Government of the United States of America on the delimitation of the continental shelf in the western Gulf of Mexico beyond 200 nautical miles, Washington, 9 June 2000, EIF: 17 January 2001, 2143 UNTS 417.

[167] *Ibid.*, art. 4 (1). See Chapter 4.

[168] *Ibid.*, art. 5 (1) (b).

[169] Agreement between the United Mexican States and the United States of America concerning transboundary hydrocarbon reservoirs in the Gulf of Mexico, Los Cabos, 20 February 2012, EIF: 18 July 2014, N/A UNTS, registration number 52496.

[170] *Ibid.*, arts. 1 and 2. The US-Mexico Agreement specifies that the entirety of transboundary hydrocarbon fields is to be located beyond 9 nm from the coastline.

[171] The procedure for determination of whether a hydrocarbon reservoir is transboundary or not is discussed in Chapter 4.

1.4.6.6 The North-west Atlantic

Saint Pierre and Miquelon are two small French islands situated at a short distance from the south coast of Canada's province of Newfoundland and Labrador. Being unable to delimit the EEZ, Canada and France agreed to submit this dispute to an ad hoc Arbitral Tribunal, which delivered its decision in 1992.[172] The Tribunal established the permanent boundary between Canada and France for all purposes.[173] Canada approached France in 1998 to suggest that the two countries enter into an agreement to manage possible transboundary hydrocarbon fields.[174] In 2005, Canada and France concluded an agreement governing the exploration and exploitation of transboundary hydrocarbon resources (Canada-France Agreement).[175] According to article 21, the Canada-France Agreement enters into force following notification that "all necessary internal requirements have been fulfilled". While France has already ratified the Canada-France Agreement, Canada still has to complete its domestic requirements.[176] However, it is evident that Canada puts licensees on notice of the terms of this Agreement.[177]

The Canada-France Agreement deals with the likelihood of discovering hydrocarbon deposits straddling the maritime boundary between Canada and France.[178] This maritime boundary represents the lines established by the Agreement between Canada and France on their Mutual Fishing Relations[179] and the Tribunal's Award of 1992[180] and has the shape of a "key" or a "baguette" (Illustration No. 8).[181]

It is worth noting that since the conclusion of the Canada-France Agreement, the two Parties have filed overlapping extended CS claims with the CLCS under article 76 (8) of the UNCLOS.[182]

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[172] *Case concerning the Delimitation of Maritime Areas between Canada and the French Republic*, Award, 10 June 1992, the decision and two dissenting opinions were printed in 31 ILM 1149-1219 (1992).
[173] *Ibid.*
[174] Comments and Observations received from Governments, 2009, p. 109, *supra* note 125.
[175] Agreement between the Government of Canada and the Government of the French Republic relating to the Exploration and Exploitation of Transboundary Hydrocarbon Fields, Paris, 17 May 2005, EIF: not in force, reproduced in N. Bankes, Report Number 1-2 (2) "Canada-France" in: C. G. Lathrop (ed), *International Maritime Boundaries*, 2017, pp. 16-44.
[176] *Ibid.*, p. 3.
[177] *Ibid.*
[178] Canada-France Agreement, Preamble.
[179] Agreement between Canada and France on their Mutual Fishing Relations, Ottawa, 27 March 1972; EIF: 27 March 1972, 862 UNTS 214.
[180] Canada-France Agreement, art. 1.
[181] Bankes, Report Number 1-2 (2) "Canada-France", *op. cit.*, pp. 1-2.
[182] *Ibid*., p. 12, footnote 11.

1.4.6.7 The Timor Sea

In December 1975, Indonesia occupied Timor-Leste.[183] While Timor-Leste was under Indonesian control, in 1989, Australia entered into a treaty with Indonesia (Timor Gap Treaty).[184]

Following the UN-sponsored referendum, on 20 May 2002, Timor-Leste (re)gained its independence.[185] On the same day, Timor-Leste and Australia signed a treaty in the Timor Sea (Timor Sea Treaty or TST),[186] which replaced the Timor Gap Treaty, and a Memorandum of Understanding concerning an International Unitization Agreement for the Greater Sunrise field.[187] The TST established a Joint Petroleum Development Area (JPDA) to enable petroleum activities in a part of the Timor Sea where maritime claims of Australia and Timor-Leste overlapped(Illustration No. 9),[188] in conjunction with a three-tiered administrative structure to govern this area.[189] At the conclusion of the TST, the Parties were aware of the existence of two petroleum fields (the Sunrise and Troubadour gas fields, collectively known as 'Greater Sunrise') extending across the eastern boundary of the JPDA (Illustration No. 9).[190] In 2003, Timor-Leste and Australia signed a unitization agreement concerning these straddling fields (Greater Sunrise UA).[191] It is important to note that as of the end of 2018, the Greater Sunrise fields have not yet been developed.

In 2006, Timor-Leste and Australia concluded a treaty on Certain Maritime Arrangements in the Timor Sea (CMATS Treaty) which, *inter alia*, divided revenues from the production of oil and gas deposits equally between the Parties (instead of the 90:10 basis (in favor of Timor-Leste) under the TST) and imposed a 50-year moratorium on maritime boundary negotiations

[183] This information is taken from the Decision on Australia's Objections to Competence, para. 7, available at https://pcacases.com/web/sendAttach/1921 (last accessed January 2019).
[184] *Ibid*. Treaty on the zone of cooperation in an area between the Indonesian province of East Timor and Northern Australia, 11 December 1989, EIF: 9 February 1991, no longer in force, 1654 UNTS 105.
[185] The referendum was held on 30 August 1999 (*ibid.*, para. 8).
[186] Timor Sea Treaty between the Government of East Timor and the Government of Australia, Dili, 20 May 2002, EIF: 2 April 2003, 2258 UNTS 3.
[187] Memorandum of Understanding between the Government of the Democratic Republic of East Timor and the Government of Australia concerning an International Unitization Agreement for the Greater Sunrise field, 20 May 2002, available at http://www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/AUS-TLS2002SUN.PDF (last accessed January 2019).
[188] TST, art. 3.
[189] TST, art. 6. The issue is further examined in Chapter 6.
[190] *Ibid*., Annex E and MoU.
[191] Agreement between the Government of Australia and the Government of the Democratic Republic of Timor-Leste relating to the Unitisation of the Sunrise Troubadour Fields, Dili, 6 March 2003, EIF: 23 February 2007, 2483 UNTS 317.

or claims.[192] Several years after the conclusion of the CMATS Treaty, Timor-Leste received information that Australia had interfered in the negotiation process.[193] On that basis, Timor-Leste notified Australia that it considers the CMATS Treaty to be null and void, and therefore the TST continues to operate unamended by the CMATS Treaty.[194] Since Australia rejected the view of Timor-Leste, in 2013, the latter instituted arbitral proceedings against the former at the Permanent Court of Arbitration (PCA), under paragraph (b) of Annex B to article 23 of the TST, seeking a declaration that the TST had not been modified by the CMATS Treaty.[195] The second arbitration filed by Timor-Leste in September 2015 challenged Australia's taxation rights over a subsea pipeline.[196]

On 11 April 2016, Timor-Leste separately requested UNCLOS compulsory conciliation in relation to its maritime boundary with Australia.[197]

In January 2017, Timor-Leste, Australia and the Conciliation Commission issued two joint statements.[198] According to these statements, the Parties agreed on a series of actions in order to "facilitate the conciliation process and create the conditions conducive to the achievement of an agreement on permanent maritime boundaries in the Timor Sea".[199] As part of the actions, on 10 January 2017, Timor-Leste formally notified Australia of the termination of the CMATS Treaty. Consequently, the CMATS Treaty ceased on 10 April 2017 pursuant to its terms.[200] The

[192] Treaty between Australia and East Timor on certain maritime arrangements in the Timor Sea, Sydney, 12 January 2006, EIF: 27 June 2006, 2483 UNTS 359, arts. 4 and 5.
[193] Conciliation between The Democratic Republic of Timor-Leste and The Commonwealth of Australia, Opening Session Transcript, 29 August 2016, p. 32, lines 17-24, available at https://pcacases.com/web/sendAttach/1889 (last accessed January 2019).
[194] *Ibid.*
[195] *Ibid.*, p. 33, lines 6-11. See also *Arbitration under the Timor Sea Treaty (Timor-Leste v. Australia)*, 2013, available at https://pcacases.com/web/view/37 (last accessed January 2019). Australia however argued that the real reason of the Timor-Leste's desire to terminate the CMATS Treaty is Timor-Leste's displeasure with the proposal of the contractors on how a pipeline from the Greater Sunrise shall lay. See *supra* note 193, pp. 85-89.
[196] *Arbitration under the Timor Sea Treaty (Timor-Leste v. Australia)*, 2015, available at https://pcacases.com/web/view/141 (last accessed January 2019).
[197] UNCLOS, art. 298 (1) (a) (i) and Annex V, section 2; *Conciliation between The Democratic Republic of Timor-Leste and The Commonwealth of Australia*, available at https://pcacases.com/web/view/132 (last accessed January 2019). On 19 September 2016, the Conciliation Commission held that it was competent to continue with the conciliation process and that there were no issues of admissibility or comity that precluded the Commission from doing so (see Decision on Australia's Objections to Competence, 19 September 2016, available at https://pcacases.com/web/sendAttach/1921 (last accessed January 2019)).
[198] Joint Statement by the Governments of Timor-Leste and Australia and the Conciliation Commission Constituted Pursuant to Annex V of the United Nations Convention on the Law of the Sea, 9 January 2017, available at https://pca-cpa.org/wp-content/uploads/sites/175/2017/01/20170109-Trilateral-Joint-Statement.pdf; Joint Statement by the Governments of Timor-Leste and Australia and the Conciliation Commission Constituted Pursuant to Annex V of the United Nations Convention on the Law of the Sea, 24 January 2017, available at https://pca-cpa.org/wp-content/uploads/sites/175/2017/01/20170124-Trilateral-Joint-Statement.pdf (last accessed January 2019).
[199] *Ibid.*
[200] See Joint Statement of 24 January 2017, *supra* note 198; CMATS Treaty, art. 12 (2).

statements also disclosed Timor-Leste's decision to withdraw the two arbitrations initiated against Australia under the TST.[201] As regards the TST, Timor-Leste and Australia agreed to retain it and its supporting regulatory framework in force until a final delimitation has come into effect.[202] The States also confirmed their commitments to negotiating permanent maritime boundaries.

The work of the Conciliation Commission resulted in the adoption of a maritime boundaries treaty between Australia and Timor-Leste in the Timor Sea (Timor Sea Boundary Treaty) in March 2018.[203] This treaty established both an EEZ boundary and a CS boundary (Illustrations No. 10 and 11).[204] The Timor Sea Boundary Treaty provides that the TST and the Greater Sunrise UA will terminate once it enters into force.[205] It is interesting to note that the established CS boundary runs only through the Sunrise field (and not through the Troubadour field, per the JPDA's former boundary).[206] Nevertheless, a special regime created by the Boundary Treaty applies to both fields within a maritime area equal to the outline of the Greater Sunrise Unit Area established under the Greater Sunrise UA (called as "Greater Sunrise Special Regime Area").[207]

Pending the Timor Sea Boundary Treaty entering into force, the Parties have agreed that the TST and its regulatory framework continue to apply. It is also important to recall article 22 of the TST, which states that ongoing petroleum activities "shall continue even if the Treaty is no longer in force under conditions equivalent to those in place under the Treaty".[208] This provision is relevant in the context of the ongoing operations with respect to the Bayu-Undan gas field (currently located in the CS of Timor-Leste, but in the former JPDA).

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[201] On 20 March 2017, the PCA issued an order that terminated the arbitral proceedings under the Timor Sea Treaty. See the PCA's termination order, 20 March 2017, available at https://pcacases.com/web/sendAttach/2110 (last accessed January 2019).

[202] Apart from that, the TST also provides that it may apply for 30 years from the date of its entry into force, namely until 2033.

[203] Treaty between Australia and the Democratic Republic of Timor-Leste Establishing Their Maritime Boundaries in the Timor Sea, New York, 6 March 2018, EIF: not in force, available at http://dfat.gov.au/geo/timor-leste/Documents/treaty-maritime-arrangements-australia-timor-leste.pdf (last accessed January 2019). In accordance with article 13 of this Treaty, the Treaty enters into force when Australia and Timor-Leste notify each other "in writing through diplomatic channels that their respective requirements for entry into force of this Treaty have been fulfilled". See also Joint media release of the Minister for Foreign Affairs and the Minister for Resources and Northern Australia, "Bill introduced to implement Treaty with Timor-Leste", 28 November 2018, available at https://www.minister.industry.gov.au/ministers/canavan/media-releases/bill-introduced-implement-treaty-timor-leste (last accessed January 2019).

[204] Timor Sea Boundary Treaty, arts. 2- 4.

[205] *Ibid.*, art. 9.

[206] *Ibid.*, Annex C.

[207] *Ibid.*, art. 7 and Annexes B and C.

[208] See also article 27 of the Greater Sunrise UA and Annex D of the Timor Sea Boundary Treaty.

The entering into force of the Timor Sea Boundary Treaty will change the apportionment of hydrocarbons produced from the Greater Sunrise Special Regime Area and the regulatory and institutional landscapes in the Timor Sea. These issues are further discussed in Chapter 6 of this thesis. Although the TST will soon no longer be in force, it is a good example of the cooperative management of commercially exploitable hydrocarbon resources in an undelimited maritime area. As shown further in Chapter 6, Mauritius and the Seychelles have established the similar model of cooperation in an area of overlapping maritime claims.[209]

1.4.6.8 The East China Sea

In 1974, Japan and the Republic of Korea reached an agreement on the joint exploration and development of petroleum resources in a maritime area of their overlapping claims (Japan-S. Korea Agreement).[210] In this area, the two States established a Joint Development Zone (JDZ) (Illustration No. 12).[211] According to article XXXI (2), the Japan-S. Korea Agreement shall remain in force for a period of 50 years (i.e., until 2028) and shall continue to apply thereafter until it is terminated. Either Party may, by giving 3-year written notice to the other Party, terminate that Agreement at the end of the 50-year period or at any time thereafter.[212] The only possibility of terminating the Japan-S. Korea Agreement before the end of the 50-year period is the acknowledgment by both Parties that the "natural resources [of the JDZ] are no longer economically exploitable".[213] To date, there is no information that Japan or S. Korea have expressed their desire to terminate the Agreement between them. It is however noteworthy that there is little commercial production in the JDZ due to the very poor petroleum potential.[214] Schofield and Townsend-Gault have noted that "the fact that China also claims part of the [JDZ] might well have proved to be a significant complication had seabed resources actually been discovered".[215]

[209] See Chapter 6.12 in this regard.
[210] Agreement between Japan and the Republic of Korea concerning Joint Development of the Southern Part of the Continental Shelf Adjacent to the Two Countries, Seoul, 30 January 1974, EIF: 22 June 1978, 1225 UNTS 113.
[211] *Ibid.*, art. II.
[212] *Ibid.*, art. XXXI (3).
[213] *Ibid.*, art. XXXI (4).
[214] C. Acheson, "Disputed Claims in the East China Sea: An Interview with James Manicom", The National Bureau of Asian Research, 25 July 2011, available at http://www.nbr.org/research/activity.aspx?id=159 (last accessed January 2019).
[215] C. H. Schofield and I. Townsend-Gault, "Choppy waters ahead in "a sea of peace cooperation and friendship"?: Slow progress towards the application of maritime joint development to the East China Sea", *Marine Policy*, 2011, vol. 35 (1), p. 29.

In June 2008, Japan signed an arrangement with another neighbor, China (China titles this arrangement as "principled consensus", while Japan "joint press statement").[216] Japan and China established a small zone adjacent to the JDZ between Japan and S. Korea (Illustration No. 13) and committed themselves to continue negotiations further towards implementing the arrangement.[217] Currently, there is little progress in this respect and no sufficient material is available for analysis.

1.4.6.9 The Gulf of Thailand

Several States bordering the Gulf of Thailand have reached arrangements in disputed maritime areas. These arrangements are Memoranda of Understanding between Thailand and Malaysia, including a subsequent agreement between them,[218] between Malaysia and Vietnam,[219] and between Thailand and Cambodia (Illustrations No. 14-17).[220] They are considered in Chapter 6 of this thesis.

It is important to note that a relatively small area within the Joint Development Area established by Malaysia and Thailand is also claimed by Vietnam. Under Article 2 of the delimitation agreement between Thailand and Vietnam of 1997, the Parties are required to enter into negotiation with Malaysia in order to settle this tripartite overlapping continental claim area (TOCCA).[221] Malaysia, Thailand and Vietnam are currently in negotiation on the cooperative

[216] *Ibid.* M. Hayashi, "The 2008 Japan-China Agreement on Cooperation for the Development of East China Sea Resources", Presentation at the 35th Annual Conference on the Law of the Sea and Ocean Policy, June 2011, available at http://www.virginia.edu/colp/pdf/Bali-Hayashi.pdf (last accessed January 2019).
[217] *Ibid.*
[218] Memorandum of Understanding between Malaysia and the Kingdom of Thailand on the Establishment of The Joint Authority for the Exploitation of the Resources of the Sea Bed in a Defined Area of the Continental Shelf of the Two Countries in the Gulf of Thailand, Chiang Mai, Thailand, 21 February 1979, EIF: 24 October 1979. The text is available at https://www.mtja.org/assets/pdf/en/memorandum_en.pdf (last accessed January 2019). Agreement between the Government of Malaysia and the Government of the Kingdom of Thailand on the Constitution and Other Matters relating to the Establishment of the Malaysia-Thailand Joint Authority, Kuala Lumpur, 30 May 1990, EIF: N/A, reproduced in J. I. Charney and L. M. Alexander (eds), *IMB*, vol. 1, 1993, pp. 1111-1123. The text is available at https://www.mtja.org/assets/pdf/en/agreement_en.pdf (last accessed January 2019).
[219] Memorandum of Understanding between Malaysia and the Socialist Republic of Vietnam for the Exploration and Exploitation of Petroleum in a Defined Area of the Continental Shelf Involving the Two Countries, Kuala Lumpur, 5 June 1992, EIF: 4 June 1993, reproduced in J. I. Charney and L. M. Alexander (eds), *IMB*, vol. 3, 2004 pp. 2341-2344.
[220] Memorandum of Understanding between the Royal Government of Cambodia and the Royal Thai Government regarding the Area of their Overlapping Claims to the Continental Shelf, Phnom Penh, 18 June 2001, EIF: N/A, reproduced in Report No. 5-24, "Cambodia-Thailand" in: D. A. Colson and R. W. Smith (eds), *IMB*, vol. 5, 2005, pp. 3743-3744.
[221] Agreement between the Government of the Kingdom of Thailand and the Government of the Socialist Republic of Viet Nam on the delimitation of the maritime boundary between the two countries in the Gulf of Thailand, 9 August 1997, EIF: 28 February 1998, reproduced in J. I. Charney and R. W. Smith (eds), *IMB*, vol. IV, 2002, pp. 2692-2694. For understanding the location of the TOCCA within the Malaysia-Thailand Joint Development Area, see the last picture at https://www.mtja.org/potential.php (last accessed January 2019) where the TOCCA is shaded in grey.

management of the TOCCA.[222] No arrangement providing, for example, for trilateral joint development is not yet reached. Pending a solution regarding the TOCCA, no activity is conducted in this area.

1.4.6.10 The Gulf of Guinea

In an area of overlapping claims to the EEZ, Nigeria and São Tomé and Príncipe (STP) signed a 45-year treaty on the joint exploration and exploitation of petroleum and other non-petroleum resources (Nigeria-STP Treaty).[223] This Treaty established a Joint Development Zone (JDZ) and a two-tiered administrative structure (Illustrations No. 18 and 19).[224] The legal regime of the JDZ comprises a number of instruments such as the mentioned Treaty between the two countries, tax and petroleum regulations,[225] environmental regulations and production sharing contracts (PSCs).[226] The JDZ is currently divided into nine blocks, with a total area of 8 429 km^2, of which six blocks are already allocated to petroleum companies.[227]

Both Nigeria and STP are members of the Extractive Industries Transparency Initiative (EITI).[228] The Second EITI Report concerning STP published in 2015[229] shows that there are a number of PSCs concluded between the Authority and different companies with respect to the blocks.[230] Usually a PSC in the JDZ has a term of 28 years, including 8 years of exploration

[222] See, for example, T. T. Thuy, "Tightrope Walking over the Sea of Trouble: Vietnam's Foreign Policy, Maritime Strategy, and Relations with China and the United States", in: D. B.H. Denoon (ed), *China, The United States, and the Future of Southeast Asia: U.S.-China Relations*, vol. II, New York University Press, 2017, p. 188.

[223] Treaty between the Federal Republic of Nigeria and the Democratic Republic of Sao Tome and Principe on the Joint Development of Petroleum and other Resources, in respect of Areas of the Exclusive Economic Zone of the Two States, Abuja, 21 February 2001, EIF: 16 January 2003, reproduced in J. I. Charney, D. A. Colson and L. M. Alexander (eds), *International Maritime Boundaries*, vol. 5, 2005, pp. 3649-3682.

[224] *Ibid.*, art. 2.

[225] Nigeria-São Tomé and Príncipe Joint Development Authority Petroleum Regulations of 2003, available at http://www.grip.st/docs/26---%20DT-26_Autoridade%20%20Conjunto%20entre%20a%20Zona%20de.pdf (last accessed January 2019). Tax Regulations are available at http://nstpjda.org/wp-content/uploads/2017/10/Petroleum-Tax-Regulation-edited.pdf (last accessed January 2019). According to the information available at http://nstpjda.org/legal/, the Petroleum Regulations (of 2003) were amended in 2015. Nevertheless, these amendments are not available.

[226] See, for example, Cameron 2017, *op. cit.*, pp. 247-248. According to the information found at http://nstpjda.org/legal/, initially Environmental Guidelines were adopted in 2005, which were subsequently amended and changed to Environmental Regulations in 2015.

[227] EITI Second Report, note 229, p. 38.

[228] The Extractive Industries Transparency Initiative (EITI) was established in 2002 and comprises an alliance of governments, companies, civil society groups, investors and international organizations. The EITI aims to strengthen governance by improving transparency and accountability in the extractive industry sector through the verification and full publication of company payments and government revenues from oil, gas, and mining. The EITI's website: https://eiti.org/ (last accessed January 2019).

[229] Second EITI Report, available at https://eiti.org/sites/default/files/documents/2014_sao_tome_and_principe_eiti_report_en.pdf (last accessed January 2019).

[230] *Ibid.*, pp. 9 and 38. The first EITI Report mentions only four blocks (1 to 4) in respect of which PSCs have been signed, p. 19, available at https://eiti.org/sites/default/files/documents/2003-2013_sao_tome_and_principe_eiti_report_en.pdf (last accessed January 2019).

and 20 years of development and production.[231] However, as underlined in the Second EITI Report, there is no available information on the status of petroleum activities conducted in these blocks or results achieved. Moreover, the full texts of the existing PSCs are not publicly accessible.[232]

The Report also discloses that several petroleum companies have withdrawn from the JDZ because their findings were not in sufficient quantities to enable commercial production.[233] Nigeria and STP would appear to commit significant resource to making the JDZ attractive for carrying out petroleum activities.[234] With no production in the JDZ, the main sources of revenue constitute, *inter alia*, signature bonuses, different fees and sales of seismic data. Since the establishment of the JDZ, 43% of all revenue earned from that zone has been spent on the operating costs of the Authority managing this zone.[235]

In 2000, Nigeria and Equatorial Guinea concluded a delimitation treaty, which created a "cut-out" in the boundary line in order to leave a well related to a cross-border hydrocarbon field (Ekanga-Zafiro field) on the Nigerian side (Illustration No. 20).[236] After the conclusion of this delimitation treaty, the States reached a protocol establishing the unitization principles for the Ekanga-Zafiro field (Nigeria-Equatorial Guinea Unitization Protocol).[237] Subsequent commercial agreements between Nigeria and Equatorial Guinea are not publicly available.

Angola (Cabinda Province) and the Republic of the Congo (Congo) also signed a unitization protocol (Angola-Congo Unitization Protocol) with respect to hydrocarbon fields straddling the blocks issued by Angola and Congo (mainly, in respect of the Lianzi oil field, see Illustration No. 21).[238] Although that Protocol refers to the term 'unitization', there is no maritime boundary

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[231] *Ibid.*, pp. 38 and 42.
[232] *Ibid.*, p. 40.
[233] *Ibid.*, p. 40. See also O. Onwuemenyi, "15 years after, Nigeria-Sao Tome JDZ remains unproductive", SweetCrude Reports, May edition 2017, p. 16, available at https://issuu.com/sweetcrude/docs/may_edition_2017 (last accessed January 2019).
[234] *Ibid.*
[235] Second EITI Report, *supra* note 229, p. 9. See Chapter 6.7.
[236] Treaty between the Federal Republic of Nigeria and the Republic of Equatorial Guinea concerning their Maritime Boundary, Malabo, 23 September 2000, EIF: 3 April 2002, 2205 UNTS 325. See more D. C. Smith, "Equatorial Guinea-Nigeria", Report No. 4-9 (2), in: D.A. Colson and R.W. Smith (eds), *IMB*, vol. V, 2005, pp. 3624-3626.
[237] Protocol on Implementation of Article 6.2 of the Treaty between the Federal Republic of Nigeria and the Republic of Equatorial Guinea Concerning their Maritime Boundary, Abuja, 2 April 2002, EIF: 29 June 2002, 2220 UNTS 410.
[238] Protocol between the Republic of Angola and the Republic of the Congo on the Unitization of Prospects 14K and A-IMI, Luanda, 10 September 2001, EIF: Angola ratified on 21 May 2002, there is no record of the Republic of the Congo's ratification, reproduced in D.C. Smith and C. Dolan, "Angola-Republic of Congo", Report No. 4-16, in: D. A. Colson and R.W. Smith (eds), *IMB*, vol. VI, 2011, pp. 4289-4295.

established between the States.[239] Angola and Congo entered into three additional agreements implementing the Unitization Protocol. However, these agreements are not publicly available.[240]

Angola (Cabinda Province) and the Democratic Republic of the Congo (DRC) have not delimited their maritime boundaries. Instead, these States concluded an agreement (Angola-DRC Agreement) and created a Common Interest Zone (Illustration No. 22).[241]

1.4.6.11 The Indian Ocean

In 2008, Mauritius and the Seychelles made a joint submission to the CLCS in respect of the Mascarene Plateau region, an area beyond 200 nm from the baselines from which the breadth of the territorial sea of the two states is measured.[242] In 2011, the Commission adopted its recommendations confirming the maritime entitlements of both States to this area of the extended CS.[243] In 2012, Mauritius and the Seychelles signed two treaties applicable to the shared extended CS (Illustration No. 23). The first treaty confirmed the intention of the two countries to exercise their sovereign rights to explore and exploit jointly.[244] The second treaty (Seychelles-Mauritius Treaty)[245] established a joint management area covering the shared extended CS.[246] These two treaties are the world's first dealing with the cooperative management of an area of overlapping claims to the CS beyond 200 nm. It is likely that other neighboring States with an undelimited extended CS will use the interim arrangements in the Indian Ocean as a model.[247]

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[239] *Ibid.* Preamble: "The Republic of Angola and the Republic of the Congo also agree that the process of Unitization should not be used with the objective of delimiting the maritime borders between the two States".
[240] Information about these three agreements is found in "Angola-Republic of Congo" Report, *op. cit.*
[241] Agreement on the Exploration and Production of Hydrocarbons in the Common Interest Maritime Zone between the Democratic Republic of the Congo and the Government of the Republic of Angola, Luanda, 30 July 2007, EIF: 23 July 2008, reproduced in "Angola- Democratic Republic of the Congo", Report No. 4-15, D.A. Colson and R.W. Smith (eds), *IMB*, vol. VI, 2011, pp. 4277-4280.
[242] See http://www.un.org/depts/los/clcs_new/submissions_files/submission_musc.htm (last accessed January 2019).
[243] *Ibid.*
[244] Treaty concerning the Joint Exercise of Sovereign Rights over the Continental Shelf in the Mascarene Plateau Region between the Government of the Republic of Mauritius and the Government of the Republic of Seychelles, Vacoas, 13 March 2012, EIF: 18 June 2012, Law of the Sea Bulletin No. 79, 2013, pp. 26-40.
[245] Treaty concerning the Joint Management of the Continental Shelf in the Mascarene Plateau Region between the Government of the Republic of Mauritius and the Government of the Republic of Seychelles, Vacoas, 13 March 2012, EIF: 18 June 2012, Law of the Sea Bulletin No. 79, 2013, pp. 41-52.
[246] *Ibid.*, art. 3 (1) and Annex A.
[247] J. Mossop, *The Continental Shelf Beyond 200 Nautical Miles: Rights and Responsibilities*, Oxford University Press, 2016, p. 230.

1.4.6.12 The Mediterranean Sea and the Bay of Biscay

In May 2006, Cyprus and Egypt signed a Framework Agreement concerning cross-border hydrocarbon resources (Cyprus-Egypt Framework Agreement).[248] Cyprus is currently in negotiations in the context of concluding similar agreements with Israel and Lebanon.[249] As of now, there is uncertainty related to the existence of transboundary hydrocarbon deposits. For example, Israel argues that the Aphrodite gas field discovered on the Cypriot CS extends into its CS,[250] whereas Cyprus claims part of the Zohr gas field found on the Egyptian CS (Illustration No. 24).[251]

In 1974, France and Spain signed two Conventions in the Bay of Biscay. The first Convention delimited the territorial sea and the contiguous zone between the Parties.[252] The second Convention delimited the CS and established a joint zone straddling the CS boundary (Illustration No. 29).[253]

1.4.6.13 The Persian Gulf and the Red Sea

Saudi Arabia has concluded several agreements with its neighbors. In 1958, Saudi Arabia and Bahrain concluded an agreement (Saudi Arabia-Bahrain Agreement) delimiting the CS between

[248] Framework Agreement between the Republic of Cyprus and the Arab Republic of Egypt Concerning the Development of Cross-median Line Hydrocarbon Resources, May 2006, EIF: 2013, available at http://extwprlegs1.fao.org/docs/pdf/bi-110369.pdf (last accessed January 2019). See also Agreement between the Republic of Cyprus and the Arab Republic of Egypt on the Delimitation of the Exclusive Economic Zone, Cairo, 17 February 2003, EIF: 7 March 2004, 2488 UNTS 8.

[249] Agreement between the Government of the State of Israel and the Government of the Republic of Cyprus on the delimitation of the exclusive economic zone, Nicosia, 17 December 2010, EIF: 25 February 2011, 2740 UNTS 55. In January 2007, Cyprus and Lebanon concluded a delimitation agreement. Although this delimitation agreement is not published since it is not yet ratified by Lebanon (Cyprus ratified the agreement in November 2007), some details are contained in "The Legal Framework of Lebanon's Maritime Boundaries: The Exclusive Economic Zone and Offshore Hydrocarbon Resources", report prepared by V. Gowlland-Debbas, November 2012, pp. 20-21, available at http://lebcsr.org/wp-content/uploads/2017/12/LegalFramwork.pdf (last accessed January 2019).

[250] See, for example, "Israel, Cyprus disagree over Aphrodite gas field", Lebanon Gas News, available at https://lebanongasnews.com/wp/israel-cyprus-disagree-over-aphrodite-gas-field/; S. Le Bon, "Israeli official declares that any gas cooperation with Cyprus is not possible without Turkey", 10 November 2015, available at https://middleeastnewsservice.com/2015/11/10/former-israel-ambassador-to-jordan-and-the-european-union-declares-that-the-unitization-agreement-between-israel-and-cyprus-will-be-signed-if-the-internal-political-dispute-in-cyprus-is-solved-and-if/ (last accessed January 2019).

[251] See, for example, G. Psyllides, "Cyprus will soon know if gas discovered in Egypt extends into island's EEZ", Cyprus mail, 15 September 2015, available at http://cyprus-mail.com/2015/09/15/in-next-days-cyprus-will-know-if-gas-reserve-discovered-in-egypt-extends-into-islands-eez/#disqus_thread (last accessed January 2019). Eni SPA's website contains no information that the Zohr gas field is transboundary (https://www.eni.com/enipedia/en_IT/international-presence/africa/enis-activities-in-egypt.page).

[252] Convention between the Government of the French Republic and the Government of the Spanish States on the delimitation of the territorial sea and the contiguous zone in the Bay of Biscay, Paris, 29 January 1974, EIF: 5 April 1975, 996 UNTS 356.

[253] Convention between the Government of the French Republic and the Government of the Spanish States on the delimitation of the continental shelves of the two States in the Bay of Biscay, Paris, 29 January 1974, EIF: 5 April 1975, 996 UNTS 344. See Chapter 7.

these States and establishing a maritime area called “Fasht bu Saafa Hexagon” (Hexagon) where the Parties agreed to share the revenues received from the exploitation of petroleum resources in this area equally (Illustration No. 25).[254] An interesting feature of the Saudi Arabia-Bahrain Agreement is that the Hexagon lies only on the Saudi Arabian side of the CS boundary.[255] In 1965, Saudi Arabia and Kuwait reached an agreement (Saudi Arabia-Kuwait Agreement of 1965) creating an onshore and offshore neutral zone,[256] and a supplementary agreement in 2000 (Illustration No. 26).[257]

In the Red Sea, Saudi Arabia and Sudan have established a Common Zone in an undelimited maritime area (Illustration No. 27).[258]

1.5 Structure of the thesis

This thesis is divided into four parts.

Part I consists of this Chapter and sets the stage for the further discussions.

Part II includes three Chapters and deals with the first research question, which aims at considering the rules of public international law governing the rights and obligations of States with respect to shared hydrocarbon resources. Chapter 2 defines the term ‘shared hydrocarbon resources’ and provides for the general principles applicable to that category of shared natural resources. Subsequently, Part II provides more detailed information on each type of shared hydrocarbon resource. While Chapter 3 focuses on hydrocarbon resources located in areas of overlapping maritime claims, Chapter 4 looks at hydrocarbon resources that extend across maritime boundaries between neighboring coastal States.

Part III includes three Chapters and addresses the second research question concerning the issue of shared State responsibility for (potential) environmental harm. After an analysis of the current state of the law on (shared) State responsibility given in Chapter 5, the following

[254] Agreement between the Kingdom of Saudi Arabia and the Government of Bahrain, Riyadh, 22 February 1958, EIF: 26 February 1958, 1733 UNTS 8, arts. 1-2.
[255] *Ibid*., art. 2. See Chapter 7 in detail.
[256] Agreement between the Kingdom of Saudi Arabia and the State of Kuwait on the Partition of the Neutral Zone, Al-Hadda, 7 July 1965, EIF: 25 July 1966, 1750 UNTS 48. There is also a supplementary agreement to this Agreement confirming the determination of the boundary line dividing the Saudi Arabian-Kuwaiti Neutral Zone, Kuwait City, 18 December 1969, EIF: 18 December 1969, 1750 UNTS 62.
[257] Agreement between the Kingdom of Saudi Arabia and the State of Kuwait concerning the submerged area adjacent to the divided zone, Kuwait, 2 July 2000, EIF: 31 January 2001, 2141 UNTS 251. See Chapter 7 in detail.
[258] Agreement between the Government of the Democratic Republic of the Sudan and the Government of the Kingdom of Saudi Arabia relating to the joint exploitation of the natural resources of the sea-bed and subsoil of the Red Sea in the Common Zone, Khartoum, 16 May 1974; EIF: 26 August 1974, 952 UNTS 198.

Chapters of Part III examine the question of whether shared State responsibility might arise in the context of shared hydrocarbons: Chapter 6 explores shared State responsibility in the situation of sharing of hydrocarbons located in undelimited maritime areas, whereas Chapter 7 deals with the situation of sharing of hydrocarbons transected by a maritime boundary.

Part IV consists of one Chapter (Chapter 8) and summarizes the main findings of the thesis.

This thesis includes two appendices. Appendix I contains a list of arrangements and agreements that deal with the issue of shared hydrocarbons.[259] Appendix II includes illustrations relevant for the arrangements and agreements discussed in this research.

[259] See also Introduction to Chapter 1.4.6.

PART II – THE LEGAL REGIMES GOVERNING SHARED HYDROCARBONS

This Part of the thesis consists of three Chapters and addresses the first research question identified in Chapter 1.2 dealing with the rights and obligations of States that share an offshore hydrocarbon deposit. In other words, Part II aims to examine general rules of international law governing the rights and obligations of States before they establish some form of cooperative management of a shared hydrocarbon deposit. At the same time, an analysis of cooperative arrangements and agreements regarding shared hydrocarbons may significantly assist in determining the existence and/or clarifying the content of those general rules. Part II also explores the features of the general rules applicable to shared hydrocarbons that are inherent in the division of these resources into two separate categories.

CHAPTER 2. THE BASIC PRINCIPLES APPLICABLE TO SHARED HYDROCARBONS

2.1 Introduction

This Chapter identifies two categories of offshore oil and gas resources that are captured by the notion of shared hydrocarbons. The first category is hydrocarbon deposits situated in areas of overlapping maritime claims. The second category is hydrocarbon deposits transected by a maritime boundary agreed by neighboring States or determined by a court or tribunal. This Chapter examines the basic principles applicable to shared hydrocarbons, in particular those principles that stem from the characterization of the two categories of shared hydrocarbons as shared natural resources. The concept of shared natural resources entails certain rights and obligations of States. Those rights and obligations include, above all, a duty to cooperate in the management of shared natural resources (Chapter 2.4), a right to an equitable (and reasonable) share (Chapter 2.5) and a duty to prevent harm (Chapter 2.6).

At the same time, the content of those rights and obligations may vary depending on what type of shared natural resource is the subject of inquiry. This Chapter looks at the extent to which characteristics of shared hydrocarbons affect the application of the general principles (in comparison with some other types of shared natural resources). The principle of sovereign rights over the CS and its natural resources is a core part of the law relating to shared hydrocarbons. Chapter 2.3 considers this principle. It is important to note that this thesis principally focuses on the EEZ and CS legal regimes because the probability of discovering shared offshore hydrocarbon resources under these regimes is higher than, for example, under the territorial sea regime.[260]

This Chapter does not cover in detail other more general principles of international law such as the principle of good faith, the principle of good neighborliness and the principle to settle disputes peacefully. Nevertheless, these principles are also relevant in the context of shared hydrocarbons. For example, coastal States are required to make their maritime claims to an area of the EEZ/CS in good faith[261] and in the event that their claims overlap, they are under an

[260] Support for this point may be found in relevant State practice examined in Chapters 3, 4, 6 and 7.
[261] See, for example, *South China Sea*, para. 705; *Ghana/Côte d'Ivoire* Judgment, para. 592.

obligation to negotiate a maritime boundary (and/or a provisional arrangement) in good faith.[262] The no-harm duty may be considered a specific application of the principle of good neighborliness.[263] In other words, the rights and obligations of States examined in this thesis are based on a number of fundamental principles of general international law.

2.2 The meaning of the terms 'shared hydrocarbon resources' and 'shared natural resources'

This thesis employs the term 'shared hydrocarbon resources' and furthermore argues that specific rights and obligations of States flow from the characterization of hydrocarbon resources as shared natural resources. Therefore, it is important to indicate what hydrocarbon resources can be regarded as 'shared'.

As regards the notion of hydrocarbon resources, this term covers chemical compounds with molecular chains composed of hydrogen and carbon atoms.[264] Crude oil, natural gas and natural gas liquids contain hydrocarbon molecules in different proportions.[265] The word 'petroleum' is also used in relation to hydrocarbon resources. Although in its literal sense this word refers only to crude oil, it is generally accepted that petroleum resources also include natural gas.[266] Thus, in this thesis, the term 'hydrocarbon/petroleum resources' means oil and gas resources, regardless of form (solid, liquid or gaseous), including any mixture thereof, naturally occurring beneath the seabed. Many arrangements and agreements dealing with shared hydrocarbons, which are considered later in this thesis, include such a definition.[267] It is worth noting that the thesis uses the words 'resource', 'deposit', 'reservoir', 'field', 'pool', 'accumulation' and 'reserve' interchangeably.

[262] UNCLOS, arts. 74 (1) (3), 83 (1) (3) and 300; *Case concerning the Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v. Nigeria: Equatorial Guinea Intervening)*, Judgment, 10 October 2002, ICJ Reports 2002, para. 244; *Ghana/Côte d'Ivoire* Judgment, para. 604. See also Chapter 3.
[263] See, for example, BIICL's Report on Undelimited Maritime Areas, *op. cit.*, pp. 19-20, para. 67.
[264] N. J. Hyne, *Nontechnical Guide to Petroleum Geology, Exploration, Drilling and Production,* 3rd edition, PennWell Corporation, 2012, p. 2.
[265] *Ibid*. See more about natural gas liquids at https://www.eia.gov/todayinenergy/detail.php?id=5930 (last accessed January 2019).
[266] *Ibid.,* p. 1. In Greek language, 'petro' means rock and 'oleum' means oil.
[267] See, for example, TST, art. 1 (o); Nigeria-STP Treaty, art. 1 (17); Venezuela-T&T Framework Treaty, art. 1.3; Canada-France Agreement, art. 1, para. 4; US-Mexico Agreement, art. 2.

The definition of the term 'natural resources' is contextual.[268] This thesis refers to the definition of natural resources contained in article 2 (4) of the CCS and article 77 (4) of the UNCLOS.[269] These articles define natural resources of the CS as "mineral and other non-living resources of the sea-bed and subsoil together with living organisms belonging to sedentary species […]". It logically follows that accumulations of hydrocarbons are natural resources in the context of the law of the sea.

The key issue here is whether hydrocarbon resources under the two scenarios identified above (namely, those that are located in undelimited and delimited maritime areas) can be categorized as 'shared natural resources', with the particular legal implications thereof.

No significant attempt has been made to define the concept of shared natural resources in a legal instrument and to identify natural resources that fall under this concept. Although the term 'shared natural resources' is included in some UNGA Resolutions, there is no legal definition provided in the main body of these documents.[270] It is only in the course of the preparatory work of the United Nations Environment Program (UNEP) on draft Principles of Conduct in the Field of the Environment (UNEP draft Principles) that two approaches to the concept of shared natural resources have been indicated.[271] According to the *stricto sensu* approach, the notion 'shared natural resources' is used for natural resources which are situated in the territory of two or more States. Examples of these shared natural resources would be freshwater resources, fish stocks, atmospheric resources, forests and mountain chains.[272] A second approach to the concept of shared natural resources includes natural resources shared by all States, the so-called international (global) commons. Natural resources of the sea and the seabed beyond national jurisdiction would offer an illustration of the latter category of shared natural resources.

[268] N. Schrijver, *Sovereignty over Natural Resources: Balancing Rights and Duties*, Cambridge University Press, 1997, p. 13. He has emphasized that the definition used in one scientific discipline differs from that used in other disciplines.
[269] See also article 56 (1) of the UNCLOS. Living resources are outside of this thesis's scope.
[270] For example, Resolution on Cooperation in the Field of the Environment concerning Natural Resources Shared by Two or More States, UNGA Resolution 3129 (XXVIII) of 13 December 1973; Charter on Economic Rights and Duties of States, UNGA Resolution 3281 (XXIX) of 12 December 1974.
[271] Draft Principles of Conduct in the Field of the Environment for the Guidance of States in the Conservation and Harmonious Utilization of Natural Resources Shared by Two or More States, adopted by UNEP Governing Council on 19 May 1978, 17 ILM (1978), p. 1091; Report of the Executive Director, UN Doc. UNEP/GC/44, 20 February 1975, paras. 7-10. See also S. Burchi, "Shared Natural Resources in the European Economic Community Legislation", *Natural Resources Journal*, 1985, vol. 25 (3), pp. 639-640.
[272] Report of the Executive Director, *supra* note 271, para. 86; Schrijver 1997, *op. cit.*, p. 129.

More recently, the topic of shared natural resources was included in the program of the ILC's work.[273] Initially, the Commission considered the 'shared natural resources' phenomenon with reference to international watercourses.[274] Subsequently, the ILC turned to the issues of transboundary groundwaters and oil and gas resources within the topic of shared natural resources.[275]

Although the ILC eventually discontinued its codification work on petroleum resources,[276] its deliberations shed some light on the question of what oil and gas resources fall under the category of shared natural resources. At first glance, it seems that the Commission referred solely to hydrocarbon resources straddling an already established maritime boundary. This conclusion follows from the fact that the ILC repeatedly used the phrase "transboundary oil and gas resources" in a number of documents, including the questionnaire on State practice circulated to Governments.[277] At the same time, when replying to the ILC's questions concerning transboundary hydrocarbons, some States included arrangements on hydrocarbon deposits situated in undelimited maritime areas (e.g., Australia, Jamaica and Thailand).[278] In other words, one can assume that the Commission's intention was to encompass the two types of petroleum resources under the 'shared natural resources' framework.[279]

This thesis categorizes offshore oil and gas resources found in undelimited maritime areas, as well as straddling hydrocarbons, as shared natural resources. For example, the Conciliation Commission between Timor-Leste and Australia characterized the Greater Sunrise fields

[273] Yearbook of the ILC, 2002, vol. II (Part Two), Report of the ILC on the work of its fifty-fourth session (29 April–7 June and 22 July–16 August 2002), Doc. A/57/10, p. 100, para. 518, available at http://legal.un.org/docs/?path=../ilc/publications/yearbooks/english/ilc_2002_v2_p2.pdf&lang=EFSRAC (last accessed January 2019).

[274] Yearbook of the ILC, 2003, vol. II (Part One), First report on shared natural resources, prepared by Mr. C. Yamada, Doc. A/CN.4/533 and Add. 1, pp. 120-122, available at http://legal.un.org/docs/?path=../ilc/publications/yearbooks/english/ilc_2003_v2_p1.pdf&lang=EFSRAC (last accessed January 2019). Moreover, the ICJ in *Gabčíkovo-Nagymaros Project* and *Pulp Mills* (para. 85 and para. 81, respectively) referred to the rivers as shared resources.

[275] Report of the ILC on the work of its sixty-second session (3 May–4 June and 5 July–6 August 2010), Doc. A/65/10, 2010, p. 342, paras. 374-375, available at http://legal.un.org/ilc/documentation/english/reports/a_65_10.pdf (last accessed January 2019).

[276] The reasons behind this decision are mentioned in the ILC's Report, *supra* note 275, p. 344, paras. 382-383.

[277] Comments and observations received from Governments, ILC, 2009 and 2010, *op. cit.* See also *supra* note 275, paras. 378-383.

[278] *Ibid.* It is worth emphasizing that many States did not answer the questionnaire (e.g., Nigeria and STP) and some States omitted the relevant treaty practice (e.g., S. Korea (with Japan) and Thailand (with Cambodia, while mentioning with Malaysia)). See Chapter 1 in this respect.

[279] *Ibid.* Question 1 reads as follow: "Do you have any agreement(s), arrangement(s) or practice with your neighbouring State(s) regarding the exploration and exploitation of *transboundary oil and gas resources* or for *any other cooperation for such oil or gas*? Such agreements or arrangements should include, as appropriate, maritime boundary delimitation agreements, as well as unitization and *joint development agreements* or other arrangements" (emphasis added).

straddling the maritime boundary between these States as a "shared resource".[280] As regards hydrocarbons situated in areas of overlapping maritime claims, they are also shared resources. For different reasons, States may have (or may mistakenly believe that they have[281]) a legal basis to claim sovereign rights over the same maritime area. Logically, while such an area is contested between States, these States share equally valid sovereign rights to explore this area and exploit its natural resources.[282]

The situation of resource sharing is also related to the fact that some actions taken by one State may have adverse effects on the other State (e.g., migration of hydrocarbons).[283]

Thus, the term 'shared hydrocarbon resources' used throughout this thesis covers two types of oil and gas fields: those that are found to lie across the delimitation line between neighboring States (interchangeably referred to as 'transboundary', 'cross-border', 'cross-boundary' and 'straddling' resources) and those that are located in areas of overlapping maritime claims (called 'disputed' resources). Both these types constitute shared natural resources.

2.3 The principle of sovereign rights over shared hydrocarbons

Article 2 of the CCS and article 77 of the UNCLOS codify the principle of sovereign rights. According to this principle, a coastal State "exercises over the continental shelf sovereign rights for the purpose of exploring it and exploiting its natural resources",[284] including hydrocarbon deposits.[285] The UNCLOS also spells out specific forms of sovereign rights, such as the right to install structures on the CS,[286] the right to "authorize and regulate drilling on the [CS] for all purposes"[287] and the right to exploit the subsoil by means of tunneling.[288] These sovereign rights are both exclusive and inherent. The exclusive nature means that if a coastal State decides

[280] Report and Recommendations of the Compulsory Conciliation Commission between Timor-Leste and Australia on the Timor Sea, PCA Case No. 2016-10, 9 May 2018, para. 299, available at https://pcacases.com/web/sendAttach/2327 (latest accessed January 2019).
[281] See, for example, *South China Sea*, paras. 704-705.
[282] See Chapters 2.3 and 3 for more details.
[283] This understanding of shared natural resources has principally been reflected in the context of international watercourses. See Yearbook of the ILC, 1986, vol. II (Part One), Second report on the law of the non-navigational uses of international watercourses, prepared by Mr. S. C. McCaffrey, Doc. A/CN.4/399 and Add. l and 2. p. 102, available at http://legal.un.org/docs/?path=../ilc/publications/yearbooks/english/ilc_1986_v2_p1.pdf&lang=EFSRA (last accessed January 2019). However, the classification of international watercourses as shared natural resources was abandoned by the ILC.
[284] CCS, art. 2 (1); UNCLOS, art. 77 (1).
[285] Hydrocarbon resources are natural resources of the CS. See Chapter 2.2.
[286] UNCLOS, arts. 80 and 60.
[287] *Ibid.*, art. 81.
[288] *Ibid.*, art. 85.

not to explore the CS or exploit its petroleum resources, no other State may do so without the explicit consent of the coastal State.[289] Prior occupation of the CS or a proclamation is not a prerequisite to the exercise of the sovereign rights.[290] Such rights exist *ipso facto* and *ab initio.*[291] Nowadays, there is no doubt that the principle of sovereign rights has become part of customary international law[292] and, therefore, it binds countries that are not parties to the UNCLOS. The UNCLOS provides a coastal State with the criteria for defining the outer limits of its CS beyond 200 nm from the baselines in certain circumstances stipulated in article 76.

The sovereign rights of a State over petroleum resources are also attached to this State by virtue of the entitlements it has over an EEZ.[293] Article 56 (3) of the UNCLOS states that in the exercise of EEZ rights with respect to the seabed and subsoil, a State shall act in accordance with the CS regime (Part VI of the UNCLOS).

This thesis explores the operation of the principle of sovereign rights in two contrasting scenarios of oil and gas resource sharing: the first is the sharing of a hydrocarbon deposit located in an undelimited maritime area and the second relates to the sharing of a resource transected by a boundary line. As regards the first scenario, there is legal uncertainty as to the scope of the application of the principle of sovereign rights. Under the second scenario, the difficulty is that although the geographical scope of the principle's application is clearly set, several States are entitled to exercise sovereign rights over a part of the same accumulation(s) of hydrocarbons and the competitive existence of such rights may entail certain negative consequences.[294] A more detailed examination of the principle of sovereign rights in these two contexts is contained in Chapters 3 and 4.

Both the CCS and UNCLOS provide coastal States with sovereign rights to explore for and exploit hydrocarbon resources without defining the content and nature of these activities. Nonetheless, this issue is important, for example, when considering the question of what type

[289] CCS, art. 2 (2); UNCLOS, art. 77 (2).
[290] CCS, art. 2 (3); UNCLOS, art. 77 (3). Unlike an EEZ that shall be claimed by a coastal State (UNCLOS, art. 57).
[291] *North Sea Continental Shelf cases (Federal Republic of Germany v. Denmark and the Netherlands)*, Judgment, 20 February 1969, ICJ Reports 1969, para. 19.
[292] See, for example, Y. Tanaka, *The International Law of the Sea*, Cambridge University Press, 2012, p. 133; M. P. Scharf, *Customary International Law in Times of Fundamental Change: Recognizing Grotian Moments*, Cambridge University Press, 2013, p. 59; A. J. Higginson, "Legal Aspects of Safety, Health and Welfare on the United Kingdom Continental Shelf", in: R. A. F. Cox (ed), *Offshore Medicine: Medical Care of Employees in the Offshore Oil Industry*, Springer, 1982; F. Mucci and F. Borgia, "The Legal Regime of the Antarctic", in: D. Attard et al. (eds), *The IMLI Manual on International Maritime Law: Volume I, The Law of the Sea*, Oxford University Press, 2014.
[293] *Supra* note 290.
[294] See Chapter 4.

of petroleum activity may lead to a permanent physical modification of the seabed and subsoil or may cause hydrocarbon resources to migrate from the other side of the maritime boundary.[295]

The production-chain of petroleum resources consists of two parts: upstream and downstream parts.[296] Whereas the upstream part includes exploration and exploitation of hydrocarbon resources, the downstream part refers to transportation, storage, refining, marketing, distribution and so forth.[297] This research focuses on the upstream part, which can be divided broadly into two phases: exploration and exploitation.

The goal of exploration is to identify maritime areas where commercial oil and gas deposits may be located, by using different methods, including seismic surveys and exploratory drilling. Seismic is used to identify the presence of a petroleum resource in the CS. The purpose of seismic exploration is to obtain information concerning the geophysical structure of the seabed and its subsoil by transmitting sound waves from a source. These sound waves travel down through the rock layers, which reflect them up to a sensor. This sensor records the acquired information to be interpreted by a scientist.[298]

In order to confirm a potential accumulation of hydrocarbons, a wildcat well is to be drilled. If the well is found to be dry, it will be plugged and abandoned and offshore drilling equipment will typically be withdrawn. If exploratory drilling discovers a new reservoir, appraisal wells are then drilled to determine the size and geographical extent of the reservoir discovered by the wildcat well. The size of the reservoir needs to be determined to compute the amount of oil and gas that can be produced. If the deposit is significantly large, it may thus be economically justified to develop it further.[299]

If exploration has proved the existence of a hydrocarbon deposit with commercial potential, exploitation of this deposit may then be commenced. Exploitation includes such activities as drilling recovery wells,[300] and construction, placing and operation of installations. It is worth noting that the terms ‘exploitation’, ‘production’ and ‘development’ are usually used interchangeably and are rarely defined in the legal literature. While exploitation indeed

[295] These questions are discussed in Chapters 3 and 4, respectively.
[296] See, for example, Guide to Extractive Industries Documents – Oil & Gas, World Bank Institute Governance for Extractive Industries Programme, Allen & Overy, September 2013, p. 27, available at http://www.allenovery.com/SiteCollectionDocuments/geiprogram.pdf (last accessed January 2019).
[297] *Ibid*., pp. 27 and 30. See also Becker-Weinberg 2014, *op. cit.*, p. 10.
[298] Hyne 2012, *op. cit.*, pp. 215-234.
[299] *Ibid*., pp. 243-244 and 392-397.
[300] A recovery well is a well used for production or injection. Norwegian Petroleum Directorate, ABC of oil, http://www.npd.no/en/About-us/Information-services/Dictionary/ (last accessed January 2019).

encompasses development and production stages, a distinction between these stages may be drawn. Development includes those activities that make the removal of hydrocarbons from a reservoir possible, production covers activities associated with this removal such as treatment and storage of hydrocarbons and other substances, transportation of hydrocarbons (by ship or pipeline) to shore.[301] The last phase will typically include decommissioning when the production of the hydrocarbon resource has come to an end.[302]

Exploration and exploitation operations are usually carried out by private actors authorized by coastal States to do so.

2.4 General and specific obligations to cooperate

This section explores whether the understanding of disputed and transboundary hydrocarbons as shared natural resources implies a duty to cooperate.

2.4.1 The general duty to cooperate and its forms

The general duty to cooperate constitutes a basic principle of public international law. Article 1 (3) of the UN Charter sets out that one of the purposes of the UN as an international organization is to achieve international cooperation in order to solve problems of an economic, cultural or humanitarian character. Further, article 2 of the Charter contains the relevant legal principles to be respected by both the organization and its members for the achievement of the purposes enshrined in article 1. However, this general aim of cooperation is not reflected in article 2. On the other hand, Chapter IX of the Charter is wholly dedicated to the question of "international economic and social co-operation". An array of issues, concerning which States pledge themselves to cooperate internationally in the socio-economic field, can include, for instance, those related to education, public health, environmental protection.[303]

The UNGA has reaffirmed the general duty to cooperate by its Declaration on Principles of International Law concerning Friendly Relations and Cooperation among States.[304] The Declaration proclaims the duty to cooperate as one of the principles of international law, which

[301] See, for example, US-Mexico Agreement, art. 2.
[302] K. N. Casper, "Oil and Gas Development in the Arctic: Softening of Ice Demands Hardening of International Law", *Natural Resources Journal*, 2009, vol. 49 (3/4), pp. 832-833. See also Glossary.
[303] UN Charter, arts. 55 and 56; B. Garcia, *The Amazon from an International Law Perspective*, Cambridge University Press, 2011, p. 5.
[304] Declaration on Principles of International Law concerning Friendly Relations and Cooperation among States, UNGA Resolution 2625 (XXV) of 24 October 1970, 13 UNR 337, 4th principle.

consequently applies to all States,[305] including the non-members of the UN.[306] The ICJ has highlighted that the unanimous approval of this Declaration has to be regarded as "an acceptance of the validity of the rule or set of rules declared by the resolution".[307]

According to the Declaration, States "have the duty to cooperate with one another, irrespective of the differences in their political, economic and social systems, in the various spheres of international relations, […]".[308] However, the Declaration employs the verb 'should' when it comes to cooperation in the economic, social and cultural fields, as well as in the domain of science and technology. Such usage does not correspond to the mandatory 'shall' contained in the initial part under the heading "The duty of States to co-operate with one another in accordance with the Charter".[309] Therefore, the Declaration does not make it clear whether States have recognized the legal duty to cooperate in the specific context of socio-economic issues.

There is considerable debate in the literature as to customary status of the duty to cooperate.[310] It is noteworthy that since the 1970s, the general duty to cooperate has got an extensive follow-up in multilateral treaty law. The general duty to cooperate is spelled out in many legal instruments regulating different fields of international law. Prior to the examination of the duty to cooperate in the field of shared natural resources, it is important to distinguish two types of this duty: a *pactum de negotiando* and a *pactum de contrahendo.* The main difference between them is that the former contains a mere obligation to negotiate in good faith, while the latter imposes an obligation to reach an agreement. Thus, the *pactum de negotiando* creates a weaker commitment than a *pactum de contrahendo* since it does not go so far as to require the conclusion of an agreement at any cost.[311] The issue of whether a particular legal instrument constitutes a *pactum de negotiando* or a *pactum de negotiando* should be considered with caution.[312] For instance, at first glance, it may appear that there is a *pactum de contrahendo*

[305] *Ibid*., General Part, point 3 of the Declaration.
[306] F. X. Perrez, *Cooperative Sovereignty: From Independence to Interdependence in the Structure of International Environmental Law*, The Hague: Kluwer Law International, 2000, p. 271.
[307] *Nicaragua v. the US*, para. 188.
[308] UNGA Resolution 2625 (XXV), *supra* note 304, 4th principle.
[309] *Ibid*., paras. 1 and 2 of the 4th principle of cooperation.
[310] See, for example, Perrez 2000, *op. cit.*
[311] L. McNair, *The Law of Treaties*, Clarendon Press Oxford, 1986, pp. 27-29 and p. 567.
[312] Owada has noted that "whether an instrument constitutes a *pactum de contrahendo* or a *pactum de negotiando* and imposes legal obligations is a delicate issue of legal interpretation. An imprecise or unclear formulation of the commitment in question often raises doubts as to its legally binding character, and an ambiguous or indeterminate clause may be construed only to reflect the parties' common understanding on joint political goals". See H. Owada, "Pactum de contrahendo, pactum de negotiando", Max Planck Encyclopedia of Public International Law (online version, updated: April 2008), available at

concerning the delimitation of the EEZ and CS.[313] Nevertheless, it is generally understood that these provisions establish a *pactum de negotiando*.[314]

As observed below in this thesis, duties to cooperate in respect of shared hydrocarbons may take the form of both a *pactum de contrahendo* and a *pactum de negotiando*, although the latter form prevails.[315]

2.4.2 The duty to cooperate with respect to shared natural resources

A number of resolutions adopted by the UNGA include the duty of States to cooperate regarding shared natural resources. UNGA Resolution 3129 (XXVIII) underlines the necessity to establish "adequate international standards for the conservation and harmonious exploitation of natural resources common to two or more States".[316] It is further stressed that cooperation shall be developed "on the basis of a system of information and prior consultation".[317] This statement echoes with article 3 of the Charter on Economic Rights and Duties of States that provides for cooperation between States sharing natural resources "on the basis of a system of information and prior consultation in order to achieve optimum use of such resources without causing damage to the legitimate interests of others".[318] Thus, the main message enshrined in these UNGA Resolutions is that States are expressly required to cooperate prior to any exploitation of a shared natural resource.

The UNEP draft Principles urge States sharing a natural resource to cooperate in order to conserve and utilize it in a harmonious manner.[319] The requirement to cooperate is further transformed into specific commitments, including the exchange of information, notification, and consultation between States that share natural resources.[320] Moreover, the UNEP draft Principles reflect such modern obligations of States under international law as the duty to prevent transboundary harm and the duty to conduct an environmental impact assessment (EIA).[321]

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http://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e1451 (last accessed January 2019).

[313] UNCLOS, arts. 74 (1) and 83 (1).

[314] *North Sea Continental Shelf*, pp. 46-47. See also T. Cottier, *Equitable Principles of Maritime Boundary Delimitation: the Quest for Distributive Justice in International Law*, Cambridge University Press, 2015, p. 219.

[315] See Chapters 3 and 4 in this respect.

[316] UNGA Resolution 3129 (XXVIII), *supra* note 270, para. 1.

[317] *Ibid.*, para. 2.

[318] UNGA Resolution 3281 (XXIX), *supra* note 270.

[319] UNEP draft Principles, *supra* note 271, principles 1 and 2.

[320] *Ibid.*, principles 5, 6 and 7.

[321] *Ibid.*, principles 3 and 4. See D. Dam-De Jong, *International Law and Governance of Natural Resources in Conflict and Post-Conflict Situations*, Cambridge University Press, 2015, p. 146.

More recently, the duty to cooperate is firmly established in the context of some categories of shared natural resources. One of the most sophisticated legal regimes in this respect relates to shared water resources. The duty to cooperate has been codified in a number of instruments dealing with international watercourses[322] and shared groundwater resources.[323] States are obligated to cooperate in order to attain equitable and reasonable utilization and adequate protection of these shared water resources.[324] The process of cooperation among States is framed by specific requirements to exchange information, notify, conduct an EIA, consult and negotiate.[325]

The management and conservation of shared fish stocks is also governed by the duty to cooperate.[326] Unlike shared water resources, the duty of States to cooperate with respect to shared fisheries resources is formulated in more concrete manner. States are required to cooperate directly or through regional fisheries management organizations (RFMOs) or arrangements.[327] It is notable that apart from the general procedural requirements encapsulated in the duty to cooperate, the institutional component of the duty to cooperate in the context of shared fisheries resources is strong.

Thus, the development of the legal regimes governing the management of water and fisheries resources supports the argument that the duty to cooperate exists and includes concrete procedural requirements. Nevertheless, whereas the duty to cooperate has been enshrined in the context of shared water and fisheries resources, there are many other types of shared natural

[322] Watercourses Convention, art. 8. Other legal instruments are described by M. M. Rahaman, "Principles of Transboundary Water Resources Management and Water-related Agreements in Central Asia: An Analysis", *Water Resources Development*, 2012, vol. 28 (3), pp. 478-480.
[323] ILC's draft Articles on the Law of Transboundary Aquifers, 2008, art. 7. See Chapter 1.
[324] It is worth to note that article 8 of the Watercourses Convention refers to "*optimal* utilization and *adequate* protection of an international watercourse" (emphasis added), while article 7 of the ILC's draft articles on the Law of Transboundary Aquifers uses the wording "*equitable and reasonable* utilization and *appropriate* protection" (emphasis added) of a transboundary aquifer or aquifer system. These objectives of the general duty to cooperate appear to be equivalent. See C. Leb, *Cooperation in the Law of Transboundary Water Resources*, Cambridge University Press, 2013, p. 85.
[325] *Pulp Mills*, para. 81. See also Perrez 2000, *op. cit.*, pp. 304-317; C. Leb, "One step at a time: International law and the duty to cooperate in the management of shared water resources", *Water International*, 2015, vol. 40 (1); O. McIntyre, *Environmental Protection of International Watercourses under International Law*, 2013, pp. 221-229; Leb 2013, *supra* note 324; O. McIntyre, "The Role of Customary Rules and Principles of International Environmental Law in the Protection of Shared International Freshwater Resources", *Natural Resources Journal*, 2006, vol. 46 (1), pp. 186-189.
[326] UNCLOS, art. 63; FSA, art. 5. The typologies of shared fish stocks: R. Churchill, "The Management of Shared Fish Stocks: the Neglected "Other" Paragraph of Article 63 of the UN Convention of the Law of the Sea", in: A. Stratu et al. (eds), *Unresolved Issues and New Challenges to the Law of the Sea: Time Before and Time After*, Brill Academic Publisher, 2005, p. 5; G. Munro et al., "The conservation and management of shared fish stocks: legal and economic aspects", FAO Fisheries Technical Paper 465, 2004; N. Oral, *Regional Co-operation and Protection of the Marine Environment Under International Law*, 2013, pp. 169-173.
[327] *Ibid.*

resources, such as air, forests and mountains, in respect of which no specific rules of international law exist.[328] However, as discussed in Chapter 2.2, the mentioned resources are covered by the concept of shared natural resources and, consequently, it is reasonable to argue that the duty to cooperate also applies to such resources, including shared hydrocarbon resources.

However, it is important to emphasize that each resource type within the concept of shared natural resources has its own (physical or geological) characteristics which make that type different from the others. This fact was clearly reflected by the example of the groundwater-oil and gas resources dichotomy.[329] It suggests that the difference between characteristics of shared natural resources is likely to impact on the content of the legal rules governing the management of these resources. For instance, the objectives of the duty to cooperate may differ depending on whether a renewable or non-renewable shared natural resource is the subject of cooperation. A distinction can be made between the goals aimed at utilization of a shared natural resource and that directed to its conservation and protection. While cooperation in respect of shared renewable natural resources usually aims at achieving both objectives, States sharing a non-renewable petroleum deposit are primary required to cooperate on the issue of economic exploitation of that deposit.[330] One of the relevant characteristics of petroleum resources is that unlike, for example, solid mineral resources (e.g., polymetallic nodules), they can migrate when exploited.[331] This characteristic is essential when considering the regime applicable to petroleum resources straddling maritime boundaries.[332]

An interesting observation is that although the duty to cooperate has evolved significantly since the adoption of the UNEP draft Principles, its core procedural elements have remained unchanged. There are requirements to inform, notify, consult and negotiate in good faith that flow from the characterization of a particular natural resource as "shared". Thus, States that share a natural resource shall, in giving effect to the duty to cooperate, comply with these procedural requirements in good faith.

[328] There are a few regional treaties concerning transboundary forests, including the Amazon Cooperation Treaty and the Congo Basin Conservation Treaty. See Dam-De Jong 2015, *op. cit.*, p. 146.
[329] See, for example, Report of the ILC on the work of its fifty-ninth session (7 May-5 June and 9 July-10 August 2007), UN Doc. A/62/10, paras. 161-166, available at http://legal.un.org/docs/?symbol=A/62/10 (last accessed January 2019).
[330] See Chapters 3 and 4 in this regard.
[331] See Becker-Weinberg 2014, *op. cit.*, pp. 8-9; Mossop 2016, *op. cit.*, p. 139.
[332] See Chapter 4.

2.4.3 The existence of a requirement to cooperate in respect of shared hydrocarbons

As discussed above in this section, both disputed and transboundary hydrocarbon deposits fall under the concept of shared natural resources. Such classification gives rise to the duty on States sharing a hydrocarbon deposit to cooperate because this duty constitutes a fundamental principle of the body of norms applicable to the management of any shared natural resource. Thus, in the context of shared hydrocarbons, States are required to cooperate by means of information exchange, consultation and negotiation in good faith.[333]

Many provisions of the UNCLOS stress the general duty to cooperate.[334] The UNCLOS also contains provisions that can be read as referring to shared petroleum resources. As indicated in Chapter 3, one of the obligations set forth in articles 74 (3) and 83 (3) of the UNCLOS is a duty to cooperate with respect to petroleum resources located in undelimited maritime areas.[335] Chapter 4 however questions the applicability of these articles to transboundary hydrocarbons. In this respect, Chapter 4 will consider the question of whether article 142 of the UNCLOS could serve as a relevant provision since it concerns the analogous situation of resource deposits lying across the boundary between the Area and an area subject to national jurisdiction.

This thesis also examines relevant State practice and case law in order to confirm that the duty to cooperate with respect to shared hydrocarbons exists. The existence of this duty enjoys substantial support in the legal literature.[336] However, the question remains whether the scope of the duty to cooperate varies depending on whether there is a boundary line in place or not. With this in mind, Chapters 3 and 4 will consider the regimes of cooperation in both situations of petroleum resource sharing.

2.5 The principle of equitable utilization

The UNEP draft Principles affirmed the principle of equitable utilization and extended its application to shared natural resources.[337] Today, it is generally recognized that this principle

[333] See Chapter 2.4.2.
[334] UNCLOS, arts. 61(2), 64, 65, 66, 117, 123 and Part XII, section 2 (that deals with protection of the marine environment). See also Chapter 5.
[335] These articles stipulate that pending a final delimitation, States, "in a spirit of understanding and cooperation", shall endeavor to reach a provisional of a practical nature and, "during this transitional period, not to jeopardize or hamper the reaching the final agreement". See Chapter 3.
[336] See, for example, Lagoni 1979, *op. cit.*; Ong 1999, *op. cit.*; Bastida et al., *op. cit.*; R. Barnes, *Property Rights and Natural Resources*, Hart Publishing, 2009, p. 277.
[337] UNEP draft Principles, *supra* note 271, principle 1. Chapter 2.2 explains the meaning of the term 'shared natural resources'.

is a fundamental rule of international law governing the use of shared freshwater resources.[338] It elicits the question of whether other types of shared natural resources, including shared hydrocarbons, are subject to the principle of equitable utilization. It has been observed that even though it might be useful to extend the principle of equitable utilization to as many shared natural resources as possible in order to protect them, there is a distinction between desire and reality.[339] Arguably, the principle of equitable utilization does not apply to every natural resource that is, or may be classified as, shared.[340]

The principle of equitable utilization rests on a foundation of equality of rights.[341] This equality of rights stems from the sovereign equality of States.[342] Thus, in the context of shared natural resources, it should be understood that all States sharing a natural resource have equal rights necessary for and connected with its exploration and exploitation. However, equality of rights over a shared natural resource does not mean that each State is entitled to an equal share of it. Instead, the principle of equitable utilization must be construed to entitle every State to an equitable share of the benefits to be derived from the use of a shared natural resource. The main issue is how to determine what share is equitable. In the context of shared water resources, the determination of equitable share(s) requires taking into account all relevant factors and circumstances.[343] This makes the principle of equitable utilization flexible and sensitive to the particularities of each individual case. At the same time, the principle's normative vagueness poses a risk of disputes between the States concerned regarding its application. In this respect, cooperation plays an important role in the implementation of the principle of equitable utilization because only through this process States can determine what constitutes equitable and reasonable utilization. The perception of equity and reasonableness by one State may diverge from the opinion of the other State(s) on that issue. Therefore, under the principle of

[338] *Supra* note 325.
[339] K. Odendahl, "Conservation and Utilization of Natural Resources and Common Spaces", in: A. D. Tarlock and J. C. Dernbach (eds), *Environmental Laws and theirs Enforcement*, Oxford, 2009, p. 253.
[340] *Ibid.* Odendahl has cited an example of air resources that are shared natural resources, but do not fall under the principle of equitable utilization. In the context of shared fisheries resources, the principle of equitable utilization is not mentioned (see, for example, FSA, arts. 5 and 7).
[341] See A. Boyle, "Central Asian water problems: The role of international law" in: S. N. Cummings (ed), *Oil, transition and security in Central Asia*, RoutledgeCurzon, 2003, p. 206; I. Kaya, *Equitable Utilization: The Law of the Non-Navigational Uses of International Watercourses*, 2003, pp. 89-90; G. Handl, "Principle of "Equitable Use" as Applied to Internationally Shared Natural Resources: Its Role in Resolving Potential International Disputes over Transfrontier Pollution", *Belgian Review of International Law*, 1978, vol. 14 (1), p. 43.
[342] *Ibid.* See also McIntyre 2013, *op. cit.*
[343] Watercourses Convention, art. 1.

equitable utilization, the desired result would be an arrangement or agreement concluded between States in which each State's share is specified.

This thesis argues in favor of the applicability of the principle of equitable utilization to shared hydrocarbons. The Preamble of the UNCLOS stipulates that one of the objectives of the Convention is the "equitable and efficient utilization" of the resources of the seas and oceans.[344] The Convention does not specify what kind of resources it had in mind in respect of this objective. It is logical to assume that the natural resources of the CS, as well as of the EEZ, are to be included.[345] In *Guyana v. Suriname*, the Tribunal noted that provisional arrangements of a practical nature concluded between States with respect to living and non-living resources "promote realization" of this objective.[346] Indeed, the analysis of available provisional arrangements and agreements relating to shared hydrocarbons reveals that many of them include the principle of equitable utilization (or apportionment)[347] in their Preambles.[348]

Nevertheless, it is worth emphasizing that even though the principle of equitable utilization is applicable to shared hydrocarbons, it does not mean that its application would be similar to that existing in the context of other shared natural resources. Moreover, the rules of equitable apportionment may differ depending on whether there is a transboundary deposit or a disputed deposit. This thesis further examines that issue in detail.[349]

2.6 The no-harm principle: the environment and beyond

A rule of international law, which prohibits a State from using its own territory in such a manner as to cause damage to others, is derived from the Latin maxim "*sic utere tuo ut alienum non laedas*".[350] This rule was enshrined for the first time in *Trail Smelter*.[351] In connection with a

[344] UNCLOS, Preamble, para. 4.
[345] See Chapter 2.2.
[346] *Guyana v. Suriname*, para. 460. Chapter 3.3 deals with the meaning of the phrase 'provisional arrangements of a practical nature'.
[347] The term of equitable apportionment seems to be more appropriate in the context of shared hydrocarbon resources. The reason why the term 'equitable apportionment' was replaced by the notion 'equitable utilization' in the context of shared water resources is explained in S. J. Buck, G. W. Greason and M. S. Jokufu, ""The Institutional Imperative": Resolving Transboundary Water Conflict in Arid Agricultural Regions of the United States and the Commonwealth of Independent States", *Natural Resources Journal*, 1993, vol. 33 (3), p. 600.
[348] See, for example, Canada-France Agreement; US-Mexico Agreement; Seychelles-Mauritius Treaty; Nigeria-STP Treaty, art. 31; Timor Sea Boundary Treaty, art. 8. See in detail Chapter 4.4.
[349] See Chapter 4.4.
[350] G. Lynham, "The *Sic Utere* Principles as Customary International Law: A Case of Wishful Thinking?", *James Cook University Law Review*, 1995, vol. 2, p. 172. "*Sic utere tuo ut alienum non laedas*": use your own property in such a way as not to cause damage to others.
[351] *Trail Smelter Arbitration (United States v. Canada),* Awards of 16 April 1938 and 11 March 1941, 3 RIAA 1905 and 1941.

dispute concerning Canadian responsibility for damage arising from air pollution caused in the US by a smelter located in Canada, the Tribunal held that:

> under the principles of international law […] no state has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties of persons therein, when the cause is of serious consequence and the injury is established by clear and convincing evidence.[352]

Since *Trail Smelter*, the duty not to cause harm to other States (referred to below as the 'no-harm principle') has principally been developed in the field of international environmental law. In general terms, this duty is currently formulated as one requiring States to ensure that activities within their jurisdiction and control do not cause harm to the environment of other States or of areas beyond the limits of national jurisdiction.[353]

The current research, however, argues that the scope of the no-harm principle shall not only be confined to the environment. In this respect, the *Corfu Channel* case is of particular importance.[354] Although the factual matrix of *Corfu Channel* differs from what is examined in this thesis, the Court's findings may be relevant in the context of shared hydrocarbons.

In *Corfu Channel*, the ICJ held Albania responsible for loss of life and damage suffered by British warships when the vessels struck mines laid in Albanian territorial waters. In its Judgment, the Court has acknowledged that every State is obligated "not to allow knowingly its territory to be used for acts contrary to the rights of other States".[355] The ICJ has alluded to specific legal rights of the UK. The UK was entitled to the protection of its right of innocent passage through an international transit through which it should not be prohibited by a coastal State in time of peace,[356] and the right to receive from another State treatment in accordance with elementary considerations of humanity.[357] Albania, in its turn, had neither notified the presence of the mines nor warned the warships of the imminent danger they were

[352] *Ibid.*, Part Three, p. 1965.
[353] Stockholm Declaration on the Human Environment, 1972, 11 ILM 1416, principle 21; Rio Declaration on Environment and Development, 1992, 31 ILM 876, principle 2. Usually, the no-harm principle is regarded as a rule of customary international environmental law. See in detail D. Langlet, *Prior informed consent and hazardous trade: regulating trade in hazardous goods at the intersection of sovereignty, free trade and environmental protection*, Kluwer Law International, 2009, pp. 50-61; K. Bannelier, "Foundational judgment or constructive myth? The Court's decision as a precursor to international environmental law", in: K. Bannelier, T. Christakis et al. (eds), *The ICJ and the evolution of international law: the enduring of the Corfu Channel case*, 2012, pp. 248-255. See also Chapter 5.
[354] *Corfu Channel case (United Kingdom of Great Britain and Northern Ireland v. Albania*), Judgment, 9 April 1949, ICJ Reports 1949, p. 4.
[355] *Ibid.*, p. 22.
[356] *Ibid.*, p. 28 and pp. 29-30.
[357] *Ibid.*, p. 22.

approaching.[358] Thus, the Court referred to harm to "the rights of other States". It is important to underline that the core issue considered in *Corfu Channel* did not concern an environmental problem.[359] Therefore, it is reasonable to argue that the no-harm principle offers the protection of rights of third States, and not only the environment of other States or the environment of areas beyond the limits of national jurisdiction.[360]

A number of provisions of the UNCLOS reflect the principle not to cause harm to the rights of other States. For example, pursuant to article 56 (2), each coastal State exercising its rights and performing its duties in the EEZ "shall have due regard to the rights and duties of other States". In accordance with article 78 (2), each coastal State exercising its sovereign rights over the CS "must not infringe or result in any unjustifiable interference with navigation and other rights and freedoms of other States".[361] The regime of provisional measures considered in Chapter 3 may also be viewed as a specific application of the no-harm principle.

The existence of the no-harm principle in the context of rights may have legal implications for authorizing activities with respect to shared hydrocarbons. It would be internationally wrongful for a State to permit petroleum activities under its jurisdiction and control that entail a risk of causing damage to rights of other States. In other words, a State must abstain from conducting activities which might negatively affect (a) undisputed rights of another State (i.e., with respect to transboundary hydrocarbons) and (b) those rights that another State may have in an area of overlapping maritime claims.

According to the *Corfu Channel* case, the no-harm principle is accompanied by the requirement of knowledge which a State has, or ought to have, of the unlawful activities being conducted within its jurisdiction and control.[362] In reality, there can be very little doubt that a State would

[358] *Ibid*., p. 22.

[359] Nevertheless, this Judgment has repeatedly been cited in connection with the legal analyze of international environmental problems. See, for example, *supra* note 283, p. 115. Subsequently, the ILC quoted the *Corfu Channel* case in the course of its drafting work on the AP.

[360] The AP also state in favor of a broader interpretation of the notion 'harm' that includes damage caused to persons, property or the environment (AP, draft art. 2). Nevertheless, the AP do not mention harm to the rights of other States. See also Chapter 5.

[361] See also *Dispute concerning Delimitation of the Maritime Boundary between Bangladesh and Myanmar in the Bay of Bengal (Bangladesh/Myanmar)*, Judgment, 14 March 2012, ITLOS Reports 2012, para. 475. See also Chapter 4.3.

[362] The ICJ underlined that "it cannot be concluded from the mere fact of the control exercised by a State over its territory and waters that that State necessarily knew, or ought to have known, of any unlawful act perpetrated therein, nor yet that it necessarily knew, or should have known, the authors. This fact, by itself and apart from other circumstances, neither involves *prima facie* responsibility nor shifts the burden of proof" (*Corfu Channel*, p. 18). It has been observed that the ICJ's reasoning seems to contradict the holding of *Trail Smelter*: namely, that a State is responsible for every transboundary harm when it exceeds a certain threshold of gravity. See Bannelier 2012, *supra* note 353, p. 246.

not be aware of ongoing hydrocarbon activities, as the authorization of these activities is within its authority. Another question, however, is whether a State would know that the authorized petroleum activity is contrary to the (alleged) rights of the neighboring States. For instance, this issue may arise in a situation where State A has authorized hydrocarbon activities, while neighboring State B has not proclaimed its sovereign rights over the CS on which State A's activities take place.[363] Similarly, in the context of cross-border hydrocarbons, one can envisage a situation where a State is not initially able to identify that a field discovered on its side of the maritime boundary extends across this boundary. Chapters 3 and 4 will deal with those situations.

Although in this section, the no-harm principle is discussed outside the context of the environment, its environmental dimension is worth emphasizing. Under international environmental law, States conducting *unilateral and joint* exploration and exploitation activities with respect to shared hydrocarbons (as well as other non-living resources) are required to ensure that these activities do not cause significant harm to the (marine) environment of other States and global commons areas (e.g., the high seas and the Area).[364] It is important to note that this thesis argues that the obligation to prevent harm to the environment is not only limited to maritime areas where a State has legally established its sovereign rights to explore and exploit, but it also applies to areas where this State may have such rights.[365] In other words, this means that a State shall protect and preserve the environment when permitting any hydrocarbon activity in an undelimited area because such activity always poses a risk of environmental harm, especially to its neighbors.[366] Otherwise, international environmental law would fail to protect many areas of overlapping maritime claims which are not covered by provisional arrangements and where extensive hydrocarbon activities take place (such as the Gulf of Thailand and the South China Sea). Consequently, the obligation to prevent significant harm to the environment also applies in situations where several States carry out joint petroleum activities in undelimited areas.[367]

[363] UNCLOS, art. 77 (3). See also Chapter 2.3.
[364] See Chapter 5.
[365] UNCLOS, arts. 15, 74 and 83. See also Chapters 3 and 5.
[366] For example, Côte d'Ivoire, when requesting provisional measures under article 290 of the UNCLOS, argued that Ghana's hydrocarbon activities in the disputed maritime area had created a risk of serious harm to the marine environment. While the SC found that Côte d'Ivoire had not adduced sufficient evidence to support this claim, it stated that the protection and preservation of the marine environment is "of great concern" of the SC (*Ghana/Côte d'Ivoire* Order, paras. 67-73). See also *South China Sea*, paras. 927 and 940.
[367] See Chapters 5 and 6.

Thus, the no-harm principle's application extends beyond the environmental context. Translated to the context of shared hydrocarbons, this principle would require State A to refrain from conducting those petroleum operations that might adversely affect the (alleged) sovereign rights of State B and, consequently, the potential benefits arising from the exercise of these rights. Chapter 5 of this thesis examines in detail the environmental aspect of the no-harm principle.

2.7 Conclusions and observations

This Chapter has examined the basic principles of international law applicable in the context of shared hydrocarbons. Starting with the principle of sovereign rights over shared hydrocarbons, the Chapter considered the principles that are inherent to the characterization of shared hydrocarbons as a type of shared natural resources. These principles require States that share a hydrocarbon field to: (a) cooperate in order to manage this field, including procedural commitments; (b) abstain from authorizing a hydrocarbon activity that might harm the rights of the other State, including potential rights in an area where a maritime boundary has not yet been established, and the (marine) environment; and (c) respect that each State is entitled to an equitable share of benefits derived from the exploitation of this field.

However, as highlighted above, due to the specific characteristics of shared hydrocarbons, the content of these general principles in this regard is likely to differ from those principles related to other types of shared natural resources mentioned in this Chapter. Moreover, the regime governing each category within the framework of shared hydrocarbons may have an additional effect on the implementation of the general principles. For example, as noted in Chapter 2.3, the operation of the principle of sovereign rights is different depending on whether there is a disputed or cross-border petroleum deposit. Another example is that the application of the principle of equitable utilization/apportionment in the context of transboundary hydrocarbons may be dissimilar to that existing in the context of disputed hydrocarbons. While each State's entitlement to an equitable share in a transboundary deposit appears to be unquestionable (although there is uncertainty as to the exact share), such an entitlement may be contested in the context of disputed hydrocarbons. Chapters 3 and 4 of Part II consider in more detail the regimes governing each category of shared hydrocarbons and discuss the features of applying the general principles outlined in this Chapter.

CHAPTER 3. THE REGIME GOVERNING DISPUTED HYDROCARBONS*

3.1 Introduction

This Chapter addresses the question of what obligations a State owes to its neighbor when permitting and/or conducting offshore petroleum resource activities in a maritime area that is also claimed, or may be claimed, by this neighboring State, and whether that State can commence those activities prior to the final determination of a maritime boundary or in the absence of some form of cooperation in this regard. As noted earlier in this thesis, there are many maritime areas of overlapping claims of several coastal States over the same EEZ and/or (extended) CS across different parts of the world.[368]

As discussed in Chapter 2, the effect of the overlap between States' EEZ and CS claims is that two (or more) sets of sovereign rights of claimant States apply to the same maritime area, including any offshore oil and gas resources contained therein. The UNCLOS, in paragraph 3 of articles 74 and 83, seeks to regulate maritime areas of overlapping claims.[369] Articles 74 (3) and 84 (3) of that Convention stipulate that States, pending a final delimitation of their EEZ and CS, "shall make every effort to enter into provisional arrangements of a practical nature and, during this transitional period, not to jeopardize or hamper the reaching of the final [delimitation] agreement". Hereby, these provisions impose two obligations upon States parties to the UNCLOS in the context of a maritime boundary dispute. The first obligation is that States must make every effort to conclude a provisional arrangement of a practical nature. The second obligation is that States must make every effort not to jeopardize or hamper the reaching of a boundary agreement. Paragraph 3 of articles 74 and 83 also emphasizes that these two obligations shall be performed "in a spirit of understanding and cooperation".

Before considering the substantive scope and content of the mentioned obligations (Chapters 3.3 and 3.4 below), the issue of their temporal scope is addressed in the following section. This

* Parts of this Chapter are based on my article: N. Ermolina, "Unilateral Hydrocarbon Activities in Undelimited Maritime Areas", *Indonesian Journal of International Law*, 2018/2019 (forthcoming).

368 See van Logchem 2018, *op. cit.*, p. 210. There are several types of overlapping maritime claims. See more T. Davenport, "The exploration and exploitation of hydrocarbon resources in areas of overlapping claims", in: R. Beckman et al. (eds), *Beyond Territorial Disputes in the South China Sea: Legal Frameworks for the Joint Development of Hydrocarbon Resources*, Edward Elgar, 2013, p. 99; D. Anderson and Y. van Logchem, "Rights and Obligations in Areas of Overlapping Maritime Claims", in: S. Jayakumar, T. Koh and R. C. Beckman (eds), *The South China Sea Disputes and Law of the Sea*, 2014, pp. 194-195.

369 It is worth noting that the CCS does not contain similar provisions.

issue is important because State responsibility may be triggered only when a State breaches an international obligation that is in force for that State at the time the breach occurs.[370] However, it should be borne in mind that these treaty obligations might exist in the form of general rules of international law, which are also applicable to States that are non-parties to the UNCLOS. The two obligations contained in articles 74 (3) and 83 (3) of the UNCLOS could also derive from the general principles discussed in Chapter 2. This Chapter also examines the relationship between the "not to jeopardize or hamper" obligation and a more general duty of States to refrain from acts that might aggravate or extend a dispute in Chapter 3.6.

3.2 The time frame of existence of the article 74 (3) and 83 (3) obligations

Paragraph 3 of articles 74 and 84 of the UNCLOS begins with the phrase "pending agreement as provided for in paragraph 1". Hereinafter, it introduces a second phrase "during this transitional period". Logically, the first phrase relates to the obligation to enter into provisional arrangements, while the second phrase is directly linked to the obligation not to jeopardize or hamper.[371] This section considers the meaning of these two phrases.

3.2.1 "Pending [a maritime boundary] agreement"

It is unclear when a future delimitation agreement is considered to be "pending". A number of legal commentators have emphasized that the existence of the obligations does not depend on whether or not delimitation negotiations have been initiated.[372] Indeed, the affirmation that the moment of the emergence is somehow associated with the negotiation process may detract from the significance of these obligations. It may be likely that there would be a considerable time difference between the moment when negotiations start and when the maritime claims of neighboring States (potentially) overlap. Being dependent on the commencement of the negotiations, the obligations would therefore not be in force, for example, at the stage when, or in circumstances when, one of the parties would have refused to negotiate, or if the negotiations reached a deadlock or were discontinued.[373]

[370] ARSIWA, draft art. 13.
[371] Anderson and van Logchem, *op. cit.*, p. 209.
[372] R. Lagoni, "Interim Measures Pending Maritime Delimitation Agreements", *The American Journal of International Law*, 1984, vol. 78 (2), pp. 357 and 364; S. N. Nandan and S. Rosenne (eds), *United Nations Convention on the Law of the Sea 1982: A Commentary*, vol. II, Dordrecht: Martinus Nijhoff, 1993, p. 815.
[373] Lagoni 1984, *op. cit.*, p. 364.

If the point in time at which the obligations stemming from paragraph 3 emerge is tied to the time at which it is apparent that maritime claims to a particular area do, or might potentially, overlap,[374] that elicits the question of the circumstances in which the existence of overlapping claims becomes clear. Unlike claims to an EEZ, States are not required to make an express claim to a CS.[375] Undoubtedly, the obligations would arise when neighboring States, through diplomatic channels or by other means, have explicitly acknowledged that an area of overlapping maritime claims exists, giving rise to a need for delimitation.[376] It also seems easy to establish the fact that States have overlapping maritime claims to a CS beyond 200 nm.[377]

However, there is less clarity in the case when State A has made its claims known (e.g., enacted a relevant law) or has proceeded to exercise its (alleged) sovereign rights to explore and exploit, while State B has raised no objection to that.[378] It is reasonable to assume that the absence of reaction does not activate the obligations under paragraph 3 because it is unlikely that State A can unilaterally identify where exactly maritime claims of State A and State B overlap. The question arises as to whether the obligations are triggered when State B, after a certain period of time, starts to contest the position and activities of State A (for example, because State A has discovered a large-volume petroleum resource or State B has not been able to protest) on the basis that State B was not obligated to proclaim its rights over the CS.[379] The *Ghana/Côte d'Ivoire* case exemplifies this scenario. In that case, Ghana had authorized petroleum operations in a maritime area for a long time (since the 1960s) before Côte d'Ivoire started to react (beginning in 2009). Ghana did so in the belief that a *de facto* maritime boundary was established and Côte d'Ivoire tacitly consented to Ghana's petroleum activities. Leaving aside the SC's conclusions that there was no tacit delimitation agreement between Ghana and Côte d'Ivoire and that Côte d'Ivoire was not estopped from objecting,[380] it is notable that the Chamber was of the view that Ghana's obligation not to jeopardize or hamper clearly arose in 2009 when the existence of a maritime delimitation dispute and the location of the disputed area became, or should have become, obvious to Ghana.[381] In other words, it means that in a similar situation where State B breaks its silence and starts to object, State A must pay due attention to

[374] Y. van Logchem, "The Scope of Unilateralism in Disputed Maritime Areas", in: C. H. Schofield et al. (eds), *The Limits of Maritime Jurisdiction*, Leiden: Martinus Nijhoff Publishers, 2014, p. 178.
[375] UNCLOS, art. 77 (3); *Ghana/Côte d'Ivoire* Judgment, para. 590. See also Chapter 2.3.
[376] Anderson and van Logchem, *op. cit.*, p. 209.
[377] States must follow the procedure established in article 76 of the UNCLOS. See also Chapter 2.3.
[378] BIICL's Report on Undelimited Maritime Areas, *op. cit.*, para. 108.
[379] UNCLOS, art. 77 (3). See Chapter 2.3.
[380] *Ghana/Côte d'Ivoire* Judgment, Parts VII and VIII.
[381] *Ibid.*, paras. 588, 630 and 631.

the obligations set forth in articles 74 (3) and 83 (3) of the UNCLOS, even if State A believes that State B is estopped from objecting or has no entitlements. State B may indeed have good reasons why it could not react earlier (e.g., internal conflicts that prevented State B from focusing on delimitation issues). The subsequent issue relates to the legal consequences attached to the moment of triggering of paragraph 3: for example, whether State A would be compelled to halt its hydrocarbon activities in the contested maritime area or to share the benefits received prior to State B's objection. The *Ghana/Côte d'Ivoire* case demonstrates that it may be difficult to suspend ongoing activities, but that it is possible to freeze new petroleum activities.[382]

The opening phrase of paragraph 3 is also intended to determine the moment of termination of the obligation to seek provisional arrangements. The French and Russian texts of the UNCLOS clearly refer to the date of *conclusion* of a delimitation agreement.[383] However, it may be a time difference between the date of conclusion of a treaty and its date of entry into force.[384] Moreover, there is also a risk that the adopted delimitation treaty will not come into force. In this respect, the rules stemming from the law of the treaties are applicable.[385] A delimitation agreement may apply provisionally pending its entry into force.[386] Article 18 of the VCLT imposes upon States an obligation to refrain from acts that might defeat the object and purpose of a treaty prior to its entry into force. In other words, if a delimitation treaty is signed, but not yet in force, the Parties to that treaty are bound by their accord on where the delimitation line lies. Following this logic, the obligations under paragraph 3 cease once a final delimitation agreement is reached as long as neither contracting Party attempts to withdraw from that agreement. Thus, paragraph 3 is not tied to the date of entry into force of a delimitation treaty.[387]

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[382] *Ibid.* See also Chapter 3.4.

[383] UNCLOS, arts. 74 (3) and 84 (3). French text: "En attendant la conclusion de l'accord visé au paragraphe l, […]". Russian text: "До *заключения* соглашения, как предусматривается в пункте 1, […]" (emphasis added).

[384] Delimitation agreements may enter into force upon signature. However, they are usually subject to ratification or approval. See, *Handbook on the Delimitation of Maritime Boundaries*, DOALS, 2000, p. 82; D. Anderson, "Negotiating Maritime Boundary Agreements: A Personal View" in R. Lagoni and D. Vignes (eds), *Maritime Delimitation*, Martinus Nijhoff Publishers, 2006, p. 139. See, for example, Chapter 1 on the Canada-France Agreement.

[385] The governing law is Part II of the VCLT.

[386] VCLT, art. 25. See, for example, Agreement between the United States of America and the Union of Soviet Socialist Republics on the Maritime Boundary, 1 June 1990, EIF: pending. The Parties, however, agreed to abide by the terms of that delimitation agreement. See Agreement between the United States of America and the Union of Soviet Socialist Republics to abide by the terms of the Maritime Boundary Agreement of 1 June 1990, pending entry into force, 2262 UNTS 408.

[387] For example, the Russian text of paragraph 3 of articles 74 and 83 of the UNCLOS refers to "заключенное соглашение" that means a delimitation treaty concluded between States, which is different from "действующее соглашение" that means a delimitation treaty that is *in force* under paragraph 4 of these articles.

It is important to note that the term 'agreement' is employed in a broader context, covering not only the situation where States have agreed on a maritime boundary, but also where the delimitation dispute has been settled by a court or tribunal.[388] The question is whether, in the latter situation, the obligation would cease once some form of dispute settlement procedure has been invoked, or once the court or tribunal has decided that it has jurisdiction, or only when the court or tribunal has delivered its final judgment on the merits.[389] It seems reasonable to suggest that the obligations are terminated once the determination of a maritime boundary is made by a judicial body. However, there might be a situation where one of the Parties to a delimitation dispute does not accept the final decision.[390] In this situation, it could be argued that the obligations of paragraph 3 continue to apply until the decision is fully implemented by the States involved.

3.2.2 "During this transitional period"

As regards the obligation not to jeopardize or hamper, articles 74 (3) and 84 (3) of the UNCLOS stipulate that this obligations lasts "during this transitional period". The articles provide no explanation of what the phrase "during this transitional period" implies.

The question is when the transitional period might be considered to conclude. The logical conclusion is that paragraph 3 refers to the period at which a maritime boundary is agreed by the Parties or is determined by a court or tribunal. The SC in *Ghana/Côte d'Ivoire* offered the similar reading of paragraph 3.[391] At the same time, the SC drew a distinction between two scenarios within the transitional period: the scenario where a provisional arrangement is reached and the scenario where no such provisional arrangement exists.[392] It is not clear what the SC desired to show by this distinction: whether the obligation not to jeopardize or hamper is

[388] UNCLOS, arts. 74 (2) and 84 (2).
[389] BIICL's Report on Undelimited Maritime Areas, *op. cit.*, p. 32, para. 109.
[390] For example, Croatia issued a statement declaring that it does not accept the Final Award of 29 June 2017 in *Croatia v. Slovenia*, available at http://www.mvep.hr/en/info-servis/press-releases/,28223.html (last accessed January 2019). In *Cameroon v. Nigeria: Equatorial Guinea intervening*, Nigeria initially did not accept the ICJ's Judgment of 10 October 2002. The process of the Judgment's implementation took more than 5 years. See in detail H. V. Lukong, *The Cameroon-Nigeria Border Dispute: Management and Resolution, 1981-2011*, Langaa Research & Publishing GIG, 2011, Chapter 5. In 2010, Cameroon and Nigeria signed an agreement on joint development of a number of cross-border petroleum fields (the text of this agreement is not publicly available). See "Cameroon and Nigeria agree joint development along part of their maritime boundary", IBRU news, 15 March 2011, available at https://www.dur.ac.uk/ibru/news/boundary_news/?itemno=11734&rehref (last accessed January 2019). See also note 610.
[391] *Ghana/Côte d'Ivoire* Judgment, para. 630.
[392] *Ibid.* See also the statement of the Conciliation Commission between Timor-Leste and Australia. In its decision on Australia's objection to competence, the Conciliation Commission stated that the transitional period is a period "pending a final delimitation and the provisional arrangements of a practical nature", para. 97, available at https://pcacases.com/web/sendAttach/1921 (last accessed January 2019).

terminated once a provisional arrangement is concluded or whether the obligation not to jeopardize or hamper becomes supplementary where a provisional arrangement is in place. The latter interpretation is preferable for a number of reasons.

A provisional arrangement rarely regulates all activities in the disputed maritime area and does not always apply to the entire area of overlapping claims. Logically, if a provisional arrangement solely covers fisheries activities or a part of a disputed area, the obligation not to jeopardize or hamper would be applicable to other activities, such as hydrocarbon exploration and exploitation activities, or to other parts of the contested area. Against this backdrop, Anderson and van Logchem assert that the obligation not to jeopardize or hamper applies while a provisional arrangement is in place, as well as before such an arrangement is concluded.[393] Their approach can be supported by the fact that no provisional arrangement can cover all acts which may amount to jeopardizing or hampering the reaching a final delimitation.

Thus, it appears reasonable that the duration of the obligation not to jeopardize or hamper is equated with the temporal scope of the obligation to seek provisional arrangements. In other words, the obligations under articles 74 (3) and 83 (3) of the UNCLOS are triggered once State A has realized that a certain maritime area is also claimed by State B and cease when a delimitation agreement between State A and State B is concluded or when a maritime boundary is established by a judicial body (if neither State challenges the validity of its decision). There is no reason to attach a different meaning to the phrase "during this transitional period" only on the basis that the period it refers to is already covered by paragraph 3's opening phrase.[394]

3.2.3 Sovereignty disputes and disputes over the status of maritime features

A more complex question arises as to whether the obligations stemming from paragraph 3 also apply in situations where the sovereignty over land territory generating maritime zones (e.g., the dispute between Ukraine and Russia over the Crimea),[395] including over islands (e.g., the dispute between Argentina and the UK over the Falklands (Malvinas) Islands),[396] or where the legal status of a maritime feature is disputed (e.g., whether a maritime feature is an island or a

[393] Anderson and van Logchem, *op. cit.*, p. 209.
[394] See also Chapter 3.6.
[395] *Dispute Concerning Coastal State Rights in the Black Sea, Sea of Azov, and Kerch Strait (Ukraine v. the Russian Federation)*, PCA Case No. 2017-06, recent developments of this case are available at https://pcacases.com/web/view/149 (last accessed January 2019).
[396] See Y. van Logchem, "Exploration and Exploitation of Oil and Gas Resources in Maritime Areas of Overlap under International Law: the Falklands (Malvinas)", *Hague Yearbook of International Law/Annuaire de La Haye de Droit International*, 2015, vol. 28 (publication date: December 2017), pp. 29-66.

rock as in the *South China Sea* case).[397] In *South China Sea*, the Tribunal concluded that several features in the central part of the South China Sea do not generate maritime entitlements beyond the territorial sea and, therefore, there is no overlap of EEZ and CS requiring delimitation with the coasts surrounding the South China Sea.[398] In other words, in an analogous situation where a particular maritime feature is to be considered a rock or low-tide elevation (like in *South China Sea*), the obligations laid down in articles 74 (3) and 83 (3) of the UNCLOS are not triggered.

In the literature, there is no consensus on the applicability of articles 74 (3) and 83 (3) to the situations mentioned above in this section.[399] Nevertheless, it is reasonable to argue that the obligations of paragraph 3 shall apply until a determination on the absence of overlapping entitlements is made (for example, by a judicial body). At the same time, such a determination may be difficult without dealing with the question of sovereignty (e.g., there is no overlap between Argentina and the UK if Argentina is indeed entitled to exercise sovereignty over the Falklands (Malvinas) Islands) that usually limits the jurisdiction of international courts and tribunals.[400] At this point, it is worth recalling that obligations similar to those embedded in articles 74 (3) and 83 (3) of the UNCLOS may arise from more general principles of international law considered in Chapter 2 above.[401]

3.3 The obligation to seek provisional arrangements of a practical nature

This section considers the first obligation set forth in articles 74 (3) and 83 (3) of the UNCLOS according to which pending a final delimitation, States, in a spirit of understanding and cooperation, are required to "make every effort to enter into provisional arrangements of a practical nature".

3.3.1 The legal content of the obligation

The language used in articles 74 (3) and 83 (3) of the UNCLOS indicates that there is no obligation to enter into a provisional arrangement of a practical nature. States are only obligated

[397] Other examples can be found in the map over disputed territories, available at http://metrocosm.com/disputed-territories-map.html (last accessed January 2019).
[398] *South China Sea*, Part VI.
[399] For a review of different views, see Van Logchem 2015 (2017), *supra* note 396.
[400] See, for example, *Chagos Marine Protected Area Arbitration (Mauritius v. United Kingdom)*, Award, 18 March 2015, Chapter V (A) (2) (b).
[401] See also Chapters 3.1 and 3.6.

to "make every effort" to arrive at such a provisional arrangement. The requirement to "make every effort" was considered in *Guyana v. Suriname* where the Tribunal acknowledged that this requirement "leaves some room for interpretation" either by States or by any dispute settlement body.[402] Nevertheless, the Tribunal was of the view that the obligation is framed in a way that imposes on the parties "a duty to negotiate in good faith",[403] which requires "a conciliatory approach to negotiations, pursuant to which they would be prepared to make concessions in the pursuit of a provisional arrangement".[404]

However, it is well known that the duty to negotiate in good faith does not imply an obligation to reach an agreement.[405] States are required to enter into negotiations with a view to concluding an agreement and not merely to go through a formal process of negotiation.[406] The negotiations are to be "meaningful, which will not be the case when either of [the Parties] insists upon its own position without contemplating any modification of it".[407] Thus, the first obligation stemming from articles 74 (3) and 83 (3) of the UNCLOS constitutes a requirement to be involved in negotiations moving towards the reaching of a provisional arrangement of a practical nature, regardless of whether the negotiations would be fruitful or not.

The concept of provisional arrangements of a practical nature is not further developed in the UNCLOS. It has been observed that the term 'arrangement' is employed to disassociate it from an 'agreement'.[408] The former term is used to indicate a document having other functions than the delimitation of a maritime boundary between neighboring States.[409] An arrangement may take the form of both formal treaties between States, and informal documents such as notes verbales, exchange of notes, agreed minutes, memoranda of understanding.[410] Thus, States may title a provisional arrangement as they determine, including the use of the term 'agreement' or 'treaty'. Articles 74 (3) and 83 (3) of the UNCLOS make it clear that a possible arrangement is intended to be temporary, namely until a maritime boundary is established. At the same time, nothing prevents States from continuing the application of the already concluded provisional

[402] *Guyana v. Suriname,* para. 461.
[403] See also *Ghana/Côte d'Ivoire* Judgment, para. 627.
[404] *Guyana v. Suriname,* para. 461.
[405] *North Sea Continental Shelf,* para. 87.
[406] *Ibid*., paras. 85 (a) and 87.
[407] *Ibid*., para. 85 (a).
[408] Kim 2004, *op. cit.*, p. 46.
[409] *Ibid.*
[410] Lagoni 1984, *op. cit.*, p. 358; Kim 2004, *op. cit.*, pp. 46-47. See also Appendix I.

arrangement (or some elements of this arrangement), even after the reaching of a final boundary agreement.[411]

Articles 74 (3) and 83 (3) of the UNCLOS also contain the requirement that provisional arrangements should be "of a practical nature". Although the articles provide no precision concerning the meaning of the phrase 'of a practical nature', it has been construed to mean that such arrangements are to provide practical solutions to problems which may arise regarding the use of a maritime area in dispute.[412] In other words, neighboring States themselves shall determine whether it is appropriate to enter into negotiations relating to provisional arrangements.

The last sentence of articles 74 (3) and 83 (3) of the UNCLOS provides that "[provisional] arrangements shall be without prejudice to the final delimitation". Indeed, a large number of existing (and terminated) provisional arrangements include a clause identical to the said provision.[413] The requirement of non-prejudice appears to imply that nothing contained in the provisional arrangement may affect the legal position and claims of a State in relation to the delimitation dispute.[414] However, not every interim arrangement contains a "without prejudice" clause. Consequently, it elicits the question of whether the absence of such a clause (particularly in provisional arrangements concluded between States that are not parties to the UNCLOS) has any significant legal implications. Of course, its insertion is preferable for avoiding legal uncertainty. Nonetheless, even if a "without prejudice" clause is not included in a provisional arrangement, there is no reason to believe that this arrangement is inconsistent with the requirement of non-prejudice to a final delimitation. An interesting question relates to the inclusion in the (terminated) CMATS Treaty of a 50-year moratorium on discussing, negotiating or otherwise pursuing the settlement of maritime boundaries between Timor-Leste and Australia.[415] Although the Conciliation Commission did not discuss the issue of whether this moratorium was compatible with the non-prejudice requirement existing under paragraph 3 of articles 74 and 83 of the UNCLOS, one can suppose that in a similar situation such an issue might arise. However, it is worth noting that the Conciliation Commission did not interpret the

[411] Lagoni 1984, *op. cit.*, p. 358. See, for example, the Timor Sea example (Chapters 1 and 6) and the Saudi Arabia-Kuwait example (in particular Chapter 7).
[412] Lagoni 1984, *op. cit.*, p. 358.
[413] See, for example, Japan-S. Korea Agreement, art. XXVIII; TST, art. 2; CMATS Treaty, art. 2; Barbados-Guyana Treaty, Preamble; Nigeria-STP, Preamble.
[414] *Ibid.* See also *Fisheries Jurisdiction case (United Kingdom of Great Britain and Northern Ireland v. Iceland),* Judgment, 25 July 1974, ICJ Reports 1974, para. 37.
[415] CMATS Treaty, art. 4.

moratorium as precluding delimitation negotiations between the Parties, including under article 298 (1) (a) (i) of the UNCLOS. [416]

In sum, the first obligation contained in articles 74 (3) and 83 (3) of the UNCLOS constitutes a duty to cooperate in respect of various practical issues that may arise in a disputed maritime area. Although this obligation leaves States with considerable discretion as to the extent of efforts that must be made and the type of provisional arrangement that should be concluded, its importance should not be completely dismissed.[417] The obligation to make every effort to reach an interim arrangement is not merely a recommendation, but rather a binding rule "whose breach would represent a violation of international law".[418] The following section provides guidance on how to act in good faith in fulfilling the obligation to seek a provisional arrangement.

3.3.2 The issue of breach

In *Ghana/Côte d'Ivoire*, the SC held that the fact that Côte d'Ivoire had not requested Ghana to enter into negotiations on a provisional arrangement of a practical nature prevented Côte d'Ivoire from claiming that Ghana had violated the obligation to negotiate such an arrangement.[419] In other words, the first step required of a State is a proposal to the other claiming State to establish a provisional arrangement in a disputed maritime area. This proposal triggers the other State's duty to negotiate in good faith.

The *Guyana v. Suriname* case is more informative as to what actions are required of a State to comply with its obligation to negotiate a provisional arrangement in good faith. In this case, Guyana and Suriname both claimed that the other party breached its duty to make every effort to enter into provisional arrangements of a practical nature.[420] The Tribunal stated that the attempts of Guyana and Suriname to reach a provisional arrangement appear to have started in 1989.[421] In 1991, Guyana and Suriname concluded a MoU: "Modalities for Treatment of the Offshore Area of Overlap between Guyana and Suriname".[422] This MoU provided that further discussions would have to occur if any discoveries would be made.[423] However, over the

[416] Conciliation Commission, Decision on Australia's Objections to Competence of 19 September 2016, para. 81, available at https://pcacases.com/web/sendAttach/1921 (last accessed January 2019).
[417] N. Klein, "Provisional Measures and Provisional Arrangements in Maritime Boundary Disputes", *The International Journal of Marine and Coastal Law*, 2006, vol. 21 (4), pp. 444-445.
[418] Lagoni 1984, *op. cit.*, p. 354; Ong 1999, *op. cit.*, p. 784. See *Guyana v. Suriname*, Chapter VIII (C).
[419] *Ghana/Côte d'Ivoire* Judgment, para. 628.
[420] *Guyana v. Suriname*, para. 471.
[421] *Ibid.*, para. 472.
[422] *Ibid.*, paras. 148 and 472.
[423] *Ibid.*, para. 472.

following years, Suriname showed no particular interest in further discussions, despite several efforts made by Guyana.[424]

The Tribunal drew a distinction between (in)action of Suriname prior to and after 8 August 1998, which is the date when the UNCLOS came into force.[425] The Tribunal stated that acts prior to 8 August 1998 could not form the basis of a finding that Suriname breached its obligation under the UNCLOS.[426] In this respect, one can recall the rule of State responsibility according to which an act of a State constitutes a breach of an international obligation only when the State is bound by that obligation at the time the act occurs.[427] Therefore, the Tribunal declared that only post-8 August 1998 conduct of Suriname was relevant to its consideration, while recognizing that pre-8 August 1998 conduct was also contrary to the duty to make every effort to conclude a provisional arrangement.[428] Thus, the Tribunal focused solely on the issue of breach of the UNCLOS-based obligation to cooperate in disputed maritime areas without examining its status under customary international law.[429]

The Tribunal found that Suriname violated its obligation to negotiate provisional arrangements. When Suriname became aware of Guyana's authorization of exploratory drilling in the disputed area, instead of attempting to engage in a dialogue which could have led to a satisfactory solution for both Parties, it resorted to self-help in threating the drilling rig, in violation of the UNCLOS.[430] Furthermore, the Tribunal stated that Suriname could have met its obligation if it would have actively attempted to bring Guyana to the negotiating table, or, at least, have accepted a last-minute invitation proposed by Guyana and negotiated in good faith.[431]

As regards Guyana, the Tribunal concluded that it also breached the obligation to make every effort to enter into provisional arrangements.[432] The Tribunal held that Guyana failed to inform Suriname directly of its plans for exploratory drilling, although such drilling had been prepared for some time before the incident (the notification in the press by way of CGX's public announcements was not sufficient).[433] Moreover, Guyana should have sought to engage

[424] *Ibid.*, para. 472.
[425] *Ibid.*, para. 458.
[426] *Ibid.*, para. 474.
[427] ARSIWA, draft art. 13. See also Chapter 5.
[428] *Guyana v. Suriname*, para. 474.
[429] As noted in Chapter 2, several legal commentators have concluded that a rule of customary international law requiring cooperation is now applicable to shared hydrocarbons located in disputed maritime areas.
[430] *Guyana v. Suriname*, para. 476.
[431] *Ibid.*
[432] *Ibid.*, paras. 477 and 486.
[433] *Ibid.*, para. 477.

Suriname in discussions concerning the drilling at a much earlier stage.[434] The Tribunal then illustrated the means by which Guyana could have complied with its duty under the UNCLOS, including "(a) giving Suriname official and detailed notice of the planned activities; (b) seeking cooperation of Suriname in undertaking the activities; (c) offering to share the results of the exploration and giving Suriname an opportunity to observe the activities; and (d) offering to share all the financial benefits received from the exploratory activities".[435]

Although the Tribunal found that both Guyana and Suriname violated their obligations to negotiate provisional arrangements in good faith, it also noted that after the CGX incident, the Parties acted in conformity with the obligation to make every effort to arrive at a provisional arrangement, even though the joint meetings had not resulted in reaching such an arrangement.[436]

Thus, a number of conclusions follow from the foregoing. State A cannot invoke State B's international responsibility for a violation of the obligation to seek a provisional arrangement in the event that State A has not attempted to propose State B such an arrangement. At the same time, once State B is requested to conclude a provisional arrangement, it is required to enter into negotiations concerning this matter. It is expected that both States actively participate in the negotiation process. However, if the negotiations between States have not proved to be fruitful, it does not mean that the obligation to seek a provisional arrangement is breached by failure to achieve a result. Neither does it mean that this obligation ceases. As discussed in Chapter 3.2 above, the obligation continues to apply until State A and State B reach a final agreement on delimitation or a court/tribunal determines a maritime boundary.

It is interesting to note that among the steps Guyana could have taken in order to meet the obligation to make every effort to reach a provisional arrangement, the Tribunal listed the requirement to notify *directly* of unilateral drilling planned in the disputed area. It does not appear that the Tribunal based its statement upon the findings in relation to the obligation not to hamper or jeopardize, namely that Guyana's unilateral exploratory drilling was contrary to this obligation.[437]

[434] *Ibid.*
[435] *Ibid*.
[436] *Ibid.*, para. 478.
[437] See in detail Chapter 3.4.

The Tribunal's logic implies that when State A permits exploratory drilling (as well as other petroleum operations)[438] in an area also claimed by State B, State A shall give State B an official notice of these operations. In light of the general principles examined in Chapter 2, the requirement to notify is reasonable and justified. This research does not involve a detailed analysis of State practice regarding notification in disputed maritime areas. However, from the examples available,[439] it does not appear to be common for States to inform other States of their (unilateral) hydrocarbon activities. States usually find out necessary information in other sources (e.g., a press release published by a State based on a licensing round). One possible explanation for that might be that each State considers the CS on which hydrocarbon activities take place as appertaining to it. Therefore, it is not uncommon that States claiming sovereign rights over the same maritime area authorize competitive operations in this area without any notice, which often may result in tensions between them.

Subsequent questions are: (a) how does a notification of a planned activity affect this activity; and (b) what are implications in the absence of such a notification? These questions are interlinked with the question of what hydrocarbon activities are permissible in disputed maritime areas that is addressed in the next sections of this Chapter. At the same time, it could be argued that even if a petroleum operation is indeed allowed (although the following section demonstrates the legal uncertainty concerning this issue), the absence of a notification of that operation may constitute a breach of the duty to cooperate and such general principles of international law as the principle of good faith and the principle of good neighborliness.[440] Articles 74 (3) and 83 (3) of the UNCLOS set forth two separate duties whose breach should be treated differently.

3.3.3 Types of provisional arrangements of a practical nature

As discussed above, paragraph 3 does not specify types of provisional arrangements that States may enter into. Consequently, many States have formulated a wide variety of interim solutions, which are likely to constitute provisional arrangements of a practical nature within the meaning of articles 74 (3) and 83 (3) of the UNCLOS. These interim solutions include a moratorium on all or specific activities within a disputed maritime area,[441] joint exploitation of living and/or non-living marine resources, agreements on environmental cooperation, as well as agreements

[438] See Chapter 2.3.
[439] For example, *Guyana v. Suriname* and *Ghana/Côte d'Ivoire.*
[440] See Chapter 2 in this respect.
[441] There is also question of whether a moratorium is to be viewed as implementing the duty not to jeopardize or hamper. See Chapter 3.4.

on allocation of criminal and civil jurisdiction.[442] This thesis focuses only on one type of provisional arrangements that makes the exploration and/or exploitation of disputed hydrocarbons possible.[443] Such provisional arrangements are often referred to as "joint development agreements".[444] Nevertheless, this thesis does not use that term because each example of joint development has its own features[445] and, as indicated in Chapter 3.3.1, does not always take the form of an agreement. Chapter 6 will consider relevant provisional arrangements concluded between States in disputed maritime areas in detail.

There is considerable debate in the legal literature on whether the duty to cooperate with respect to disputed hydrocarbons reflects customary international law. While some commentators are of the view that the duty to cooperate constitutes a rule of customary international law,[446] other commentators oppose that view because State practice is far from being uniform and is conditioned not only by international law, but also by economic and social factors.[447] At the same time, even if the duty to cooperate in respect of disputed hydrocarbons is a rule of customary international law, this duty does not require States to achieve a concrete result, namely the conclusion of a provisional arrangement, and does not dictate a particular form of an arrangement to be concluded between States.

3.4 The obligation not to jeopardize or hamper final delimitation

Along with the positive obligation to make every effort to arrive at provisional arrangements of a practical nature, articles 74 (3) and 83 (3) of the UNCLOS provide a negative obligation to make every effort not to jeopardize or hamper the reaching of a final agreement on delimitation. This section examines the latter obligation. The obligation not to jeopardize or hamper is particularly important when neighboring States have not been able to reach a provisional arrangement or have not even attempted to do so insofar as this obligation is designed to limit activities in a disputed maritime area.[448] The importance of this obligation has increased in light

[442] R. Beckman, "The legal framework for joint development in the South China Sea", in: W. Shicun and N. Hong (eds), *Recent Developments in the South China Sea Dispute: the Prospect of a Joint Development Regime*, Routledge, 2014, p. 56. The examples of provisional arrangements under articles 74 (3) and 83 (3) of the UNCLOS, which have been negotiated after 16 November 1994, are mentioned in I. V. Karaman, *Dispute Resolution in the Law of the Sea*, 2012, pp. 351-353.
[443] See Appendix I.
[444] See Chapter 6 in this respect.
[445] *Ibid.*
[446] *Supra* note 429.
[447] See, for example, Davenport 2013, *op. cit.*, pp. 110-111. See also Chapter 1 on the two elements of an international custom.
[448] *Guyana v. Suriname*, para. 459. It is however important to keep in mind that the obligation not to jeopardize or hamper does not cease upon the adoption of a provisional arrangement. See Chapter 3.2.2 in this respect.

of the recent dictum of the SC in *Ghana/Côte d'Ivoire*. In paragraph 592 of its Judgment, the SC stated:

> maritime activities undertaken by a State in an area of the continental shelf which has been attributed to another State by an international judgment cannot be considered to be in violation of the sovereign rights of the latter if those activities were carried out before the judgment was delivered and if the area concerned was the subject of claims made in good faith by both States.

Consequently, the SC held that the argument advanced by Côte d'Ivoire that Ghana's hydrocarbon activities conducted in the disputed area constitute a violation of the sovereign rights of Côte d'Ivoire was not sustainable, even assuming that some of those activities took place in areas attributed to Côte d'Ivoire by the Judgment.[449] This statement has far-reaching implications. When State A authorizes and carries out hydrocarbon activities in a disputed maritime area without State B's permission, this would not be in breach of State B's sovereign rights even if the maritime area (or its parts) where these activities were taken place would be attributed to State B (State A needs to demonstrate that it made its claims in good faith). The SC's finding does not contribute to restrain States from conducting unilateral hydrocarbon activities in disputed maritime areas.[450] On the contrary, this finding may trigger unilateralism in those areas.[451] Thus, the negative obligation set forth in paragraph 3 of articles 74 and 83 of the UNCLOS appears to be the main "legal device" that can regulate the conduct of maritime activities, including hydrocarbon activities, in undelimited maritime areas.[452]

3.4.1 The core content of the obligation and its significance

From the outset, it is worth emphasizing that the requirement to "make every effort" also applies to the obligation not to jeopardize or hamper, not only to the obligation to seek provisional arrangements.[453] It would be a significant difference if the UNCLOS had stipulated an absolute obligation not to jeopardize or hamper. However, for convenience, the considered obligation is abbreviated as 'the obligation not to jeopardize or hamper' in this thesis. The temporal scope

[449] *Ghana/Côte d'Ivoire* Judgment, para. 594.
[450] *Ghana/Côte d'Ivoire*, Separate Opinion of Judge Paik, para. 18, available at https://www.itlos.org/fileadmin/itlos/documents/cases/case_no.23_merits/C23_Judgment_23.09.2017_SepOp_Paik_orig.pdf (last accessed January 2019).
[451] See in detail N. Ermolina and C. Yiallourides, "State responsibility for unilateral hydrocarbon activities in disputed maritime areas: The case of Ghana and Côte d'Ivoire and its implications", JCLOS Blog, 23 November 2017, available at http://site.uit.no/jclos/files/2017/11/JCLOS-Blog-231117_Ghana-blog_final.pdf (last accessed January 2019).
[452] *Ghana/Côte d'Ivoire*, Separate Opinion of Judge Paik, *supra* note 450, para. 18. Judge Paik has also noted that State B may be able to claim for compensation with respect to damage arising from activities of State A (for example, on the basis of unjust enrichment) conducted on the CS attributable to State B.
[453] *Guyana v. Suriname*, para. 459; *Ghana/Côte d'Ivoire* Judgment, paras. 626-627.

of this obligation and the meaning of the phrase 'make every effort' have been discussed in Chapters 3.2 and 3.3.1 above, respectively.

Paragraph 3 does not define the terms 'jeopardize' and 'hamper'. According to the Concise Oxford Dictionary, the verb 'jeopardize' means to "put (someone or something) into a situation in which there is a danger of loss, harm, or failure", while 'hamper' means to "hinder or impede the movement or progress of".[454] Thus, the obligation not to jeopardize or hamper appears to mean that States having overlapping claims regarding a certain maritime area must make every effort not to engage in activities that might endanger the reaching of a final agreement on delimitation or impede the progress of negotiations to that end.[455]

It is clear that the obligation not to jeopardize or hamper does not necessarily exclude all activities unilaterally conducted within undelimited maritime areas, but rather those that would jeopardize or hamper the reaching of a final delimitation agreement.[456] However, it is unclear which types of activities are to be regarded as having the effect of jeopardizing or hampering. In the framework of this Chapter, the principal question relates to the nature of unilateral hydrocarbon activities that is likely to breach the obligation not to jeopardize or hamper.[457]

Anderson and van Logchem, and van Logchem writing separately, affirm that the question of what type of conduct jeopardizes or hampers is not likely to be answered in the abstract. They argue that the assessment of whether a particular unilateral action amounts to jeopardizing or hampering is subjective.[458] However, a court or tribunal dealing with a (putative) breach of the obligation not to jeopardize or hamper would be likely to apply an objective criterion, as the Tribunal in *Guyana v. Suriname* did (or attempted to do).[459] The Tribunal introduced a standard of "(permanent) physical change to the marine environment" that in general terms implies that petroleum activities which satisfy this standard shall not be permitted in undelimited maritime

[454] The definitions are taken from the BIICL's Report on Undelimited Maritime Areas, *op. cit.*, para. 75, p. 22, which refers to the Concise Oxford Dictionary (10th edition, OUP 1999), pp. 759 and 644, respectively.
[455] *Ibid.*, paras. 76-83. See also *Ghana/Côte d'Ivoire*, Separate Opinion of Judge Paik, *op. cit.*, para. 6.
[456] Nandan and Rosenne (eds), *op. cit.*, p. 815. See also *Guyana v. Suriname*, para. 465.
[457] Apart from hydrocarbon activities, the same question can be asked in the context of other unilateral activities undertaken in undelimited maritime areas such as fishing, laying submarine cables or pipelines, marine scientific research or enforcing national legislation. Another question is whether other conduct (e.g., rejection of a proposal to negotiate a delimitation agreement or the expulsion of diplomats) may also be considered as being inconsistent with the obligation not to jeopardize or hamper.
[458] Anderson and van Logchem, *op. cit.*, p. 206; van Logchem 2014, *op. cit.*, p. 186.
[459] BIICL's Report on Undelimited Maritime Areas, *op. cit.*, para. 85, p. 25.

areas and those which do not, are to be allowed.[460] This Chapter discusses the reasonableness of such an approach with respect to the obligation not to jeopardize or hamper.

The existence of an objective standard as to what constitutes jeopardizing or hampering may be seen as also desirable for ensuring the stability of private petroleum companies' activities in undelimited maritime areas and the investment flow.

The issue of unilateral conduct is of a practical importance. There are a number of examples where States, despite the existence of a disputed maritime area, carry out unilateral exploration and/or exploitation activities in such area. The ongoing *Somalia v. Kenya* case exemplifies this scenario.[461] In other situations, the legality of unilateral petroleum activities has not yet been challenged before a judicial body (for different reasons).[462]

It is also important to note that there are examples where neighboring States have abstained from or suspended hydrocarbon activities in undelimited areas following an agreement or a protest from one of the States.[463] In some cases, unilateral hydrocarbon activities resulted in the conclusion of provisional arrangements.[464] This elicits the question of whether the duty of restraint embodied in the obligation not to jeopardize or hamper reflects customary international law. In 1984, Lagoni stated that articles 74 (3) and 83 (3) of the UNCLOS could be the basis for an emerging customary rule.[465] His observation was based on the fact that paragraph 3 represented an element of progressive development within the rules on delimitation that did not

[460] See Chapter 3.4.3 in this respect.
[461] *Maritime Delimitation in the Indian Ocean (Somalia v. Kenya)*, ICJ, pending, latest developments are available at https://www.icj-cij.org/en/case/161 (last accessed January 2019).
[462] See such examples in: A. Rizza, "The Falkland Islands and the UK v. Argentina Oil Dispute: Which Legal Regime?", *Institut für Völker- und Europarecht*, 2011, p. 76. The China's deployment of an oil rig in an area that is also claimed by Vietnam ("China optimistic of finding gas off Vietnam, could test ties further – experts", Reuters, 28 May 2014, available at http://www.reuters.com/article/china-vietnam-gas-idUSL3N0O72NT20140528 (last accessed January 2019)). Another example is in the Mediterranean Sea where Turkey argues that the Greek Cypriot Administration is not entitled to issue exploration and exploitation licenses in the "Block 6" because this Block belongs to the CS of Turkey ("Turkey threatens Cyprus, oil giants ENI and TOTAL, and to annex Northern Cyprus", Keep Talking Greece, 3 May 2017, available at http://www.keeptalkinggreece.com/2017/05/03/turkey-threatens-cyprus-eni-total-annex-northern-cyprus/ (last accessed January 2019)).
[463] Such examples are mentioned in paras. 9.46-9.48 (with the relevant footnotes) of the Counter-Memorial of Cote d'Ivoire in *Ghana/Cote d'Ivoire*, available at https://www.itlos.org/fileadmin/itlos/documents/cases/case_no.23_merits/pleadings/Counter_Memorial_final_Vol.I_Eng_TR.pdf (last accessed January 2019).
[464] See, for example, I. Townsend-Gault, "Petroleum development offshore: legal and contractual issues", in: N. Beredjick et al. (eds), *Petroleum Investment Policies in Developing Countries*, 1988, p. 150: "[South] Korea suggested joint development after Japan had objected to Korean licensing in the areas claimed by her". J. Saravanamuttu, "Malaysia's Approach to Cooperation in the South China Sea", in: S. Wu and K. Zou (eds), *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation*, Routledge, 2016, pp. 83-84 concerning the Malaysia-Vietnam cooperation. See also Chapter 6.
[465] Lagoni 1984, *op. cit.*, p. 367.

in themselves go beyond existing customary international law.[466] Can one now affirm that the duty of restraint is an international custom?

States usually do not announce the legal motivation behind their decision not to conduct petroleum activities.[467] Therefore, it is difficult to establish whether States consider themselves bound by the duty to exercise restraint in undelimited maritime areas (*opinio juris*), which is necessary for the formation of customary international law. It is also important to bear in mind that there are many examples where States continue hydrocarbon activities despite objections of their neighbors. Even if the duty of restraint has the status of customary international law, this does not provide a clear answer to the question of the extent to which a State shall exercise restraint in an undelimited maritime area.

3.4.2 *Guyana v. Suriname* – the key case on the application of the obligation

Guyana v. Suriname is the leading case in which the obligation not to jeopardize or hamper was considered in detail. Ten years after the Tribunal rendered its Award in *Guyana v. Suriname,* the ITLOS's SC had an opportunity to elaborate the meaning of the obligation not to jeopardize or hamper in *Ghana/Côte d'Ivoire*. However, the SC did very little in this respect partly because of the submissions' formulation of Côte d'Ivoire.[468] Thus, *Guyana v. Suriname* remains the only one where the obligation not to jeopardize or hamper has been applied and interpreted in the context of unilateral hydrocarbon activities in disputed maritime areas.

In *Guyana v. Suriname*, the Tribunal considered the obligation not to jeopardize or hamper in the context of the legality of exploratory drilling authorized by Guyana in an area where the maritime claims of Guyana and Suriname overlapped. When considering this obligation, the Tribunal heavily relied on a provisional measures Order indicated by the ICJ in *Aegean Sea Continental Shelf (Greece v. Turkey).*[469]

It is worth noting that the regime of provisional measures has a different origin. The power to prescribe provisional measures is given, *inter alia,* to the ICJ and the ITLOS under provisions set forth in their constituent instruments.[470] There are several requirements that must be met in order for these judicial bodies to exercise this power.[471] Although the regime of provisional

[466] *Ibid.*, p. 368. See Chapter 1 on the dichotomy between progressive development and codification.
[467] BIICL's Report on Undelimited Maritime Areas, *op. cit.*, paras. 137-141.
[468] *Ghana/Côte d'Ivoire* Judgment, para. 633. See Ermolina and Yiallourides, *op. cit.* See also Chapter 3.2.2.
[469] *Aegean Sea Continental Shelf (Greece v. Turkey)*, Interim Protection, Order, 11 September 1976, ICJ Reports 1976, p. 3.
[470] ICJ's Statute, art. 41; ITLOS's Statute, art. 25.
[471] See in detail Chapter 3.5.

measures is of a special nature, the legal requirements developed by international courts and tribunals for prescribing provisional measures may nevertheless provide some assistance in interpreting the obligation not to jeopardize or hamper.[472]

The Tribunal underlined that the "exceptional" power to prescribe provisional measures is triggered only when activities carried out in disputed maritime areas might cause irreparable prejudice to the rights of the parties.[473] However, the Tribunal stated that cases dealing with the prescription of provisional measures are informative as to what type of activities "should be permissible" in disputed areas pending a delimitation agreement or a provisional arrangement.[474] It automatically means that the informative value of provisional measures is also contained in explaining which activities are to be prohibited in disputed maritime areas. The Tribunal further held that activities to which the prescription of provisional measures would be justified, "would easily meet the lower threshold of hampering or jeopardizing the reaching of a final agreement" on delimitation.[475] In other words, the Tribunal characterized the threshold for prescribing provisional measures as being higher than the threshold for identifying activities that jeopardize or hamper under the meaning of articles 74 (3) and 83 (3) of the UNCLOS. Despite this observation, the criteria that guided the Tribunal in its analysis of whether a breach of the obligation not to jeopardize or hamper had occurred were those "used by international courts and tribunals in assessing a request for [provisional] measures, notably the risk of physical damage to the seabed or subsoil".[476] Hence, it is difficult to understand the extent to which the obligation not to jeopardize or hamper actually diverges from the regime of provisional measures.[477] Moreover, it leaves open the question of whether activities that would *not* meet the standard for prescribing provisional measures, can nevertheless be regarded as jeopardizing or hampering the reaching of a final agreement.[478]

While the Tribunal blurred the line between the obligation not to jeopardize or hamper and the regime of provisional measures, the practice of prescribing provisional measures seems to maintain this division. It clearly follows from *Ghana/Côte d'Ivoire* in which the SC made no

[472] *Guyana v. Suriname*, paras. 468-469. A similar approach has been adopted by a number of legal scholars long before the Award in *Guyana v. Suriname*: see Lagoni 1984, *op. cit.*, pp. 365-366; Miyoshi 1988, *op. cit.*, pp. 10-11; Ong 1999, *op. cit.*, pp. 798-799; Kim 2004, *op. cit.*, pp. 57-58; Klein 2006, *op. cit.* (repeated in Klein 2018, *op. cit.*, pp. 140-141).
[473] *Guyana v. Suriname*, para. 469.
[474] *Ibid.*
[475] *Ibid.*
[476] *Ibid.*
[477] Van Logchem 2014, *op. cit.*, p. 187-188.
[478] See Chapters 3.4.3 and 3.5 in this respect.

mention of articles 74 (3) and 84 (3) of the UNCLOS in its Order, even though both Parties mentioned those provisions in their submissions. One possible explanation might be that the Chamber considered these articles irrelevant in the context of provisional measures. Moreover, the circumstances surrounding *Ghana/Côte d'Ivoire* differed significantly from those in *Guyana v. Suriname*.

Thus, the conditions for prescribing provisional measures could contribute to the clarification of the content of the obligation not to jeopardize or hamper. However, considering that the regime of provisional measures has been established independently from paragraph 3, it is debatable whether findings of a dispute settlement body on the obligation not to jeopardize or hamper would significantly influence the development of the requirements within the institution of provisional measures. This suggests that there may be a one-sided relationship between the regime of provisional measures and paragraph 3.[479]

3.4.3 The Tribunal's interpretation of the obligation

This section looks at how the Tribunal in *Guyana v. Suriname* applied and interpreted the obligation not to jeopardize or hamper in the context of unilateral hydrocarbon activities in a maritime area in dispute.

3.4.3.1 The adoption of the standard of "(permanent) physical change to the marine environment"

Although *Guyana v. Suriname* concerned exploratory drilling in an area claimed by both Parties, the Tribunal made statements of a general character on the question of what types of unilateral conduct would breach the obligation not to jeopardize or hamper.

The Tribunal distinguished two categories of unilateral activities: those that "do not cause a physical change to the marine environment" and those that "do cause [such a] physical change".[480] The Tribunal further stated that the first category would "generally" not be considered as jeopardizing or hampering the reaching a final maritime boundary agreement, whereas the second category would have the effect of jeopardizing or hampering.[481] The Tribunal found support for this distinction in the international jurisprudence of prescribing provisional measures, in particular in *Aegean Sea Continental Shelf*.[482] The Tribunal's reliance

[479] See also Chapter 3.5.
[480] *Guyana v. Suriname*, paras. 467 and 480.
[481] *Ibid.*
[482] *Ibid.*, paras. 468-469. Moreover, in para. 470, the Tribunal stated that such a distinction "is consistent with other aspects of the law of the sea and international law".

on the *Aegean Sea* Order elicits the questions of whether it was appropriate for the interpretation of the obligation not to jeopardize or hamper and whether it was in line with the regime of provisional measures (also taking into account the recent *Ghana/Côte d'Ivoire* Order).[483]

It is noteworthy that the Tribunal also introduced an additional element of permanence into the phrase 'physical change to the marine environment'.[484] Arguably, the latter phrase covers a range of activities wider than those that fall within the definition of 'permanent physical change to the marine environment'.[485] Thus, the word 'permanent' logically excludes activities that would have only a temporal physical impact on the marine environment.[486]

Subsequently, the Tribunal gave four other definitions of activities that are likely to jeopardize or hamper the reaching a final delimitation agreement: activities with a risk of "physical damage to the seabed or subsoil";[487] activities that "might affect the other party's rights in a permanent manner";[488] "activities having a permanent physical impact on the marine environment";[489] and activities that "might cause permanent damage to the marine environment".[490]

It is apparent that activities affecting the rights of the parties in a permanent way differ from activities having a (permanent) physical change or damage to, or having a (permanent) physical impact on, the marine environment. While activities within the latter category are broadly similar, although they may differ as to the degree of permanency or otherwise of their adverse effects, activities in the first category are conceptually quite different.[491] However, as discussed below in this Chapter, all definitions employed by the Tribunal generally refer to the provisional measures stage and are the necessary requirements for the prescription of provisional measures. Thus, contrary to what the Tribunal stated about the difference between the thresholds, it actually applied a standard higher than that applicable under articles 74 (3) and 83 (3) of the UNCLOS in relation to jeopardizing or hampering the reaching of a final agreement. Therefore, one can conclude that the standard adopted in *Guyana v. Suriname* may be considered too strict in determining whether the obligation not to jeopardize or hamper has been violated.

[483] See Chapter 3.5.
[484] *Guyana v. Suriname*, para. 467 and subsequently paras. 470 and 481.
[485] Van Logchem 2014, *op. cit.*, p. 184.
[486] *Ibid.*
[487] *Guyana v. Suriname*, para. 469.
[488] *Ibid.*, para. 470.
[489] *Ibid.*
[490] *Ibid.*, para. 481.
[491] Van Logchem 2014, *op. cit.*, pp. 184-185; BIILC's Report on Undelimited Maritime Areas, *op. cit.*, p. 25, para. 88.

Arguably, the question of whether a particular activity jeopardizes or hampers the reaching of a final delimitation agreement should be examined not on the basis of its physical effects on the seabed or subsoil, but rather on the basis of its potential adverse effects on the likelihood of reaching of a delimitation agreement. Moreover, as further discussed in Chapter 3.5, the requirement of (permanent) physical damage does not seem to be the only standard applicable in assessing a request for provisional measures.

3.4.3.2 The meaning of the standard of "(permanent) physical change to the marine environment"

Pursuant to the Tribunal's reasoning, the standard of "(permanent) physical change to the marine environment" appears to be decisive in identifying hydrocarbon activities that may jeopardize or hamper the reaching of a final agreement on delimitation. The Tribunal did not clarify the meaning of this standard. However, it is reasonable to assume that the Tribunal meant unilateral activities that may result in a (permanent) modification of a physical character of the marine environment and its components, including the seabed and subsoil. It is notable that the Tribunal defined the marine environment as the object to which physical damage shall not be caused and has thereby broadened the scope of the criterion used by the ICJ in the *Aegean Sea* Order.[492] The *Aegean Sea* Order referred only to "the seabed or subsoil or to their natural resources".[493]

The Tribunal further explained the adoption of the standard by commenting that activities having a (permanent) physical change to the marine environment might alter the *status quo*[494] or prejudice the position of a party in a delimitation dispute.[495]

However, the Tribunal's explanation is not quite clear. For example, modern seismic exploration techniques may allow an effective means of assessing the resource potential of the CS without permanent physical change to the marine environment and can reliably inform a State what parts of an undelimited maritime area are potentially rich in hydrocarbon resources.[496] In his analysis of the *Guyana v. Suriname* Award, Fietta has emphasized that:

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[492] See Chapter 3.5.
[493] *Aegean Sea* Order, para. 30.
[494] The Concise Oxford Dictionary defines 'the status quo' as "the existing state of affairs" (in Latin, the meaning is 'the state in which'). Therefore, changing the *status quo* means an act through which the situation, as it currently exists, may alter.
[495] *Guyana v. Suriname*, para. 480.
[496] S. Fietta, «Annex VII arbitration under UN Convention of the Law of the Sea – interstate dispute over territorial sea, exclusive economic zone, and continental shelf boundaries – primacy of equidistance line – circumstances justifying other methods – scope of duty to reach interim agreements and not to jeopardize or hinder final

> unilateral seismic exploration could, therefore, in some circumstances, significantly alter the status quo as regards the comparative levels of knowledge of two neighboring states about the value of all (or part) of a disputed maritime area. Such a disequilibrium in knowledge between two states could, in many cases, make a final delimitation agreement more difficult to obtain.[497]

Thus, while seismic exploration could somehow change the *status quo* or affect the outcome of delimitation negotiations, this activity is unlikely to cause any *permanent* physical change to the marine environment.[498]

3.4.3.3 (Unilateral) hydrocarbon activities that (are likely to) fall under the scope of the standard

In the view of the Tribunal, seismic exploration is not a type of activity that might lead to a (permanent) physical change or damage to the marine environment and, therefore, "should be permissible in a disputed area".[499] It is important to emphasize here that the Tribunal made this statement against the background that neither State had raised an objection to seismic testing authorized by the other State in the disputed maritime area.[500] The Tribunal thus arrived at the conclusion that "in the circumstances at hand", unilateral seismic testing conducted by a Party in the disputed area is not inconsistent with its obligation not to jeopardize or hamper.[501] Following the logic of the Tribunal, it could be argued that in certain circumstances, unilateral seismic exploration can nonetheless constitute a breach of the obligation not to jeopardize or hamper. The main question is what these circumstances are. Even assuming that the legality of seismic exploration in an undelimited area is called into question, it is very unlikely that this activity would satisfy the standard of *permanent* physical damage to the marine environment[502] and, thereby, would not amount to a breach of the obligation not to jeopardize or hamper. It remains unclear why the Tribunal, instead of adopting a uniform standard that unilateral seismic

agreements – implications for hydrocarbon exploration", *American Journal of International Law*, 2008, vol. 102 (1), p. 127.

[497] *Ibid.* Fietta repeated his opinion during the Conference (22 July 2016) launched the BIICL's Report on Undelimited Maritime Areas. See Report of Conference, p. 30, available at https://www.biicl.org/documents/1296_obligations_of_states_in_undelimited_maritime_areas_final_event_report.pdf?showdocument=1(last accessed January 2019). Anderson however did not agree that seismic surveys could constitute jeopardizing or hampering since seismic information is not very useful.

[498] See also C. Yiallourides, "Protecting and preserving the marine environment in disputed areas: seismic noise and provisional measures of protection", *Journal of Energy & Natural Resources Law*, 2018, vol. 36 (2), pp. 141-161.

[499] *Guyana v. Suriname*, paras. 467 and 481.

[500] *Ibid.*, para. 481.

[501] *Ibid.*, para. 481.

[502] Van Logchem 2014, *op. cit.*, pp. 184-185.

activity by its very definition is allowed in disputed maritime areas, whatever the circumstances, used the phrase '*should be* permissible'.[503]

Saying that seismic testing does not involve any physical modification of the CS and its natural resources, it could nevertheless be argued that this activity may have (although not permanent) physical effects on the marine environment. For example, sonic waves can negatively affect living marine resources, i.e., cause a change of fish migration routes or result in hearing impairment of marine mammals.[504]

As regards exploratory drilling, the Tribunal declared that "*some* exploratory drilling might cause permanent damage to the marine environment".[505] However, the Tribunal did not clarify what kind of exploratory drilling it conceived as likely to fall into this category. It nevertheless appears reasonable to assume that *all* exploratory drilling operations could result in an irreversible physical change to the CS and, hence, should not be permissible in the absence of either a delimitation agreement or a provisional arrangement. Drilling is an activity which involves crushing the rock on and beneath the seabed.[506]

The Tribunal abstained from concluding as to whether unilateral exploratory drilling authorized by Guyana in the disputed maritime area was consistent with that State's obligation not to jeopardize or hamper and merely alluded to remedies envisaged by Part XV and Annex VII of the UNCLOS.[507] However, it appears that the authorization of concession holders to carry out exploratory drilling in the disputed area was considered by the Tribunal as an act that jeopardized or hampered the reaching of a final delimitation treaty. Whereas the Tribunal held that Suriname breached its obligation not to jeopardize or hamper by the use of a threat of force against Guyana's exploratory drilling, it also concluded that Guyana violated the obligation not to jeopardize or hamper.[508] It is logical to infer that unilateral exploratory drilling of Guyana was the reason for the latter statement. The most likely explanation for the Tribunal's hesitation

[503] *Ibid.*
[504] See Yiallourides 2018, *supra* note 498. See, for example, T. Nilsen, "Finnmark politician calls for marine mammal observer onboard seismic vessels", The Barents Observer, 16 November 2018, available at https://thebarentsobserver.com/en/ecology/2018/11/finnmark-politician-calls-marine-mammal-observer-onboard-seismic-vessels (last accessed January 2019).
[505] *Guyana v. Suriname*, para. 481 (emphasis added).
[506] See N. Ermolina, "Some comments on Ghana's alleged violation of provisional measure (a) as prescribed by the ITLOS Special Chamber in its Order of 25 April 2015", JCLOS Blog, 21 March 2017, available at http://site.uit.no/jclos/files/2017/03/Some-comments-on-Ghana%E2%80%99s-alleged-violation-of-provisional-measure-a-as-prescribed-by-the-ITLOS-Special-Chamber-in-its-Order-of-25-April-2015.-1.pdf (last accessed January 2019). See also Chapter 2.3.
[507] *Guyana v. Suriname*, para. 482.
[508] *Ibid.*, paras. 486 and 488 (3).

might be that the Tribunal decided to attribute the area where Guyana authorized its exploratory drilling operations to Guyana.[509]

Unlike seismic exploration and some exploratory drilling, the Tribunal stated that unilateral exploitation of oil and gas resources in a disputed area would undoubtedly jeopardize or hamper.[510] Although neither Guyana nor Suriname had conducted exploitation of hydrocarbon reservoirs in the disputed area, the Tribunal found that such activities are to be prohibited, since they always lead to a permanent physical change to the marine environment.[511]

3.5 The relationship between the obligation not to jeopardize or hamper and the regime of provisional measures

As noted earlier in this Chapter, the regime of provisional measures and the obligation not to jeopardize or hamper have different origins.[512] However, the requirements developed by international courts and tribunals for prescribing provisional measures are often considered a source that may inform the determination of what acts would have the effect of jeopardizing or hampering.[513] In *Guyana v. Suriname*, the Tribunal stated that activities that warrant the prescription of provisional measures would also breach the obligation not to jeopardize or hamper.[514] This section examines what unilateral petroleum operations in a disputed area might justify the prescription of provisional measures. At the same time, it is important to bear in mind that activities might still amount to jeopardizing or hampering even if they do not trigger the power to prescribe provisional measures.[515]

This section focuses on two provisional measures orders: in the *Aegean Sea* and *Ghana/Côte d'Ivoire* cases. Similar to *Guyana v. Suriname*, these two cases were concerned with the issue of certain hydrocarbon activities undertaken unilaterally in areas of overlapping maritime claims. It is also important to note that the *Aegean Sea* Order was indicated by the ICJ, while the *Ghana/Côte d'Ivoire* Order was prescribed by a Chamber of the ITLOS. Although both institutions are largely guided by the same set of requirements,[516] the ICJ's regime of

[509] *Ibid.*, para. 451.
[510] *Ibid.*, para. 467.
[511] *Ibid.*, para. 467.
[512] See Chapter 3.4.2.
[513] *Supra* note 472.
[514] See Chapter 3.4.2.
[515] *Ibid.*
[516] See Chapter 3.5.1.

provisional measures[517] has been established independently from the regime of provisional measures under the UNCLOS. The common feature of these two regimes is that a party to a dispute may resort to the procedure of requesting provisional measures only when the dispute has been submitted to the ICJ or ITLOS. However, two points of difference between the regimes are worthy to mention.

The first is that in accordance with the ICJ Rules, the Court may exercise its power to indicate provisional measures, regardless of whether a request has been submitted or not.[518] Unlike the ICJ, article 290 (3) of the UNCLOS empowers the ITLOS to prescribe provisional measures only when one of the parties to a dispute has made a written request. The ITLOS Statute stipulates that the ITLOS has the power to "prescribe" provisional measures,[519] whereas the ICJ Statute employs the verb 'indicate'.[520] The question of whether provisional measures indicated by the ICJ are mandatory was resolved in favor of their binding nature in the *LaGrand* case.[521]

The second is that article 290 (1) of the UNCLOS sets forth that the prescription of provisional measures may be justified on two different legal grounds: in order to preserve the rights of either party to the dispute or in order to prevent serious harm to the marine environment. Although article 41 (1) of the ICJ Statute does not refer to the latter, it is reasonable to conclude that the power of the ICJ to indicate provisional measures may also have as its object the protection of the marine environment. Article 290 of the UNCLOS applies to the ICJ, along with the ITLOS, and relevant international tribunal, when it exercises jurisdiction under the UNCLOS.

3.5.1 The legal requirements for the prescription of provisional measures and their applicability to the obligation not to jeopardize or hamper

The jurisprudence of both the ICJ and the ITLOS establishes that several legal conditions must be met in order to prescribe provisional measures. The first prerequisite for prescribing provisional measures is that the relevant court or tribunal must satisfy itself that it has *prima*

[517] Earlier the ICJ used the term 'interim measures'.
[518] Rules of the International Court of Justice, 14 April 1978, EIF: 1 July 1978, arts. 73-75, available at https://www.icj-cij.org/en/rules (last accessed January 2019).
[519] ITLOS's Statute, art. 25 (1). See also UNCLOS, art. 290 (1) and (5).
[520] ICJ's Statute, art. 41.
[521] G. Cottereau, "Resort to International Courts in Matters of Responsibility", in: J. Crawford, A. Pellet and S. Olleson (eds), *The Law of International Responsibility*, 2010, p. 1125.

facie jurisdiction over the dispute.[522] Once *prima facie* jurisdiction is established, the objectives pursued by a requested party shall be considered.

The next two legal conditions under which a court or tribunal can exercise its power to prescribe provisional measures are intertwined. One is the requirement of urgency and the other is the requirement of a risk that irreparable prejudice might be caused to the rights of the parties to the dispute before a final decision on the merits is delivered. The former requirement is generally considered in the context of the rights that are to be preserved. Therefore, it appears logical to examine the question of whether there is a risk of irreparable prejudice to the rights at stake, before moving to the issue of urgency. Both the ICJ and the ITLOS are of the view that provisional measures may be prescribed only if there is "a real and imminent risk that irreparable prejudice may be caused to the rights of the parties to the dispute".[523] Interestingly, neither the ICJ Statute nor article 290 of the UNCLOS refer to the concept of irreparable prejudice. Nevertheless, under the regime of provisional measures, this concept is generally understood as a harm that cannot be fully compensated by way of financial reparations.[524]

While the first paragraph of article 290 of the UNCLOS does not mention the requirement of urgency for the prescription of provisional measures, the fifth paragraph expressly refers to "the urgency of the situation". The latter paragraph applies when a dispute has been submitted to an arbitral tribunal, which has not yet been constituted. In such a case, paragraph 5 authorizes any court or tribunal agreed upon by the parties to the dispute, the ITLOS or, in respect of activities in the Area, the Seabed Disputes Chamber, to prescribe provisional measures.[525] Although paragraph 1 contains no reference to "urgency", it is generally understood that the ITLOS, the ICJ or an arbitral tribunal may issue an order for provisional measures only in a case of urgency.[526] The standard of urgency implies that there is "the need to avert a real and imminent risk that irreparable prejudice may be caused to [the] rights at issue before the final decision is

[522] See, for example, *Application of the International Convention for the Suppression of the Financing of Terrorism and of the International Convention on the Elimination of All Forms of Racial Discrimination (Ukraine v. Russian Federation)*, Provisional Measures Order, 19 April 2017, ICJ Reports 2017, para. 17.
[523] See, for example, *ibid.*, para. 89; *Ghana/Côte d'Ivoire* Order, para. 41.
[524] *Ibid.*
[525] For example, the ITLOS has considered several requests for provisional measures under article 290 (5) of the UNCLOS. There are the *Southern Bluefin Tuna Cases (New Zealand v. Japan; Australia v. Japan)*, ITLOS Cases No. 3 and 4, Provisional Measures Order, 27 August 1999, ITLOS Reports 1999, p. 280; the *MOX Plant Case (Ireland v. United Kingdom)*; the Case concerning land reclamation (Straits of Jahore), *Arctic Sunrise*, the ARA Libertad Case and the Enrica Lexie Incident.
[526] See, for example, *Construction of a Road in Costa Rica along the San Juan River (Nicaragua v. Costa Rica) & Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua)*, Provisional Measures Order, 13 December 2013, ICJ Reports 2013, p. 398, *para. 25; Ghana/Côte d'Ivoire* Order, para. *42.*

delivered".[527] It has been observed that the requirement of urgency is stricter when an applicant requests provisional measures under paragraph 5 of article 290 than it is when provisional measures are requested under paragraph 1.[528]

The next legal requirement, which shall be fulfilled for the prescription of provisional measures, is that the provisional measures requested by a party must be linked to the rights it claims.[529] In addition to the requirements discussed above, recently both the ICJ and the ITLOS have started to apply a new standard: the standard of plausibility.[530] The application of the plausibility test means that prior to the prescription of provisional measures, a court or tribunal has to satisfy itself that the rights, which a party claims on the merits and seeks to preserve, are at least plausible.[531]

While exercising its power, a relevant court or tribunal may prescribe provisional measures that are in whole or in part different from those requested by a party.[532]

It remains worth emphasizing that by means of a provisional measures order, particular transitory obligations may be imposed upon States while a final decision on the merits is pending. States must comply with the interim obligations imposed on them by a provisional measures order in good faith. Hence, States may incur the international responsibility for a breach of these obligations.[533]

The regime of provisional measures has been established and thereafter developed in order to preserve the potential rights of the parties to a dispute pending a final decision on the merits. Similarly, the obligation not to jeopardize or hamper is intended to confine activities for the purpose of protecting the putative rights of each party pending the establishment of a maritime

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[527] *Ibid.*

[528] See Separate Opinion of Judge Treves in *Southern Bluefin Tuna Cases (New Zealand v. Japan; Australia v. Japan)*, para. 4, available at https://www.itlos.org/fileadmin/itlos/documents/cases/case_no_3_4/published/C34-O-27_aug_99-SO_T.pdf (last accessed January 2019).

[529] See, for example, *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua)*, Provisional Measures Order, 8 March 2011, ICJ Reports 2011, para. 54; *Ghana/Côte d'Ivoire* Order, *para. 63.*

[530] For the first time, this requirement was included in *Questions relating to the Obligation to Prosecute or Extradite (Belgium v. Senegal)*, Provisional Measures Order, 28 May 2009, ICJ Reports 2009, para. 57. Subsequently, in other Orders indicated by the ICJ. At the ITLOS, the requirement of plausibility was for the first time applied in the *Ghana/Côte d'Ivoire* Order and subsequently in the *"Enrica Lexie" Incident (Italy v. India)*, ITLOS Case No. 24, Provisional Measures Order, 24 August 2015.

[531] *Ghana/Côte d'Ivoire* Order, *para. 58; Ukraine v. Russian Federation* Order of 19 April 2017, *op. cit.*, para. 64.

[532] ITLOS's Rules, art. 89 (5); ICJ's Rules, art. 75 (2).

[533] For instance, in *Ghana/Côte d'Ivoire*, Côte d'Ivoire accused Ghana of violating a number of provisional measures prescribed by the *Ghana/Côte d'Ivoire* Order of 25 April 2015. The SC, however, found that Ghana had not violated the provisional measures prescribed (*Ghana/Côte d'Ivoire* Judgment, paras. 647-658). See also Ermolina 2017, *supra* note 506.

boundary,[534] which also corresponds the no-harm principle discussed in Chapter 2 of this thesis. Therefore, it could be argued that some requirements existing in the context of provisional measures may apply by analogy to the obligation not to jeopardize or hamper. There are two requirements that directly aim at protecting the rights: the requirement of irreparable prejudice and the requirement of plausibility.[535] The first requirement seems to be the most applicable to the obligation not to jeopardize or hamper.

Against this background, the statement of the Tribunal in *Guyana v. Suriname* can be recalled. The Tribunal held that activities that would satisfy the condition of irreparable prejudice would automatically constitute a violation of the obligation not to jeopardize or hamper.[536] Consequently, the following sections of this Chapter examine the question of what kinds of hydrocarbon activities are likely to result in irreversible prejudice to the rights of parties to a delimitation dispute.

As regards the second requirement, its incorporation into the obligation not to jeopardize or hamper would significantly limit the scope of this obligation. In addition to the fact that the plausibility requirement is controversial and vague, the allegation of one State that the sovereign rights claimed by the other State are not plausible might affect the credibility of its own legal position.[537] At the same time, the practice of prescribing provisional measures has established a low threshold for meeting the plausibility condition. For example, in *Ghana/Côte d'Ivoire*, the SC found that Côte d'Ivoire had sufficiently demonstrated that the rights it claimed and sought to protect in the disputed area were plausible,[538] while at the stage of merits the Chamber decided to allocate (most of) the disputed area to Ghana.[539]

3.5.2 The requirement of irreparable prejudice in the *Aegean Sea* Order

In the course of litigation on the *Aegean Sea Continental Shelf Case*, Greece requested the ICJ to indicate provisional measures in respect of unilateral seismic exploration authorized by Turkey in areas of the CS claimed by both countries. In particular, Greece sought provisional

[534] Nandan and Rosenne (eds), *op. cit.*, p. 984. This has been repeated in the BIICL's Report on Undelimited Maritime Areas, *op. cit.*, p. 36, para. 124. See also Klein 2018, *op. cit.*, p. 141. It is important to note that Judge Paik in his Separate Opinion has opposed that view and stated that "while the purpose of provisional measures is to preserve the rights of the parties pending the final decision, that of the obligation not to jeopardize or hamper is rather to *facilitate and ensure the reaching of the final agreement, thus "strengthening peace and friendly relations between nations and of settling disputes peacefully"* (*Ghana/Côte d'Ivoire*, Separate Opinion of Judge Paik, *op. cit.*, para. 9 (emphasis added)).
[535] See also BIICL's Report on Undelimited Maritime Areas, *op. cit.*, p. 36, paras. 123-124.
[536] *Guyana v. Suriname*, para. 469.
[537] BIICL's Report on Undelimited Maritime Areas, *op. cit.*, p. 39, para. 133.
[538] *Ghana/Côte d'Ivoire* Order, para. 62.
[539] *Ghana/Côte d'Ivoire* Judgment, paras. 539-540.

measures requiring Turkey to refrain from all exploration activity or any scientific research within the disputed areas in order to preserve the sovereign rights of Greece to research, explore and exploit the CS appertaining to it.[540]

The ICJ declined to indicate the provisional measures requested by Greece, citing three reasons in doing so. First, Greece made no claim that seismic exploration undertaken by Turkey – although it required small explosions under water for the purpose of sending sound waves through the seabed to obtain relevant information concerning its geophysical structure – involved "any risk of physical damage to the seabed or subsoil or to their natural resources".[541] Second, Turkish seismic exploration was of a transitory character and did not involve "the establishment of installations on or above the seabed of the continental shelf".[542] Third, Turkey did not embark upon operations involving "actual appropriation or other use of the natural resources" located in the disputed areas of the continental shelf.[543]

The ICJ reaffirmed that its power to indicate provisional measures is triggered only when the circumstances of a case reveal that there is a risk of irreparable prejudice to the rights of the parties in a dispute.[544] However, the Court found that Turkish seismic exploration in the disputed areas constituted no risk of irreparable prejudice to the rights claimed by Greece.[545] The ICJ held that the damage caused by the acquisition of information on the natural resources of the disputed areas was compensable, even if the Court, in its judgment on the merits, would find that these areas belonged to Greece.[546] Judge Stassinopoulos, in his dissenting opinion, argued that the gathering of information regarding the resource potential of the disputed areas and its possible disclosure created a risk of irreparable harm to the rights of Greece.[547] His argument would appear to be reasonable, particularly in light of the *Ghana/Côte d'Ivoire* Order. Although the *Ghana/Côte d'Ivoire* Order is subject to scrutiny in the next section of this Chapter, it is worth noting that the SC has applied an approach slightly different from that of the ICJ in the *Aegean Sea* Order.[548]

[540] *Aegean Sea* Order, paras. 2 and 15.
[541] *Ibid.*, para. 30
[542] *Ibid.*
[543] *Ibid.*
[544] *Ibid.*, paras. 25 and 32.
[545] *Ibid.*, para. 33.
[546] *Ibid.*, para. 33. However, the case was not decided on the merits, as the ICJ found that it lacked jurisdiction (see *Aegean Sea Continental Shelf (Greece v. Turkey)*, Judgment, 19 December 1978, ICJ Reports 1978, p. 3).
[547] *Aegean Sea*, dissenting Opinion of Judge Stassinopoulos, p. 38, available at https://www.icj-cij.org/files/case-related/62/062-19760911-ORD-01-09-EN.pdf (last accessed January 2019).
[548] *Ghana/Côte d'Ivoire* Order, paras. 95 and 108 (b).

The ICJ's reasoning raises the question of whether the Court would have reached a different conclusion, had Greece made a claim concerning the harmful nature of Turkish seismic exploration. The wording of paragraph 30 seems to imply that if Greece would have provided sufficient material to show that Turkish activity had entailed a risk of physical harm to the marine environment, it would, arguably, have warranted the indication of provisional measures under article 41 of the ICJ's Statute.[549] Against this background, it is important to emphasize that the Court by no means focused on the environmental component of seismic exploration. At the time when the ICJ considered the request of Greece, the UNCLOS had not yet been adopted. Hereby, the Court was guided solely by the content of article 41 of the ICJ Statute, which does not include the protection of the marine environment as its objective.

The other conclusion that follows from the wording of paragraph 30 of the *Aegean Sea* Order is that activities involving the establishment of installations or the actual exploitation of natural resources of a disputed maritime area are likely to be viewed as prejudicing in an irreparable manner. Although Turkey conducted no such activities in the disputed areas, it could nevertheless be assumed that if it had been the case, the Court would have been able to exercise its power to indicate provisional measures.

Thus, Turkish seismic activities did not meet the condition of irreparable prejudice for granting of provisional measures. Nevertheless, it is interesting to note that, in paragraph 32, the Court clearly acknowledged that seismic exploration conducted by Turkey without the consent of Greece could possibly cause a prejudice (although not irreparable) to the exclusive exploration rights of Greece, should the ICJ uphold the claims of Greece on the merits. This suggests that even if such a prejudice would not count as 'irreparable', it could be argued that unilateral seismic exploration in a disputed maritime area can nevertheless be categorized as jeopardizing or hampering. As noted above in this Chapter, in respect of the obligation not to jeopardize or hamper the threshold should be lower than the threshold justifying the prescription of provisional measures.[550]

[549] *Aegean Sea* Order, para. 30: "no complaint has been made that this form of seismic exploration involves any risk of physical damage to the seabed or subsoil or to their natural resources".

[550] The dispute between Greece and Turkey concerning the delimitation of the CS in the Aegean Sea is still a source of tensions between these States. See, for example, a note submitted by Greece to the UN protesting hydrocarbon exploration and exploitation licenses issued by Turkey in the Aegean Sea, 20 February 2013, available at http://www.marineregions.org/documents/grc_note_20022013_re_tur.pdf (last accessed January 2019).

3.5.3 The requirement of irreparable prejudice in the *Ghana/Côte d'Ivoire* Order

In the course of the litigation in *Ghana/Côte d'Ivoire*, Côte d'Ivoire filed a request for the prescription of provisional measures under article 290 (1) of the UNCLOS with the SC.[551] In its request, Côte d'Ivoire raised the issue of unilateral exploration and exploitation activities undertaken by Ghana in an area of overlapping claims.[552] As indicated in the request, activities authorized by Ghana had already gone beyond simple seismic survey of the disputed area.[553] Ghana permitted a number of drilling operations and had even moved to the exploitation phase.[554] Therefore, Côte d'Ivoire requested that Ghana be ordered, *inter alia*, to cease all ongoing oil exploration and exploitation activities in the disputed area and abstain from issuing any new permits for oil exploration and exploitation in this area.[555]

The *Ghana v. Côte d'Ivoire* case appears to be unusual, although not unprecedented, in terms of the significant exploration and investment that had occurred in the disputed area before the dispute was submitted to the Tribunal.[556] The reason for this is that according to Ghana, it had acted in the belief that the Parties had mutually accepted and applied a boundary line between them, and that for more than 40 years (until 2009), Côte d'Ivoire did not object to Ghana's hydrocarbon activities and did not inform Ghana of the existence of a different position concerning the delimitation issue.[557]

According to article 290 (1) of the UNCLOS, pending a final decision on the merits, the SC has the power to prescribe provisional measures in order to preserve the respective rights of the parties to the dispute or to prevent serious harm to the marine environment. Therefore, a request for the prescription of provisional measures shall at least be based on one of the legal grounds mentioned in article 290 (1) of the UNCLOS. Côte d'Ivoire in its request argued that provisional measures had to be prescribed since there was the need both to preserve the respective rights

[551] Côte d'Ivoire's request for the prescription of provisional measures under article 290 (1) of the UNCLOS, 27 February 2015, available https://www.itlos.org/fileadmin/itlos/documents/cases/case_no.23_prov_meas/C23_Request_prov_measures_translation_Reg.pdf (last accessed January 2019).
[552] This area is defined in paras. 60 of the *Ghana/Côte d'Ivoire* Order.
[553] Côte d'Ivoire's request, *supra* note 551, paras. 10 and 23-27.
[554] *Ibid.*
[555] *Ibid.*, para. 54.
[556] N. Bankes, "ITLOS Special Chamber Prescribes Provisional Measures with Respect to Oil and Gas Activities in the Disputed Area in Case Involving Ghana and Côte d'Ivoire", The JCLOS Blog, 12 May 2015, available at https://site.uit.no/jclos/2015/05/12/itlos-special-chamber-prescribes-provisional-measures-with-respect-to-oil-and-gas-activities-in-disputed-area-in-case-involving-ghana-and-cote-divoire/ (last accessed January 2019).
[557] Written Statement of Ghana, 25 March 2015, Section I, subsection B https://www.itlos.org/fileadmin/itlos/documents/cases/case_no.23_prov_meas/Vol._I_-_Written_Statement_of_Ghana_FINAL.pdf (last accessed January 2019). See also Chapter 3.2.

and to protect the marine environment. Côte d'Ivoire claimed that provisional measures were required in order to preserve three categories of its "exclusive sovereign rights … arising under the UNCLOS", namely:

- "the right to explore for and exploit the resources of Côte d'Ivoire's seabed and the subsoil thereof by carrying out seismic studies and drilling, and installing major submarine infrastructures" in the disputed area;
- "the right to exclusive access to confidential information" about Côte d'Ivoire's natural resources in the disputed area;
- "the right to select the oil companies to conduct exploration and exploitation operations and freely to determine the terms and conditions in its own best interest and in accordance with its own requirements with respect to oil and the environment".[558]

Moreover, Côte d'Ivoire also alleged that exploration and exploitation activities authorized by Ghana in the disputed area were causing serious harm to the marine environment.[559] This allegation was used in support of Côte d'Ivoire's claim under the protection of the marine environment object of article 290 (1) of the UNCLOS.

When prescribing provisional measures, the SC stated that all legal conditions necessary for granting of provisional measures had been met.[560] This section focuses on the changes that the Chamber made with respect to the requirement of irreparable prejudice.

In its Order, the Chamber has confirmed that it prescribes provisional measures only when there is a real and imminent risk of causing irreparable prejudice to the rights of the parties to a dispute before a final decision on the merits is handed down.[561] The Chamber held that a risk of irreparable prejudice exists where, in particular, "activities result in significant and permanent modification of the physical character" of an area in dispute, and where "such modification cannot be fully compensated by financial reparations".[562]

Côte d'Ivoire claimed that the continuation of Ghana's unilateral activities in the contested area would cause irreversible damage to its sovereign rights.[563] Ghana in its reply stated that the harm claimed by Côte d'Ivoire cannot be regarded as "irreparable" because it might be

[558] Côte d'Ivoire's request, *supra* note 551, para. 53; *Ghana/Côte d'Ivoire* Order, paras. 44-49.
[559] Côte d'Ivoire's request, *supra* note 551, paras. 39-53; *Ghana/Côte d'Ivoire* Order, para. 50.
[560] Chapter 3.5.1 discusses the conditions for the prescription of provisional measures.
[561] *Ghana/Côte d'Ivoire* Order, para. 74.
[562] *Ibid.*, para. 89.
[563] *Ibid.*, paras. 76-81.

addressed through an appropriate award of damages and by delivery of information acquired by Ghana.[564]

The Chamber agreed with Ghana that "the alleged loss of the revenues derived from oil production could be the subject of adequate compensation in the future".[565] However, the Chamber took the view that the ongoing exploration and exploitation activities conducted by Ghana in the disputed area were of a distinctive character. Such activities were likely to "result in a modification of the physical characteristics of the [CS]"[566] and "any compensation awarded would never be able to restore the *status quo ante* in respect of the seabed and subsoil."[567]

As regards the exclusive right to access to confidential information about the natural resources of the continental shelf, the Chamber took into account Ghana's statement that the gathered information on the natural resources of the disputed area will be duly recorded and that Ghana will be able to provide this information to Côte d'Ivoire, if it will be required to do so at the conclusion of the dispute.[568] Although the Chamber accepted the undertaking given by Ghana, it also held that the right claimed by Côte d'Ivoire required protection.[569]

The Chamber stated that "the acquisition and use of information about the resources of the disputed area would create a risk of irreversible prejudice to the rights of Côte d'Ivoire", if the Chamber, in its judgment on the merits, would rule that all or any part of the disputed area pertains to Côte d'Ivoire.[570] Therefore, dealing with a matter similar to that raised in the *Aegean Sea* Order, the Chamber arrived at the opposite conclusion.[571] The Chamber's finding seems to imply that the condition of irreparable prejudice can be met even if there is no risk of physical change to the seabed and subsoil. Support for this interpretation is to be found in the formulation of paragraph 89 of the *Ghana/Côte d'Ivoire* Order, which by the inclusion of the adverb 'in particular', indicates that the requirement of physical change is not the only one to satisfy the condition of irreparable prejudice.[572]

[564] *Ibid.*, paras. 82-87.
[565] *Ibid.*, para. 80.
[566] *Ibid.*, para. 88.
[567] *Ibid.*, para. 90.
[568] *Ibid.*, paras. 92 and 93.
[569] *Ibid.*, para. 94.
[570] *Ibid.*, para. 95.
[571] *Aegean Sea* Order, para. 33.
[572] See also Judge Paik's Separate Opinion in *Ghana/Côte d'Ivoire, op. cit.*, para. 8.

In sum, the Chamber accepted that an imminent risk of irreparable prejudice to the sovereign and exclusive rights of Côte d'Ivoire existed.[573] In other words, it concluded that the exploration and exploitation activities planned by Ghana in the disputed area required the prescription of provisional measures. At the same time, the Chamber prescribed provisional measures different from those requested by Côte d'Ivoire. In doing so, the Chamber relied upon two main aspects: the preservation of Ghana's rights and the protection of the marine environment. The Chamber stated that in the event that Ghana would be ordered to suspend its activities, especially in respect of which drilling had already taken place, it would "cause prejudice to the rights claimed by Ghana and create an undue burden on it" and it could also result in a "harm to the marine environment."[574]

A two-pronged approach of this type can be explained with the reference to the wording of article 290 of the UNCLOS. This article aims at preserving the respective rights of both parties to a dispute, not only the rights of the requesting party. Hence, the Chamber attempted to reach a delicate balance between the competing rights of the Parties under the regime of provisional measures.[575] The special circumstances of the *Ghana v. Côte d'Ivoire* case should also be borne in mind. It seems that the Chamber took into account that Côte d'Ivoire was not particularly active to contest Ghana's exploration and exploitation activities in the disputed area prior to 2009, which led to Ghana's extensive petroleum activities with accompanying massive financial investment in this area.[576] At the same time, as underlined above in this Chapter, at the merits stage the Chamber paid little attention to the fact that Ghana had intensified its petroleum activities in the disputed area from 2009 until April 2015 when the Chamber prescribed the provisional measures.

3.5.4 Some conclusions concerning the impact of provisional measures on the threshold of jeopardizing or hampering

The *Ghana/Côte d'Ivoire* case is the second case, following the *Guyana v. Suriname* case, in which the duty of restraint embedded in the obligation not to jeopardize or hamper set forth in

[573] *Ghana/Côte d'Ivoire* Order, para. 96.
[574] *Ghana/Côte d'Ivoire* Order, paras. 99-101. It is interesting to note that the Chamber, when referring to a risk of prejudice to Ghana's rights, did not consider it as "irreparable". As regards the second argument against the suspension of Ghana's activities in the disputed area, one can wonder why the Chamber regarded environmental harm resulting from the suspension of ongoing activities as more serious than that from the continuation of these activities.
[575] Y. Tanaka, "Unilateral Exploration and Exploitation of Natural Resources in Disputed Areas: A Note on the *Ghana/Côte d'Ivoire* Order of 25 April 2015 before the Special Chamber of ITLOS", *Ocean Development & International Law*, 2015, vol. 46, p. 326; Fietta and Cleverly, *op. cit.*, p. 136.
[576] See, for example, *Ghana/Côte d'Ivoire* Judgment, para. 586.

articles 74 (3) and 83 (3) of the UNCLOS was considered by the judiciary. Unfortunately, the SC in *Ghana/Côte d'Ivoire* did very little to clarity the meaning and scope of the obligation not to jeopardize or hamper in the context of unilateral petroleum activities in disputed maritime areas. On the contrary, the SC concluded that petroleum activities carried out by State A unilaterally in an area also claimed by State B in good faith cannot be considered a violation of the sovereign rights of State B even if this area will be attributed to State B by an international judgment.[577] Moreover, the SC did not examine the validity of the standard of "(permanent) physical change to the marine environment" developed by the Tribunal in *Guyana v. Suriname* for identifying what type and form of unilateral hydrocarbon activity is likely to be inconsistent with the obligation not to jeopardize or hamper. Thereby, this standard is still the only guide that exists when dealing with the issue of unilateral hydrocarbon activities in disputed maritime areas.

When adopting the standard of "(permanent) physical change to the marine environment" as a threshold of jeopardizing or hampering, the Tribunal relied heavily on the criterion laid down by the ICJ in the *Aegean Sea* Order. In the view of the ICJ, maritime activities that pose a risk of physical damage to the seabed or subsoil, or to their natural resources might cause irreparable prejudice to those rights that are the subject of a dispute.[578] The Tribunal however modified the ICJ's criterion by including such additional component elements as "permanent" and "the marine environment". Nevertheless, one can agree with a number of legal scholars that the benchmark used by the Tribunal was not fully justified with respect to the obligation not to jeopardize or hamper.[579] In the opinion of this author, the Tribunal should have applied a less strict threshold for finding a breach of the obligation not to jeopardize or hamper, rather than referring to that used for triggering the power to prescribe provisional measures. Moreover, as discussed above in this Chapter, the SC in the *Ghana/Côte d'Ivoire* Order seems to have changed the content of the irreparability requirement. In the context of the right to information about resources of the disputed maritime area, it appears that the Chamber did not consider the standard of permanent physical change to the marine environment as a necessary condition to

[577] *Ghana/Côte d'Ivoire* Judgment, paras. 592 and 594. This conclusion appears to be inconsistent with the SC's own observations in the *Ghana/Côte d'Ivoire* Order concerning the sovereign rights claimed by Côte d'Ivoire in the disputed area (see Chapter 3.5.3).
[578] Chapter 3.5.2.
[579] See, for example, van Logchem 2014, *op. cit.*, p. 191; Fietta's comments on the BIICL's Report on Undelimited Maritime Areas, *op. cit.*, pp. 21-22.

meet the requirement of irreparable prejudice.[580] Thus, the formula provided by the Tribunal in *Guyana v. Suriname* should be revisited in light of the *Ghana/Côte d'Ivoire* Order.

If one assumes that the standard of permanent physical damage is indeed a general rule of international law defining what unilateral hydrocarbon activities are or are not consistent with the obligation not to jeopardize or hamper, the question is what phases of the exploration and exploitation are most likely to come under the scope of this standard. The standard would definitely apply to activities involving the placement of permanent installations and structures on the seabed, or activities aimed at extracting of petroleum resources located in areas of overlapping maritime claims. As follows from the discussions in Chapter 3.4.3.3, all drilling operations entail a risk of permanent physical damage to the seabed and subsoil and, therefore, are likely to be contrary to the obligation not to jeopardize or hamper. The answer to the question of the applicability of the assumed standard to seismic testing is less certain. Seismic exploration would hardly meet such a high threshold for finding a violation of the obligation not to jeopardize or hamper.

Moreover, the question arises as to whether the same standard should be applicable in the context of other unilateral activities carried out in disputed maritime areas (e.g., fisheries activities). It seems inappropriate to apply this standard to activities of a different nature. Otherwise, it would lead to the situation in which a wide range of activities cannot be categorized as jeopardizing or hampering.

However, it is important to bear in mind that based on the analysis conducted in this Chapter, this thesis concludes that the application of the standard of permanent physical change is not justified for finding a breach of the obligation not to jeopardize or hamper. It argues that even if the mentioned standard cannot be met in the context of a particular hydrocarbon activity, it does not mean that this activity is in line with the obligation not to jeopardize or hamper. As noted above, the emphasis should be placed *not* on the physical effects of a hydrocarbon activity on the marine environment and its components, including the seabed and subsoil, but on its effects on the *process* of reaching a maritime boundary agreement. Thus, for example, seismic survey operations could have a jeopardizing or hampering effect on that process by providing one of the parties to a dispute with a considerable advantage in delimitation negotiations. A State's (even erroneous) perception of an undelimited maritime area as rich in oil and gas resources may make that State less flexible in its negotiations with the other State. In other

[580] *Ghana/Côte d'Ivoire* Order, para. 95.

words, State A arguing that a petroleum operation carried out by State B in an area, which is subject to overlapping claims made in good faith by both State A and State B, is in breach of the obligation not to jeopardize or hamper would need to substantiate the effect of this operation upon the delimitation negotiations between States A and B.

3.6 The obligation to abstain from aggravating or extending a dispute

Chapter 3.4 showed that articles 74 (3) and 83 (3) of the UNCLOS equip States with a tool to question the legality of hydrocarbon activities unilaterally conducted in disputed maritime areas: the negative obligation contained in paragraph 3 embodies a duty of States to exercise (mutual) restraint in these areas. However, a potential difficulty in submitting issues concerning the non-compliance with the obligation not to jeopardize or hamper (as well as with the obligation to seek provisional arrangements) may lie in the possibility for States to exclude certain categories of disputes from compulsory procedures entailing a binding decision. In particular, a State may issue a declaration under article 298 (1) (a) of the UNCLOS excluding "disputes concerning the interpretation or application of article 15, 74 and 83 relating to sea boundary delimitation […]". Logically, all issues related to the obligations contained in paragraph 3 of articles 74 and 83 are covered by this opt-out provision.[581]

The literature suggests that the duty of restraint in disputed maritime areas derives not only from the obligation not to jeopardize or hamper under articles 74 (3) and 83 (3) of the UNCLOS, but also from the obligation not to engage in acts that might aggravate or extend a dispute (as well as from more general principles of international law considered in Chapter 2).[582] This section examines the extent to which the obligation not to aggravate or extend a (maritime boundary) dispute may influence the possibility of States to unilaterally conduct hydrocarbon activities in disputed maritime areas.

[581] Nonetheless, van Logchem (van Logchem 2014, *op. cit.*, p. 195) argues that paragraph 3 as such is not a maritime boundary delimitation provision, but rather a provision that encompasses the obligations incumbent upon neighboring States pending a final delimitation. Thus, he concludes that if a court or tribunal cannot proceed (or has not been asked) to delimit a disputed maritime area due to a declaration made under article 298 (1) (a), it would apparently have jurisdiction over disputes concerning the obligations of States in this area. His view is unlikely to find practical application in the jurisprudence of international courts and tribunals.

[582] See, for example, BIICL's Report on Undelimited Maritime Areas, *op. cit.*, pp. 19-21; BIICL's Report on the Use of Force, *op. cit.*, p. 93, para. 184, and p. 101, para. 200; van Logchem 2018, *op. cit.*, pp. 205-206, referring to Klein 2014, *op. cit.*, p. 458: "[t]he concept of non-aggravation is affirmed in paragraph 3 of Articles 74 and 83 […]".

The *South China Sea* Arbitration is notable in this respect. Prior to the *South China Sea* Award, the obligation not to aggravate or extend a dispute had been articulated only under the umbrella of provisional measures. This fact did not go unnoticed by the Tribunal,[583] when the Philippines claimed that by conducting a number of activities China had aggravated and extended the Parties' disputes.[584] However, the Tribunal stated that the extensive jurisprudence on provisional measures must be understood as recalling an already existing obligation beyond the purview of provisional measures to abstain from aggravating or extending a dispute or disputes.[585] The Tribunal considered the obligation not to aggravate or extend as corollary to the obligation to settle disputes peacefully included, *inter alia*, in the UNCLOS and UN documents.[586] The Tribunal also linked the obligation not to aggravate or extend with the principle of good faith, which is "no less applicable to the provisions of a treaty relating to dispute settlement".[587] Moreover, the obligation not to aggravate or extend may be seen as a specific application of the more general principle not to harm examined in Chapter 2 above.

Thus, the Tribunal's finding implies that the obligation not to aggravate or extend a dispute exists by the very fact of such a dispute and does not depend on whether a court or tribunal has issued an order imposing non-aggravation or extension provisional measures.

3.6.1 The obligation's substantive scope

Black's Law Dictionary defines the verb 'aggravate' as "make (something) worse or more serious" and the verb 'extend' as "cause (something) to last longer".[588] In other words, it means that when there is a maritime boundary dispute between States, they must not engage in acts/activities that would increase the gravity of this dispute or lead to an additional time for its settlement. The main question here is what type of conduct might exacerbate or extend a maritime delimitation dispute.

It is interesting to note that when addressing the issue of whether China's actions in the context of the *South China Sea* case such as dredging, artificial island-building and other construction activities had aggravated and extended the disputes between the Parties,[589] the Tribunal did not

[583] *South China Sea*, paras. 1167-1168.
[584] *Ibid.* See the Philippines' submission No. 14, para. 1110.
[585] *Ibid.*, para. 1169.
[586] *Ibid.*, paras. 1170-1172. The Tribunal mentioned article 279 of the UNCLOS, UN Charter and UNGA Resolution 2625 (XXV) (see Chapter 2). See also BIICL's Report on the Use of Force, *op. cit.*, pp. 102-104.
[587] *Ibid.*, para. 1171.
[588] Black's Law Dictionary, 9th edition, 2009, pp. 75-76 and 663. The dictionary also defines the nouns 'aggravation' and 'extension'.
[589] *South China Sea*, paras. 1177 – 1180. The Tribunal identified a series of disputes. See in detail para. 1181 (a) – (d).

use the jurisprudence on provisional measures. Although the Philippines did not request non-aggravation or extension provisional measures, this fact, for example, did not prevent the Tribunal in *Guyana v. Suriname* from applying the criteria developed in the context of provisional measures at the merits stage.[590] One possible explanation might be that the Tribunal in *South China Sea* attempted to avoid the controversial issue concerning the threshold for indicating provisional measures aimed at preventing the aggravation or extension of a dispute, which is harder to crystallize than the threshold considered in the preceding section of this Chapter.[591] Another explanation might be that the Tribunal desired to distinguish the issue of aggravation as a claim at the merits stage from that existing in the context of provisional measures.

The Tribunal in *South China Sea* held that "actions [which may aggravate or extend a dispute] must have a specific nexus with the rights and claims making up the parties' dispute in order to fall foul of the limits applicable to parties engaged in the conduct of dispute resolution proceedings".[592] Further, the Tribunal stated that a party to a dispute (within the meaning given by the Tribunal to the term 'dispute' mentioned below in this section) may aggravate this dispute by: (a) continuing with actions that "are alleged to violate the rights of the other [party], in such a way as to render the alleged violation more serious"; (b) "taking actions that would frustrate the effectiveness of a potential decision, or render its implementation by the parties significantly more difficult"; or (c) "rendering the work of a court or tribunal significantly more onerous or taking other actions that decrease the likelihood of the proceedings in fact leading to the resolution of the parties' dispute".[593] By applying these criteria, the Tribunal concluded

[590] See Chapter 3.4

[591] The essence of this issue lies in the fact that in a number of cases, the ICJ has stated that it possesses the power to indicate provisional measures in order to prevent the aggravation or extension of a dispute (along with the power to prescribe provisional measures with a view to preserving specific rights of the parties). It raised the question of whether the indication of the former type of provisional measures is subject to the same conditions that must be met when the latter type of provisional measures is sought. In *Pulp Mills*, the ICJ dismissed Uruguay's request for provisional measures because it found that there was no imminent risk of irreparable harm to the rights. Based on this finding, the Court declined to indicate provisional measures aiming merely at the non-aggravation or extension of the dispute (see *Pulp Mills* Order, para. 50). See also P. Palchetti, "The Power of the International Court of Justice to Indicate Provisional Measures to Prevent the Aggravation of a Dispute", *Leiden Journal of International Law*, 2008, vol. 21(3), pp. 623-642; S. Forlati, *The International Court of Justice: An Arbitral Tribunal or a Judicial Body*, Springer, 2014, Chapter 7; K. Oellers, "Provisional Measures in Interpretation Proceedings – A New Way to Extend the Court's Jurisdiction? The Practice of the Court in the Avena and Temple of Preah Vihear Cases", in: C. C. Jalloh and O. Elias (eds), *Shielding Humanity: Essays in International Law in Honour of Judge Abdul G. Koroma*, Brill Nijhoff, 2015.

[592] *South China Sea*, para. 1174.

[593] *Ibid.*, para. 1176.

that China had aggravated and extended a number of disputes through its activities conducted in the South China Sea.[594]

Thus, the analysis in this section suggests that the obligation not to aggravate or extend a dispute imposes a requirement upon States to exercise restraint in disputed maritime areas, that is to say, to refrain from activities that could make the resolution of the dispute difficult. This requirement of restraint links the obligation not to aggravate or extend a dispute with the obligation not to jeopardize or hamper which, at its core, aims to limit activities that might jeopardize or hamper the reaching of a final delimitation. It seems that the latter obligation derives from the former obligation having a more general character. However, as follows from the Tribunal's reasoning in *South China Sea*, the threshold for finding a violation of the obligation not to aggravate or extend a dispute is lower than in respect of the obligation not to jeopardize or hamper. Therefore, a State engaged in unilateral hydrocarbon activities in a disputed maritime area may easier fall short of the obligation not to aggravate or extend a dispute, in contrast with the obligation not to jeopardize or hamper.

3.6.2 The obligation's temporal scope

One of the issues that arises is the point in time at which the obligation not to aggravate or extend a dispute is triggered. In the view of the Tribunal in *South China Sea*, this obligation lasts during the pendency of the dispute settlement proceedings.[595] In other words, the obligation arises when the proceedings are initiated and ceases when a court or tribunal delivers its final decision on the merits. The obvious explanation as to why the Tribunal reached this view is the formulation of the Philippines' submission No. 14. The Philippines argued that China had aggravated and extended the disputes "since the commencement of [the] arbitration in January 2013".[596] Although the duration of the obligation identified by the Tribunal is justified insofar as an adjudicative process may typically take a number of years, it is worth noting that the obligation is being linked to the notion of dispute in general. Therefore, it is reasonable to argue that the temporal scope of the obligation is broader than the life cycle of a dispute under a dispute settlement mechanism, and the obligation lasts as long as a dispute exists. Consequently, the question is when a particular situation constitutes a dispute. For example, the BIICL's Report on Undelimited Maritime Areas drew a distinction between "undelimited" and "disputed" areas where maritime areas falling under the latter category are

[594] *Ibid.*, para. 1181. *Supra* note 589.
[595] *Ibid.*, para. 1169.
[596] *Ibid.*, para. 1110.

actively disputed by States.[597] Chapter 3.2 discussed the factors which may assist to identify that there is a maritime area of overlap between two or more States, but what does it mean that States have a dispute?

At first sight, it may appear to be relatively easy to determine whether a dispute exists or not. However, it is not uncommon for one of the parties to a dispute to contest the existence of the dispute.[598] Although many legal instruments, including Part XV of the UNCLOS and article 33 of the UN Charter, presuppose the existence of a dispute, they do not provide the definition of a dispute.

International case law has developed certain criteria in the determination of the existence of a dispute:

1. The ICJ and its predecessor define a dispute as "a disagreement on a point of law or fact, a conflict of legal views or interests" between parties;[599]
2. Whether there exists a dispute "is a matter for objective determination".[600] A mere denial of the existence of a dispute does not prove its non-existence.[601] A mere assertion that a dispute exists is not sufficient to constitute a dispute;[602]
3. "It must be shown that the claim of one party is positively opposed by the other".[603]

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[597] BIICL's Report on Undelimited Maritime Areas, *op. cit.* Repeated in BIICL's Report on the Use of Force, *op. cit.*, p. 2, para. 2. See also N. A. Ioannides, "Rights and Obligations of States in Undelimited Maritime Areas: The Case of the Eastern Mediterranean Sea", in: S. Minas and J. Diamond (eds), *Stress Testing the Law of the Sea Dispute Resolution, Disasters & Emerging Challenges*, Brill, 2018, p. 312.

[598] The existence of a dispute is usually challenged at the stage of preliminary objections. States do this to avoid construction adjudication. See also BIICL's Report on the Use of Force, *op. cit.*, para. 10, p. 7.

[599] *Mavrommatis Palestine Concessions*, Preliminary Objections, Judgment No. 2, 30 August 1924, PCIJ Series A, p. 11; *Case concerning the Northern Cameroons (Cameroon v. United Kingdom)*, Preliminary Objections, Judgment, 2 December 1963, ICJ Reports 1963, p. 11. Subsequently recalled in, *inter alia*, *East Timor (Portugal v. Australia)*, Judgment, 30 June 1995, ICJ Reports 1995, pp. 99-100, para. 22; *Case concerning the Land and Maritime Boundary between Cameroon and Nigeria (Cameroon v. Nigeria: Equatorial Guinea Intervening)*, Preliminary Objections, Judgment, 11 June 1998, ICJ Reports 1998, para. 87. See also *South China Sea*, Award on Jurisdiction and Admissibility, 29 October 2015, para. 149.

[600] *Interpretation of Peace Treaties with Bulgaria, Hungary and Romania*, Advisory Opinion, 30 March 1950 (first Phase), ICJ Reports 1950, p. 74. Subsequently recalled in, *inter alia*, *East Timor*, *op. cit.*, p. 100, para. 22; *Case concerning Questions of Interpretation and Application of the 1971 Montreal Convention arising from the Aerial Incident at Lockerbie (Libyan Arab Jamahiriya v. United Kingdom)*, Preliminary Objections, Judgment, 27 February 1998, ICJ Reports 1998, p. 17, paras. 21-22; *Case concerning Certain Property (Liechtenstein v. Germany)*, Preliminary Objections, Judgment, 10 February 2005, ICJ Reports 2005, p. 18, para. 24.

[601] See, for example, *Interpretation of Peace Treaties with Bulgaria, Hungary and Romania*, *op. cit.*, p. 74.

[602] See, for example, *South West Africa Cases (Ethiopia v. South Africa; Liberia v. South Africa)*, Preliminary Objections, Judgment, 21 December 1962, ICJ Reports 1962, p. 328.

[603] *Ibid*. Subsequently recalled in, *inter alia*, *Case concerning Armed Activities on the Territory of the Congo (New Application: 2002) (Democratic Republic of the Congo v. Rwanda)*, Jurisdiction and Admissibility, Judgment, 3 February 2006, ICJ Reports 2006, p. 40, para. 90; *South China Sea*, Award on Jurisdiction and Admissibility, *supra* note 599, para. 149.

Thus, one can observe that the threshold for establishing the existence of a dispute is relatively low.[604] The presence of divergent views is sufficient to constitute a dispute. Ideally, the existence of a dispute presupposes a certain degree of communication demonstrating a conflict of legal views. Nevertheless, as the ICJ has noted in *Cameroon v. Nigeria: Equatorial Guinea Intervening* and *Georgia v. Russia*, a State's failure to respond does not exclude the existence of a dispute in circumstances where such a response is called for.[605] A key question in respect of maritime delimitation disputes concerns the legal implications attached to the absence of a State's reaction.[606]

In the context of this thesis, a disagreement between neighboring States as to where a maritime boundary shall lie clearly constitutes a dispute.[607] Reservations made by States under the UNCLOS in order to exclude the jurisdiction of courts and tribunals over these categories of disputes do not mean the absence of a dispute. This is evident in the delimitation case between Timor-Leste and Australia.[608] Moreover, the intentional non-characterization by the parties of a situation as a dispute does not prove its non-existence.[609]

Thus, the existence of a dispute does not presuppose that a maritime area of overlapping claims is to be actively disputed. The duty of restraint embedded in the obligation not to aggravate or extend a dispute applies until the conclusion of a delimitation agreement or the determination of a maritime boundary by a court or tribunal (if the latter option is relevant in the circumstances). In other words, the duration of the obligation not to aggravate or extend a dispute is similar to the temporal scope of the obligation not to jeopardize or hamper discussed in Chapter 3.2. Consequently, as underlined in Chapter 3.2, the obligation not to aggravate or extend a dispute, like the obligation not to jeopardize or hamper, continues to apply in a situation where one of the parties to a delimitation dispute does not accept or recognize the final

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[604] See also Nii Lante Wallace-Bruce, *The Settlement of International Disputes: The Contribution of Australia and New Zealand*, Martinus Nijhoff Publishers, 1998, pp. 3-18; C. Schreuer, "What is a Legal Dispute?", in: I. Buffard et al. (eds), *International Law between Universalism and Fragmentation: Festschrift in Honour of Gerhard Hafner*, Leiden: Koninklijke Brill, 2008, pp. 959-980; G. Oduntan, *International Law and Boundary Disputes in Africa*, Routledge, 2015; S. V. Busch, *Establishing continental shelf limits beyond 200 nautical miles by coastal state: a right of involvement for other states?*, Brill Nijhoff, 2016, pp. 66-69.

[605] *Cameroon v. Nigeria: Equatorial Guinea Intervening*, Preliminary Objections, *supra* note 599, para. 89; *Case concerning Application of the International Convention on the Elimination of All Forms of Racial Discrimination (Georgia v. Russian Federation)*, Preliminary Objections, Judgment, 1 April 2011, ICJ Reports 2011, para. 30. It seems that the Tribunal in *South China Sea* has also inferred the dispute(s) from the Philippines' statements and China's Position Paper (*South China Sea*, Award on Jurisdiction and Admissibility, *supra* note 599, para. 152).

[606] See Chapter 3.2.

[607] This assertion follows from the extensive case law concerning delimitation disputes.

[608] See Chapter 1.

[609] For example, Norway and Russia had refrained from the characterization of a disagreement in the Barents Sea as a dispute. See BIICL's Report on Undelimited Maritime Areas, *op. cit.*, Annex III, para. 7, p. 168.

decision of an international court or tribunal because this dispute cannot be considered resolved.[610]

3.7 Conclusions and observations

(Customary) international law requires claimant States to cooperate with respect to the management of (possible) petroleum resources located in a maritime area that is subject to their overlapping claims.[611] However, practice shows that the process of negotiating provisional arrangements in maritime areas of overlapping claims is as difficult as dealing with the issue of delimitation. For a number of different reasons, many States are unable or unwilling (e.g., because State A considers the claim of State B as having no legal basis under international law) to agree on provisional arrangements. The likelihood of such an arrangement in some disputed maritime areas (e.g., between several States bordering the South China Sea and the Mediterranean Sea,[612] and between Ukraine and Russia in the Black Sea) is extremely limited at the time of writing. Therefore, this Chapter paid special attention to the problem of unilateral petroleum activities in disputed maritime areas.

This Chapter concluded that States are required to exercise restraint when engaging in hydrocarbon activities in disputed maritime areas. This requirement derives from the obligation not to jeopardize or hamper contained in paragraph 3 of articles 74 and 83 of the UNCLOS, the obligation not to aggravate or extend a dispute and the general principles of international law such as the no-harm principle and the principle of good neighborliness considered in Chapter 2. However, the existence of the requirement of restraint does not answer the question of the extent to which States shall exercise restraint. As discussed in this Chapter, unilateral petroleum activities and other operations associated with those activities aimed at extracting oil and gas reserves located in disputed maritime areas would certainly be inconsistent with international law and, for that reason, should not be conducted pending a provisional arrangement or delimitation agreement. It remains, however, difficult to draw a general conclusion regarding other types of unilateral petroleum activities preceding the exploitation phase. As argued in this Chapter, the threshold of "(permanent) physical change to the marine environment" as

[610] China rejected the *South China Sea* Award. See Statement of the Ministry of Foreign Affairs of the People's Republic of China on the Award of 12 July 2016 of the Arbitral Tribunal in the South China Sea Arbitration Established at the Request of the Republic of the Philippines, 12 July 2016, available at https://www.fmprc.gov.cn/mfa_eng/zxxx_662805/t1379492.shtml (last accessed January 2019). See also *supra* note 390.
[611] States are also required to negotiate a delimitation agreement in good faith under international law. See in detail BIICL's Report on Undelimited Maritime Areas, *op. cit.*, Chapters 2.1-2.3.
[612] See, for example, Ioannides 2018, *op. cit.*, pp. 311–337.

established in *Guyana v. Suriname* is not particularly suitable for defining the scope of unilateralism in disputed maritime areas and, consequently, petroleum activities not meeting this threshold, including seismic survey operations, could also be not in compliance of the requirement of restraint.

The absence of a universal threshold or test that can apply in assessing whether a hydrocarbon activity is allowed or not as a matter of international law provides a high degree of uncertainty, in particular for petroleum companies.[613] One of the recommendations to petroleum companies is that they shall first check the status of the contract area and evaluate the risks associated with its contested character.[614] Petroleum companies may also consider the possibility of contracting with both claimant States.[615] In practice, however, this is often not a realistic option.[616]

The *Guyana v. Suriname* and *Ghana/Côte d'Ivoire* (although to a limited extent) cases provide coastal States with indications of certain important steps that they should take in disputed maritime areas. State A authorizing a petroleum activity in a maritime area also claimed by State B (and State A is aware of State B's claims) should inform State B directly of this activity. State B should abstain from using force against State A's petroleum activities in the disputed area and should opt for a peaceful course of action, including objecting to these activities, insisting on their cessation and seeking cooperation with State A in undertaking the activities on a joint basis. State A should engage in negotiations with State B in good faith (on the establishment of a maritime boundary and/or the adoption of a provisional arrangement covering the disputed area) and it should not wait until State B takes the initiative in this regard. The steps described do not guarantee that the issues associated with a disputed area will be resolved, but they may contribute to their resolution.

It is also important to note article 82 of the UNCLOS in the case of exploitation of non-living resources of the CS beyond 200 nm. Insofar as one of the conclusions made in this Chapter is that exploitation activities with respect to hydrocarbon resources located in an area of overlapping claims, including overlapping claims of coastal States to the same area of CS beyond 200 nm,[617] would be in breach of international law, exploitation of hydrocarbon (and

[613] See in general M. Pappa, "Private Oil Companies Operating in Contested Waters and International Law of the Sea: A Peculiar Relationship", *OGEL/Oil, Gas & Energy Law*, 2018 (1).
[614] M. M. Garcia, "Territorial delimitation and hydrocarbon resources", in: G. Picton-Turbervill (ed), *Oil and Gas: A Practical Handbook*, Globe Business Publishing Ltd., 2009, pp. 22-23.
[615] *Ibid.*, p. 24.
[616] *Ibid.*: "each state may believe that it has a legitimate claim to the whole contract area and there may also be political objections, particularly if the states do not have friendly relations".
[617] UNCLOS, art. 76.

other non-living) resources situated in such a disputed area of extended CS is to be carried out on a cooperative basis. Consequently, the obligation to make payments or contributions in kind under article 82 of the UNCLOS becomes a joint obligation of the cooperating States. To date, there is one example, the Seychelles-Mauritius example, where two States have agreed on the cooperative management of an overlapping area of CS beyond 200 nm.[618] The Seychelles-Mauritius example is subject to consideration in Chapter 6.12 of this thesis. However, the implementation of article 82 will not be discussed in detail and the practical import of this article remains to be seen in the context of cooperative resource exploitation in maritime areas of overlapping extended CS claims.[619]

[618] See Chapter 1.
[619] See also Chapter 4.5.

CHAPTER 4. THE REGIME GOVERNING TRANSBOUNDARY HYDROCARBONS

4.1 Introduction

The previous Chapter dealt with the regime governing hydrocarbon resources located in areas of overlapping maritime claims. This Chapter examines the obligations and rights of States with respect to hydrocarbon resources straddling an already established maritime boundary where these resources can be exploited, wholly or in part, from either side of that boundary.[620]

It is worth noting that the findings of this Chapter are also relevant in a situation where State A unilaterally (namely, in the absence of a formal delimitation agreement with State B or of a boundary determined by a judicial body) determines the location of its maritime boundary running across a petroleum field. The *Ghana/Côte d'Ivoire* case illustrates this situation. In that case, the line applied by Ghana actually traversed a number of petroleum deposits.[621] Although the Special Chamber did not discuss the obligations of Ghana owed to Côte d'Ivoire in this respect, it does not mean that such obligations do not exist.[622]

It is important to emphasize that the twin obligations set forth in articles 74 (3) and 83 (3) of the UNCLOS (i.e., the obligation to make every effort to enter into provisional arrangements of a practical nature and the obligation to make every effort not to jeopardize or hamper the reaching of a final delimitation agreement) no longer apply once a boundary line between neighboring States is established.[623] The final delimitation clears up the matter of what part of the EEZ/CS appertains to each State and in which maritime area it is fully entitled to exercise its sovereign rights to explore and exploit natural resources.[624] However, it is possible that a single accumulation of hydrocarbons lies on both sides of a maritime boundary. Despite the fact that States saw this as a real possibility, neither the CCS nor the UNCLOS contain any provision on States' reciprocal obligations when a hydrocarbon field straddles the boundary.[625] Except

[620] This thesis refers to these hydrocarbon resources as 'transboundary', 'cross-border', 'cross-boundary' and 'straddling'. See Chapter 2.2.
[621] See Cote d'Ivoire's Rejoinder, para. 6.40, available at https://www.itlos.org/fileadmin/itlos/documents/cases/case_no.23_merits/pleadings/C23_Rejoinder_TR_Rev_1_25_09_2017.pdf (last accessed January 2019).
[622] *Ibid.* For example, Côte d'Ivoire noted that Ghana did nothing to comply with its procedural obligations arising from the presence of straddling petroleum deposits.
[623] See Chapter 3.
[624] Chapter 2.3.
[625] I. Townsend-Gault, "Zones of Cooperation in the Oceans – Legal Rationales and Imperatives", in: M. H. Nordquist and J. Norton Moore (eds.), *Maritime Border Diplomacy*, Brill, Leiden, 2012, p. 119.

for the general duties to cooperate, the UNCLOS includes no specific requirement to cooperate with respect to transboundary hydrocarbons.[626]

As concluded in Chapter 2, certain duties, in particular the duty to cooperate and the duty to exercise restraint, derive from the characterization of shared hydrocarbons as shared natural resources. Chapter 3 examined the temporal, geographic and substantive scope of those duties in the context of disputed hydrocarbons. This Chapter focuses on the scope of relevant duties in the context of transboundary hydrocarbons. As noted earlier in this thesis, each scenario of petroleum sharing has its own features that are likely to impact the content of the obligations applicable in that scenario.

Dissimilar to disputed hydrocarbons, the UNCLOS does not explicitly require neighboring States to refrain from unilateral activities with respect to a transboundary petroleum resource pending a further agreement on that issue. It seems that, on the contrary, the principle of sovereign rights countenances unilateral exploration and exploitation. At the same time, taking into account the general principles of international law discussed in Chapter 2 (e.g., the principle of good neighborliness and the no-harm principle), this Chapter will consider whether international law nevertheless imposes particular constraints on a coastal State when it explores for and/or exploits (or prepares to do either) a cross-border field, especially when these operations may result in negative effects for its neighbor.

This Chapter will examine State practice regarding transboundary hydrocarbons in detail for two reasons: first, to confirm (or disprove) the existence of certain rules governing the rights and obligations of States in a transboundary hydrocarbon deposit; and, second, to analyze the content of these rules and their features in contrast to disputed hydrocarbons. As noted in Chapter 1 of this thesis, maritime boundary delimitation treaties and other related agreements dealing with the issue of straddling hydrocarbons are referred to as the main sources of State practice.

4.2 The requirement to cooperate with respect to transboundary hydrocarbons

This section focuses on two questions: first, whether States that share a transboundary deposit are required to cooperate with respect to the management of this deposit under international

[626] See Chapter 2.4.

law; and, second, whether the scope of the requirement to cooperate in the context of transboundary hydrocarbons differs from that existing in the context of disputed hydrocarbons.

4.2.1 The inclusion of a 'transboundary mineral resource' clause in a delimitation agreement

Treaty practice of many States has responded to the geological reality of straddling hydrocarbons by the inclusion of so-called 'transboundary mineral resource' clauses in maritime delimitation treaties.[627] This section examines the core content of such clauses and their significance in the formation of the requirement to cooperate with regard to transboundary hydrocarbons.

4.2.1.1 The key elements of the 'typical' clause

A 'transboundary mineral resource' clause was first included in the UK-Norway delimitation agreement of 1965.[628] Subsequently, it has been incorporated into a considerable number of other delimitation agreements beyond the North Sea region.[629]

Generally, a typical transboundary mineral deposit clause included in many delimitation agreements after 1965 (it is also worth noting that such a clause is often incorporated into provisional arrangements examined in Chapter 6) states that if any single mineral resource deposit extends across the delimitation line and that part of this deposit is exploitable from either side of this line, the Parties shall seek to reach an agreement on the manner of its most effective exploitation and the apportionment.[630] Thus, the typical clause contains five fundamental elements.

First, the clause refers to all mineral resources that straddle the delimitation line. However, in practice no *maritime* examples of straddling mineral resources, other than hydrocarbons, appear to exist.[631]

Second, the clause is triggered in the event that a mineral deposit extends across the delimitation line. However, delimitation agreements contain nothing that may assist the Parties in determining whether any particular accumulation of hydrocarbons is, or might be, straddling. Every delimitation agreement is simply premised on the already established existence of such

[627] See also Bankes 2014, *op. cit.*, pp. 666-667.
[628] UK-Norway delimitation agreement of 1965, art. 4.
[629] Cameron 2006, *op. cit.*, p. 563.
[630] See delimitation agreements provided in Annex II of the BIICL's Report on Undelimited Maritime Areas, *op. cit.*, and the list of provisional arrangements contained in Appendix I of this thesis.
[631] Bankes 2016, *op. cit.*, p. 161, footnote 44.

an accumulation. Given the importance of this issue, Chapter 4.2.2 will examine subsequent (framework and unitization) agreements on the subject of whether they establish a common procedural framework within which the Parties and their licensees may identify when a hydrocarbon field extends or does not extend across the delimitation line.[632]

Third, the clause applies only to those straddling mineral resources that are exploitable, wholly or in part, from either side of the delimitation line. In other words, the clause is triggered when State A, from its side of the delimitation line, may exploit a portion of the transboundary mineral resource which is also located in the CS of State B and vice versa. Although the clause does not indicate how the mineral resource may be exploited from the other side of the boundary, it is reasonable to assume that the criterion of exploitability would be met when State A has drilled a well on its CS and this well is capable of producing a resource that migrates from under State B's CS to State A's CS, for example.[633]

The fourth element of the typical clause is the obligation of the Parties to seek to conclude an agreement. The fifth element relates to the content of any subsequent agreement, namely that it should address the most effective way to exploit the straddling mineral deposit and the apportionment of the proceeds of production.

The language in which the obligation contained in the clause is framed only imposes upon the Parties a duty to negotiate with a view of setting the terms applicable to the cooperative exploitation of a mineral deposit lying across the delimitation line. In other words, the Parties do not commit themselves to conclude an agreement in the event of a cross-border petroleum deposit being discovered.[634] Although most of the transboundary mineral deposit clauses are phrased in the manner mentioned above, there are some delimitation agreements that use language that goes beyond a mere duty to negotiate in good faith. These delimitation agreements envisage that an agreement concerning the development of transboundary hydrocarbons shall be reached at the request of one of the Parties.[635] Thereby, it can be regarded

[632] Chapter 4.2.2 explains the terms 'framework agreements' and 'unitization agreements'.
[633] Bankes 2016, *op. cit.*, p. 145.
[634] It should be considered as a *pactum de negotiando* and not as *pactum de contrahendo* which would be an obligation to conclude an agreement. See *Case Concerning Claims Arising Out of Decisions of the Mixed Graeco-German Arbitral Tribunal Set Up under Article 304 in Part X of the Treaty of Versailles (between Greece and the Federal Republic of Germany)*, 26 January 1972, 19 R.I.A.A. 27, para. 62. See also Chapter 2.4.1.
[635] See, for example, Agreement between Denmark and Norway relating to the Delimitation of the Continental Shelf, Oslo, 8 December 1965, EIF: 22 June 1966, 634 UNTS 76, art. 4; Agreement between the Kingdom of Denmark and the Kingdom of Norway concerning the Delimitation of the Continental Shelf in the Area between Jan Mayen and Greenland and concerning the Boundary between the Fishery Zones in the Area, Oslo, 18 December 1995, EIF: 18 December 1995, 1903 UNTS 177, art. 2; Agreement between the Government of the Kingdom of Denmark together with the Home Government of the Faroe Islands, on the one hand, and the

as a *pactum de contrahendo*, not a *pactum de negotiando*.[636] However, the provision which places on the Parties a duty to enter into an agreement is the exception rather than the rule. The general reluctance of States to include a duty of this nature in their delimitation agreements is quite understandable. Requiring that an agreement is be concluded would mean the power of a State to impede legitimate unilateral actions of its neighbors in the event of a failure to reach such an agreement.[637]

In other words, the transboundary mineral resource clause typically used in delimitation treaties contemplates that the Parties have to make strong efforts to achieve a further agreement on the exploitation of a transboundary hydrocarbon deposit. Most of the clauses do not require the Parties to reach any specific type of subsequent agreement. As discussed below in this Chapter, States have negotiated different forms of cooperative agreements to deal with the topic of transboundary hydrocarbons.[638]

Thus, it appears that the content of the duty to cooperate set forth in the typical transboundary mineral deposit clause is similar to that contained in articles 74 (3) and 83 (3) of the UNCLOS, namely that States are required to make every effort to arrive at an arrangement/agreement. However, unlike articles 74 (3) and 83 (3) of the UNCLOS, the typical clause establishes no additional duty to abstain from some unilateral actions pending the conclusion of a subsequent agreement.[639]

Also, the typical clause, while explicitly providing for the duty to seek an agreement, does not require the Parties to notify, inform or consult one another in the event of the discovery of a (potential) transboundary accumulation of hydrocarbons. However, as discussed further in this Chapter, such procedural duties are clearly reflected in subsequent agreements on transboundary hydrocarbons. It has also been noted in Chapter 2 that these duties can be regarded as integral parts of the duty to negotiate.[640] The statement of the Arbitral Tribunal in the *Eritrea/Yemen* case supports the existence of procedural duties in the context of

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Government of the United Kingdom of Great Britain and Northern Ireland, on the other hand, relating to Maritime Delimitation in the Area between the Faroe Islands and the United Kingdom, 18 May 1999, art. 2, available at http://www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/DNK-GBR1999MD.PDF (last accessed January 2019); Norway-Russia Treaty, art. 5 (2). See Fodchenko 2018, *op. cit.*, in respect of the Norway-Russia Treaty.

[636] *Supra* note 634.

[637] *Lac Lanoux* Arbitration, para. 11; United States – Import Prohibitions of Certain Shrimp and Shrimp Products, Recourse to Article 21.5 of the DSU by Malaysia (2001), WTO Doc. WT/DS58/AB/RW, para. 123-24. See also Chapter 4.3.

[638] See Chapter 4.2.2.

[639] See Chapter 3.

[640] See also Lagoni 1979, *op. cit.*, p. 237; Ong 1999, *op. cit.*, p. 798.

transboundary hydrocarbons. The Tribunal in this case was of the view that the Parties were obligated to inform and consult one another on any hydrocarbon or mineral resources which may straddle the established maritime boundary or which may exist in its immediate vicinity.[641]

4.2.1.2 Variations in the content of transboundary mineral deposit clauses

While the typical clause examined in the previous section serves as a baseline, various additional elements can be found in delimitation agreements. As discussed below in this Chapter, some delimitation agreements include a prohibition on hydrocarbon activities within a narrow strip along the maritime boundary.[642] A number of delimitation agreements provide that if a cross-border deposit has been exploited prior to the conclusion of any agreement, the State whose sovereign rights have been affected is entitled to compensation.[643] Other delimitation agreements refer to the concept of unitization[644] or some form of dispute resolution procedure to which the Parties may resort in cases when they are unable to agree on the manner of exploitation or apportionment.[645] Many delimitation agreements are completely silent on the involvement of licensees operating on both sides of the boundary in the process of reaching a further agreement.

These examples illustrate that the content of transboundary mineral resource clauses incorporated into delimitation treaties may vary, although the key elements considered in the preceding section remain largely unchanged. It is perhaps not surprising that the clauses are not identical. The content of each delimitation treaty and its provisions is usually determined by the realities of what is viable in a particular negotiating context.[646] However, despite the existence of different elements and formulations, this form of clause is typically relatively simple. Many

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[641] *Award of the Arbitral Tribunal in the second stage of the proceedings between Eritrea and Yemen (Maritime Delimitation)*, 17 December 1999, para. 86.

[642] Chapter 4.2.4.

[643] See, for example, Treaty between the Kingdom of Denmark and the Federal Republic of Germany concerning the delimitation of the continental shelf under the North Sea, Copenhagen, 28 January 1971, EIF: 7 December 1972, 857 UNTS 120; France-Spain Convention, art. 4 (2); Convention between Spain and Italy on the Delimitation of the Continental Shelf between the two States, Madrid, 19 February 1974, EIF: 16 November 1978, 1120 UNTS 362, art. 4 (2); Agreement between the Hellenic Republic and the Italian Republic on the Delimitation of the Respective Continental Shelf Areas of the two States, Athens, 24 May 1977, EIF: 12 November 1980, 1275 UNTS 428, art. 2 (2).

[644] See, for example, Treaty between the Federal Republic of Nigeria and the Republic of Equatorial Guinea concerning their maritime boundary, Malabo, 23 September 2000, EIF: 3 April 2002, 2205 UNTS 325, art. 6.

[645] Simultaneously with the conclusion of the UK-Netherlands delimitation agreement of 1965 (see Chapter 1), the Parties concluded a separate agreement on the exploitation of single straddling geological structures in the North Sea. See Agreement between the Government of the Kingdom of the Netherlands and the Government of the United Kingdom of Great Britain and Northern Ireland relating to the exploitation of single geological structures extending across the dividing line on the continental shelf under the North Sea, London, 6 October 1965, EIF: 23 December 1966, 595 UNTS 107, art. 2.

[646] R. J. Zedalis, *International Energy Law: Rules Governing Future Exploration, Exploitation and Use of Renewable Resources*, 2000, p. 72.

recent delimitation agreements still follow this pattern,[647] while other agreements have moved beyond the simplest version of the clause and have adopted a more sophisticated transboundary mineral deposit clause.[648]

4.2.1.3 Significance of the clauses

As explained earlier, the typical transboundary mineral resource clause is incorporated into a large number of delimitation agreements concluded by States in all parts of the world. At the same time, Bankes has noted that there are also many delimitation agreements across the globe that are silent on the issue of transboundary hydrocarbons.[649] The potential rationales for this choice might be poor hydrocarbon potential of a particular maritime area, the desire of the negotiators not to complicate the negotiating process,[650] or the belief of States that general rules governing transboundary hydrocarbons exist under international law.

It could be argued that the silence of a delimitation agreement is not decisive as to the obligations of States with regard to a transboundary petroleum deposit if such a deposit is discovered after this agreement has been ratified. Much evidence supports the conclusion that States are required to cooperate in respect of transboundary hydrocarbons, including the general principles considered in Chapter 2 (particularly those reflected in the UNGA Resolutions), the existence of a similar requirement to cooperate in the context of disputed hydrocarbons,[651] several judicial decisions,[652] relevant State practice and doctrinal writings discussed in this Chapter. Several legal scholars have concluded that the requirement to cooperate is now a rule of customary international law applicable to both disputed and transboundary hydrocarbons.[653] Other commentators are more guarded and have suggested that there is a regional customary international rule applicable to States bordering, *inter alia,* the North Sea and the Persian

[647] See, for example, Treaty between the Government of Australia and the Government of New Zealand Establishing Certain Exclusive Economic Zone Boundaries and Continental Shelf Boundaries, Adelaide, 25 July 2004, EIF: 25 January 2006, 2441 UNTS 235, art. 4.
[648] The most striking instance is the Norway-Russia Treaty. See Chapter 7 in detail.
[649] Bankes 2016, *op. cit.*, p. 144. However, it is difficult to say how many delimitation agreements include a transboundary mineral resource clause and how many delimitation agreements are silent on the issue of transboundary mineral resources. For example, van Logchem states that "the majority of delimitation agreements are silent" (van Logchem 2018, *op. cit.*, p. 217) referring to Bankes 2016, *op. cit.*, p. 144. At the same time, Bankes has not claimed that there is "the majority". Van Logchem also states that "about 10% of [delimitation agreements covering the former disputed maritime areas] contain a conjoining provision that seeks to deal with straddling oil and gas resources" (*ibid.*, p. 216) referring primarily to Anderson 2006, *op. cit.*, p. 138.
[650] *Ibid.* See also N. Bankes, The Treatment of Transboundary Hydrocarbon Deposits in the Maritime Delimitation Agreements of Arctic States, presentation, October 2014, slide number 6, available at http://law.ucalgary.ca/files/law/bankes_tb-agreements_arctic-states_iceland-paper_oct2014.pdf (last accessed January 2019).
[651] See Chapter 3.
[652] *Supra* note 641 and Chapter 1.
[653] See, for example, Onorato 1968 and 1977, *op. cit.*; Lagoni 1979, *op. cit.* See also Chapter 1.

Gulf.[654] It is true that the analysis of delimitation agreements reveals that whereas countries situated in certain geographic regions usually include a typical transboundary mineral deposit clause (which encapsulates the requirement to cooperate) in their delimitation agreements, the practice of other States from the same region does not deal with the topic of transboundary hydrocarbons at all.[655] It is also true that the inclusion of a transboundary mineral deposit clause in delimitation agreements is more common now than before. Consequently, one could conclude that this points to evidence for the consistency of State practice (at least, bilateral treaty practice) and *opinio juris* necessary to create a rule of customary international law requiring cooperation of States in the management of transboundary hydrocarbons.[656]

At the same time, the requirement to cooperate does not constitute a requirement to arrive at an agreement. States have a mere duty to attempt to agree on some sort of cooperative management in order to facilitate the development of a transboundary deposit. They are not obligated to reach a specific type of agreement, such as an agreement that adopts a unitization approach. This does not also exclude a situation where two States sharing a transboundary deposit agree that only one State will exploit this deposit from its side of the maritime boundary.[657]

4.2.2 Agreements based on the clauses requiring cooperation in respect of transboundary hydrocarbons

This section looks at how the requirement to cooperate included in the typical clauses has developed through subsequent agreements, particularly in the domain of procedural aspects of cooperation. These subsequent agreements include framework and unitization agreements.

4.2.2.1 Framework agreements

More recently, several States have reached framework agreements dealing with transboundary hydrocarbons. In this thesis, seven agreements adopted since 2005 are categorized as framework agreements.[658] Each framework agreement is premised on the already existing delimitation agreement and makes a clear reference to the transboundary mineral resource clause included in that delimitation agreement. However, these framework agreements go far beyond the general content of the clause. They establish specific rules and procedures that may

[654] Ong 1999, *op. cit.*, p. 798; Cameron 2006, *op. cit.*
[655] See Chapter 1.
[656] See also Chapter 1.4.2.
[657] See also Chapter 4.4.
[658] See Appendix I, Chapters 1 and 7.

assist the Parties in identifying transboundary hydrocarbons, facilitating their joint development and settling potential disputes.

Nevertheless, there is one important distinction between the first framework agreement and those that followed: while Norway and the UK already have considerable experience with inter-State cooperation regarding straddling hydrocarbons and have concluded some unitization agreements in the past,[659] the other States have a very limited (or no) history related to transboundary hydrocarbon activities.[660] Consequently, the context underpinning the conclusion of these framework agreements are different. Whereas the UK-Norway Framework Agreement was negotiated in order to facilitate the development of marginal fields situated within a 60 km wide corridor either side of the delimitation line,[661] the six latter agreements aim at providing certainty by establishing a set of ground rules governing the exploration and exploitation of (possible) straddling hydrocarbon resources. Thus, while the other framework agreements are confined to hydrocarbon deposits straddling the maritime boundaries, the UK-Norway Framework Agreement has a wider objective of dealing with resources lying in a broad corridor next to the delimitation line.

All framework agreements are very sophisticated. They address a large number of different topics, including the scope of the agreement, its purpose and objectives, identification of transboundary reservoirs, determination and redetermination of reserves and their allocation, fiscal issues, infrastructure issues, environmental issues, institutions and dispute resolution procedure, decommissioning, duration of the agreement and many other issues.[662] However, throughout this thesis, only some elements of these framework agreements will be examined, *inter alia*: the procedure by which the Parties to the framework agreement identify whether any particular accumulation of hydrocarbons is transboundary, the issue of whether one Party may authorize development of a transboundary deposit without an agreement of the other Party, and the design of the standard of due diligence.[663]

4.2.2.2 Unitization agreements

There are a number of examples where transboundary hydrocarbon fields have been discovered and States have negotiated unitization agreements (UAs) to deal with these fields. UAs are fundamentally different from the agreements establishing JDZs discussed further in this

[659] See Chapter 1 in more detail.
[660] Bankes 2014, *op. cit.*, p. 669.
[661] UK-Norway Report, *op. cit.* See also Bankes 2014, *op. cit.*, p. 670.
[662] Bankes 2014, *op. cit.*, p. 671.
[663] See Chapters 4.2.2.3, 4.3 and 7.

Chapter. While a joint zone agreement normally covers a relatively large maritime area, a UA is usually limited to the geographical and geological extent of a particular transboundary accumulation of hydrocarbons and aims at the efficient development of that accumulation as a single unit.[664] It is important to note that a UA may be concluded not only in relation to a hydrocarbon deposit which lies across the delimitation line, but also with respect to a deposit which straddles the boundary between a JDZ[665] and the area under national jurisdiction of either Party.

The first UA was the Agreement between Norway and the UK concerning the Frigg field reservoir signed in 1976.[666] This was followed by two other agreements between those countries relating to the exploitation of the Statfjord and Murchison field reservoirs (both in 1979).[667] The unitization approach was extended to the Netherlands with the conclusion of the Markham UA between the UK and the Netherlands in 1992[668] and subsequently was adopted by countries outside the North Sea region. Other examples of cross-border hydrocarbons with respect to which States have adopted (or are in the process of adopting) UAs include the Zafiro-Ekanga field between Nigeria and Equatorial Guinea, the Loran-Manatee, the Kapok-Dorado and the Manakin-Coquina fields between Venezuela and T&T, the Lianzi field between Angola and Congo, and the Greater Sunrise fields between Australia and Timor-Leste.[669]

4.2.2.3 Procedure for the identification of a hydrocarbon deposit as transboundary and the procedural duties arising from its (possible) existence

As alluded to earlier, the typical transboundary mineral resource clause incorporated into a large number of delimitation treaties is only triggered when a hydrocarbon deposit extends across the delimitation line. Nonetheless, none of the delimitation agreements include a procedure according to which the Parties may identify that a particular accumulation of hydrocarbons is, or might be, a transboundary field. This section examines framework and unitization agreements in order to give insight into whether there is any common procedure that might be used in identifying a transboundary hydrocarbon deposit. This issue is important not only to determine the moment of the emergence of the duty to cooperate, but also to understand how

[664] See also Chapter 7.
[665] Both types of JDZs: pending the resolution of a maritime boundary dispute and in addition to an established boundary line.
[666] Chapter 1.
[667] *Ibid*.
[668] *Ibid.*
[669] *Ibid*.

likely it is that a State might authorize development of a hydrocarbon deposit without the knowledge that the deposit extends into the CS of its neighbor.[670]

The importance may be demonstrated by an example of the Aphrodite gas field. As noted in Chapter 1, Israel claims that this field found on the Cypriot CS extends into its EEZ (Illustration No. 24), which would activate the obligation of the Parties (in particular Cyprus) to cooperate in the joint exploitation of the field in accordance with article 2 of the delimitation agreement between these two States.[671] Chapter 1 also mentioned other similar examples.

The UK-Norway Framework Agreement does not go further than incorporation of the transboundary mineral deposit clause included in the UK-Norway delimitation agreement of 1965.[672] This Framework Agreement is premised on the mutual understanding of the two governments that there is a transboundary petroleum reservoir which should be exploited as a single unit.[673] The UK-Norway Guidelines take a step further providing that if the licensees wish to start development of a petroleum structure that is considered, through geological/geophysical mapping, to extend across the delimitation line, they should inform the authorities of their home country.[674] As necessary, the authorities discuss and hold meetings to review the potential extent of the petroleum structure across the delimitation line.[675]

The Venezuela-T&T Framework Treaty similarly refers to the transboundary mineral deposit clause of the delimitation agreement concluded between them in 1990.[676] The Framework Treaty declares that both Parties should hold appropriate technical consultations in order to identify the existence of a cross-border hydrocarbon deposit.[677] In the subsequent Loran-Manatee UA, the Parties made it clear that, by virtue of exploration activities on both sides of the delimitation line, they have identified seven hydrocarbon reservoirs.[678] Six of them were

[670] See also Chapter 2.6.
[671] See Chapter 1. See also "Cyprus and Israel move to end dispute over Aphrodite gas", KNEWS, 2 May 2018, available at http://knews.kathimerini.com.cy/en/news/cyprus-and-israel-move-to-end-dispute-over-aphrodite-gas-field (last accessed January 2019).
[672] UK-Norway delimitation agreement of 1965, art. 4. The UK-Norway Framework Agreement refers to the UK-Norway delimitation agreement of 1965 in the Preamble, paras. 3 and 4.
[673] UK-Norway Framework Agreement, art. 3.1 (1).
[674] UK-Norway Guidelines, *op. cit.*, part 1.1. The authorities are the Norwegian Petroleum Directorate (NPD) for a discovery predominantly in Norway and the Department of Energy and Climate Change (DECC) for a discovery predominantly in the UK.
[675] *Ibid.*
[676] Venezuela-T&T Framework Treaty, Preamble, para. 1, refers to article 7 of the Treaty between Trinidad and Tobago and Venezuela on Delimitation of Marine and Submarine Areas, Caracas, 18 April 1990, 1654 UNTS 293.
[677] *Ibid.*
[678] Loran-Manatee UA, Preamble, para. 3 and art. 2.

identified as transboundary, while the final gas reservoir was determined to be located solely within the CS of Venezuela.[679]

The Norway-Iceland Agreement of 2008 goes more deeply into this issue. It stipulates that if a hydrocarbon reserve is found on the CS of one of the Parties and the other Party is of the view that it might extend to its CS, the latter may initiate discussions on the limits of this reserve and the possibility for its development as a unit.[680] The initiating Party is obligated to prove its opinion by submitting the geological and/or geophysical data, including any existing drilling data.[681] If the Parties have concluded that the discovered hydrocarbon deposit is of a transboundary nature or its exploitation by one Party would affect the possibility of exploitation by the other Party, they shall reach a UA at the request of either Party.[682] An identical procedure is also established under the Norway-Russia Treaty.[683]

The Canada-France Agreement contains an even more sophisticated procedure. Article 2 (1) (a) requires a Party, authorizing any exploratory drilling within 10 nm of the maritime boundary, to provide the other Party with the information, results and data prescribed in Annex I within 60 days of receiving such information from its license-holders. In the event that the information provided allows one of the Parties to conclude that a hydrocarbon reservoir does or does not exist, the other Party must be notified forthwith.[684] Such a notice shall specify, *inter alia*, whether there is reason to consider the reservoir as transboundary.[685] The conclusion of the notifying Party that the discovered hydrocarbon resource does not extend beyond its CS shall be supported by evidence from the technical information received.[686] However, if the other Party disagrees with the conclusion set forth in the notice, it may refer this issue to a single expert, whose decision shall be final and binding on both Parties.[687] Once the expert has determined, or the Parties have agreed, that a transboundary accumulation of hydrocarbons exists, each Party is obligated to provide additional information prescribed in Annex II.[688] In these circumstances, a Party, informed about a licensee's intention to start production from the transboundary field, shall give notice to the other Party "in writing forthwith" and request that

[679] *Ibid.*, art. 2 (2.3) (2.4) (2.5).
[680] Norway-Iceland Agreement of 2008, art. 2 (1) and (2).
[681] *Ibid.*
[682] *Ibid.*, art. 2 (3).
[683] Norway-Russia Treaty, art. 5 and Annex II.
[684] Canada-France Agreement, art. 3 (1).
[685] *Ibid.*
[686] *Ibid.*, art. 3 (2).
[687] *Ibid.* and Annex III.
[688] *Ibid.*,, art. 2 (1) (c) and 3 (3), Annex II.

Party to conclude an exploitation agreement.[689] If the Parties have failed to reach such agreement, either Party may refer its finalization to an arbitral tribunal.[690]

It is interesting to note that in the event when a second well on the same geological structure has been drilled and a Party, authorizing such activity, has not informed the other Party of it within one year, the latter has the right to request the establishment of a technical working group to examine the matter.[691] The Party carrying out the drilling "shall show the other Party the information it has derived from the drilling and explain why the information is insufficient to provide" a notice.[692] The Canada-France Agreement further requires each Party to notify the other Party "in any event" no later than one year after three exploration wells have been drilled on the same geological structure.[693]

The US-Mexico Agreement mainly relies on an earlier maritime delimitation agreement between these two countries, which recognizes the possible existence of hydrocarbon deposits that straddle the delimitation line.[694] Article 4 (1) of the US-Mexico Agreement requires the Parties to consult in respect of exploration and exploitation activities[695] undertaken within 3 statute miles of the delimitation line and to exchange all relevant and available geological information resulting from such activities. Moreover, each Party is obligated to give the other Party notice when it has approved or received from a licensee a plan to conduct seismic survey, drilling or production activities within the mentioned area, and when it has become aware of the likely presence of a transboundary hydrocarbon accumulation[696] and the discovery of any hydrocarbon occurrence close to the delimitation line.[697] Within 30 days of receipt of the notice, both Parties, through their designated agencies, shall initiate consultations with a view to

[689] *Ibid.*,, art. 3 (4) and 4.
[690] *Ibid.*,, art. 4 (5) and Annex IV.
[691] *Ibid.*,, arts. 2 (1) (b) and 17.
[692] *Ibid.*, art. 2 (1) (b).
[693] *Ibid.*,, art. 3 (1).
[694] The US-Mexico Agreement in the Preamble refers to the Treaty between the Government of the United States of America and the Government of the United Mexican States on the Delimitation of the Continental Shelf in the Western Gulf of Mexico beyond 200 Nautical Miles, Washington, 9 June 2000, EIF: 17 January 2001, 2143 UNTS 417.
[695] Article 2 of the Agreement defines the terms 'exploitation' and 'exploration'.
[696] According to article 2 of the Agreement, 'transboundary reservoir' means any reservoir which extends across the delimitation line and the entirety of which is located beyond 9 nautical miles from the coastline, exploitable in whole or in part from both sides of the delimitation line.
[697] US-Mexico Agreement, art. 4 (2) (a) – (d).

determine whether a transboundary hydrocarbon reservoir indeed exists.[698] In the case of failure to agree on such determination, the matter may be submitted to a joint commission.[699]

In summary, there are few agreements that establish a procedure through which the Parties and their licensees may agree on whether or not an accumulation of hydrocarbons is transboundary. Out of all of the agreements considered above, the Canada-France Agreement contains the most comprehensive treatment of that issue.[700] The examination of these agreements has shown that the *possible* existence of a straddling petroleum deposit generates mutual duties of States. These agreements reinforce the duty to cooperate, including its procedural components, with respect to transboundary hydrocarbons. They also make it clear that (a) the process of reaching the conclusion that a particular deposit extends across the boundary is difficult and multistage, and that (b) if one of the States has information indicating that a deposit is potentially transboundary, this State shall comply with procedural duties towards the other State in good faith. Some cases, however, illustrate that it is possible that a State may be initially unaware of the prospect of a reservoir's straddling nature.[701] At the same time, if State A assumes and argues that the reservoir straddles, or is likely to straddle, the maritime boundary between State A and State B, State B shall pursue cooperation in order to confirm or refute this assumption.

4.2.3 The establishment of a joint development zone as part of the delimitation

The establishment of a joint development zone (JDZ) as part of the negotiation of a delimitation agreement is usually considered a method of dealing with transboundary hydrocarbons.[702] However, agreements creating such zones typically contain no indication that this is their main objective as they are generally aimed at regulating activities in respect of non-living (and/or living) marine resources within these zones.[703]

It is important to emphasize that this thesis makes a distinction between two types of JDZs: those that have been defined in association with the delimitation of a maritime boundary and those that have been established in areas where neighboring States are unable to agree on a delimitation line. As noted in Chapter 3, the latter category is likely to constitute provisional

[698] *Ibid.*, art. 5 (1). The paragraph further states that the agencies "shall request their Licensees to provide all Geological Information relevant to such determination and shall submit to each other all available Geological Information in their possession".
[699] *Ibid.*, art. 5 (2).
[700] Bankes 2014, *op. cit.*, p. 674.
[701] See, for example, *supra* note 671.
[702] See, for example, Bankes 2016, *op. cit.*, p. 142, footnote 4.
[703] See Chapter 7.

arrangements of a practical nature within the meaning of articles 74 (3) and 83 (3) of the UNCLOS.

There are a number of JDZs created in conjunction with maritime boundaries for purposes related to the exploration and exploitation of hydrocarbon resources. Chapter 7 will examine all these JDZs. Although these agreements are not provisional arrangements under articles 74 (3) and 83 (3) of the UNCLOS, they include some elements similar to those incorporated into provisional arrangements: for example, the designation of a JDZ, the determination of the jurisdiction(s) applicable within the zone, and the identification of proportions in which costs and profits shall be divided between the Parties. However, it is worth noting that it is less common to find the establishment of a JDZ where there is already a delimitation line than where there is no such line. Neighboring States are more inclined to conclude UAs with respect to specific hydrocarbon fields that straddle a delimited boundary.[704]

It is noteworthy that many agreements creating JDZs in both delimited and undelimited maritime areas also include a provision concerning the possible existence of hydrocarbon fields extending across the boundaries of these zones.[705] The wording of this type of provision is often very similar to the content of a typical transboundary mineral deposit clause considered above in this Chapter.

4.2.4 The insertion of a provision prohibiting hydrocarbon activities in the vicinity of the maritime boundary

One of the approaches in dealing with the issue of transboundary hydrocarbons is the inclusion in delimitation treaties of a provision according to which certain hydrocarbon activities are limited within a defined area surrounding the delimitation line. The reasons for this may be different. The most obvious one is that the negotiators believed that hydrocarbon reservoirs are likely to be discovered near/across the delimitation line, and they wished to avoid any tensions that might follow from their detection. Additionally or alternatively, this provision could also be included in delimitation agreements on account of any number of other considerations such as those discussed in Chapter 4.3 below.

[704] See Chapters 4.2.2.2 and 7.
[705] See, for example, Chapters 3 and 7.7.4.

Such a prohibition provision appears in a number of delimitation agreements concluded by Iran with its neighbors in the Persian Gulf and forbids drilling operations close to the maritime boundary.[706]

The Australia-Papua New Guinea Treaty[707] establishes a broad protected zone encompassing the Torres Strait[708] within which the Parties agree not to conduct drilling and mining of the seabed during a period of ten years from the date of entry into force of that Treaty.[709] Rather than a mere limit to the identification of potential oil and gas resources, the objective of including such a moratorium is founded in the desire to protect the livelihood and traditional way of life of the traditional inhabitants and to preserve the marine environment and indigenous fauna and flora of the zone.[710]

A provision similar to that existing in the Australia-Papua New Guinea Treaty can be found in the US-Mexico delimitation treaty of 2000.[711] This agreement set forth a period of ten years, starting from the date of its entry into force (until January 2011), during which neither drilling nor any exploitation shall be permitted within 1.4 nm on either side of the boundary line.[712] In contrast to the Australia-Papua New Guinea Treaty, the US-Mexico delimitation treaty clarifies that such a moratorium is introduced in order to determine the possible existence and distribution of transboundary resources in the area along the boundary line.[713] Once either Party has discovered that any particular hydrocarbon deposit is or might be transboundary, it is required to notify the other Party.[714] Moreover, the Parties committed themselves to seek to reach an agreement for the efficient and equitable exploitation of transboundary resources.[715] As noted in Chapter 1, the US-Mexico Framework Agreement was signed in 2012. This Framework Agreement will be examined in detail in Chapter 7. The US-Mexico delimitation

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[706] See Agreement concerning the sovereignty over the islands of Al-'Arabiyah and Farsi and the delimitation of the boundary line separating submarine areas between the Kingdom of Saudi Arabia and Iran, Teheran, 24 October 1968, EIF: 29 January 1969, 696 UNTS 212, art. 4; Agreement concerning the boundary line dividing the continental shelf between Iran and Qatar, Doha, 20 September 1969, EIF: 10 May 1970, 787 UNTS 172, art. 2; Agreement concerning Delimitation of the Continental Shelf between Iran and Bahrain, Manama, 17 June 1971, EIF: 14 May 1972, 826 UNTS 234, art. 2; Agreement concerning Delimitation of the Continental Shelf between Iran and Oman, Tehran, 25 July 1974, EIF: 28 May 1975, 972 UNTS 274, art. 2.
[707] Treaty between Australia and the Independent State of Papua New Guinea concerning sovereignty and maritime boundaries in the area between the two countries, including the area known as Torres Strait, and related matters, Sydney, 18 December 1978, EIF: 15 February 1985, 1429 UNTS 207.
[708] *Ibid.*, art. 10.
[709] *Ibid.*, art. 15.
[710] *Ibid.*, art.10 (3) and (4).
[711] US-Mexico delimitation treaty of 2000, *supra* note 694.
[712] *Ibid.*, art. 4 (1).
[713] *Ibid.*, art. 4 (4) (5) and 5 (1) (a).
[714] *Ibid.*, art. 4 (6)
[715] *Ibid.*, art. 5 (1) (b).

treaty of 2000 also provides that even after the expiry of ten years, the Parties agree to inform each other about activities conducted in the area.[716]

Thus, the analysis in this section reveals that delimitation treaties rarely include a provision prohibiting the conduct of some hydrocarbon activities within a narrow strip along the maritime boundary. The following sections of this Chapter will return to these prohibition provisions and their significance in the context of unilateralism with respect to transboundary hydrocarbons.

4.3 Implications of a failure to agree

As follows from the above discussions, international law requires States to perform certain substantive and procedural obligations – to inform, consult and seek an agreement – in relation to hydrocarbon resources that straddle a delimitation line, even if the delimitation agreement establishing this delimitation line is silent on the issue of straddling hydrocarbons. However, for one reason or another, the required cooperation may not materialize. Neighboring States may be unable to agree upon the framework governing the management of a straddling hydrocarbon deposit or the terms of its apportionment. This elicits the question of what consequences arise from a failure to agree: whether, in other words, a State may unilaterally proceed to explore and exploit a transboundary field when the negotiations with its neighbor have reached an impasse or dragged on for a long period. As Cameron noted, in such circumstances, even the most responsible government would consider whether some form of unilateral actions is an appropriate alternative.[717] Another relevant question arising from the foregoing is whether petroleum activities, which have already been commenced, with respect to a transboundary deposit must be ceased: for example, in a situation where State A has proceeded with exploitation of a deposit which has later been declared transboundary.

In other words, this section examines the extent to which a State (and, accordingly, petroleum companies under the approval of that State) can take unilateral acts in relation to a transboundary hydrocarbon deposit.

4.3.1 Clarifying the essence of the rule of capture

As concluded in Chapter 3, even seismic surveys, not to mention exploratory drilling and extractive activities, unilaterally conducted in undelimited maritime areas are likely to breach international law. However, the situation where States have already established a maritime

[716] *Ibid.*, art. 5 (2).
[717] Cameron 2006, *op. cit.*, p. 569.

boundary differs from a situation where the boundary line itself is still contested. Each State on its side of the maritime boundary acquires exclusive sovereign rights to explore the respective CS, to drill for and exploit petroleum resources located within the limits of that CS.[718] The difficulty associated with transboundary petroleum resources is that due to their fugacious properties, State A's drilling into a cross-border reservoir will lead away the oil and gas resources in this reservoir, including those that are located on the side of State B, to the point where the reservoir is pierced by the drilled well of State A.[719] In other words, one State may in fact be able to take any or all of the oil and gas resources also situated on the other State's side of the maritime boundary.[720]

There is a considerable debate in the legal literature as to whether international law adopts a so-called 'rule of capture' in relation to transboundary hydrocarbons. The rule of capture has its origin in the maxim "*cuius est solum, eius est usque ad coelum et ad infernos*" (whoever owns the soil also owns the air above and the depths below).[721] In the municipal context, there is extensive practice concerning common onshore hydrocarbon deposits which underlie different landholdings. Development of such deposits was built upon the rule of capture according to which the owner of a certain tract of land possesses hydrocarbon resources that could be found within this area.[722] In the event that activities of an adjoining or distant owner cause the deposit to migrate towards its land or control, the "former" owner incurs no damage.[723] The only remedy of the "former" owner is to engage in competitive drilling on its own land in order to recapture the deposit.[724] In other words, the existence of the rule of capture means that owner A is not liable if its activities cause hydrocarbons to migrate from owner B's land to owner A's land.

The existence of an international rule of capture applicable to transboundary offshore hydrocarbon deposits has been widely disputed. As follows from the literature review regarding this issue, the majority of legal scholars rejects the applicability of the rule of capture at the

[718] See Chapter 2.3.
[719] See Mossop 2016, *op. cit.*, p. 140; van Logchem 2018, *op. cit.*, p. 215.
[720] See also Chapter 4.2.
[721] D. Roughton, "Rights (and Wrongs) of Capture: International Law and the Implications of the Guyana/Suriname Arbitration", *Journal of Energy & Natural Resources Law*, 2008, vol. 26 (3), p. 383.
[722] G. W. Hardy, "Drainage of oil and gas from adjoining tracts – a further development", *Natural Resources Journal*, 1996, vol. 6 (1), pp. 47-51; B. M. Kramer and O. L. Anderson, "The rule of capture – an oil and gas perspective", *Environmental* Law, 2005, vol. 35 (4), p. 949.
[723] Roughton 2008, *op. cit.*, p. 383; M. H. Loja, "Who Owns the Oil that Traverses a Boundary on the Continental Shelf in an Enclosed Sea? Seeking Answers in Natural Law through Grotius and Selden", *Leiden Journal of International Law*, 2014, vol. 27 (4), p. 897.
[724] Loja 2014, *op. cit.*, p. 898. See also van Logchem 2018, *op. cit.*, pp. 201-202.

international level.[725] Meanwhile, the CS regime established under the CCS and UNCLOS is rarely mentioned in these debates, although it provides a clear-cut path to the conclusion that the rule of capture is not applicable in the context of transboundary offshore hydrocarbons.[726] Chapter 4.3.2 below will show that the CS regime establishes limitations on the ability of State A to negatively affect State B's sovereign rights over the same hydrocarbon deposit. Further, Chapter 4.3.3 will examine State practice in order to confirm the non-applicability of the rule of capture to transboundary offshore hydrocarbons.

4.3.2 The regime of the continental shelf and unilateralism

The essential starting point is that both the CCS and UNCLOS confer sovereign rights upon a coastal State "for the purpose of exploring [the CS] and exploiting its natural resources".[727] Thus, the CCS and UNCLOS establish a rule according to which every coastal State is entitled to explore for and exploit hydrocarbon resources located within the limits of its CS. This rule equally applies to States that share an accumulation of hydrocarbons. In other words, once the EEZ/CS is delimited, the oil and gas bedded in a cross-border deposit on each side of the maritime boundary is subject to the sovereign rights of the State of whose shelf it forms part. These sovereign rights are exclusive in the sense that if a State does not explore the CS and exploit its resources, it is only with its express consent that anyone else may do so.[728]

Therefore, the question is whether a State authorizing hydrocarbon activities to be conducted with respect to its portion of a transboundary deposit in its CS is required to obtain the consent

[725] Lagoni 1979, *op. cit.*, p. 220: "… neither the rule of capture nor the prior appropriation rule can be regarded as a general principle of law recognized by civilized nations"; M. Miyoshi, "The Basic Concept of Joint Development of Hydrocarbon Resources on the Continental Shelf: with special reference to the discussion of the East-West Centre workshops on the South-East Asian Seas", *International Journal of Estuarine and Coastal Law*, 1988, vol. 3 (1), p. 6: "the lawyers at the third workshop were broadly agreed that there is no international 'rule of capture'"; Ong 1999, *op. cit.*, p. 777; T. Daintith, *Finders Keepers?: How the Law of Capture Shaped the World Oil Industry*, RFF Press, 2010, p. 407; J. E. Vargas, "The 2012 U.S.-Mexico Agreement on Transboundary Hydrocarbon Reservoirs in the Gulf of Mexico: A Blueprint for Progress or a Recipe for Conflict?", *San Diego International Law Journal*, 2012, vol. 14 (1), pp. 60-61; van Logchem 2018, *op. cit.*, pp. 215-219. Cameron (Cameron 2006, *op. cit.*, p. 569) appears to be equivocal. On the one hand, he supports the non-applicability of the rule of capture, while on the other hand he asserts that a State may consider unilateral action if it met with the intransigence of the other state.
Some legal commentators have suggested that the rule of capture is applicable. See, for example, J. W. Morris, "The North Sea Continental Shelf: Oil and Gas Legal Problems", *International Lawyer*, 1967, vol. 2, p. 210 (he affirms the applicability of an inferred rule of capture under international law, but not within the North Sea context since the UK and Norway had replaced this rule with the requirement of unitization or cooperative development of adjoining license tracts); R. R. Bundy, "Natural Resource Development (Oil and Gas) and Boundary Disputes", in: G. H. Blake et al. (eds), *Peaceful management of Transboundary Resources*, 1995, pp. 23-24; E. Voyiakis, "Shared Oil and Gas Resources", in: I. Bantekas et al. (eds), *Oil and Gas Law in Kazakhstan: National and International Perspectives*, 2014, p. 77.
[726] Daintith 2010, *op. cit.*, p. 406.
[727] CCS, art. 2 (1); UNCLOS, art. 77 (1). See also Chapter 2.3.
[728] CCS, art. 2 (2); UNLOS, art. 77 (2). See also Chapter 2.3.

of the neighboring State in the CS of which this deposit is also located. It seems inappropriate to apply the requirement of consent to seismic surveys and exploratory drilling. These activities are primarily aimed at identifying the resources located in the CS, estimating their volumes and determining their geographical extent, including the likelihood of extension across the maritime boundary.[729] On the other hand, the question of applying this requirement is crucial at the exploitation stage.[730] If State A commences the development of a straddling reservoir from its side of the boundary, State B would inevitably lose the volumes of petroleum, which amounts, *inter alia*, to a loss of revenue thereof, (the reservoir's depletion is also possible) that were prior to the development located in the CS of State B and in respect of which State B is entitled to exercise its exclusive sovereign rights. Thus, it could be argued that exploitation activities carried out by one State with respect to a transboundary accumulation of hydrocarbons without the agreement with its neighbor constitute a violation of the latter's sovereign rights. In other words, although there is no provision in the UNCLOS that directly deals with transboundary hydrocarbons, the exclusive character of sovereign rights can be considered a limitation on the right of a State to exploit such resources unilaterally, without the consent of the adjacent or opposite State. It is worth emphasizing that apart from in the context of transboundary hydrocarbons, the regime of exclusivity also prohibits States from directional drilling into neighboring States' subsoil, or drawing hydrocarbons from the subsoil of a neighboring State by other means without permission.[731]

Article 142 of the UNCLOS may also serve as a relevant provision since it concerns the analogous situation when resource deposits straddle the Area and a coastal State's (extended) CS. This article provides that activities in respect of these straddling (hydrocarbon or other mineral) deposits shall be carried out "with due regard to the rights and legitimate interests" of the relevant coastal State and that consultations, including a system of prior notification, shall take place in order to avoid trespassing on such rights and interests.[732] Furthermore, article 142 (2) requires the prior consent of the coastal State concerned in the event that activities in the Area may result in the *exploitation* of resources located within national jurisdiction.[733]

[729] See Chapter 2.3.
[730] This importance is also underlined in the wording of a typical transboundary mineral resource clause. See Chapter 4.2.1.1.
[731] E. A. Neff, "Deepwater Transboundary Hydrocarbons: Considerations for Exploitation at the Edge of Continental Margins under the United Nations Convention on the Law of the Sea (1982) Between Coastal States and the International Seabed Authority", *University of Miami International and Comparative Law Review*, 2014, vol. 22 (1), p. 54.
[732] UNCLOS, art. 142 (1) and (2).
[733] It seems that article 142 (2) has a wide scope rather than covering only straddling non-living resources.

Consequently, the question is whether the requirement of prior consent applies by analogy to similar circumstances involving two (or more) sovereign States that share a transboundary petroleum deposit.

According to article 142 (2), the duty to obtain consent is solely imposed upon the one who carries out exploitation activities in the Area, although it is not altogether clear who shall ask for consent: the Enterprise of the International Seabed Authority (ISA) pursuant to Annex IV of the UNCLOS, the sponsoring State(s) or contractor(s). Article 142 (2) contains no reciprocal obligation of a coastal State to request or receive the consent of the ISA in the case where it plans to exploit a deposit that extends, or may extend, beyond the limits of its national jurisdiction. In other words, this provision seems to imply that while the coastal State can unilaterally exploit a straddling deposit, the ISA is not entitled to do so.[734] However, against the background of the discussions in this thesis, it is inappropriate to place no duties on the coastal State with respect to such a deposit. The duties to cooperate and exercise mutual restraint would also apply to the coastal State, not only to the ISA.[735] Moreover, the coastal State's unilateral exploitation is likely to be in violation of article 78 (2) of the UNCLOS, since the development of the Area's resources always involves rights of third States. To the same extent, this affirmation may also refer to unilateral exploitation of hydrocarbon resources lying in the CSs of several States.

According to article 78 (2) of the UNCLOS, a coastal State in exercising its rights over the CS "must not infringe or result in any unjustifiable interference with navigation and other rights and freedoms of other States as provided for in [that] Convention". By means of using the words 'must not', the obligation is of a definitive character.[736] The phrase 'other States' is used as opposed to the specific phrase 'coastal State' and, therefore, covers all States besides the respective coastal State, including its neighboring States, flag States and sponsoring States.[737]

Furthermore, article 78 (2) emphasizes that the obligation is intended to protect "navigation and *other rights* and freedoms of other States" (emphasis added). Nevertheless, paragraph 2 does

[734] See D. M. Ong, "A Legal Regime for the Outer Continental Shelf? An Inquiry as to the Rights and Duties of Coastal States within the Outer Continental Shelf", Paper presented to the Third ABLOS Conference, 2003, p. 5, available at http://www.iho.int/mtg_docs/com_wg/ABLOS/ABLOS_Conf3/PAPER7-4.PDF (last accessed January 2019).
[735] Mossop 2016, *op. cit.*, pp. 146-147, referring to A. Chircop, "Managing Adjacency: Some Legal Aspects of the Relationship between the Extended Continental Shelf and the International Seabed Area", *Ocean Development & International Law*, 2011, vol. 42 (4), p. 313, and ISA Technical Study No. 4, p. 62.
[736] Nandan and Rosenne (eds), *op. cit.*, 78.8 (c), p. 906.
[737] *Ibid.*

not specify which rights and freedoms of third States are to be included in the category of 'other', except that they should be provided for in the UNCLOS. Therefore, the reference to "other rights and freedoms of other States" includes, *inter alia*, the right to lay submarine cables and pipelines, the freedom of fishing, the freedom of scientific research, and the right to conduct marine scientific research.[738] The wording of article 78 (2) indicates that all other rights and freedoms, provided for elsewhere in the UNCLOS, may fall under its application. Thus, article 78 (2) also offers protection to sovereign rights of neighboring States with regard to a cross-border petroleum field and may prevent the conduct of unilateral extractive activities in respect of such a field. Arguably, unilateral exploitation of a straddling resource might be inconsistent with the obligation not to infringe or cause an unjustifiable interference with other (exclusive sovereign) rights of other (neighboring) States. Although article 78 (2) does not provide any particular steps to avoid infringement of other rights,[739] the requirement of consent seems to be reasonable, at least, for activities that may result in the exploitation of oil and gas resources located on the other side of the delimitation line. At the same time, article 78 (2) can be read as requiring a coastal State to exercise due regard to the rights and freedoms of other States. However, one can note that in contrast with article 56 (2) of the UNCLOS (dealing with the EEZ), article 78 (2) is formulated differently and does not include a due regard requirement. Unilateral exploitation of a transboundary field would also be contrary to the general principles of international law discussed in Chapter 2, in particular the no-harm principle that is interlinked with the principle of good neighborliness. As noted in Chapter 2 of this thesis, the provisions of articles 56 (2) and 78 (2) of the UNCLOS are based on the no-harm principle.

Thus, several provisions of the UNCLOS examined in this section may support the notion that one State must not authorize exploitation of a transboundary hydrocarbon deposit on its side of the maritime boundary, without the other State's consent. However, this appears to go far beyond the duty to cooperate in the context of transboundary hydrocarbons. As discussed earlier, the duty to cooperate with respect to transboundary hydrocarbons does not specifically require one State to obtain the consent of the other State before commencing with the unilateral exploitation of a transboundary hydrocarbon deposit. Moreover, the existence of the requirement to obtain consent may have significant implications. This requirement implies that

[738] *Ibid.*, 78.8 (d), p. 907. Paragraph 2 of article 78 is modelled upon article 5 of the 1958 Convention of the Continental Shelf, which proved that "[t]he exploration of the continental shelf and the exploitation of its natural resources must not result in any unjustifiable interference with navigation, fishing, … the conservation of the living resources of the sea … [and] fundamental oceanographic or other scientific research carried out with the intention of open publication".

[739] For example, in comparison with article 142 (2) of the UNCLOS, *supra* note 732.

a State may refuse to give or proceed for a long period of time without giving its consent (e.g., for environmental reasons or due to the unstable political situation) and, thereby, may freeze – for an indefinite period – hydrocarbon activities of its neighbor in respect to a straddling field. Similar concerns were expressed in the Award in *Guyana v. Suriname.* The Tribunal noted that "international courts and tribunals should be careful not to stifle the parties' ability to pursue economic development in a *disputed [maritime] area* […], as the resolution of [the boundary dispute usually is] a time-consuming process" (emphasis added).[740] All this raises certain doubts as to whether State A can suspend the development of a cross-border petroleum deposit planned by State B by failing to enter into an agreement on the cooperative management of this deposit, including its apportionment, and subsequently by refusing to give its consent. Nevertheless, even if there is no requirement of consent in the context of transboundary hydrocarbons, it is important to bear in mind that State A, like State B, has an equal legal right to exploit the deposit and is entitled to an equitable share of it.[741]

In summary, the principle of sovereign rights clearly represents a limitation on the possibility of States to exploit a transboundary accumulation of hydrocarbons unilaterally. However, it is difficult to establish the precise parameters of that limitation. It seems that the interpretation of the principle of sovereign rights as requiring another State's consent is quite stringent. At the same time, it does not mean that State A may commence unilateral exploitation of a transboundary deposit without trying to reach an agreement concerning the management of this deposit with State B.[742]

It appears that the regime on the protection of sovereign rights is stronger in the context of transboundary hydrocarbons than in the context of disputed hydrocarbons. As discussed in Chapter 3, the Chamber, by its controversial conclusion in *Ghana/Côte d'Ivoire* that State A does not violate the sovereign rights of State B when it authorizes hydrocarbon activities in an area claimed by State A and State B in good faith, even if this area will be later attributable to State B,[743] has significantly undermined the value of the principle of sovereign rights in the context of disputed hydrocarbons. The strength of the principle of sovereign rights in the context of transboundary hydrocarbons might be explained by the fact that the existence of

[740] *Guyana v. Suriname*, para. 470. The Tribunal also noted that "[the obligation to make every effort to enter into provisional arrangements of a practical nature (under articles 74 (3) and 83 (3) of the UNCLOS)] constitutes an implicit acknowledgment of the importance of avoiding the suspension of economic development in a disputed maritime area, as long as such activities do not affect the reaching of a final agreement" (*ibid.*, para. 460).
[741] See Chapter 4.4.
[742] See Chapter 4.2.
[743] *Ghana/Côte d'Ivoire* Judgment, paras. 592 and 594.

equal sovereign rights of two States to a transboundary field is apparent and can hardly be contested.

4.3.3 State practice and unilateralism

As observed earlier in this Chapter, many States commit themselves to cooperate with respect to the management of transboundary hydrocarbons. However, the widespread inclusion of transboundary mineral deposit clauses in delimitation agreements does not of itself tell us anything about whether the Parties believed that the rule of capture is part of international law.[744] For example, States may have undertaken to cooperate in order to avoid potential adverse effects associated with the application of the rule of capture or any uncertainty about its legal status resulting in future discussions.[745] It is also possible that one Part being less confident in its technical capacity to exploit cross-border mineral deposits wished to ensure that it would have means to resist the other Party's relative technological superiority.[746]

On the other hand, one may conclude that the reason behind the insertion of transboundary mineral deposit clauses was the opposite: that the Parties believed in the non-applicability of the rule of capture and that one State would, therefore, be able to paralyze hydrocarbon development of its neighbor, unless the delimitation agreement imposed an obligation to seek an agreement on this issue.[747] Moreover, it may be assumed that a number of Parties to some delimitation agreements are likely to have been guided by any other reasons. It is also worth noting that many delimitation agreements are silent on the topic of transboundary hydrocarbons.[748]

Inasmuch as it is uncertain whether delimitation agreements reject or support the applicability of the capture rule to transboundary hydrocarbons, subsequent framework and unitization agreements may shed light on that issue.[749] Most of these agreements stipulate that no production from a transboundary reservoir may commence in the absence of an agreement. For instance, the Norway-Russia Treaty provides that exploitation of any cross-border hydrocarbon deposit may only begin under the terms of a UA.[750] If the Parties fail to conclude such an

[744] Daintith 2010, *op. cit.*, p. 402.
[745] *Ibid.*
[746] *Ibid.* Daintith stated that the US-Mexico delimitation treaty of 2000 (*supra* note 694) may illustrate that example.
[747] *Ibid.*
[748] See Chapter 4.2.1.3.
[749] See Chapter 4.2.2.
[750] Norway-Russia Treaty, art. 5 (3).

agreement, the Treaty provides a special procedure for resolving this disagreement.[751] Identical provisions are included in the Norway-Iceland Agreement of 2008.[752] Likewise, according to the UK-Norway Framework Agreement, the Governments shall not permit the commencement of production from a transboundary deposit until they have jointly approved the Licensees' Agreement, the appointment of the unit operator, and the development plan (unless otherwise agreed).[753] The existing UAs between the UK and Norway concerning three transboundary hydrocarbon fields address the issue of a failure to agree on their apportionment. Pending such agreement, production from these fields shall commence on a provisional basis.[754] In other words, while production can move forward even without an agreement on apportionment, it must be done pursuant to provisional shared production and compulsory third party dispute settlement procedure.

The Canada-France Agreement similarly provides that no commercial production of a transboundary deposit shall commence until the Parties have concluded an exploitation agreement, and the unit operator has submitted a development plan and a benefits plan which both Parties shall have approved.[755] The Cyprus-Egypt Framework Agreement contains no express prohibition on production in the absence of a UA. Nevertheless, this Framework Agreement in its entirety is premised on the idea that the Parties shall develop a cross-border hydrocarbon reservoir jointly.[756] Therefore, it is unlikely that the Cyprus-Egypt Framework Agreement is framed in favor of unilateral exploitation of transboundary hydrocarbons. The practice of these States also supports this conclusion. For example, the production from the Zohr gas field discovered on the Egyptian CS in 2015 (Illustration No. 24) has not started before Egypt and Cyprus reached an agreement that this field does not extend into the CS of Cyprus.[757]

The Venezuela-T&T Framework Treaty stipulates that production from a transboundary hydrocarbon deposit may only commence when a development plan is approved by the

[751] *Ibid*., Annex II, art. 3.
[752] Norway-Iceland Agreement of 2008, arts. 1, 4 and 5.
[753] UK-Norway Framework Agreement, art. 3.10.
[754] Frigg, Statfjord and Murchison UAs, art. 2 (3). The meaning of the term 'provisional basis' under each UA is addressed in Chapter 4.4.
[755] Canada-France Agreement, art. 4 (1) and 9 (1). An "exploitation agreement" is similar to a UA under other framework and unitization agreements.
[756] Cyprus-Egypt Framework Agreement, art. 4.
[757] See, for example, "Zohr not linked to Cyprus gas field", Cyprus Profile, 3 March 2016, available at https://www.cyprusprofile.com/en/articles/view/zohr-not-linked-to-cyprus-gas-field; Press Release of Eni of 20 December 2017, available at https://www.eni.com/en_IT/media/2017/12/eni-begins-producing-from-zohr-the-largest-ever-discovery-of-gas-in-the-mediterranean-sea (last accessed January 2019).

Parties.[758] However, in the event that the Parties are unable to agree upon the apportionment of a particular field, "the unitized exploitation may proceed on a provisional basis […] without prejudice to the position of either Party".[759] However, in contrast to the UAs between the UK and Norway, the Venezuela-T&T Framework Treaty does not clarify how such provisional allocation shall occur. The conclusion of subsequent UAs concerning the Loran-Manatee and Manakin-Cocuina fields evidences that the production may commence only when a UA is in place. It is also evident from the examples of such petroleum reservoirs as the Aphrodite (potentially straddling the boundary between Cyprus and Israel), Kapok-Dorado (straddling the boundary between Venezuela and T&T) and Greater Sunrise (straddling the boundary between Australia and Timor-Leste) fields that none of the States involved favor unilateral exploitation of these fields.[760]

Although the US-Mexico Agreement is premised on the idea that any activity regarding a transboundary field should be pursuant to a UA approved by the Parties,[761] the language of article 7 suggests that this is not an affirmative requirement. The implication of a failure to agree is that each Party can authorize its licensee(s) to proceed with exploitation of transboundary reservoirs, subject only to the requirement to exchange production data on a monthly basis.[762]

It is notable that many provisional arrangements covering undelimited maritime areas also restrict the ability of the Parties to exploit petroleum deposits straddling the JDZ's boundaries unilaterally. Although the TST imposes no explicit prohibition on exploitation of petroleum deposits extending across the JPDA's boundaries in the absence of a UA,[763] the Parties have in fact acknowledged that it may only be done pursuant to such an agreement.[764] In a similar situation, the Nigeria-STP Treaty provides that if a UA is not reached within nine months after giving notice on the presence of a straddling petroleum deposit, there shall be made a fair and

[758] Venezuela-T&T Framework Treaty, art. 3.6.1; Loran-Manatee UA, Preamble.
[759] Venezuela-T&T Framework Treaty, art. 3.2.3.
[760] See Chapter 1.
[761] US-Mexico Agreement, art. 6 (1).
[762] *Ibid.*, art. 7 (5). The conclusion that the US-Mexico Agreement deviates from the general practice of non-unilateral exploitation of transboundary hydrocarbons may also be found in Bankes 2014, *op. cit.*, p. 677, and G. J. G. Sanchez and R. J. McLaughlin, "The 2012 Agreement on the Exploitation of Transboundary Hydrocarbon Resources in the Gulf of Mexico: Confirmation of the Rule or Emergence of a New Practice?", *Houston Journal of International Law*, 2015, vol. 37(3), Part VII (C), pp. 783-789.
[763] TST, art. 9.
[764] MoU concerning the Greater Sunrise; Greater Sunrise UA, Preamble. Recent developments in the Timor Sea discussed in Chapter 6 must also be taken into account.

reasonable allocation of the petroleum taken from this deposit.[765] One can assume that the issue of straddling hydrocarbons in the case where the JDZ is established might be resolved quickly because the cooperative management mechanism is already in place.

Thus, it may be inferred that in accordance with most of the examined agreements, the rule of capture is not applicable to transboundary hydrocarbons.[766] Among the agreements prohibiting the development of a transboundary reservoir without the confirmation of approval from the other State, the US-Mexico Agreement is exceptional in this regard and is perhaps unlikely to be followed in other agreements.[767] However, it is worth noting that some agreements allow the development of a transboundary hydrocarbon field on an interim basis, in particular where the Parties have difficulties in reaching an agreement on its apportionment.

4.4 The principle of equitable apportionment as a prevailing rule

As emphasized in Chapter 2.5, the principle of equitable apportionment is applicable to shared hydrocarbon resources and many agreements dealing with those resources, particularly with transboundary resources, refer to that principle. As also noted in Chapter 2.5, the application of the principle of equitable apportionment in the context of shared hydrocarbons is not necessarily similar to the application of this principle within other categories of shared natural resources. This section of the Chapter principally addresses the content of the principle of equitable apportionment in the context of transboundary hydrocarbons.

States that share a hydrocarbon resource must take into account that each of them is entitled to a share of the resource located in its CS. The process of apportionment of hydrocarbon volumes in transboundary fields is crucial for the Parties and usually time consuming,[768] usually involving the participation of experts. This section examines the question of how the equitable share of each State in a transboundary hydrocarbon reservoir can be determined: in other words, whether this is exclusively a technical rule or other factors may be incorporated into the process of apportionment. This section focuses on analyzing agreements concerning already detected

[765] Nigeria-STP Treaty, art. 31.1. The paragraph does not say who is responsible to such apportionment. However, it seems to be the competence of the Authority. The paragraph also provides that the apportionment "shall be with retrospective effect back to the start of production provided that the State Party which has given notice did so with reasonable promptitude after the verification by drilling". See also Chapter 6.

[766] See also M. H. Loja, "Is the Rule of Capture Countenanced in the South China Sea? The Policy and Practice of China, the Philippines and Vietnam", *Journal of Energy & Natural Resources Law*, 2014, vol. 32 (2), pp. 483-508.

[767] Bankes 2014, *op. cit.*, p. 677.

[768] For example, the process of estimating the total volumes in the straddling Frigg field (between the UK and Norway) and its apportionment took 4 years. See in detail at http://www.kulturminne-frigg.no/modules/module_123/proxy.asp?C=24&D=2&I=212 (last accessed January 2019).

straddling hydrocarbons because agreements of this type provide more detailed information on the issue of apportionment than those that deal only with the likelihood of discovering such resources in the future. Joint zone agreements are also considered, however, only to the extent they address the possibility of hydrocarbon resources straddling the JDZ and a maritime area of one of the States party to such an agreement or a third State.

The UAs between Norway and the UK provide that the distribution of the cross-border hydrocarbon fields should occur pursuant to an agreement between the Parties.[769] This agreement should be concluded prior to the start of production from the fields.[770] In the event of a failure of the Parties to agree on the allocation issue before that date, the reserves shall be provisionally apportioned on the basis of a proposal submitted by the licensees or, if no such proposal is submitted, on the provisional basis of equal shares.[771] As compared with the Frigg UA, the possibility of equal provisional apportionment was included neither in the Statfjord UA nor in the Murchison UA.[772]

Although the mentioned UAs provide no indication of factors that were taken as a basis for the apportionment, subsequent practice has shown that the apportionment of each of the transboundary hydrocarbon fields was based on the ratio in which these fields were situated on each side of the delimitation line.[773] The UK-Norway Framework Agreement also enshrines an obligation on the licensees on both sides of the delimitation line to enter into an agreement defining how a transboundary hydrocarbon deposit should be distributed.[774] The criteria used

[769] Frigg, Statfjord and Murchison UAs, art. 2 (2) and (3).
[770] *Ibid.*
[771] Frigg UA, art. 2 (3).
[772] Statfjord and Murchison UAs, art. 2 (3) state "on such other basis as the two Government may agree".
[773] St. prp. Nr. 15 (1980-1981), http://www.ptil.no/getfile.php/PDF/40StatfjordMurchinsonOverenskomst.pdf (last accessed January 2019). The total volume of gas initially in place in the Frigg reservoir was calculated to be 268,658 billion Sm^3. While 60.82 % of the reserves was located on the Norwegian side, the UK had 39.18 %. See Kulturminne Frigg, timeline, 1977, "Division of resources clarified", available at http://www.kulturminne-frigg.no/modules/module_123/proxy.asp?C=134&I=528&D=2&mid=135&iTopNavCategory=118 (last accessed January 2019); E. Torheim, "Changing perceptions of a gas field during its life cycle: a Frigg field case study", in: A. G. Dore and R. Sinding-Larsenand (eds), *Quantification and Prediction of Hydrocarbon Resources*, Elsevier Science B.V., 1996, p. 279. The Statfjord field was divided 85.47%:14.53% in favor of Norway (information concerning the Statfjord field in Norwegian is available at http://www.norskolje.museum.no/statfjord/ (last accessed January 2019)). As concerns the Murchison field, it was initially apportioned as 74.94%:25.06% in favor of the UK. In 1986, the Norwegian portion was reduced to 22.2 % (information concerning the Murchison field in Norwegian is available at http://www.norskolje.museum.no/murchison/ (last accessed January 2019)).
[774] UK-Norway Framework Agreement, art. 3.3.

for the distribution of the Markham field straddling the UK-the Netherlands maritime border were similar to those applied by the UK and Norway.[775]

The Preamble of the Canada-France Agreement underlines the Parties' desire to exploit transboundary hydrocarbon deposits in an equitable manner and for the benefits of their peoples. Moreover, the Preamble stipulates that transboundary hydrocarbons shall be apportioned according to the proportions in which they are situated within each Party's respective jurisdiction.

Apart from the commitment to agree on the apportionment of estimated volumes of hydrocarbons stored in each transboundary reservoir prior to production,[776] the Venezuela-T&T Framework Treaty contains no more detail to assist a detailed understanding of the allocation process. Nonetheless, the Parties were able to reach an agreement on the distribution of the volumes comprised in the Loran-Manatee gas field as 73.06%:26.94% in favor of Venezuela.[777] According to this Agreement, such apportionment is characterized as "equitable".[778] Based on the available information concerning the other two cross-border hydrocarbon fields, one can conclude that their allocation also occurs in accordance with the proportions located on each side of the delimitation line.[779]

Under the Norway-Russia Treaty, the Parties have committed themselves to reach a UA, including the matter of the apportionment of a transboundary hydrocarbon reserve.[780] In the event that Norway and Russia are at variance on how the reserve should be apportioned, they shall appoint an independent expert to resolve this issue.[781] The decision of that expert is binding upon the Parties.[782]

The Preamble of the US-Mexico Agreement indicates that the Parties are guided by the principle of equitable and reasonable utilization of transboundary hydrocarbon deposits. The Agreement provides that, 60 days before the start of production from a transboundary

[775] See D. M. Sharples et al., "The Markham Field, A Trans-Median Development", SPE, 1994, available at https://www.onepetro.org/download/conference-paper/SPE-28839-MS?id=conference-paper%2FSPE-28839-MS (last accessed January 2019).
[776] Venezuela-T&T Framework Treaty, art. 3.2.2.
[777] Loran-Manatee UA, art. 4.1.
[778] *Ibid.*, Annex 2.
[779] K. Ramnarine, "Natural Gas in Trinidad and Tobago", KBH Energy Center blog, 19 October 2016, available at https://www.kbhenergycenter.utexas.edu/2016/10/19/natural-gas-in-trinidad-and-tobajo/ (last accessed January 2019).
[780] Norway-Russia Treaty, art. 5 (2) and Annex II, art. 1 (3).
[781] *Ibid.*, Annex II, art. 4 (1). However, the procedure of the appointment of an expert is unclear.
[782] *Ibid.*

accumulation of hydrocarbons, the unit operator is required to initiate consultations on the distribution of production by submitting a proposal regarding this matter to the Parties' Executive Agencies.[783] The proposal is subject to approval by the Agencies.[784] In the case of a failure of such Agencies to agree upon the initial allocation of production within 30 days following the initiation of consultation, the Joint Commission shall examine the issue.[785] While the Parties have committed themselves to endeavor to ensure that re-allocation of production of each transboundary reservoir would be fair and equitable,[786] the US-Mexico Agreement does not contain an identical provision related to the initial allocation. However, as follows from the Preamble of this Agreement, the principle of equitable apportionment appears to be guiding for the entire process of resource allocation between the US and Mexico.

The Jamaica-Colombia Treaty provides that the distribution of the volumes of a transboundary hydrocarbon resource is proportional to the volume of this resource found on either side of the maritime boundary.[787]

The Timor Sea Boundary Treaty stipulates that any petroleum deposit straddling the maritime boundary is to be shared equitably.[788] This provision echoes article 9 (b) of the TST which addressed petroleum deposits extending across the boundary of the former JPDA.[789] The equitable sharing of a straddling petroleum deposit seems to imply that the apportionment is to be determined according to the ratio of the portions of this deposit which lie on either side of the maritime boundary. This clearly follows from the Greater Sunrise UA.[790] At the same time, as noted in Chapter 1, the maritime boundary established in the Timor Sea in 2018 does not coincide with the JPDA's boundary (Illustration No. 11) and, consequently, the larger portion of the Greater Sunrise is now located in the CS of Timor-Leste, not of Australia. However, it does not appear that the apportionment ratio established under the Timor Sea Boundary Treaty reflects the ratio in which the Greater Sunrise is located on each side of the boundary. The apportionment of the Greater Sunrise depends on which of the Parties any pipeline from these fields goes to (80:20 or 70:30 in favor of Timor-Leste).[791] In other words, the Timor Sea

[783] US-Mexico Agreement, art. 8 (1).
[784] *Ibid.*
[785] *Ibid.*, art. 8 (3).
[786] *Ibid.*, art. 9 (1).
[787] Jamaica-Colombia Treaty, art. 2.
[788] Timor Sea Boundary Treaty, art. 8.
[789] TST, art. 9 (b): "Australia and East Timor shall work expeditiously and in good faith to reach agreement on the manner in which the deposit will be most effectively exploited and on the *equitable sharing of the benefits arising from such exploitation*" (emphasis added).
[790] Greater Sunrise UA, art. 7.
[791] Timor Sea Boundary Treaty, Annex B, art. 2 (2).

example shows that States may take into account other factors in the allocation of a transboundary hydrocarbon deposit than the proportion in which such a deposit lies on either side of the maritime boundary.

A notable feature of the Norway-Iceland Agreement of 1981 is the treatment of possible straddling hydrocarbons. This Agreement stipulates that if a hydrocarbon deposit extends beyond the JDA into the Norwegian CS, it would wholly be considered as lying inside the JDA.[792] At the same time, the Agreement does not provide for a similar provision in the event where a hydrocarbon deposit straddles either the delimitation line between the Parties or the boundary between the JDA and the CS of Iceland.[793] Such apportionment in favor of Iceland was due to special factors which were taken into consideration. The Conciliation Commission has emphasized the very low hydrocarbon potential of the Icelandic CS and accordingly the needs of Iceland for hydrocarbon resources.[794] In the case of a straddling petroleum deposit, article 8 (1) of the Norway-Iceland Agreement of 1981 states that "the usual unitization principles for the distribution and exploitation of the deposit shall apply" meaning that the deposit should be apportioned in accordance with a fair expert assessment.[795] The Norway-Iceland Agreement of 2008 does not focus in any more detail on the issue of apportionment. It simply contains a duty of the Parties to agree on the manner in which a transboundary reserve and proceeds thereto shall be allocated.[796]

The analysis conducted above reveals that equity is a central consideration in the apportionment of transboundary hydrocarbons. The equitable shares are usually measured by reference to the proportion of those petroleum reserves of a transboundary reservoir that are actually located within the jurisdiction/CS of each State. Such method of apportionment serves as a basic rule and it is likely to be applied to other situations involving transboundary hydrocarbons. Its adoption is not surprising. This approach is borrowed from the industry practice of many States on the apportionment of petroleum fields that straddle the boundaries of several concession blocks within the jurisdiction of one single State.[797]

[792] Norway-Iceland Agreement of 1981, art. 8 (2).
[793] *Ibid.*, art. 8 (1).
[794] Report of the Conciliation Commission between Norway and Iceland, 1981, *op. cit.*, pp. 24 and 30.
[795] *Ibid*., p. 31.
[796] Norway-Iceland Agreement of 2008, art. 2 (3), 3 (3) and 6.
[797] See Weaver and Asmus, *op. cit.*, pp. 3-197; P. F. Worthington, "Provision for expert determination in the unitization of straddling petroleum accumulations", *Journal of World Energy Law & Business*, 2016, vol. 9 (4), pp. 254-268.

However, one cannot exclude that States sharing a hydrocarbon resource may take into account other factors which in their opinion are relevant for the process of resource allocation. The relative needs of each State could bring about distributive justice by using the capacity of a petroleum resource to ameliorate the per capita wealth of each neighboring nation.[798] Nonetheless, apart from the Norway-Iceland case, there are no such examples.

What also follows from the analysis of existing agreements is the recognition that (a) each State is entitled to an equitable share of hydrocarbon resources comprised in a transboundary reservoir, which means an equitable share of revenue derived from the commercial exploitation of this reservoir, and that (b) each State's share can only be determined by an agreement between the States. However, as noted above in this Chapter, there are certain doubts whether one State can restrict the ability of the other State to exploit a transboundary field in a situation where there is difficulty in reaching an agreement on the terms of apportionment of this field. If States fail to agree upon apportionment, production may commence on, say, the basis of equal shares, while this matter is referred to one of the compulsory dispute settlement procedures. Consequently, the final apportionment may then be substituted retroactively for the existing provisional apportionment. In other words, State A cannot disregard the fact that State B has also the right to a certain share in a cross-border petroleum field arising from State B's sovereign rights to this field. As alluded to earlier, States usually postpone the production of petroleum from transboundary fields until each State's initial share is determined.[799]

Dissimilar to transboundary hydrocarbons, disputed hydrocarbons are generally apportioned *equally* between the States involved (50 % to State A and 50 % to State B).[800] This can be explained by the fact that these States recognize that they have an equal basis for the existence of their sovereign rights and jurisdiction over the same maritime area under international law.[801] There is only one current example, the Nigeria-STP example (60:40 in favor of Nigeria), which deviates from the general practice of equal sharing of the benefits arising from activities with respect to disputed hydrocarbons and which is considered in detail in Chapter 6 of this thesis.[802]

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[798] L. Goldie, "Equity and the International Management of Transboundary Resources", *Natural Resources Journal*, 1985, vol. 25 (3), p. 689.

[799] The initial apportionment of a transboundary deposit may be changed through agreement by the Parties involved. The agreements on transboundary hydrocarbons usually provide for the possibility of their reapportionment.

[800] See, for example, Japan-S. Korea Agreement, art. IX; Saudi Arabia-Sudan Agreement (see also Chapter 6.3); Seychelles-Mauritius Treaty, art. 5 (a); Barbados-Guyana Treaty, art. 6 (5); Malaysia-Thailand Agreement, art. 9.

[801] See Chapter 2.3.

[802] Nigeria-STP Treaty, art. 3.1. See also Chapter 6.7. As noted in Chapter 1, the Timor Sea example where petroleum produced in the JPDA were apportioned on a 90:10 basis in favor of Timor-Leste (TST, art. 4) will cease to exist.

It is however important to note that the (equal) apportionment of disputed hydrocarbons within the JDZ does not necessarily apply to the apportionment of petroleum deposits extending beyond this zone into the CS of one of the States.[803] The basic rule of the apportionment of transboundary hydrocarbons examined above in this section is likely to apply.

Thus, the application of the principle of equitable apportionment in the context of disputed hydrocarbons differs from the application of this principle in the context of transboundary hydrocarbons. While the apportionment of hydrocarbon resources in the latter context is essentially a technical matter, the apportionment of disputed hydrocarbons is mainly based on the concept of equality.

4.5 Conclusions and observations

This Chapter has examined the international obligations owed by State A to State B (and vice versa) in a situation where an accumulation of hydrocarbons straddles, or may straddle, the maritime boundary between State A and State B.[804]

It is generally accepted that international law obligates States to cooperate with respect to (potential and actual) transboundary hydrocarbons, including procedural requirements to notify, exchange relevant information and seek to reach an agreement concerning the cooperative management and exploitation of those hydrocarbons. Although the obligation of State A and State B to cooperate does not generally imply a duty to reach an agreement, there are no cases where States concluding that a deposit is straddling have rejected to enhance their cooperation in order to find suitable modalities for the management of that deposit. Even in situations of uncertainty as to whether a deposit is transboundary, States usually cooperate in order to verify the status of that deposit. Consequently, one could argue that the requirement to cooperate is stronger in the context of transboundary hydrocarbons than in the context of disputed hydrocarbons.

There are also other rules of international law that contribute to the strength of the requirement to cooperate in the context of transboundary hydrocarbons. A number of the provisions of the UNCLOS and the State practice examined in this Chapter support the existence of mutual restraint over the unilateral exploitation of transboundary hydrocarbons. A State's failure to

[803] See, for example, Seychelles-Mauritius Treaty, art. 5 (c); Barbados-Guyana Treaty, art. 6 (6) and (7); Nigeria-STP Treaty, art. 31.
[804] As noted in Chapter 4.1, the findings of this Chapter also have relevance in a situation where a coastal State has declared the location of a maritime boundary, but its neighbor contests that location. *Supra* notes 621 and 622.

exercise restraint is likely to constitute a violation of the principle of good neighborliness, the no-harm principle and the other State's sovereign rights. As discussed in this Chapter, the equal nature of the sovereign rights State A and State B have over a transboundary petroleum deposit entails that each State is entitled to an equitable share of the benefits arising from the exploitation of this deposit which the other State shall respect.

This Chapter primarily considered the issue of transboundary hydrocarbon deposits located within 200 nm. However, one may envisage a scenario in which a hydrocarbon deposit straddles the boundary delimiting the CS beyond 200 nm.[805] In this scenario, apart from the obligations already examined in this Chapter, States shall observe article 82 of the UNCLOS according to which they are required to make payments and contributions with respect to the exploitation of such a transboundary deposit.[806] However, the implementation of article 82 in the context of joint exploitation of transboundary hydrocarbons located in the extended CS is not further discussed in this thesis. Neither does this thesis deal in detail with the regime governing petroleum deposits straddling the boundary between a State's (extended) CS and the Area. It has been observed that the prospect of finding this type of straddling petroleum is low, unlike other straddling mineral resources that have their own characteristics different from oil and gas resources (e.g., solid mineral resources are not mobile when extracted).[807] Nevertheless, the regime of straddling mineral resource deposits established under article 142 of the UNCLOS serves as an important indicator that the unilateral exploitation of a shared deposit may infringe the other State's sovereign rights.[808]

[805] For example, the US-Mexico example in the western gap. See Chapter 1 and Illustration No. 7.
[806] The same true also applies to hydrocarbon fields straddling the 200 nm "boundary" between the inner and extended CS within the jurisdiction of a single coastal State. See Mossop 2016, *op. cit.*, pp. 138-139.
[807] *Ibid.*, pp. 139 and 146-147.
[808] See Chapter 4.3.2.

PART III – THE ISSUE OF SHARED STATE RESPONSIBILITY

Part III consists of three Chapters and addresses the second research question outlined in Chapter 1. This question concerns the probability of shared (joint) State responsibility in a scenario in which States conduct cooperative activities with respect to shared hydrocarbons. Part III mainly focuses on the issue of damage (harm) to the environment.[809] Of course, damage to vessels (e.g., a vessel collides with a facility)[810] and/or natural or legal persons (e.g., a person can lose its life or be injured)[811] may occur. However, these types of damage are less frequent than (marine, in particular) environmental damage and generally do not trigger as many practical difficulties as may arise in the event of damage to the environment. Hence, Part III pays less attention to (shared) State responsibility for non-environmental damage, but does not completely exclude such a scenario (e.g., a State responsibility claim brought by a flag State or a State of the nationality of a person who suffered damage).

Part III addresses (marine) environmental damage to a third party arising from hydrocarbon activities carried out by two States in cooperation (currently, there are no examples of trilateral cooperation between States in the context of shared hydrocarbons).[812] The terminology of 'third party' in Part III primarily refers to States: States directly affected by environmental damage and those States that may invoke the international responsibility on behalf of other States and the international community (e.g., where pollution extends to the high seas and/or the Area).[813] One of the questions is whether international organizations (e.g., the ISA, RFMOs and other organizations) may invoke (shared) State responsibility. Currently, there are significant limitations related to the access of international organizations to international litigation. At the same time, given the development of the law of international organizations (IOs) and the fact

[809] See Chapter 5.4 in detail.

[810] For example, in 2009, the vessel Big Orange XVIII collided with the water injection facility Ekofisk 2/4-W situated on the Norwegian CS. See Investigation Report of the Petroleum Safety Authority of Norway, 2009, available at http://www.ptil.no/getfile.php/138073/Tilsyn%20på%20nettet/tilsynrapporter%20pdf/granskingsrapport-kollisjon%20Big%20Orange-eng.pdf (last accessed January 2019).

[811] For example, 11 persons lost their lives on the *Deepwater Horizon* rig. See Report of the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling to the President, Deep Water: The Gulf Oil Disaster and the Future of Offshore Drilling, January 2011, available at https://www.nrt.org/sites/2/files/GPO-OILCOMMISSION.pdf (last accessed January 2019).

[812] As noted in Chapter 1, there is the potential for a trilateral joint arrangement between Malaysia, Thailand and Vietnam. However, such an arrangement is not yet concluded.

[813] See ARSIWA, draft arts. 42 and 48; ITLOS's Advisory Opinion of 2011, paras. 179-180. See also R. L. Johnstone, *Offshore Oil and Gas Development in the Arctic under International Law: Risk and Responsibility*, Leiden/Boston: Brill, 2015, pp. 211-217, and R. Beckman, "State responsibility and transboundary marine pollution", in: S. Jayakumar et al., *Transboundary Pollution: Evolving Issues of International Law and Policy*, Edward Elgar Publishing, 2015, pp. 154-156.

that they are vested with standing in advisory proceedings,[814] the situation may change in the future.

In the context of shared hydrocarbons, (possible) environmental damage has certain core features. In undelimited maritime areas, any environmental damage is transboundary by definition because it simultaneously affects the two cooperating States.[815] In the case of cross-border hydrocarbon deposits, a risk of transboundary environmental damage is higher than if hydrocarbon activities were carried out at a considerable distance from the maritime boundary: facilities are generally located close to the boundary. As discussed in more detail below in this Chapter, these features have an effect on the required standard of care to be exercised by States.[816] Nevertheless, this thesis does not deal with the issue of the responsibility owed by cooperating State A to cooperating State B.[817] It focuses on a shared State responsibility claim that a third party may bring against two cooperating States for environmental damage that is caused, or may be caused, to it by activities with respect to shared hydrocarbons. The probability of causing transboundary environmental damage depends on many factors: the extent of damage, the wind direction, ocean currents and the proximity (or remoteness) of other States or global commons areas. While such a probability is relatively low in some geographical regions (e.g., the Gulf of Mexico and the North Sea (the UK and Norway), it is high in others (e.g., the Gulf of Thailand, the Gulf of Guinea and in the situations of hydrocarbon cooperation on the extended CS).[818]

[814] See ARIO. For example, the ISA and the Sub-regional Fisheries Commission requested an advisory opinion from the ITLOS (ITLOS's Advisory Opinions of 2011 and 2015). The UNGA requested an advisory opinion from the ICJ on the legal consequences of the separation of the Chagos Archipelago from Mauritius in 1965, pending, latest developments are available at https://www.icj-cij.org/en/case/169 (last accessed January 2019). It is important to note that the ITLOS may handle complaints involving IOs for violations of the UNCLOS's provisions. See, for example, *Case concerning the Conservation and Sustainable Exploitation of Swordfish Stocks in the South-Eastern Pacific Ocean (Chile/European Union)*, ITLOS, Case No. 7. See also P. Schmitt, *Access to Justice and International Organizations: The Case of Individual Victims of Human Rights Violations*, Edward Elgar Publishing Ltd., 2017, Chapter 4.
[815] Draft article 2 of the AP defines 'transboundary'.
[816] See Chapter 5.5.2.3.
[817] See Chapter 8.4 in this regard.
[818] See Chapter 1.

CHAPTER 5. THE REGIME OF (SHARED) STATE RESPONSIBILITY IN THE COURSE OF HYDROCARBON ACTIVITIES IN RESPECT OF SHARED OIL AND GAS RESOURCES

5.1 Introduction

The main conclusion following from Part II is that States sharing oil and gas resources[819] are required to undertake hydrocarbon activities in cooperation with respect to such resources, in particular when it comes to the exploitation of those resources. As noted in the preceding Chapters, many coastal States facing the presence of shared hydrocarbons have adopted some form of cooperation on the joint management of these resources. The number of agreements and arrangements dealing with shared hydrocarbons constantly increases.[820] However, it is well known that all stages of petroleum exploration and exploitation entail a risk of damage, particularly to the environment. The environmental impacts range from temporary to long-term harm, arising from the accidental or operational release into the marine environment of oil, chemicals used in the drilling process, heat or waste streams.[821] The impacts are not limited to the marine environment, but may be terrestrial, in the case of an oil slick washing ashore, or atmospheric, in the case of venting or flaring of natural gas.[822]

In addition, there is always the potential for an incident involving large volumes of oil. Two well-known incidents, which occurred on the *Montara Wellhead* platform (in 2009) and on the *Deepwater Horizon* drilling rig (in 2010), demonstrate this potential.[823] While the *Deepwater Horizon* oil spill stayed within the waters of the US,[824] Indonesia claims that the *Montara* oil spill has extended beyond the jurisdiction of Australia and affected, *inter alia*, Indonesian

[819] This thesis looks at two scenarios of hydrocarbon resource sharing: the sharing of resources of an undelimited maritime area and the sharing of a single petroleum deposit transected by a maritime boundary. See Chapter 2.2.
[820] For example, since 1989 (see Fox et al., *op. cit.*, pp. 3-5), one can observe a considerable increase in the number of (unitization) agreements dealing with cross-border hydrocarbon deposits. See Appendix I.
[821] Low 2012, *op. cit.*, p. 46, citing S. Kloff and C. Wicks, "Environmental Management of Offshore Oil Development and Maritime Oil Transport: A Background Document for Stakeholders of the West African Marine Eco Region", IUCN Commission on Environmental, Economic and Social Policy, October 2014, pp. 25-28.
[822] *Ibid.*
[823] See, for example, B. Soyer, "Compensation for Pollution Damage Resulting from Exploration for and Exploitation of Seabed Mineral Resources", in: B. Soyer and A. Tettenborn (eds), *Pollution at Sea: Law and Liability*, Informa Law, 2012, p. 59. Other examples can be found in A. A. Sheau Ye, "Liability and compensation regime for transboundary oil pollution damage", *Australian Journal of Maritime & Ocean Affairs*, 2013, vol. 5 (2), p. 64, endnote 4.
[824] See Report on the *Deepwater Horizon* Spill, *supra* note 811, p. 198.

fishermen and seaweed farmers (this claim is however rejected by the operator).[825] A similar situation of environmental damage may occur in the course of hydrocarbon activities conducted by several coastal States in respect of shared oil and gas resources. This situation is not only hypothetical. Chapters 6 and 7 will give examples of pollution incidents that resulted from operations with respect to shared hydrocarbons.

Any harm, including harm to the (marine) environment, arising out of petroleum operations and other activities associated with those operations is traditionally addressed through the mechanism of civil liability attached to a licensee/operator (under the polluter pays principle).[826] However, the national civil liability regimes of some States are not sufficiently developed or might have severe limitations.[827] At the same time, States are generally unwilling to accept any form of responsibility and liability for environmental harm.[828] Such unwillingness is so deeply rooted that sometimes States affected by environmental harm are reluctant to make claims against the State of origin of this harm.[829] Nonetheless, the reluctance does not mean that States are exempt from being held responsible/liable for (environmental) damage arising out of hydrocarbon activities conducted under their jurisdiction or control. The civil liability of operators and international State responsibility/liability exist in parallel. In other words, a civil

[825] This Chapter will consider some relevant aspects of the *Montara* case. See Y. Lyons, "Transboundary pollution from offshore activities: a study of the Montara offshore oil spill", in: S. Jayakumar et al. (eds), *Transboundary Pollution: Evolving Issues of International Law and Policy*, Edward Elgar Publishing, 2015, pp. 162-189. See also Report of the Australian Lawyers Alliance, "After the Spill: Investigating Australia's Montara Oil Disaster in Indonesia", July 2015, available at https://www.lawyersalliance.com.au/documents/item/412 (last accessed January 2019).

[826] See, for example, Johnstone 2015, *op. cit.*, p. 261.

[827] See, for example, "Environmental Governance in Oil-producing Developing Countries - Findings from a Survey of 32 Countries", managed by E. Mayorga Alba, Extractive Industries for Development Series #17, June 2010, World Bank, available at http://siteresources.worldbank.org/EXTOGMC/Resources/336929-1266963339030/eifd17_environmental_governance.pdf (last accessed January 2019). It is also important to note that currently there is no international liability regime for transboundary damage from offshore petroleum exploration and exploitation activities. However, some steps towards this have been made. See, for example, S. P. Klein, *Liability and Compensation due to Transboundary Pollution Caused by Offshore Exploration and Exploitation: IMO Competence and Development of Guidelines*, Doctoral thesis, World Maritime University, 2016, available at https://commons.wmu.se/cgi/viewcontent.cgi?article=1530&context=all_dissertations (last accessed January 2019).

[828] There are a limited number of cases where States had accepted their responsibility. For example, the Swiss Government acknowledged responsibility for lack of due diligence in preventing pollution of the Rhine through adequate regulation of the pharmaceutical industry. See AP, draft art. 3, commentary 8; E. Morgera, *Corporate Accountability in International Environmental Law*, Oxford University Press, 2009, pp. 37-38.

[829] T. Scovazzi, "State Responsibility for Environmental Harm", *Yearbook of International Environmental Law*, 2002, vol. 12 (1), p. 56. Scovazzi gives an example of the Chernobyl accident where many States refrained from asking for compensation from the USSR.

claim against the operator does not preclude a State claim against another State under the law of State responsibility.[830]

As indicated in the general introduction to Part III, this Part addresses the question of whether two States cooperating with respect to disputed and transboundary hydrocarbon resources may share international responsibility for (potential or actual) environmental harm. The circumstances under which shared State responsibility may be triggered follow from the law of State responsibility. This Chapter examines the legal conditions that must be met to hold any coastal State responsible for environmental harm arising out of offshore hydrocarbon activities conducted under its jurisdiction or control. These conditions will assist in identifying basic criteria for shared State responsibility that will be used later in the consideration of each scenario of resource sharing (Chapters 6 and 7). Another reason why Chapter 5 mainly focuses on the responsibility of a single State is that even in the situation of shared State responsibility, an injured State may opt to bring a claim against one of the responsible States in order to avoid difficulties in the invocation of shared State responsibility.[831] This does not, however, mean that shared State responsibility is absent and cannot be triggered.

It is important to emphasize that *the question of whether* two States may share international responsibility is different from *the question of the ratio* in which States share that responsibility and *of how* an injured State may invoke shared State responsibility. As noted above, Part III primarily considers the likelihood of shared State responsibility in the context of shared hydrocarbons. At the same time, the latter question is also touched upon in this Part and in Chapter 8.

Before considering the question at hand, Chapter 5.2 proceeds to clarify the meaning of the terms ‘responsibility’ and ‘liability’ due to confusion these terms may create.

5.2 Juxtaposition of the terms ‘responsibility’ and ‘liability’

This section examines the legal concepts of responsibility and liability.

[830] Johnstone 2015, *op. cit.*, p. 265, citing D. Ong, “International Environmental Law’s “Customary” Dilemma: Betwixt General Principles and Treaty Rules”, *The Irish Yearbook of International Law*, 2006, vol. 1 (3), p. 21.
[831] ARSIWA, draft art. 47. See also Chapter 5.8.

Whereas the English text of the UNCLOS uses both terms,[832] other authentic texts of the Convention refer to a single word to cover both 'responsibility' and 'liability'.[833] The discrepancy can be explained by the fact that the distinction between 'responsibility' and 'liability' is unknown outside the common law legal system.[834] According to the provisions of the UNCLOS, the term 'responsibility' is meant to designate a set of obligations incumbent upon the States Parties, while the term 'liability' refers to the consequences arising from a breach of those obligations.[835]

Another possible approach to distinguish the concepts of 'responsibility' and 'liability' may be to draw the line between the obligations of States in public international law and the obligations at the private law level.[836]

However, none of the mentioned approaches correspond to the ILC's conception of the terms 'responsibility' and 'liability'. The ILC adopted an approach according to which both terms deal with the consequences of certain acts.[837] Whereas the term 'responsibility' is used exclusively in connection with internationally wrongful acts, the term 'liability' denotes the legal consequences attached to injurious activities that are not deemed wrongful under international law.[838] In other words, the ILC has attempted to make it clear that the responsibility of a State would arise when it has acted wrongfully under international law, while international liability in a situation in which the State has acted lawfully, but with a risk of causing damage.[839] This conceptual distinction resulted in the segregation of the topic of State

[832] UNCLOS, arts. 139, 235 (1) and 263.
[833] The Russian text refers to the term 'ответственность', 'responsabilité' in French, 'responsabilidad' in Spanish and 'Haftung' in German. See also Yearbook of the ILC, 1980, vol. II (Part One), Preliminary report on international liability for injurious consequences arising out of acts not prohibited by international law, prepared by Mr. R. Q. Quentin-Baxter, Special Rapporteur, Doc. A/CN.4/334 and Add.1 and 2, pp. 250-251, available at http://legal.un.org/docs/?path=../ilc/publications/yearbooks/english/ilc_1980_v2_p1.pdf&lang=EFSR; Yearbook of the ILC, 1986, vol. II (Part One), Second report on international liability for injurious consequences arising out of acts not prohibited by international law, by Mr. J. Barboza. Doc. A/CN.4/402, available at http://legal.un.org/docs/?path=../ilc/publications/yearbooks/english/ilc_1986_v2_p1.pdf&lang=EFSRA (last accessed January 2019); R. Lefeber, *Transboundary Environmental Interference and the Origin of State Liability*, The Hague: Kluwer Law International, 1996, pp. 13-14; ITLOS's Advisory Opinion of 2011, para. 66.
[834] J. Barboza, *The Environment, Risk and Liability in International Law*, Martinus Nijhoff, 2010 p. 22.
[835] ITLOS's Advisory Opinion of 2011, paras. 65 and 66. See also A. E. Boyle, "State Responsibility and International Liability for Injurious Consequences of Acts not Prohibited by International Law: a Necessary Distinction?", *International and Comparative Law Quarterly*, 1990, vol. 39, p. 9.
[836] Boyle 1990, *op. cit.*, p. 9.
[837] Barboza 2010, *op. cit.*, p. 23.
[838] Yearbook of the ILC, 1973, vol. II, Report of the ILC on the work of its twenty-fifth session (7 May - 13 July 1973), Doc. A/9010/Rev.1, p. 169, available at http://legal.un.org/docs/?path=../ilc/publications/yearbooks/english/ilc_1973_v2.pdf&lang=EFSR (last accessed January 2019).
[839] Yearbook of the ILC, 1977, vol. II (Part Two), Report of the ILC on the work of its twenty-ninth session (9 May-29 July 1977), Doc. A/32/10, p. 6, para. 17, available at

responsibility (ARSIWA) from international liability (AP and PAL) – an approach that has been criticized in legal literature.[840]

This thesis employs the distinction between 'responsibility' and 'liability' made by the ILC because, despite the criticism, that distinction is often used in case law and current legal literature, also in addressing the issue of environmental damage.[841] In other words, this means that the term 'responsibility' is used where a State commits an internationally wrongful act:[842] for example, in a situation where a State authorizes exploitation of a shared hydrocarbon deposit unilaterally or does not comply with the provisional measures prescribed by a judicial body.[843] A State also bears responsibility for a failure to exercise its due diligence obligation to ensure that hydrocarbon activities are carried out in compliance with its international obligations, including the obligation to prevent significant harm to the (marine) environment as considered further in this Chapter. Nevertheless, it is worth noting that in some parts of the following Chapters the notion 'responsibility' means an obligation (to do or not to do something) of a State or an inter-State body. For example, the phrase "State A and State B share responsibility for protection of the marine environment of the area X" implies that both State A and State B have obligations to protect the marine environment. This deviation from the definition of the term 'responsibility' used in Part III is due to the wording of a particular arrangement or agreement in which 'responsibility' means 'obligation'.

The term 'liability' is used to indicate a situation where a State has met its due diligence, but (environmental) damage has nevertheless happened – a duty to address such damage.[844] The issue of international State liability is particularly relevant where the civil liability regime does not function optimally. Chapter 5.7 deals with State liability in the absence of a wrongful act.

http://legal.un.org/docs/?path=../ilc/publications/yearbooks/english/ilc_1977_v2_p2.pdf&lang=EFSR (last accessed January 2019). See also AP, draft art. 1, commentary 6.

[840] See, for example, M. B. Akehurst, "International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law", *Netherlands Yearbook of International Law,* 1985, vol. 16, p. 8; Boyle 1990, *op. cit.*, p. 14; L. De La Fayette, "The ILC and International Liability: a Commentary", *Review of European Community & International Environmental Law,* 1997, vol. 6 (3), p. 324-327. See Chapter 1 concerning the ARSIWA, AP and PAL.

[841] See, for example, Scovazzi 2002, *op. cit.*; M. Fitzmaurice, "International Responsibility and Liability", in: D. Bodansky, J. Brunnée and E. Hey (eds), *The Oxford Handbook of International Environmental Law,* Oxford University Press, 2008; Johnstone 2015, *op. cit.*, Part 3.

[842] Chapter 5.3 discusses the elements of an internationally wrongful act.

[843] See Chapters 3 and 4 (e.g., *Ghana/Côte d'Ivoire* Judgment, Part X).

[844] See, for example, Johnstone 2015, *op. cit.*, p. 192 and especially Chapter 11.

5.3 Elements of international State responsibility

The primary source governing the international responsibility of a State is the ARSIWA adopted by the ILC.[845] Pursuant to draft article 1 of the ARSIWA, a State bears responsibility for an internationally wrongful act.[846] The conduct of a State, whether by way of an action or omission, is to be qualified as an internationally wrongful act if two conditions are met.[847] First, the conduct shall be attributable to the State under international law.[848] Second, the conduct shall constitute a breach of an international obligation of the State,[849] or, as the draft Articles set out, shall "not [be] in conformity with what is required" by the international obligation.[850] Therefore, for establishing international legal responsibility of a State both conditions must be satisfied. The absence of one of them results in a failure to generate the State's responsibility.

It is logical to assert that draft article 2 of the ARSIWA prescribes a determined sequence of steps for establishing international responsibility of a State. Prior to the determination of whether the State has breached its obligations under international law, first the question of whether an act is attributable to the State should be examined. Nevertheless, a number of commentators have observed that the two elements contained in draft article 2 could be inverted.[851] In other words, it may be possible first to determine whether an act is contrary to what is required from a State, even if thereafter this act would not be attributable to the State.[852] However, judicial bodies usually address the question of attribution before dealing with the issue of breach.[853] One possible explanation might be that it is relatively easier to reply to the first question than to the second.

It is important to note that such elements as fault and damage have not been included in the ARSIWA.[854] However, these elements can be required, depending on the content of an

[845] See Chapter 1 on the authority of the ARSIWA.
[846] As underlined in Chapter 1 of this thesis, in *Ghana/Côte d'Ivoire*, the SC held that draft article 1 of the ARSIWA "reflects customary international law" (*Ghana/Côte d'Ivoire* Judgment, para. 558).
[847] ARSIWA, draft art. 2.
[848] *Ibid.*, draft art. 2 (a).
[849] *Ibid.*, draft art. 2 (b).
[850] *Ibid.*, draft art. 12.
[851] B. Stern, "The Elements of an Internationally Wrongful Act", in: J. Crawford, A. Pellet and S. Olleson (eds), *The Law of International Responsibility*, Oxford University Press, 2010, p. 202.
[852] *Ibid.* Stern gives an example of the *Bosnian Genocide* case in which the ICJ followed such order.
[853] See, for example, ITLOS's Advisory Opinion of 2015, para. 146; *Arctic Sunrise*, para. 201.
[854] The requirements of fault and attribution are usually described as 'subjective' elements of an internationally wrongful act, while the breach of an obligation and damage are characterized as 'objective' elements. It is worth noting that the distinction between objective and subjective elements was abandoned by the ILC. See ARSIWA, draft art. 2, commentary 3.

international obligation.[855] For example, a State's act constitutes genocide only if it is committed "with intent to destroy, in whole or in part, a national, ethnical, racial, or religious group, as such …" (fault is to be established).[856] Part III focuses on international environmental law where the presence of environmental harm is an essential (but not the only) requirement for triggering State responsibility that also affects the availability of remedies.[857] Moreover, there must be a sufficient causal link between environmental damage and a wrongful act, which has been clearly reflected by the ICJ in its Judgment on compensation in the *Costa Rica v. Nicaragua* case.[858] In other words, in the context of this thesis, it must be shown that a State's failure to exercise due diligence caused damage to another State.

Thus, an injured party (A) may invoke the international responsibility of a State (B) when:

a. B has committed an internationally wrongful act, namely it has failed to exercise due diligence with respect to hydrocarbon activities; and
b. A suffered (environmental) damage as a result of B's failure to exercise due diligence.

The following sections address these elements of State responsibility. Moreover, this Chapter explores two additional questions. The first question is whether A may trigger B's responsibility in the absence of actual damage to the environment. The second question relates to the requirement of attribution. Given the fact that in the petroleum sector, a breach of an international obligation may originate not from acts of the State *per se*, but from acts of private entities, the question is in what circumstances private acts are attributable to the State.

It is also important to bear in mind that the ARSIWA include defenses that preclude the wrongfulness of an act in certain situations.[859] For example, if a defense of *force majeure* (e.g., an earthquake and subsequent tsunami that hit an installation resulted in marine environmental damage) can be established, no international State responsibility arises.

5.4 The requirement of damage

As indicated in the introduction to Part III, the emphasis in this Part is on damage to the environment. Environmental damage can be caused together with or without other types of

[855] ARSIWA, draft art. 2, commentaries 9 and 10.
[856] *Ibid.*, draft art. 2, commentary 3, referring to article II of the Convention on the Prevention and Punishment of the Crime of Genocide, Paris, 9 December 1948, EIF: 12 January 1951, 78 UNTS 277.
[857] See Chapter 5.4.
[858] *Certain Activities Carried Out by Nicaragua in the Border Area (Costa Rica v. Nicaragua): Compensation Owed by the Republic of Nicaragua to the Republic of Costa Rica*, Judgment, 2 February 2018, Section II.
[859] ARSIWA, Chapter V «Circumstances Precluding Wrongfulness».

damage (e.g., the *Deepwater Horizon* incident caused damage to persons and the environment).[860] Hence, damage to the environment is a separate head of responsibility.[861]

5.4.1 Environmental damage

The term 'environmental damage' can be defined in different ways. A narrow definition of environmental damage is limited to damage to natural resources, such as air, water, soil, flora and fauna, and their interaction.[862] A broader definition includes damage to natural resources and property that forms part of cultural heritage, such as historic sites and monuments.[863] The ILC in its PAL offered a more extensive definition in which the "characteristic aspects of the landscape" are to be considered.[864]

'Environmental damage' is not identical to 'pollution damage'. Sands has observed that while the concept of 'pollution' provides some assistance in determining what constitutes 'environmental damage', these terms are not necessarily interchangeable.[865] Ong has cited a scenario of environmental damage without pollution *per se* (a ship crashes against a coral reef without actually polluting the surrounding marine environment), although acknowledging several difficulties associated with this scenario.[866] In other words, Ong has attempted to show that environmental damage may be caused not only by pollution.[867] At the same time, in the hydrocarbon sphere, environmental damage is tightly linked to pollution resulting from an escape of hydrocarbons.

As in the case of 'environmental damage', there is no universally accepted definition of 'pollution'. For example, article 1 (4) of the UNCLOS defines 'pollution of the marine environment' as:

> the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources

[860] See PAL, draft principle 2, commentary 11.
[861] PAL, draft principle 2; *Costa Rica v. Nicaragua* Compensation Judgment; D. M. Ong, "The Relationship between Environmental Damage and Pollution: Marine Oil Pollution Laws in Malaysia and Singapore", in: M. Bowman and A. Boyle (eds), *Environmental Damage in International and Comparative Law*, Oxford University Press, 2002, p. 193.
[862] Sands et al., *op. cit.*, p. 741; PAL, draft principle 2, commentary 20. See also ITLOS's Advisory Opinion of 2011, para. 179. The Tribunal held that damage within article 139 of the UNCLOS "would include damage to the Area and its resources constituting the common heritage of mankind, and damage to the marine environment".
[863] De la Fayette 2002, *op. cit.*, p. 149; Sands et al., *op. cit.*, p. 741.
[864] PAL, draft principle 2 (commentaries 20-23 explain the reasons). See also De la Fayette 2002, *op. cit.*, p. 149.
[865] Sands et al., *op. cit.*, p. 741.
[866] Ong 2002 (b), *op. cit.*, p. 194.
[867] *Ibid.*, pp. 193-195. See also Birnie et al., *International Law and the Environment*, Oxford University Press, 3rd edition, 2009, pp. 380 and 387-388.

> and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities.

This expansive definition serves as a baseline for States insofar as they usually include neither a definition of pollution nor a definition of environmental damage/degradation in arrangements and agreements dealing with shared hydrocarbons.[868] A notable exception is the Nigeria-STP Treaty which largely repeats the definition of pollution given in the UNCLOS.[869]

When discussing the issue of environmental damage, it is important to mention the ICJ's Judgment on compensation in *Costa Rica v. Nicaragua* in which the Court for the first time dealt with a claim for compensation for environmental damage, that is, for "the impairment or loss of environmental goods and services" prior to recovery of the environment subject to the claim for compensation.[870] Without analyzing this landmark Judgment in detail, some findings deserve mention. First, environmental damage caused by an internationally wrongful act triggers State responsibility.[871] Secondly, there is no single methodology for the valuation of environmental damage under international law.[872] Thirdly, a State may be entitled to compensation for costs and expenses incurred as a consequence of the wrongful act.[873] Fourthly, there must be a causal link between the wrongful act and environmental damage, including the costs and expenses claimed.[874] These findings are relevant for future environmental damage claims, both within and outside the context of shared hydrocarbons.

Another important aspect of the requirement of damage is that environmental damage must be "significant" to trigger State responsibility.[875] As explained by the ILC, this threshold is

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[868] It is worth noting that there may be other applicable agreements outside these arrangements and agreements on shared hydrocarbons. See, for example, Chapter 7.6.
[869] Nigeria-STP Treaty, art. 1 (21).
[870] *Costa Rica v. Nicaragua* Compensation Judgment, para. 42. While Costa Rica identified 22 categories of environmental goods and services that had been impaired or lost as a result of Nicaragua's unlawful activities, it claimed compensation only in respect of 6: "standing timber; other raw materials (fibre and energy); gas regulation and air quality; natural hazards mitigation; soil formation and erosion control; and biodiversity, in terms of habitat and nursery" (*ibid.*, para. 55). See also PAL, draft principle 2, commentary 13.
[871] *Ibid.*, para. 41.
[872] *Ibid.*, para. 52.
[873] *Ibid.*, para. 41. See also PAL, drat principle 2 (a) (iv) and (v).
[874] *Ibid.*, paras. 34 and 89.
[875] The thresholds "significant', "substantial" and "serious" are extensively discussed. The panel in *Trail Smelter* limited its considerations to activities, which cause injury of "serious consequence". The threshold "seriously" was also reflected in the *Lac Lanoux* arbitration. The UNCLOS, in article 206, refers to harm that may cause "substantial pollution of or significant and harmful changes to the marine environment". Article 290 of the UNCLOS refers to a risk of "serious harm to the marine environment". There is a number of other legal instruments that use "significant", "serious" and "substantial" (for example, AP, draft art. 2, commentary 6, footnotes 874 and 875, and PAL, draft principle 2, commentary 1, footnotes 330 and 331). The ILC in its commentaries to the AP and PAL describes the term 'significant' as "something more than "detectable" but need not be at the level of "serious" or "substantial" (AP, draft art. 2, commentary 4, and PAL, draft principle 2, commentary 2). This

designed to "prevent frivolous or vexatious claims".[876] While it is generally accepted that many hydrocarbon activities entail a risk of (significant) harm to the (marine) environment and, hence, States must exercise due diligence in relation to these activities (see Chapter 5.5),[877] this does not mean that any environmental harm caused by hydrocarbon activities would automatically be "significant". Significance of environmental damage should be considered in accordance with the circumstances of each case in question. Like the standard of due diligence,[878] the "significant" damage threshold varies.[879] For example, while the removal of trees in freshwater wetlands may reach the level of "significant" damage, it is not necessarily so in another geographical region.[880] In the context of hydrocarbon activities, an incident involving a small quantity of oil may have more significant adverse effects on the environment than an incident involving larger quantities of oil: for example, in vulnerable maritime areas (e.g., the Arctic) or at distances relative to a coastline or maritime feature.

The underlying issue here is the occurrence of environmental damage that is *not* at the level of "significant".[881] State A is not legally responsible for environmental damage caused to State B by State A's hydrocarbon activities where this damage does not reach the "significant" damage threshold. State B is expected to tolerate minor adverse impacts on its environment.[882] In this respect, the standard of due diligence plays an important role: for example, whether persons of State B injured by State A's hydrocarbon activities may seek redress in the domestic courts of State A. In other words, States shall primarily focus on the issue of averting damage to the environment. A duty to prevent significant environmental damage is legally distinct from a duty to deal with harmful effects where such a damage has already occurred.[883]

indicates that significance of harm or damage is a lower threshold than "serious" or "substantial". See also Sands et al., *op. cit.*, pp. 743-744; Birnie et al., *op. cit.*, pp. 186-188.

[876] PAL, draft principle 2, commentary 1.

[877] See, for example, Low 2012, *op. cit.*, p. 55; Johnstone 2015, *op. cit.*, p. 207. See also Chapter 5.1.

[878] See Chapter 5.5.2.3.

[879] AP, draft art. 2, commentary 7; PAL, draft principle 2, commentary 3.

[880] See, *Costa Rica v. Nicaragua* Compensation Judgment, para. 79.

[881] Another issue is whether significant environmental damage is compensable or not.

[882] PAL, draft principle 2, commentary 2.

[883] T. Scovazzi, "Some Remarks on International Responsibility in the Field of Environmental Protection", in: M. Ragazzi (ed), *International Responsibility Today: Essays in Memory of Oscar Schachter*, Martinus Nijhoff Publishers, 2005, p. 212. This distinction is reflected in the work of the ILC on the AP and PAL.

5.4.2 The causal nexus between environmental damage and a wrongful act

There must be "a sufficiently direct and certain causal nexus" between a wrongful act and damage.[884] As a general rule, the burden of proof rests on an injured party.[885] In other words, in the context of this thesis, an injured party has to prove the existence of significant environmental damage and provide evidence demonstrating that this damage is a result of a State's failure to discharge its due diligence obligation. In *Costa Rica v. Nicaragua*, the ICJ has acknowledged that there may be certain difficulties related to the issue of damage and causation, which must be dealt with in each concrete case.[886] For example, the operator of the *Montara* platform rejects any causal link between the *Montar*a oil spill and the decline in seaweed production of Indonesian farmers.[887] It is also possible to envisage a scenario in which an injured State may face difficulties in identifying the source of environmental damage: for example, whether it originates from hydrocarbon activities with respect to shared oil and gas resources or with respect to other petroleum resources.

5.4.3 State responsibility in the absence of (environmental) damage

Although the occurrence of significant environmental damage is a central element for legal remedies, a State may be held responsible even in the absence of damage. In its Advisory Opinion, the SDC stated that damage is not a precondition for international State responsibility: "a State may be held liable under customary international law even if no material damage results from its failure to meet its international obligations".[888] At the same time, the SDC noted that there might be exceptions to this rule of customary international law. For example, in accordance with article 139 (2) of the UNCLOS, a sponsoring State is responsible only if it fails to carry out its obligations and there is damage which results from that failure.[889] This exception however applies to activities in the Area.

Thus, the presence of the requirement of damage depends on the content of the international obligation in question.[890] For example, the establishment of a safety zone around an installation

[884] *Bosnian Genocide*, para. 462. The ICJ has repeated that in the *Guinea v. DRC* and *Costa Rica v. Nicaragua* Compensation Judgments (paras. 14 and 32, respectively). See also ITLOS's Advisory Opinion of 2011, para. 182.
[885] *Costa Rica v. Nicaragua* Compensation Judgment, para. 33. Nevertheless, the ICJ has noted that the burden of proof may rest on the respondent if he is in a better position to establish certain facts.
[886] *Costa Rica v. Nicaragua* Compensation Judgment, para. 34. See also Peel 2015, *op. cit.*, pp. 68-75.
[887] See, for example, S. Zillman, "Montara oil spill: 15,500 Indonesian seaweed farmers take fight to Federal Court", ABC News, 30 August 2017, available at http://www.abc.net.au/news/2017-08-30/montara-oil-spill-indonesian-farmers-take-company-to-court/8857384 (last accessed January 2019).
[888] ITLOS's Advisory Opinion of 2011, para. 178.
[889] *Ibid.*
[890] See Chapter 5.3.

in nonconformity with article 60 of the UNCLOS constitutes a wrongful act even in the absence of material damage to vessels.[891] In other words, when considering the topic of environmental protection where a risk of harm to the environment is in focus, a State may bear responsibility when it fails to take appropriate preventive measures even if there is no physical impact on the environment.[892] It is however important to emphasize that the legal consequences of the situations with and without actual environmental damage differ.[893] For instance, in the situation of a failure to comply with the duty to carry out an EIA, the State would be under an obligation to cease the hydrocarbon activity in question until such an EIA is conducted.[894] In the case of significant environmental damage, the State of origin may be under an obligation to make full reparation for such damage (e.g., compensation, which is one of the forms of reparation).[895] It is however difficult to find State practice of invoking responsibility in the absence of actual environmental damage. A potentially injured party may use different forms to respond to a wrongful act, including diplomatic and other confidential channels.[896] In other words, a State may request another State to cease a harmful hydrocarbon activity without proceedings before an international court or tribunal having begun.

5.5 Establishing a State's lack of due diligence

States are the main bearers of rights and obligations in public international law.[897] However, in certain circumstances, States need to involve other actors to exercise some elements of their authority. In the context of this research, States, by issuing permits to (state-owned, national and/or foreign) petroleum companies to conduct exploration and exploitation operations, are exercising their exclusive sovereign rights over the CS.[898] Consequently, each coastal State must ensure that those exploration and exploitation operations are carried out in conformity with its primary international obligations. In this research, one of the key international environmental obligations is a State's due diligence obligation to ensure that petroleum

[891] See *Arctic Sunrise*, para. 206. It is however important to note that the Tribunal found no evidence that Russia committed an internationally wrongful act (*ibid.*, para. 220).
[892] Johnstone 2015, *op. cit.*, p. 203; Beckman 2015, *op. cit.*, p. 156. See Chapter 5.5 in detail.
[893] Scovazzi 2005, *op. cit.*, p. 212. See also ARSIWA, Part Two.
[894] ARSIWA, draft art. 30.
[895] *Ibid.*, draft art. 34; *Costa Rica v. Nicaragua* Compensation Judgment, paras. 29-31.
[896] *Ibid.*, draft arts. 42 and 43, commentaries 2.
[897] IOs are also duty-bearers. See N. Nedeski, *Shared Obligations in International Law*, Doctoral thesis, University of Amsterdam, 2017, pp. 19-22.
[898] See Chapter 2.3.

activities authorized by this State are such as to create no risk of significant harm to the (marine) environment. This section examines the content of this environmental obligation.

The due diligence obligation to ensure a particular behavior of private actors does not only exist in the context of hydrocarbon activities. For example, a flag State is under an obligation to ensure that vessels flying its flag satisfy the safety at sea requirements and do not conduct IUU fishing in the EEZ of a third State.[899] Similarly, under human rights law, a State must ensure that activities of non-state actors do not obstruct the realization of human rights.[900]

Thus, for triggering international responsibility, it must be demonstrated that a State has not exercised its due diligence obligation to prevent significant environmental harm. In the context of the ARSIWA, the State's failure to exercise due diligence may be considered an omission which means that this failure constitutes an internationally wrongful act.[901]

5.5.1 The standard of due diligence and marine environmental protection

It is generally accepted that under international law each State is obligated to ensure that activities within its jurisdiction and control do not cause significant harm to other States and to areas beyond the limits of national jurisdiction.[902] Chapter 2.6 considered this obligation in the context of unilateral activities with respect to shared hydrocarbons. As noted in Chapter 2.6, the obligation not to cause significant harm has been mainly developed with regard to the protection and preservation of the environment. One landmark case for the development of this obligation is the ICJ's *Nuclear Weapons* Advisory Opinion.[903] The Court declared that "[t]he general obligation of States to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment".[904] In *Pulp Mills*, the ICJ stated that every State is obligated to "use all the means at its disposal in order to avoid activities which take place in its territory, or in any area under its jurisdiction, causing significant damage to the environment of another State".[905]

[899] UNCLOS, art. 94. See also ITLOS's Advisory Opinion of 2015, paras. 85-140.
[900] See, for example, W. Vandenhole, "Shared Responsibility of Non-State Actors: A Human Rights Perspective", in: N. Gal-Or et al. (eds), *Responsibilities of the Non-State Actor in Armed Conflict and the Market Place: Theoretical Considerations and Empirical Findings*, Leiden/Boston: Brill Nijhoff, 2015.
[901] ARSIWA, draft art. 2. See Chapter 5.3.
[902] See also Chapter 2.6.
[903] See Chapter 2.6 on the *Trail Smelter* and *Corfu Channel* cases.
[904] *Nuclear Weapons*, para. 29.
[905] *Pulp Mills*, para. 101. In this case, the ICJ referred to the *Corfu Channel* and *Nuclear Weapons* cases.

It is also important to mention the work of the ILC on the AP. The ILC noted that the obligation to prevent significant transboundary harm or minimize the risk thereof has been incorporated into a large number of international treaties concerning protection of the environment, including those dealing with the marine environment (in particular Part XII of the UNCLOS).[906] The UNCLOS provides for a general duty to protect and preserve the marine environment while exploring and exploiting natural resources.[907] That general duty applies to the entire marine environment, including undelimited maritime areas where States have agreed to conduct hydrocarbon activities in cooperation.[908] In *South China Sea*, the Tribunal noted that this general duty is a positive obligation to "take active measures to protect and preserve the marine environment" and, at the same time, is a negative obligation not to degrade the marine environment.[909] Further, the Tribunal stated that the content of the general duty to protect and preserve the marine environment under article 192 of the UNCLOS is informed by the subsequent provisions of Part XII, including article 194, and other applicable rules of international environmental law mentioned above in this section.[910] The Tribunal in *South China Sea* also recalled the acknowledgment by the Tribunal in *Iron Rhine* that "States have a positive "duty to prevent, or at least mitigate" significant harm to the environment when pursuing large-scale construction activities".[911]

Article 194 of the UNCLOS imposes on States obligations to take all measures necessary to: (a) "prevent, reduce and control pollution of the marine environment *from any source*", including offshore petroleum activities; and (b) "ensure that activities under their jurisdiction or control" are carried out so as not to "cause damage by pollution to other States and their environment, and that pollution […] does not spread beyond the areas where they exercise sovereign rights".[912] It is notable that in article 194, the UNCLOS does not use "significant" as

[906] AP, draft art. 3, commentary 8, footnote 880.
[907] UNCLOS, arts. 192 and 193.
[908] See, for example, *South China Sea*, para. 940. It is important to bear in mind the applicability of the general duty to protect and preserve the marine environment in the context of *unilateral* hydrocarbon activities, particularly in undelimited maritime areas. See Chapter 2.6 in this regard.
[909] *South China Sea*, para. 941. The Tribunal also stated that the general duty under article 192 of the UNCLOS "extends both to "protection" of the marine environment from future damage and "preservation" in the sense of maintaining or improving its present condition" (*ibid.*).
[910] *Ibid.*, paras. 941 and 942. The Tribunal referred to *Nuclear Weapons*, *supra* note 904.
[911] *Ibid.*, para. 941. See *Iron Rhine Arbitration (Belgium/Netherlands)*, Award, 24 May 2005, PCA Award Series (2007), para. 59, and *Indus Waters Kishenganga Arbitration (Pakistan v. India)*, Partial Award, 18 February 2013, PCA Award Series (2014), para. 451. The Tribunal in *Iron Rhine* also referred to other sources of international law and concluded that this duty "has now become a principle of general international law" (*ibid.*).
[912] UNCLOS, art. 194 (1) (2) (emphasis added). See also arts. 207-212. See Chapter 5.4.1 on the definition of 'pollution of the marine environment' under article 1 of the UNCLOS.

the threshold.[913] There is an obligation to ensure that (transboundary) pollution of the marine environment is prevented.

Thus, under international law relating to the protection of the environment, States authorizing hydrocarbon activities in respect of shared resources are required to ensure that those activities do not cause pollution and other significant harm to their own (marine and coastal) environment, the environment of other States and of maritime areas beyond their national jurisdiction or control. The customary status of the obligation to prevent significant environmental harm means that all States are bound by this obligation. This obligation does not need to be explicitly incorporated into arrangements and agreements dealing with shared hydrocarbons to be binding on the contracting Parties. However, as examined further in this thesis, provisional arrangements and agreements on shared hydrocarbons often include the obligation to prevent pollution and other harm to the marine environment.[914]

The obligation to ensure that hydrocarbon activities do not harm the (marine) environment can be characterized as an obligation of conduct and as a due diligence obligation. Recent decisions by international courts and tribunals have shaped this understanding of the obligation to ensure.[915] This determination is also largely supported by legal scholars.[916]

The standard of due diligence does not imply that pollution and other environmental harm must be totally eliminated,[917] but means that a State authorizing any hydrocarbon activity must take all appropriate measures to prevent the occurrence of environmental harm.[918] Thus, the State may be held responsible for its failure to take those preventive measures.[919] Consequently, when dealing with the question of whether two States cooperating in respect of shared hydrocarbons may be jointly responsible under international law, it is necessary to analyze how the standard of due diligence is framed in the context of shared hydrocarbons. The next section explores the core elements of the due diligence standard that will subsequently assist in

[913] Unlike in a number of other provisions, *supra* note 875.
[914] See Chapters 6 and 7 in detail.
[915] See, for example, *Pulp Mills,* para. 197; ITLOS's Advisory Opinion of 2011, para. 110; ITLOS's Advisory Opinion of 2015, paras. 129 and 148; *South China Sea,* para. 944
[916] See, for example, Lefeber, *op. cit.*, p. 64; X. Hanqin, *Transboundary Damage in International Law,* Cambridge: Cambridge University Press, 2003, p. 163; R. Warner, *Protecting the Oceans Beyond National Jurisdiction: Strengthening the International Law Framework,* Martinus Nijhoff Publishers, 2009, p. 48; Peel 2015, *op. cit.*, p. 55.
[917] AP, draft art. 3, commentary 7.
[918] UNCLOS, art. 194; AP, draft art. 3, commentary 7; ITLOS's Advisory Opinion of 2011, para. 110; *South China Sea, supra* note 909.
[919] See also Chapter 5.4.

analyzing the design of due diligence in the context of shared hydrocarbons, which is the main factor leading to shared State responsibility.[920]

5.5.2 The constituent components of due diligence

This section deals with the question of what is required of a coastal State to meet its due diligence obligation. The due diligence measures, which shall be taken in the context of hydrocarbon activities, are divided into two main categories: before (measures to prevent environmental damage) and after damage (measures to address such damage). This section seeks to provide a full list of measures within these categories. While a number of measures are direct primary obligations of coastal States (for example, the obligation to conduct an EIA), they can also be considered relevant factors for meeting the standard of due diligence.

5.5.2.1 Preventative measures

There are a number of cases that provide some guidance on the key elements of the standard of due diligence. In *Pulp Mills*, the ICJ stated that "[the obligation to act diligently] is an obligation which entails not only the adoption of appropriate rules and measures, but also a certain level of vigilance in their enforcement and the exercise of administrative control applicable to public and private operators, such as the monitoring of activities undertaken by such operators, to safeguard the rights of the other party".[921] The ITLOS (including the SDC) has referred to this statement in its Advisory Opinions.[922] Thus, three main "pillars" of due diligence are: (a) establishment of a regulatory framework; (b) enforcement of the existing regulatory framework; and (c) administrative control over activities.[923] These three pillars are also the foundation of due diligence in the context of (cooperative) hydrocarbon activities. In addition, the SDC in its Advisory Opinion has stated that a (sponsoring) State would comply with due diligence if it paid attention to "plausible indications of potential risks" of an activity even where there is scientific uncertainty as to the scope and extent of these risks.[924]

[920] See in detail Chapters 6 and 7.
[921] *Pulp Mills*, para. 197.
[922] ITLOS's Advisory Opinions of 2011 (para. 115) and 2015 (paras. 131 and 132). Maljean-Dubois has mentioned the decision of the ECHR in *Di Sarno and others v. Italy* (2012). See S. Maljean-Dubois, "International Litigation and State Liability for Environmental Damage: Recent Evolution and Perspectives", in: J-r. Yeh (ed), *Climate Change Liability and Beyond*, National Taiwan University Press, 2017, p. 34.
[923] The legal literature also refers to these three "pillars". See, for example, Morgera 2009, *op. cit.*, p. 35; Low 2012, *op. cit.*, p. 55; Peel 2015, *op. cit.*, p. 66.
[924] ITLOS's Advisory Opinion of 2011, para. 131.

Consequently, the first step in discharging due diligence obligations is the adoption of appropriate laws and regulations applicable to hydrocarbon activities.[925] This step is particularly crucial for joint hydrocarbon activities carried out in an undelimited maritime area because this area is governed by two or more sets of sovereign rights of claimant States.[926] As shown in Chapter 6, the establishment of a regulatory framework is indeed a primary measure taken by States in the context of disputed hydrocarbons. It does not however mean that the first step is less relevant in the context of transboundary hydrocarbons. The presence of the maritime boundary makes it easier for each State to satisfy the regulatory component of due diligence.[927]

It is true that the content of the laws and regulations that shall be adopted by each State is left to be determined by this State. However, when adopting these regulations and laws, the State must also ensure that they are in conformity with its international, regional or bilateral commitments. As noted in Chapters 6 and 7, arrangements and agreements concluded by States with respect to shared hydrocarbons are usually designed in such a way to allow environmental protection measures to evolve together with environmental obligations of the States. In other words, the Parties do not need to amend their arrangements and agreements to accommodate changes in (international or regional) environmental standards and requirements.

While the existence of appropriate laws and regulations is a necessary condition for complying with due diligence, a State must also establish enforcement mechanisms to secure compliance by licensees with the adopted laws and regulations (the second pillar of due diligence).[928] A failure to implement the laws and regulations gives rise to the presumption that due diligence has not been adequately undertaken.[929] As noted in commentary to the UN Guiding Principles on Business and Human Rights, "[t]he failure to enforce existing laws […] is often a significant legal gap in State practice. […] Therefore, it is important for States to consider whether such laws are currently being enforced effectively, and if not, why this is the case and what measures may reasonably correct the situation".[930] Although this observation relates to the enforcement

[925] See also UNCLOS, art. 208 (1) and (2); ITLOS's Advisory Opinion of 2011, para. 219.
[926] See Chapters 2.3 and 3.
[927] See Chapter 7 in this respect.
[928] See also UNCLOS, art. 214.
[929] N. Matz-Lück and E. van Doorn, "Due Diligence Obligations and the Protection of the Marine Environment", *L'Observateur des Nations Unies*, 2017, vol. 42 (1), p. 181, citing R. Barnes, "Flag States", in: D. Rothwell, A. G. Oude Elferink et al. (eds), *The Oxford Handbook of the Law of the Sea*, Oxford University Press, 2015, p. 323.
[930] Guiding Principles on Business and Human Rights, Human Rights Council (A/HRC/17/31), 2011, p. 5, available at https://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf (last accessed January 2019).

of the laws requiring business enterprises to respect human rights, the same true might also be applicable to environmental laws and regulations.

The importance of enforcement mechanisms can be demonstrated by the example of the gaps that existed in Ecuador's environmental legislation.[931] In 1984, an environmental Agency was established within the Ministry of Energy and Mines. In 1988, the Agency notified oil companies operating in Ecuador that they were required by law to submit EIAs for approval before initiating any new exploratory or production activities. However, the absence of an enforcement provision concerning the EIA requirement contributed to a situation in which no company fully complied with this requirement.[932]

Nowadays, it is generally accepted that hydrocarbon activities, including exploration and exploitation, require an EIA insofar as they pose a risk of harm to the (marine) environment.[933] Thus, each State has a duty to conduct an EIA[934] prior to authorizing hydrocarbon activities.[935] Hence, an act of authorizing hydrocarbon activities without an adequate EIA can be considered wrongful (a breach of due diligence) which triggers international State responsibility.[936] At this point, it is worth emphasizing that States rarely attempt to invoke the responsibility of other States in the absence of actual damage.[937] For example, in its Request for provisional measures in *Ghana/Côte d'Ivoire*, Côte d'Ivoire pointed out that Ghana's environmental legislation does not always meet "good oilfield practice": in particular, development operations with respect to the Jubilee field commenced before Ghana had approved the development plan and before an environmental impact study was vetted by the competent authorities.[938] Whereas this allegation had been put forward by Côte d'Ivoire in order to show that the conditions for the prescription of provisional measures under article 290 of the UNCLOS were met,[939] the issue was not

[931] This example is taken from J. Kimerling, "Disregarding the environmental law: petroleum development in protected natural areas and indigenous homelands in the Ecuadorian Amazon", *Hastings International and Comparative Law Review*, 1991, vol. 14 (4), p. 895.
[932] *Ibid*.
[933] See, for example, Johnstone 2015, *op. cit.*, p. 164.
[934] See ITLOS's Advisory Opinion of 2011, para. 145: "the obligation to conduct an [EIA] is a direct obligation under the [UNCLOS] and a general obligation under customary international law". The Tribunal in *South China Sea* repeated this (*South China Sea*, para. 948).
[935] It is important to note that the scope and content of an EIA is left to the State conducting such assessment. See AP, draft art. 7, commentaries 6-9.
[936] *Pulp Mills*, para. 204. The ICJ held that "due diligence … would not be considered to have been exercised, if a party planning works liable to affect the régime of the river or the quality of its waters did not undertake an environment impact assessment on the potential effects".
[937] As noted in Chapter 5.9, it is difficult to assess the real extent of State practice of invoking international responsibility.
[938] Côte d'Ivoire's Request for provisional measures, *op. cit.*, para. 42.
[939] See Chapter 3.

discussed at the merits stage. As regards the concept of "good oilfield practice" (GOP), an obligation to apply GOP is usually imposed on licensees conducting petroleum operations. At the same time, a State's function is to establish a set of standards that promote GOP in actual petroleum operations. There is no single definition of this concept. For example, the Timor Sea Boundary Treaty defines GOP as:

> practices and procedures employed in the petroleum industry worldwide by prudent and diligent operators under conditions and circumstances similar to those experienced in connection with the relevant aspects of [p]etroleum operations, having regard to relevant factors […].[940]

As follows from this definition, GOP does not only include technology, but also best environmental practices (BEP) in order to minimize adverse effects of petroleum operations on the environment.[941] However, the problem with this definition is the flexibility in determining of what counts as "good oilfield practice".[942]

One can cite other two examples of a State's failure to exercise due diligence which resulted in environmental (and other) damage. The first example is the *Social and Economic Rights Action Center and the Center for Economic and Social Rights v. Nigeria* case before the African Commission on Human and Peoples' Rights (ACHPR).[943] In this case, the state-owned Nigerian National Petroleum Company and the Shell Petroleum Development Corporation (a subsidiary of Shell) were part of a consortium that had exploited oil reserves in Ogoniland located in Nigeria. The operations of the consortium had caused environmental degradation and serious health impacts on the people of Ogoniland resulting from the disposal of toxic waste into the local environment and waterways.[944] The ACHPR pointed out that in the course of oil exploitation in Ogoniland (commenced in the 1950s and ceased in 1993), the (former) Nigerian Government had failed to exercise its due diligence obligation with respect to these activities. For instance, the Government had neither monitored the operations of the consortium nor

[940] Timor Sea Boundary Treaty, art. 1 (1) (h). For another definition of "good oilfield practice" (in the UK) see S. C. Styles, "Joint Operating Agreements", in: G. Gordon et al. (eds), *Oil and Gas Law: Current Practice and Emerging Trends*, Dundee University Press, 2011, p. 377.
[941] *Ibid.*
[942] See also Chapter 5.5.2.3.
[943] *Social and Economic Rights Action Center and the Center for Economic and Social Rights v. Nigeria*, Decision of the African Commission on Human and Peoples' Rights, 2001, available at http://www.achpr.org/files/sessions/30th/comunications/155.96/achpr30_155_96_eng.pdf (last accessed January 2019).
[944] *Ibid.*, paras. 1-2. See also Environmental Assessment of Ogoniland conducted by the UNEP, 2011, available at http://postconflict.unep.ch/publications/OEA/UNEP_OEA.pdf (last accessed January 2019).

required oil companies to comply with standard safety procedures.[945] The Government had not required the consortium to conduct EIAs or consult with local populations.[946]

Another example related to offshore hydrocarbon activities is the *Deepwater Horizon* incident in the Gulf of Mexico. The Report of the National Commission, which investigated this incident, discloses that the US had failed to regulate and monitor hydrocarbon activities.[947] Thus, it could be argued that if the *Deepwater Horizon* oil spill had extended to the waters of Mexico, Mexico would have had legal grounds for invoking the US's international responsibility.[948] A recent report made by the Auditor General of Norway indicates that in a number of cases the Norwegian Petroleum Safety Authority (PSA) has not carried out adequate supervision of petroleum operations on the Norwegian CS and has not applied its enforcement powers when it was necessary.[949] There is no evidence of such an extensive study on the question of due diligence of States with respect to other pollution incidents, including the *Montara* incident.[950] It has been only observed that Australia does not have legislation requiring environmental damage to be assessed nor compensated for.[951]

The examples above show that the oversight of hydrocarbon activities is an important factor in implementing due diligence. If during monitoring it appears that a petroleum activity involves a risk of causing significant harm to the environment (or persons), States shall request the operator to suspend this activity until the risk is addressed. As discussed in Chapters 6 and 7, States usually include special provisions in arrangements and agreements dealing with shared hydrocarbon deposits according to which they are entitled to conduct inspections of hydrocarbon activities with respect to those deposits and cease harmful activities.

It is interesting to note that in the literature there is the opinion that the State in which a petroleum company is incorporated or headquartered ("home State") should also exercise

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[945] *Ibid.*, paras. 4-5.
[946] *Ibid.*
[947] Report on the *Deepwater Horizon* Spill, *supra* note 811, Chapter 3, especially pp. 82-85. See in detail also A. Boyle, "Transboundary air pollution: a tale of two paradigms", in: S. Jayakumar et al., *Transboundary Pollution: Evolving Issues of International Law and Policy*, Edward Elgar Publishing, 2015, pp. 239-240.
[948] See Boyle 2015, *supra* note 947, p. 240. Boyle has noted that finding an international forum in which to sue the US could have been a difficult task.
[949] Riksrevisjonens undersøkelse av Petroleumstilsynets oppfølging av helse, miljø og sikkerhet i petroleumsvirksomheten, Dokument 3:6 (2018–2019), 15 January 2019, 11 Vurderinger, available at https://www.riksrevisjonen.no/globalassets/rapporter/no-2018-2019/petroleumstilsynet.pdf (last accessed January 2019). The summary in English is available at http://www.ptil.no/news/report-from-the-auditor-general-call-for-stricter-supervision-article14329-878.html (last accessed January 2019).
[950] See, for example, Report of the Montara Commission of Inquiry, June 2010, available at http://www.iadc.org/wp-content/uploads/2016/02/201011-Montara-Report.pdf (last accessed January 2019).
[951] *Ibid.* Lyons, *op. cit.*, p. 187.

control (e.g., Norway's control over environmental conduct of Equinor (former Statoil) or its subsidiaries operating overseas, for example, in Venezuela).[952] However, this type of extraterritorial control is hardly possible and the main control is to be exercised by the (coastal) State where the petroleum company operates. The home State may play a role in addressing civil claims. For example, a Dutch court ruled that four Nigerian farmers might take their case against Shell over damage caused by Shell's Nigerian subsidiary in the Netherlands (the issue of parent company liability).[953]

Due diligence also includes the obligation to require licensees to have financial security in order to meet any damage, including environmental damage, which might arise out of petroleum activities.[954] The conditions of such a security are usually set by the respective State. It is also worth noting that insurance companies may have their own limitations to cover (environmental) damage.[955]

Another significant preventative (as well as remedial) step is the availability of legal recourse in the event of environmental damage.[956] In other words, each State must ensure that persons, including persons outside its territory, who suffered damage may bring their claims for compensation in the courts of this State. For example, in the aftermath of the *Montara* incident, Indonesian seaweed farmers filed a class action against the operator in an Australian court.[957] Like the obligation to establish a civil liability regime, the obligation to provide civil remedy is an obligation of result meaning that States have considerable discretion regarding how these obligations operate.

Article 199 of the UNCLOS requires States to adopt contingency plans for responding to pollution of the marine environment. States generally have in place national contingency plans for dealing with pollution originating from different sources, including pollution from offshore

[952] See, for example, Morgera 2009, *op. cit.*, pp. 30-34.
[953] "Dutch courts to judge Shell in landmark oil spill case", The Straits Times, 18 December 2015, available at https://www.straitstimes.com/world/europe/dutch-courts-to-judge-shell-in-landmark-oil-spill-case (last accessed January 2019). At the same time, the claims of Bille and Ogale communities against Shell were rejected in the UK. See, for example, P. Bergkamp, "Parent Companies Are Not Parents, Subsidiaries Are Not Children: Okpabi v Shell Judgment Puts the Brakes on the Expansion of Parent Company Liability for Damage Caused by Its Subsidiaries", Corporate Finance Lab, 6 March 2018, available at https://corporatefinancelab.org/2018/03/06/okpabi/ (last accessed January 2019).
[954] PAL, draft principle 4 (3).
[955] See Chapter 5.7 for further consideration.
[956] UNCLOS, art. 235 (2); PAL, draft principle 6 (2) (3); ITLOS's Advisory Opinion of 2011, para. 122.
[957] J. Topsfield, "Indonesian seaweed farmers launch class action over Montara oil spill", The Sydney Morning Herald, 2 August 2016, available at https://www.smh.com.au/business/indonesian-seaweed-farmers-launch-class-action-over-montara-oil-spill-20160802-gqitj0.html (last accessed January 2019). This case is still pending.

petroleum activities.[958] In the context of shared hydrocarbons, the presence of joint plans of action is essential: while a jurisdictional issue is unsettled in an undelimited maritime area, a risk of transboundary pollution in the case of straddling hydrocarbons is relatively high. As discussed further in Chapters 6 and 7, States sharing hydrocarbon resources indeed develop joint contingency plans.

5.5.2.2 Remedial measures

The duty not to cause significant damage to the environment continues to apply where actual damage has occurred. States shall take active measures to mitigate and eliminate such damage. Moreover, States are required to ensure that damage does not extend beyond the areas where they exercise their sovereign rights.[959] If there is a risk that other States or areas outside national jurisdiction may be affected by damage, the State of origin shall notify these States and competent IOs (e.g., RFMOs).[960]

The standard of due diligence also includes a duty to punish private entities responsible for environmental damage.[961] In this respect, States shall investigate incidents involving damage to the environment.[962] An investigation should not only seek to identify the gravity of damage and the companies liable for it, but also to learn lessons and fill the existing gaps in the exercise of due diligence. It is however regrettable that, for example, in the aftermath of the *Deepwater Horizon* incident, the US has not significantly enhanced regulation, oversight or liability at the national level.[963] The duty to punish is interlinked with other elements of due diligence such as the regime of civil liability and access of injured persons to administrative or judicial remedies.

In the event of significant transboundary environmental damage, States should discuss the issue of compensation.[964] The discussions do not automatically give rise to an obligation to compensate.

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[958] See, for example, Norway's National Contingency Plan of 2015, available at http://www.kystverket.no/globalassets/beredskap/publikasjoner-beredskap/eng-contigency-plan-last-view.pdf; T&T's National Contingency Plan of 2013, available at http://www.energy.gov.tt/wp-content/uploads/2013/11/62.pdf; other examples are available at http://www.giwacaf.net/en/country-information/national-oil-spill-contingency-plans (last accessed January 2019).
[959] UNCLOS, arts. 194 (2) and 195. See Chapter 5.5.1.
[960] UNCLOS, art. 198; PAL, draft principle 5.
[961] R. Pisillo-Mazzeschi, "The Due Diligence Rule and the Nature of the International Responsibility of States", *German Yearbook of International Law*, 1992, vol. 35, p. 38. See also Morgera 2009, *op. cit.*, p. 35.
[962] See, for example, *South China Sea*, para. 944.
[963] Johnstone 2015, *op. cit.*, p. 266, citing B. Baker, "Oil and Gas Regulation in the United States Arctic Offshore", in: N. Loukacheva, *Polar Law Textbook II*, Nordic Council of Ministers, 2013.
[964] See, for example, Watercourses Convention, art. 7 (2).

5.5.2.3 The evolving and flexible character of the due diligence standard

The SDC in its Advisory Opinion stated that States must take into account the fact that the standard of due diligence varies.[965] It may change over time: what is considered sufficiently diligent at one point in time may become not diligent enough at some point in the future.[966] Therefore, in order to act diligently, a State shall keep abreast of new scientific and technological developments.[967] Consequently, it is important to review the adopted laws and regulations from time to time so as they are in line with the current requirements.[968] The standard of due diligence may also change due to certain factors such as the type of activity (the exploitation phase requires a higher standard of due diligence than activities aimed at finding natural resources), the geographical location of the activity (for example, whether it is carried out in special climate conditions) and so forth.[969] One of the factors in raising the level of due diligence is the occurrence of serious environmental damage: the standard of due diligence would not be the same before such damage and after it. A State should eliminate defects in exercising its due diligence obligation in relation to hydrocarbon operations if this has somehow contributed to environmental damage.

The standard of due diligence should be stricter in the context of shared hydrocarbons because a risk of transboundary adverse effects on the (marine) environment is high.[970]

Article 194 (1) of the UNCLOS refers to a State's capabilities.[971] This suggests that the due diligence standard of developed States should be higher than that of developing States. For example, developing States might have limited financial and human resources to monitor hydrocarbon activities within their jurisdiction. Matz-Lück and van Doorn have warned that the differentiation within the concept of due diligence entails a danger of "losing sight of the overall objective of specifying due diligence […]", pointing to the phenomenon of "flag States of convenience".[972] The SDC has also noted the potential problem of "sponsoring States of convenience" and concluded that the general provisions of the UNCLOS apply equally to all

[965] ITLOS's Advisory Opinion of 2011, para. 117.
[966] *Ibid.*, para. 117; AP, draft art. 3, commentary 11.
[967] *Ibid.*
[968] ITLOS's Advisory Opinion of 2011, para. 222.
[969] *Ibid.*, para. 117; AP draft art. 3, commentary 11. The SDC also pointed out that the specific type of mineral resource (whether there is polymetallic nodules, polymetallic sulphides or cobalt rich ferromanganese crusts) may necessitate different standards of due diligence.
[970] See Introduction to Part III.
[971] See also *Pulp Mills*, para. 101: "[a] State is thus obligated to use *all of the means at its disposal* in order to avoid activities which take place in its territory, or in any area under its jurisdiction, causing significant damage to the environment of another State" (emphasis added).
[972] Matz-Lück and van Doorn, *op. cit.*, p. 185.

developed and developing sponsoring States.[973] At the same, it may appear unjustified to require developing States to apply a level of due diligence equal to developed States. As emphasized by the SDC, developed and developing States may be unequal in terms of scientific knowledge, technical capability and capacity.[974] Thus, States dealing with the issue of shared hydrocarbons should take into account the differences between them. In other words, a more developed State should contribute to the exercise of due diligence to a larger degree than its neighbor because this State is in a better position to do that.[975]

5.6 Attributing private conduct to a State

In order to hold a State responsible for the commission of an internationally wrongful act, such an act shall amount to both a breach of an international obligation and be attributable to that State.[976] International courts and tribunals rarely consider the issue of attribution in detail and, even if they do, that consideration has been limited.[977] However, in the context of the current research, the issue of attribution is important. Private companies carry out exploration and exploitation activities. Coastal States generally call on companies owned by them to conduct hydrocarbon activities with respect to shared hydrocarbons.[978] A State may also delegate the conduct of an EIA or the development of a contingency plan to a private entity (e.g., operator). As discussed in Chapter 6, the issue of attribution is especially relevant in undelimited maritime areas where States usually establish a joint body model to discharge many elements of their due diligence obligations. Peel has also stated that in a situation where environmental damage does not reach the "significant" threshold, an injured State may seek to attribute private conduct to a responsible State.[979]

Therefore, this section looks at the question of when the conduct of private entities, including petroleum companies, is attributable to a coastal State.

[973] ITLOS's Advisory Opinion of 2011, paras. 158-159.
[974] *Ibid.*, para. 162.
[975] See, for example, Chapter 6 concerning Saudi Arabia-Sudan.
[976] ARSIWA, draft art. 2.
[977] For example, in the *Arctic Sunrise* case, the Tribunal concluded that all acts alleged by the Netherlands are attributable to Russia (para. 201). In its Advisory Opinion of 2015, the ITLOS held that a violation of the IUU fishing laws and regulations by a vessel is not *per se* attributable to the flag State (para. 146).
[978] This does not mean that foreign private companies are excluded. There are many examples where State-owned companies conduct hydrocarbon operations together with foreign companies. There are also examples where only foreign companies are present.
[979] Peel 2015, *op. cit.*, p. 58. See 5.4.1.

5.6.1 The bases of attribution

Although the process of attribution at first glance seems to cause no difficulties, its application in practice is a complicated issue. The first complication lies in the term 'State'. It is well known that a State is a fiction existing by the operation of law. Being unable to accomplish any act itself, the State normally acts by and through its agents and representatives.[980] Thus, 'attribution'[981] is the legal process, which establishes whether the conduct of a physical person can be regarded as an act of the State.

The bases of attribution are enumerated in draft articles 4-11 of the ARSIWA. A State bears responsibility in the event when:

- the act is committed by any organ exercising public powers;[982]
- the conduct is performed by individuals or entities which are not organs of the State, but pursuant to internal law are called upon to exercise elements of governmental authority;[983]
- the conduct is carried out by organs of one State placed at the disposal of another State;[984]
- an State organ, a person or an entity exercising elements of governmental authority acts in excess of its authority or in contravention of instructions;[985]
- individuals and entities act on the instruction of, or under the direction or control of, the State;[986]
- elements of governmental authority are exercised in the absence of such authority and in circumstances such as to call for the exercise of those elements of authority;[987]
- the conduct is of an insurrectional or other movement that has become the new government of the State, or that has succeeded in establishing in a new State;[988] and

[980] *Questions relating to German Settlers in Poland*, 1923, PCIJ, Series B, No 6, p. 4, 22, cited in the ARSIWA, draft art. 2, commentary 5.
[981] At the outset of the ILC's work, the term 'imputation' was used often than 'attribution'. See remarks on terminology, L. Condorelli and C. Kress, "The Rules of Attribution: General Considerations", in: J. Crawford et al. (eds), *The Law of International Responsibility*, 2010, Oxford University Press, p. 233.
[982] ARSIWA, draft art. 4.
[983] *Ibid.*, draft art. 5. One example is that of airline companies that exercise functions of immigration control, another is private companies managing prisons (see, ARSIWA, draft art. 5, commentary 2).
[984] *Ibid.*, draft art. 6. Commentary 3 provides examples.
[985] *Ibid.*, draft art. 7.
[986] *Ibid.*, draft art. 8.
[987] *Ibid.*, draft art. 9.
[988] *Ibid.*, draft art. 10.

- the State 'acknowledges and adopts' the conduct in question as its own, although that conduct is otherwise not attributable to the State.[989]

Thus, notwithstanding the general rule that the acts of private individuals and entities are not attributable to the State under international law,[990] the ARSIWA contain some exceptions under which responsibility of the State may be triggered through the acts of such actors. The next section looks at whether these exceptions are applicable in the context of hydrocarbon activities, resulting in attribution of the acts of private companies to a coastal State.

5.6.2 State responsibility through the acts of private entities

Draft article 4 of the ARSIWA provides that the conduct of any organ pertaining to the State apparatus shall be regarded as an act of that State under international law.[991] In respect of exploration of the CS and exploitation of its natural resources, State organs play a primary role. In many countries, the functions of issuing licenses are assigned to the government. However, an act of permitting a hydrocarbon activity is not unlawful *per se*. There might, of course, be exceptions to that. For example, as noted above (and particularly in Chapter 3), a decision to authorize drilling operations in a disputed maritime area may constitute a violation of the duty to exercise restraint embedded in, *inter alia*, the obligation not to jeopardize or hamper under articles 74 (3) and 83 (3) of the UNCLOS and the obligation not to aggravate or extend a maritime boundary dispute. Authorizing an operation without an adequate EIA would also be a wrongful act. Furthermore, State organs usually conduct monitoring which is a relevant factor for exercising the State's due diligence.

At the same time, there are private companies that carry out hydrocarbon activities. They generally stand outside the formal structure of the State and can hardly be equated with State

[989] *Ibid.*, draft art. 11.

[990] When drafting the ARSIWA, the ILC envisaged the inclusion of a provision read as: "The conduct of a private individual or group of individuals, acting in that capacity, is not considered to be an act of the State in international law" (Yearbook of the ILC, 1972, vol. II, Fourth report on State responsibility, prepared by R. Ago, Doc. A/CN.4/264 and Add. l, p. 126, para. 146, available at http://legal.un.org/docs/?path=../ilc/publications/yearbooks/english/ilc_1972_v2.pdf&lang=EFSR (last accessed January 2019). This provision was subsequently abandoned in the final version of the ARSIWA. See C. Ryngaert, "State Responsibility and Non-State Actors", in: M. Noortmann, A. Reinisc and C. Ryngaert (eds), *Non-state actors in international law*, Hart Publishing, 2015, p. 163.

[991] In *Bosnian Genocide,* the ICJ held that this is a "well-established rule, one of the cornerstones of the law of State responsibility" (para. 385).

organs within the meaning of draft article 4 of the ARSIWA. Even State ownership over a private company cannot automatically transform this company into an organ of the State.[992]

Apart from draft article 4, the ARSIWA provide that the State may be held responsible for the conduct of a person or entity, even though it cannot be classified as an organ of the State. By virtue of draft article 5, an act of persons and entities empowered by internal law to exercise elements of the governmental authority can engage the responsibility of the State. Hence, it should be determined in what circumstances a petroleum company may fall under the scope of draft article 5 of the ARSIWA.

It is unclear what "elements of the governmental authority" means. Although the commentary to draft article 5 avoids elaborating the meaning of this phrase, it nevertheless indicates some criteria that might assist in determining what "governmental authority" constitutes.[993] One of the criteria is that the entity is formally empowered by the law of the State to exercise elements of governmental authority. This means that an act must be specifically authorized by the internal law as an exercise of public authority, not as part of general regulation.[994]

It can hardly be assumed that a private company undertaking exploration and exploitation activities fits within the parameters set out in draft article 5 of the ARSIWA. Perhaps, in some situations, it could be argued that a company has been empowered to exercise elements of governmental authority: for example, where the company conducts an EIA or seabed-mapping activities related to the establishment of the outer limits of the CS in line the UNCLOS.[995] Chapter 6 will refer once again to draft article 5 of the ARSIWA when considering the question of whether joint inter-State bodies established in undelimited maritime areas might be regarded as exercising elements of governmental authority.

Since the applicability of draft article 5 is questionable, an alternative base of attribution, dealt with in draft article 8, is subject to scrutiny. Draft article 8 stipulates another exception to the general rule of non-attribution of the conduct of private entities to a State. This draft article deals with two scenarios: first, where the private entity has acted under the instructions of the

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[992] *EDF (Services) Limited v. Romania*, ICSID Case No. ARB/05/13, 8 October 2008, para. 190. http://www.italaw.com/sites/default/files/case-documents/ita0267.pdf (last accessed January 2019). See also Johnstone 2015, *op. cit.*, pp. 195-196.

[993] ARSIWA, draft art. 5, commentary 6. See also A. Hallo de Wolf, *Reconciling Privatization with Human Rights*, Intersentia Ltd., 2012, pp. 217-221, available at http://intersentia.com/en/pdf/viewer/download/id/9781780680491_0/ (last accessed January 2019).

[994] ARSIWA, draft art. 5, commentary 7.

[995] See Johnstone 2015, *op. cit.*, pp. 166 and 196.

State, and, second, where the entity has performed its act under direction or control of the State.[996] Therefore, the question is whether and when petroleum companies can be considered as acting under the instruction, direction or control of coastal States. It is worth noting that one of these three elements of attribution is sufficient for triggering State responsibility.[997]

Judicial consideration has particularly focused on the degree of control that is required for establishing attribution. A couple of cases to which the ARSIWA refer in order to cast light on this issue include the *Nicaragua v. the US* and *Tadić* cases.[998] Nevertheless, the relevant degree of control has been elaborated differently in these cases. Commentary 4 to draft article 8 underscores that the ICJ devised the 'effective control' standard in *Nicaragua v. the US*.[999] However, the commentaries to draft article 8 do not limit themselves to the level of control applied in this case. They contain a reference to the *Tadić* case in which the Appeals Chamber of the International Criminal Tribunal for the former Yugoslavia (ICTY) rejected the 'effective control' approach and set out the 'overall control' standard.[1000] Based on the commentaries, it therefore seems that the ILC has not opted in favor of any of the levels of State control.

In its more recent case, *Bosnian Genocide,* the ICJ has revisited the decisions on the *Nicaragua v. the US* and *Tadić* cases, and the provisions of draft article 8 of the ARSIWA. The Court reproached the ICTY for its incursion into the field of law on State responsibility.[1001] Furthermore, the ICJ rejected application of the 'overall control' standard adopted in the *Tadić* case since it would have the effect of "broadening the scope of State responsibility well beyond the fundamental principle governing the law of international responsibility".[1002] The ICJ instead narrowed the 'effective control' standard initially articulated in *Nicaragua v. the US*. The Court applied the criterion of 'complete control'.[1003] Thus, while rejecting the 'overall control' proposed in *Tadić*, the ICJ has altered the 'effective control' provided in *Nicaragua v. the US*.

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[996] Although the commentary states that the terms "direction" and "control" are disjunctive (commentary 7 to draft art. 8 of the ARSIWA), courts and tribunals have interpreted the phrase "direction or control" as a single standard of attribution. See Crawford 2013, *op. cit.*, p. 146.
[997] ARSIWA, draft art. 8, commentary 7.
[998] *Ibid.*, draft art. 8, commentaries 4 and 5: *Military and Paramilitary Activities in and against Nicaragua (Nicaragua v. United States of America)*, Judgment, 27 June 1986, ICJ Reports 1986, p. 14, *Prosecutor v. Tadić*, Case IT-94-1-A, ICTY Appeals Chamber, 15 July 1999.
[999] *Nicaragua v. the US*, para. 115. The standard of attribution was based on "instruction for the commission of specific acts".
[1000] *Tadić,* para. 117, cited in commentary 5 to draft art. 8 of the ARSIWA. The standard of attribution was based on the notion of general planning.
[1001] *Bosnian Genocide*, paras. 403-404.
[1002] *Ibid.*, para. 406.
[1003] *Ibid.* The standard of attribution was based on a factual evaluation of the position of the agent as a 'mere instrument' of a State.

In the context of petroleum activities, one may assert that a State has 'overall control' over these activities carried out on its (claimed) CS. However, it is difficult to argue that the State has 'effective control' or 'complete control' over each act committed in the course of hydrocarbon activities. Moreover, it can be questioned whether the mentioned degrees of control are appropriate to apply in the context of hydrocarbon activities. The relationship between the coastal State and private petroleum companies is quite distinctive from that, for example, existing between the State and private military contractors. Therefore, it is possible that a lower level of control can be adopted in relation to a case having a different factual matrix.[1004] Indeed, the wording of draft article 8 of the ARSIWA leaves room for a flexible interpretation of the degree of control. It provides an either/or approach according to which an entity must act *either* on the instruction of, *or* under direction or control of, a State in order to attribute its conduct to the latter.

However, it is difficult to imagine a situation in which a coastal State intentionally instructs an operator, or exercises direction or control over it, to do something that has an obvious risk of being inconsistent with the State's international obligations: for example, to require the operator to use a technique which is harmful to the marine environment; to insist on the continuation of an operation which involves a risk of causing significant damage to persons or the environment; or to change the required breadth of a safety zone around an installation[1005]. On the contrary, where a State owns a petroleum company, this State usually uses its ownership as means to ensure that relevant regulations and laws are implemented. Of course, the actual coastal State-private operator(s) nexus should be examined in each case. If a State has indeed used its ownership over the company as a tool to impact on the conduct, this may be a valid basis for attribution. However, as mentioned above, this scenario is improbable. Moreover, in case of foreign companies, the State's ability to instruct, direct or control becomes even more limited. In other words, the focus should not be on the question of whether private conduct is attributable

[1004] See, for example, R. McCorquodale, "Impact on State Responsibility", in: M. Kamminga and M. Scheinin (eds) *The Impact of human rights law on general international law*, Oxford University Press, 2009, pp. 245-246. McCorquodale cited the ICJ's Judgment in *Armed Activities on the Territory of the Congo (Democratic Republic of Congo v. Uganda)* of 2005 as setting a lower threshold of control under international human rights law. See also E. L. Álvarez Ortega, *The attribution of international responsibility to a State for conduct of private individuals within the territory of another State*, Bachelor thesis, 2014, available at https://repositori.upf.edu/bitstream/handle/10230/23169/TFGDRET_Alvarez_2013_2014.pdf?sequence=1 (last accessed January 2019).

[1005] For example, in the *Arctic Sunrise* case, the Netherlands argued that Russia had committed an internationally wrongful act by creating a safety zone of three nautical miles around the *Prirazlomnaya* platform, while art. 60 of the UNCLOS provides that the maximum allowed breadth of a safety zone around an artificial island, installation, or structure is 500 metres (para. 203). The Tribunal however found no evidence that a three-nautical mile safety zone was established by Russia (para. 220).

to the State, but on the question of whether State's responsibility is triggered by its failure to control adequately activities of private entities (as an element of due diligence).[1006]

Thus, the issue of attribution may be relevant in some instances. However, these instances are interlinked with the establishment of a failure to exercise due diligence.

5.7 International State liability

As follows from the previous sections of this Chapter, a State bears responsibility for its failure to exercise due diligence with respect to private companies operating on the CS of that State. A logical conclusion is that if the State has met its due diligence obligation, it incurs no responsibility, even if another State has suffered significant (environmental) damage. However, there may be a situation where a licensee is exempted from civil liability in the case of environmental damage (e.g., because of *force majeure*)[1007] or cannot cover damage (e.g., because damage significantly exceeds insurance coverage or the licensee falls into bankruptcy).[1008] The probability of such a situation has also been considered by the SDC in the context of activities in the Area.[1009] Thus, this raises the question of whether a "residual liability" does (or ought to) fall on the coastal State, which has exercised its due diligence, but under jurisdiction or control of which environmental damage has been caused by hydrocarbon activities and operators conducting these activities cannot meet civil liability in full. It is worth noting that if licensees have fully compensated damage, no question of residual State liability arises.[1010]

The importance of the residual State liability question can be shown by the *Montara* incident example. One can envisage a scenario where Australia has acted diligently in the Timor Sea and the operator[1011] for whatever reason cannot cover the alleged environmental damage caused to Indonesia. Thus, the issue is whether Australia can nevertheless be held liable for

[1006] Peel 2015, *op. cit.*, p. 60.
[1007] For example, Licence No. 2014/01 issued in the JDZ between Norway and Iceland (available at https://nea.is/media/utgefin%20leyfi/licence-2014-01-cnooc-eykon-petoro.pdf (last accessed January 2019) states that the liability of a licensee may be reduced or cancelled when there is proof that environmental damage has been caused by "a natural catastrophe or by other uncontrollable events" (Section 18).
[1008] Johnstone 2015, *op. cit.*, p. 261.
[1009] ITLOS's Advisory Opinion of 2011, paras. 203 and 205.
[1010] *Ibid.*, para. 202.
[1011] Montara wellhead platform is owned and operated by PTTEP Australasia, which a subsidiary of the PTT Exploration and Production Public Company Limited, a Thai-owned petroleum exploration and production company, IMO DOC LEG 97/14/1, 10 September 2010, available at https://cil.nus.edu.sg/wp-content/uploads/2013/03/Indonesias-proposal-for-a-new-programme-to-develop-an-international-regime.pdf (last accessed January 2019).

environmental damage on the basis of its jurisdiction and control over the activity that caused this damage. This section considers that basis.

5.7.1 The principle of residual State liability

The ILC attempted to address the principle of residual State liability in the course of its work on the topic of International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law.[1012] Subsequently, this topic was divided into two parts: prevention and allocation of loss. As a result, the ILC adopted the AP and PAL.[1013] The PAL emphasize that the draft Principles do not exclude the rules of State responsibility applicable in the scenario where the State has failed to exercise its due diligence.[1014] Unlike the ARSIWA, the PAL deal with the scenario where the State has not committed a wrongful act.[1015] The ILC noted that in the latter scenario liability primarily falls on an operator.[1016] Nevertheless, the Commission (like the SDC) recognized that there might be a situation where an operator fails to provide prompt and adequate compensation. In this situation, the PAL contain a recommendation for the creation of industry funds at the national level (which is similar to the SDC's proposal to the ISA to establish a trust fund).[1017] In the event that the mentioned measures are not sufficient, the State is called upon to "ensure that additional financial resources are made available".[1018] Thus, draft principle 4 of the PAL clearly refers to the rule of residual State liability.

However, the main obstacle here is the authority of the PAL in general and draft principle 4 in particular. The SDC did not recognize the PAL as an articulation of customary international law.[1019] The ILC itself has underlined that the draft principles are intended "to contribute to *the process of development of international law* in this field".[1020] This indicates that the PAL are a product of progressive development, rather than of codification of existing customs.[1021] This view can also be supported by the fact that the Commission entitled them "draft principles",

[1012] Yearbook of the ILC, 1996, vol. II (Part Two), Report of the ILC on the work of its forty-eighth session (6 May-26 July 1996), Doc. A/51/10, Annex I, Report of the Working Group on International Liability for Injurious Consequences Arising out of Acts Not Prohibited by International Law, draft art. 5, available at http://legal.un.org/ilc/publications/yearbooks/english/ilc_1996_v2_p2.pdf (last accessed January 2019).
[1013] See Chapter 1 concerning the AP and PAL, and their status.
[1014] PAL, general commentary, para. 6.
[1015] *Ibid.*
[1016] *Ibid.*, general commentary, para. 8 and draft principle 4 (2).
[1017] *Ibid.*, draft principle 4 (4). See also ITLOS's Advisory Opinion of 2011, paras. 205 and 209.
[1018] *Ibid.*, draft principle 4 (5).
[1019] ITLOS's Advisory Opinion of 2011, para. 209.
[1020] PAL, general commentary, para. 5 (emphasis added).
[1021] See Chapter 1 on the progressive development-codification dichotomy.

instead of "draft articles".[1022] At the same time, the commentary to the PAL acknowledges that some draft principles or their aspects may reflect customary international law.[1023] This opens up the question of whether residual State liability can be considered a rule of customary international law.

While the imposition of strict liability on licensees, including the requirement of compulsory insurance covering any damage that may arise from their activities, is common practice of States,[1024] the establishment of funds (or other additional financial security) by States to cover environmental damage not covered otherwise is uncommon in the petroleum industry.[1025] Examples of such funds are rare. For instance, the UK has established a compensation scheme according to which compensation for pollution damage may be sought from the Offshore Pollution Liability Association Ltd. (OPOL) when the operator is unable to pay.[1026] At the same time, any fund has its own limitations. For example, Soyer has noted that in case of an incident similar to the *Montara* and *Deepwater Horizon* incidents, the compensation limit available under the OPOL will be inadequate.[1027] Article 235 (3) of the UNCLOS imposes a weak duty on the States Parties with respect to the availability of additional financial security. Thus, draft principle 4 of the PAL partly reflects customary international law (in particular elements (2) and (3) of this draft principle). The principle of residual State liability does not yet have customary status.[1028]

It is important to note that the principle of residual State liability is included in some liability regimes: for example, for nuclear damage and damage caused by space objects.[1029] However, that circumstance does not make this principle a norm of customary international law: each

[1022] See Chapter 1 in this regard.
[1023] PAL, general commentary, para. 13.
[1024] This practice reflects elements (2) and (3) of the PAL's draft principle 4. It is however important to note that the State which issues licenses defines standards, limitations or exceptions to the civil liability regime.
[1025] Johnstone 2015, *op. cit.*, p. 261.
[1026] Liability & Compensation for Pollution Damage, para. 7, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/338799/130802_Liability_and_Compensation_for_Pollution_Damage.pdf. See also the OPOL's website: http://www.opol.org.uk (last accessed January 2019).
[1027] Soyer 2012, *op. cit.*, pp. 62-63.
[1028] See also D. K. Anton, "The Principle of Residual Liability in the Seabed Disputes Chamber of the International Tribunal for the Law of the Sea: The Advisory Opinion on Responsibility and Liability for International Seabed Mining [ITLOS Case No. 17]", *McGill International Journal of Sustainable Development Law and Policy*, 2012, vol. 7 (2), p. 249; I. Kim, "Legal aspects of liability for environmental damage caused by offshore petroleum operations in Greenland", in: V. Ulfbeck et al. (eds), *Responsibilities and Liabilities for Commercial Activity in the Arctic: The example of Greenland, Routledge*, 2016.
[1029] See in detail Johnstone 2015, *op. cit.*, pp. 250-260. See also L. A. de la Fayette, "New Approaches for Addressing Damage to the Marine Environment", *International Journal of Marine and Coastal Law*, 2005, vol. 20 (2), pp. 167-224.

regime mentioned above is "subject specific … [and] is binding on its own terms on its own States Parties".[1030] The principle of residual State liability may also be incorporated in the context of damage arising out of activities conducted in the Area. While rejecting the existence of residual sponsoring State liability (although noting that States had expressed different views on this issue), the SDC nevertheless left room for that.[1031] Currently, the ISA is in the process of drafting regulations on exploitation of mineral resources in the Area. These draft regulations provide for the creation of a trust fund.[1032] While the ISA has taken into account the SDC's observation, the establishment (and the acceptance) by coastal States of some kind of residual guarantee in the event of environmental damage arising from offshore petroleum operations is unlikely. The attempt of Indonesia to deal with the issue of transboundary pollution did not alter the main rule according to which a State bears international responsibility only for its own failure to exercise due diligence, even though a hydrocarbon activity on its CS has resulted in transboundary damage to the (marine) environment.[1033]

The absence of residual State liability leaves a large gap: (significant) environmental damage would be unremedied where the coastal (or sponsoring) State has acted with the requisite standard of due diligence and the operator is not liable or insolvent. Consequently, it means that the burden of environmental damage lies where it falls (other States or the international community as a whole).[1034] Viewing this situation as inequitable, a number of organizations have suggested an approach to incorporate the principle of residual State liability into the standard of due diligence in the context of activities in the Area.[1035] The SDC did not uphold this approach. As noted in Chapter 5.5, due diligence is not a static concept and a future case when an operator is not able to meet its liability for serious damage to the (marine) environment

[1030] Johnstone 2015, *op. cit.*, p. 250.
[1031] ITLOS's Advisory Opinion of 2011, paras. 203-204 and 209. The views are available at https://www.itlos.org/en/cases/list-of-cases/case-no-17/ (last accessed January 2019).
[1032] Draft Regulations on Exploitation of Mineral Resources in the Area, ISBA/24/LTC/WP.1/Rev.1, July 2018, draft regulations 52-54, available at https://ran-s3.s3.amazonaws.com/isa.org.jm/s3fs-public/files/documents/isba24_ltcwp1rev1-en_0.pdf (last accessed January 2019).
[1033] See more about this attempt S. P. Klein, *Liability and Compensation due to Transboundary Pollution Caused by Offshore Exploration and Exploitation: IMO Competence and Development of Guidelines*, Doctoral thesis, World Maritime University, 2016, available at https://commons.wmu.se/cgi/viewcontent.cgi?article=1530&context=all_dissertations (last accessed January 2019).
[1034] Anton 2012, *op. cit.*, p. 244.
[1035] In two written statements: by the International Union for Conservation of Nature, available at https://www.itlos.org/fileadmin/itlos/documents/cases/case_no_17/StatementIUCN.pdf, and by the Stichting Greenpeace Council and the World Wide Fund for Nature, available at https://www.itlos.org/fileadmin/itlos/documents/cases/case_no_17/Statement_Greenpeace_WWF.pdf (last accessed January 2019). See also Anton 2012, *op. cit.*

may lead to a change of the due diligence standard. However, currently the principle of residual State liability is far from being an accepted element of due diligence.

5.8 Shared State responsibility: an introduction

Draft article 47 of the ARSIWA sets out the general principle applicable to situations where several States are engaged in the commission of an internationally wrongful act.[1036] In such situations, an injured State may invoke the international responsibility of each State in relation to that wrongful act.[1037] Nevertheless, the ARSIWA contain limited guidance on numerous issues related to the case of a plurality of responsible States (e.g., the issue of allocation of responsibility among multiple States which have committed wrongdoing). This has given rise to the emergence of the concept of shared international responsibility in the legal literature.[1038] The concept of shared international responsibility discussed in the legal literature is broader than that employed in the ARSIWA (and the ARIO). It covers the responsibility of several actors, including States and non-state actors, which have contributed to a single harmful outcome that is undesirable from the perspective of international law.[1039]

Nollkaemper and Jacobs have distinguished two forms of shared international responsibility.[1040] The first form is so-called "cooperative" shared responsibility, which refers to the responsibility of plural actors arising out of a concerted action. They cite some examples when cooperative shared responsibility may be triggered, such as coalition warfare, joint border patrols or assistance given by one State to another in committing of a wrongful act.[1041] The second form of shared responsibility they have defined as "cumulative", meaning that responsibility of multiple actors occurs when there is no concerted action. In other words, the latter form covers the situation(s) where several actors acting independently from each other contribute to a single harmful outcome. Examples of cumulative shared responsibility may include climate change caused by emissions from many States or damage to an international watercourse caused by two or more States adjacent to it.

[1036] See Chapter 5.3 on the elements of an internationally wrongful act.
[1037] ARSIWA, draft art. 47 and 42.
[1038] See Chapter 1.2.
[1039] All components included in the concept of shared international responsibility are considered in A. Nollkaemper and D. Jacobs, "Shared responsibility in international law: a conceptual framework", *Michigan Journal of International Law*, 2013, vol. 34 (2), pp. 359-438; A. Nollkaemper, "Introduction", in: A. Nollkaemper and I. Plakokefalos (eds), *Principles of Shared Responsibility in International Law: An Appraisal of the State of the Art*, Cambridge University Press, 2014, pp. 1-24.
[1040] *Ibid.*, pp. 368-369.
[1041] *Ibid.*

The applicability of shared responsibility between States and other actors has been discussed in different contexts in the legal literature.[1042] A number of legal scholars assert that cooperative shared responsibility might arise in the context of shared hydrocarbons.[1043] However, they do not offer a detailed analysis of how the regime of shared responsibility would be operationalized in practice. For example, there are procedural hurdles and jurisdictional limitations for bringing a claim for shared responsibility of the State *and private entities* before the ICJ (and other international courts and tribunals).[1044] Pursuant to article 34 (1) of the ICJ's Statute, only States may be parties in a case brought before the Court. Furthermore, even in the situation of shared State responsibility, it may be difficult to bring all responsible States before a single judicial body.[1045] As noted earlier, this thesis does not deal in detail with procedural aspects of shared responsibility. Neither does it focus on the topic of shared responsibility arising among States and private actors involved in hydrocarbon activities. Part III, below, examines the issue of shared State responsibility (namely, where two States share the responsibility for a wrongful act, that is for a breach of the standard of due diligence).

The limited literature pointing to the likelihood of shared State responsibility in the context of shared hydrocarbons does not elaborate on the issue of shared State responsibility and pays no attention to the difference between the two scenarios of hydrocarbon resource sharing. However, these scenarios are conceptually different and, hence, aspects of shared State responsibility are likely to differ. For instance, in undelimited maritime areas, States usually create a joint entity (commission or authority) possessing a separate legal personality through which they act.[1046] The legal literature does not consider the impact the existence of such a joint entity might have on the question of State responsibility. Low asks whether a joint entity can be regarded as an IO for the purpose of attribution of responsibility.[1047] No answer is provided, however, in that discussion. Nevertheless, if a joint entity is indeed an IO,[1048] it means that the

[1042] See in detail A. Nollkaemper et al. (eds), *The Practice of Shared Responsibility in International Law*, Cambridge University Press, 2017.
[1043] See J. E. Noyes and B. D. Smith, "State Responsibility and the Principle of Joint and Several Liability", *Yale Journal of International Law*, 1988, vol. 13 (2), p. 229; Tanaka 2016, *op. cit.*, p. 96; Redgwell 2016 and 2017, *op. cit.*, pp. 60-61 and 68 and pp. 1071-1072, respectively. It is worth noting that while Noyes, Smith and Tanaka refer to shared responsibility between States, Redgwell argues that States and private operators may share international responsibility.
[1044] See a number of articles concerning the topic of procedural aspects of shared responsibility in international adjudication in *Journal of International Dispute Settlement*, 2013, vol. 4 (2), pp. 277-405. See also A. Vermeer-Künzli, "Invocation of Responsibility", in: A. Nollkaemper and I. Plakokefalos (eds), *Principles of Shared Responsibility in International Law*, Cambridge University Press, 2014, pp. 270-280.
[1045] Peel 2015, *op. cit.*, p. 62.
[1046] See Chapter 6 in detail.
[1047] Low 2012, *op. cit.*, p. 73.
[1048] The term 'international organization' is defined in draft article 2 of the ARIO.

provisions of the ARIO regulate the responsibility of this entity and States can avoid the application of relevant rules of State responsibility. Another question is whether a joint entity is rather a common body exercising elements of governmental authority of the two States within the meaning of draft article 5 of the ARSIWA.[1049] At the same time, in the context of transboundary hydrocarbons, the creation of a joint entity is not necessary.[1050] Unlike in undelimited maritime areas, there is clarity as to the jurisdictional limits of each coastal State that casts doubt on the possibility of shared State responsibility.

Chapters 6 and 7 of Part III examine whether shared State responsibility might indeed be triggered in the context of shared hydrocarbons and what practical difficulties may arise. As discussed earlier in this Chapter, States are responsible when they fail to take appropriate due diligence steps to ensure that offshore petroleum activities under their jurisdiction and control do not cause or create any risk of causing pollution and other significant harm to the environment, including the environment of other States and the environment of global common areas. Therefore, it is important to look at how due diligence is established in each individual instance of resource sharing. The components of due diligence identified in Chapter 5.5 will help in this analysis.

5.9 Searching for a joint due diligence obligation

The design of the standard of due diligence in the context of shared hydrocarbons is crucial for determining whether States cooperating with respect to those resources may share international legal responsibility for a failure to discharge their due diligence obligations. In other words, it must be established whether due diligence is a joint ('shared', 'collective' or 'common') obligation.[1051] Recent contributions to the topic of shared obligations in international law have been made by Nedeski.[1052] Nedeski has identified three main elements of a shared international obligation: there are (1) several duty-bearers (States and/or IOs) that (2) are bound to the same international obligation (3) pertaining to the same fact(s).[1053] Further, Nedeski has drawn a distinction between indivisible and divisible shared international obligations and asserted that this distinction has important implications for the determination (as well as the content) of shared responsibility.[1054] In her view, the structure of performance of a shared obligation from

[1049] See Chapters 5.6.2 and 6.
[1050] See Chapters 7.1 and 7.5.
[1051] Nedeski 2017, *op. cit.*, p. 12. The author would like to thank Nataša Nedeski for providing a copy of her thesis.
[1052] *Ibid*. The thesis was one of the outcomes of the SHARES project (see Chapter 1).
[1053] *Ibid.*, Chapter 3.
[1054] *Ibid.*, Chapters 4-6.

the perspective of its bearers is the basis for such a distinction. An indivisible obligation can only be performed by all duty-bearers simultaneously to achieve a certain common result and, consequently, it is breached by all duty-bearers when this result is not achieved.[1055] Under a divisible obligation, each duty-bearer shall perform its own share and, therefore, it is possible that while one duty-bearer breaches the obligation, the other duty-bearer fulfills the obligation by doing its share.[1056] The relationship between the indivisible-divisible distinction and shared responsibility is that a violation of an indivisible obligation automatically gives rise to shared responsibility, whereas there is no such automatic relationship between a breach of a divisible obligation and a shared responsibility.[1057]

Following Nedeski's classification of shared obligations in international law,[1058] only a small number of shared international obligations are of an indivisible character.[1059] For example, in the context of this research, the shared obligation of State A and State B to establish an inter-State administrative body upon entering into force the provisional arrangement between them can be characterized as an invisible obligation.[1060] In other words, States A and B would bear shared responsibility when such a body is not established, even if State A had made a major contribution towards this goal, while State B took little meaningful action. Difficulties arise when applying the doctrinal categorization given by Nedeski to the (alleged) shared due diligence obligation to prevent environmental harm: does that prevent this obligation (or at least some components of due diligence) from having an indivisible nature?[1061]

The emphasis in this thesis is on the question of whether the standard of due diligence is framed and exercised as a shared obligation in the situations of offshore petroleum resource sharing (Chapters 6 and 7), and not on the question as to which category this shared obligation belongs. In order to determine whether due diligence to prevent environmental harm constitutes a joint obligation in the context of shared hydrocarbons, it is important to analyze how the core

[1055] *Ibid.* For example, when States A, B and C obligate themselves to reduce their combined catches of Southern Bluefin Tuna by 50% in a 5-year period
[1056] *Ibid.* For example, when State A and State B are bound to the obligation not to torture individuals in a detention centre over which they exercise effective control, each of them is obligated to do its own share.
[1057] *Ibid.*, Chapter 5.
[1058] Nedeski also concludes that an indivisible shared obligation always constitutes a positive obligation of result, while a divisible shared obligation can consist of a positive obligation of conduct, a negative obligation of result or a positive obligation of result (*ibid.*, Chapter 4.4, pp. 150-151).
[1059] See also C. Ryngaert, "Shared obligations and shared responsibility in international law", UCALL, 22 November 2017, available at http://blog.ucall.nl/index.php/2017/11/shared-obligations-and-shared-responsibility-in-international-law/ (last accessed January 2019).
[1060] See Chapter 6 in this respect.
[1061] *Supra* note 1058.

components of due diligence (namely, regulation and enforcement) are set: on whom are these powers incumbent? The elements of a shared obligation mentioned above will also assist in this analysis. Following the difference drawn between disputed and cross-border hydrocarbons, the standard of due diligence in undelimited maritime areas is considered separately from that established with respect to cross-border hydrocarbons, in Chapters 6 and 7, respectively.

Thus, there is a close relationship between the determination of shared State responsibility and the way in which due diligence is framed and exercised in the context of shared hydrocarbons.

5.10 Conclusions and observations

The regime of State responsibility is general in character. Its rules apply to all areas of international law and to "the whole field of international obligations of States, whether the obligation is owed to one or several States, to an individual or group, or to the international community as a whole".[1062] This Chapter has examined the application of the rules of State responsibility to the situation of marine environmental harm, which results or may result from offshore hydrocarbon activities, with a particular emphasis on activities in respect of shared oil and gas resources.

State responsibility in this research is primarily linked to an assessment of whether a coastal State has acted with necessary due diligence to prevent significant harm to the (marine) environment, regardless of its occurrence. However, despite the centrality of the concept of due diligence in international environmental law, the due diligence standard, which is to be exercised by States to comply with their environmental obligations, remains vague. This Chapter has sought to establish a minimum basic standard of due diligence required from coastal States in the hydrocarbon sector. The vagueness of the due diligence standard and other practical challenges (such as the issue of causation, a method of valuation and procedural hurdles) cause difficulties in bringing State responsibility claims in the context of harm to the environment. These difficulties are likely the reason why there is a small number of cases involving State responsibility. At the same time, the limited case law on this topic does not necessary preclude the existence of broader practice of applying State responsibility rules in the context of (potential) environmental harm.[1063]

[1062] ARSIWA, Introduction, para. 5
[1063] See Chapter 5.4.

Thus, relying on the findings of this Chapter, the way in which due diligence is framed in the context of shared hydrocarbons will be key in determining whether two coastal States may share international responsibility. The following Chapters of Part III consider as to how the standard of due diligence is designed in each scenario of oil and gas resource sharing. For this purpose, the core elements of due diligence outlined in Chapter 5.5 will be used.

CHAPTER 6. DISPUTED HYDROCARBONS AND SHARED STATE RESPONSIBILITY

6.1 Introduction

This Chapter examines whether shared State responsibility might arise in the context of cooperative hydrocarbon activities taking place in undelimited maritime areas and challenges related to the issue of shared State responsibility. As highlighted in Chapter 5, the question of whether States may share international responsibility for a harmful outcome (in particular for significant environmental harm) resulting from operations in respect of disputed hydrocarbons is tied to the issue of how the standard of due diligence is designed and exercised to manage these operations. The method of designing due diligence in disputed maritime areas is important because the exercise of sovereign rights and jurisdiction by multiple coastal States overlaps.[1064]

This Chapter looks at how States frame the standard of due diligence in provisional arrangements concluded between them in order to undertake joint petroleum activities in undelimited maritime areas, by using the core components of due diligence identified in Chapter 5.5. These provisional arrangements (also known as 'joint development agreements'), as discussed in Chapters 2 and 3, are considered as satisfying the general duty to cooperate in respect of shared hydrocarbon resources and the specific requirement to cooperate stipulated by articles 74 (3) and 84 (3) of the UNCLOS. Many (in particular recent) provisional arrangements indeed include an express provision that they are intended to adhere to the latter requirement.[1065] As noted in Chapter 3.3, interim arrangements can and do take many forms: formal agreements and treaties, memoranda of understanding, declarations and so forth. They also have different degrees of complexity, from relatively simple to quite complex arrangements. Each provisional arrangement has a specific set of features that distinguishes it from other provisional arrangements. For this reason, all relevant and available[1066] arrangements dealing with disputed hydrocarbons are examined separately in chronological order in this Chapter. Chapters 6.13 and 6.14 will provide general conclusions concerning the issue of shared State responsibility on the basis of an examination of this nature. Such an examination will also assist in understanding whether there has been any evolution in

[1064] See Chapter 3 in this regard.
[1065] See, for example, TST, art. 2 (a); Barbados-Guyana Treaty, Preamble; Nigeria-STP Treaty, Preamble; Seychelles-Mauritius Treaty, Preamble.
[1066] See Chapter 1.3 on the methodological challenges.

addressing the issue of (marine) environmental protection since the adoption of the first interim arrangements in disputed areas prior to the UNCLOS, including the character of this evolution.

The framework used below for examining each provisional arrangement will be largely the same. After a short description of the arrangement (a longer description of the arrangements is included in Chapter 1), the jurisdictional and institutional structures established by the Parties are discussed. The question of who exercises jurisdiction and control over the management of hydrocarbon activities in a disputed maritime area affects the determination of who bears international responsibility for a failure to discharge due diligence with respect to these activities. In addition to the arrangement itself, relevant regulatory instruments supplementing this arrangement are also considered in this Chapter.

The Saudi Arabia-Kuwait Agreement of 1965 and the Joint Declaration between Argentina and the UK on offshore cooperation[1067] are not examined in this Chapter. Although the Agreement between Saudi Arabia and Kuwait was initially concluded as an interim arrangement in an undelimited maritime area, a subsequent agreement signed in 2000 established a single maritime border between these States without prejudice to the regime of joint exploration and exploitation created by the former Agreement.[1068] Hereby, the Agreement between Saudi Arabia and Kuwait has been transformed into another form of cooperation with respect to hydrocarbon resources (i.e., in addition to the establishment of a maritime border), and therefore both agreements are subject to consideration in Chapter 7. The Joint Declaration between the UK and Argentina is left outside the scope of this thesis for a number of reasons. First, the Joint Declaration has a different origin than the arrangements reviewed below. The Joint Declaration was adopted as an attempt to deal with the sovereignty dispute between Argentina and the UK over the Falkland Islands (Islas Malvinas). As discussed in Chapter 3.2.3, there is uncertainty as to whether the obligations stemming from article 74 (3) and 83 (3) of the UNCLOS apply where neighboring States contest sovereignty over land territory or the legal status of a maritime feature. Therefore, it is unclear whether the Joint Declaration may be regarded as a provisional arrangement in the terms of the mentioned articles. Second, the Joint Declaration is not operational due to the divergent interpretations of the Parties regarding the spatial scope of hydrocarbon cooperation.[1069] In 2007, Argentina notified the UK of its decision to terminate

[1067] Joint Declaration between Argentina and the United Kingdom on Cooperation over Offshore Activities in the South West Atlantic, 27 September 1995, 35 ILM 301 (1996).
[1068] See Chapters 1 and 7.
[1069] See, for example, V. Miller, "Argentina and the Falkland Islands", 27 January 2012, Note SN/IA/5602, p. 15.

the Joint Declaration.[1070] Argentina repeatedly protests petroleum activities of the UK in the maritime areas adjacent to the Falkland Islands. Thus, the issue of unilateral hydrocarbon activities in undelimited maritime areas discussed in Chapter 3 is of greater importance to this dispute than the issue of shared State responsibility addressed in this Chapter.[1071]

6.2 Japan and the Republic of Korea

The jurisdiction model established by the Japan-S. Korea Agreement is complex. The JDZ was initially divided into nine subzones (Illustration No. 12).[1072] Subsequently, the number of subzones was reduced to six "following surveys indicating that the likelihood of seabed hydrocarbons being present was limited".[1073] According to the Japan-S. Korea Agreement, each State shall authorize one or more licensees to conduct petroleum activities in each subzone.[1074] Licensees working in the same subzone are required to enter into an operating agreement that shall be approved by both Japan and S. Korea.[1075] Through such an operating agreement, the licensees must designate an operator.[1076] The regulatory framework applicable to exploration and exploitation of natural resources in a subzone is the laws and regulations of the Party whose licensee is designated as operator.[1077] Thus, the adjoining subzone(s) within the JDZ may be governed by different sets of norms (e.g., where the operator of subzone V is a licensee authorized by S. Korea, while the operator of subzone VII works under a license issued by Japan). Moreover, a change of operator having a license of the other State would change the laws and regulations applicable in the subzone. Low has described the jurisdiction model created by Japan and S. Korea as "parallel", "concurrent" and/or "alternating".[1078] Indeed, such a jurisdiction model can hardly ensure uniformity of the standards, including environmental standards, applicable to similar activities conducted within the JDZ. It can be argued that this is one reason why the Japanese-S. Korean model has not been widely used in undelimited

[1070] *Ibid*.
[1071] See in more detail van Logchem 2015 (2017), *op. cit.*, pp. 29-66.
[1072] Japan-S. Korea Agreement, art. III and Appendix.
[1073] C. H. Schofield and I. Townsend-Gault, "Choppy waters ahead in "a sea of peace cooperation and friendship"?: Slow progress towards the application of maritime joint development to the East China Sea", *Marine Policy*, 2011, vol. 35 (1), p. 28.
[1074] Japan-S. Korea Agreement, art. IV (1). It further provides that "when one Party authorizes more than one concessionaire with respect to one subzone, all such concessionaires shall have an undivided interest and shall be represented, […], by one concessionaire".
[1075] *Ibid.*, art. V.
[1076] *Ibid.* and art. VI.
[1077] *Ibid.*, art. XIX.
[1078] Low 2012, *op. cit.*, pp. 63-66.

maritime areas.[1079] It has also been observed that this model is perhaps only possible between Japan and S. Korea, which have legal systems not radically different from each other.[1080]

Pursuant to article XXIV of the Japan-S. Korea Agreement, the Parties agreed to set up a Joint Commission (JC) "as a means for consultations on matters concerning the implementation of [the Japan-S. Korea Agreement]". The JC consists of two national sections, each of which includes two members appointed by the respective Parties.[1081] The Commission is empowered, *inter alia*, to recommend measures to be taken to improve the operation of the Japan-S. Korea Agreement and to settle disputes between licensees; to receive technical and financial reports of licensees; and to observe operations of operators and marine facilities necessary for conducting petroleum activities in the JDZ.[1082] The JC has been described as being a weak body.[1083] Indeed, the JC's powers, including the function of observation, are limited and appear to exist to enable the Commission to make its recommendations to the Parties in order to improve the implementation of the Agreement.[1084] The Parties are solely required to "respect to the extent possible" the JC's recommendations.[1085] Unfortunately, there is no information on the current (and past) work of the JC in the public domain that could refute the argument of its weak role in the management of the JDZ.

The Japan-S. Korea Agreement includes a number of provisions relating to the protection of the marine environment. Under article XX, the Parties have committed themselves "to agree on measures to be taken to prevent collisions at sea and to prevent and remove pollution of the sea resulting from activities relating to exploration or exploitation of natural resources in the [JDZ]". Such measures are listed in the Agreed Minutes to the Japan-S. Korea Agreement (Agreed Minutes in this section).[1086] For example, in order to avoid collisions at sea, the Parties have agreed to mark installations, notify of their location and equip them with signals.[1087] As

[1079] Chapter 6.8 indicates that Thailand and Cambodia may adopt a model similar to the Japanese-S. Korean model.
[1080] Miyoshi 1999, *op. cit.*, p. 41.
[1081] Japan-S. Korea Agreement, art. XXIV (2). See also Miyoshi 1999, *op. cit.*, p. 42: "the Japanese section consists of the Deputy Director-General of the Asian Affairs Bureau of the Ministry of Foreign Affairs and the Director-General of the Petroleum Department of the Agency of Natural Resources and Energy of the Ministry of International Trade and Industry, while the Korean section consists of the counterparts in the Ministry of Foreign Affairs and the Ministry of Energy and Resources".
[1082] *Ibid.*, art. XXV (1).
[1083] Miyoshi 1999, *op. cit.*, p. 42.
[1084] Japan-S. Korea Agreement, art. XXV (2).
[1085] *Ibid.*
[1086] Agreed Minutes to the Agreement between Japan and the Republic of Korea concerning Joint Development of the Southern Part of the Continental Shelf Adjacent to the Two Countries, Seoul, 30 January 1974, 1225 UNTS 127.
[1087] Agreed Minutes, *supra* note 1086, I b and II b.

regards the prevention and removal of pollution of the sea, each Party has agreed to take certain measures with respect to: i) wells and marine facilities where that Party has authorized licensees designated and acting as operators; or ii) vessels engaged in petroleum activities in the JDZ, which are flying under the flag of that Party.[1088] For example, the Agreed Minutes provide an obligation to equip a well with a blowout preventer that meets specific requirements.[1089] The Agreed Minutes also prohibit the discharge of oil and waste from marine facilities and vessels, with some exceptions.[1090]

The Agreed Minutes state that "when large quantities of oil have been discharged from a ship or a marine facility, measures shall be taken promptly to prevent the spread of such pollution, to prevent the continued discharge of oil and to remove the discharge oil".[1091] A number of aspects make the scope of this provision uncertain.

First, the term 'discharge' is not defined: does it mean any deliberate disposal of oil or accidental escape of oil? Second, the provision does not specify the threshold at which the total quantity of oil discharged is regarded as "large".[1092] Moreover, it seems that the duty to take measures is not triggered when the quantity of oil is lower than the "large" threshold. Nevertheless, under the current state of international law (the Japan-S. Korea Agreement was concluded in 1974), both Japan and S. Korea are required to deal with pollution, even if it is less than "large" discharge of oil.[1093] Third, it is unclear who must take measures: is it the Parties, their licensees acting as operators or a combination thereof?[1094] In the event that a discharge of oil occurs from an installation operated under a license granted by one Party (e.g., S. Korea), is the other Party (Japan) also obligated to take measures?[1095] Based on the parallel jurisdiction model established pursuant to the Japan-S. Korea Agreement, it is reasonable to argue that the Party, which has authorized a concessionaire appointed as operator in a subzone where a discharge has occurred, shall take measures under the Agreed Minutes. Support for that may be found in section I c (II) of the Agreed Minutes, which imposes on one Party an obligation to inform the other Party of, *inter alia*, collisions at sea, discharge of large quantities of oil and the measures taken in respect of the latter. The obligation to inform does not, however,

[1088] *Ibid.*, I c and II c.
[1089] *Ibid.*, I c (I) (1).
[1090] *Ibid.*, I c (I) (2) and (3).
[1091] *Ibid.*, I c (I) (4).
[1092] For example, *ibid.*, I c (I) (2) contains some indications.
[1093] UNCLOS, art. 194. Japan and S. Korea are the Parties to the UNCLOS.
[1094] Low 2012, *op. cit.*, p. 64.
[1095] *Ibid.*

apply to flag States whose vessels are involved in collisions or State that might be affected by pollution.

The measures contained in the Agreed Minutes constitute an agreement between Japan and S. Korea.[1096] Therefore, even if the Parties delegate to licensees the responsibility to take action, both Japan and S. Korea are legally responsible for ensuring that the pollution is minimized and eliminated.[1097] The Agreed Minutes provide that either Party may take measures as are necessary to prevent and remove pollution of the sea when such measures are not yet taken or when this Party considers the taken measures insufficient.[1098] The issue concerning the expenses incurred by the Party for the purpose of taking measures is likely to be addressed through consultations or the dispute settlement procedure established by the Japan-S. Korea Agreement.[1099]

The Japan-S. Korea Agreement contains a provision according to which nationals of, or other persons residing in, either State that suffered damage resulting from exploration or exploitation activities in the JDZ may bring an action for compensation for such damage.[1100] The action may be brought in the court of one of the Parties depending on where the damage has occurred, where the nationals or persons bringing the action are resident or which Party had authorized the licensee acting as the operator in the subzone.[1101] It is worth noting that article XXI (1) of the Japan-S. Korea Agreement does not provide for the possibility of other subjects who are not nationals of, or resident in, Japan or S. Korea (e.g., a person having a third-State nationality or a third State that suffered damage as a result of hydrocarbon activities undertaken in the JDZ) to bring claims. However, as discussed in Chapter 5.5, both S. Korea and Japan are required to ensure that recourse is available in their legal systems in the event of pollution damage caused by licensees under their jurisdiction.[1102] In other words, guided by the jurisdiction model in the JDZ, a third party, which suffered damage by pollution, may bring its claims in the courts of the Party whose licensee acts as operator in a subzone where an incident causing such damage has occurred.

[1096] Agreed Minutes, I b, II b, I c (VI) and II c: "[the agreed measures] shall be regarded as constituting an agreement between the two Governments".
[1097] Low 2012, *op. cit.*, pp. 64-65.
[1098] Agreed Minutes, I c (IV).
[1099] Japan-S. Korea Agreement, art. XXVI.
[1100] *Ibid.*, art. XXI (1).
[1101] *Ibid.*
[1102] UNCLOS, art. 235 (2). See *supra* note 1093.

Further, article XXI of the Japan-S. Korea Agreement stipulates that licensees working in the same subzone are jointly and severally liable for damage caused by "digging operations of seabed and subsoil, or discharging of mine water or used water".[1103] This raises the question as to who is liable for damage resulting from other types of hydrocarbon activities. It is likely that the rules of joint and several liability are applicable to all stages of hydrocarbon activities. The Japan-S. Korea Agreement does not include the option that the Party might cover damage in a scenario in which the licensees authorized by that Party cannot meet their liability in full.

Thus, the Japan-S. Korea Agreement, and in particular the Agreed Minutes to this Agreement, addresses the issue of marine environmental protection in detail. This is surprising insofar as this instrument predates the adoption of the UNCLOS and its ratification by the two States (in 1996). Japan and S. Korea employed a model of jurisdiction whereby coastal State jurisdiction is determined by operatorship in a particular subzone within the JDZ. This parallel jurisdiction model is unique and is not used in other undelimited maritime areas considered further in this Chapter. The Japanese-S. Korean model makes the existence of joint due diligence in the JDZ impossible because the State whose concessionaire acts as operator in a subzone regulates and enforces its laws and regulations in this subzone. Moreover, that State is primarily responsible for dealing with pollution in the subzone. As noted above, the JC plays no active role in exercising due diligence by the Parties.

6.3 Saudi Arabia and Sudan

Pursuant to the Saudi Arabia-Sudan Agreement, the Parties established a regime of joint development of natural resources in the Common Zone (CZ).[1104] The CZ is a seabed area lying between the lines where the depth of the waters adjacent to each Party's coast is under 1000 metres (Illustration No. 27).[1105] In the CZ, the Parties agreed to exercise "equal sovereign rights" with respect to natural resources, protect these rights and defend them against third parties.[1106] It is important to emphasize that the regime of the CZ is aimed at developing minerals (e.g., polymetallic sulfides), rather than oil and gas resources.[1107]

[1103] Japan-S. Korea Agreement, art. XXI (3). This article provides different ways of identifying licensees, including the situation where there are no licensees at the time of occurrence of the damage.
[1104] Saudi Arabia-Sudan Agreement. Article I defines 'natural resources' as "non-living substances including the hydrocarbon the mineral resources".
[1105] *Ibid.*, arts. III-V. The territorial seas of Saudi Arabia and Sudan (12 nm) are not included in the CZ (art. V).
[1106] *Ibid.*, arts. V-VI.
[1107] See, for example, C. Bertram, A. Krätschel et al., "Metalliferous sediments in the Atlantis II Deep – Assessing the geological and economic resource potential and legal constraints", *Resources Policy*, 2011, vol. 36 (4), pp.

The Parties established a Joint Commission (JC) to ensure the prompt and efficient exploitation of the CZ's natural resources.[1108] The JC consists of an equal number of representatives from each Party.[1109] The JC has legal personality and extensive powers, including surveying and delimiting the CZ, undertaking studies concerning the exploration and exploitation of the CZ, considering and deciding on the applications for a licence or concession and organizing the supervision of activities at the production stage.[1110] Although the Saudi Arabia-Sudan Agreement is silent on the issue of environmental protection, it is reasonable to conclude that the JC may issue regulations relating to the protection of the (marine) environment in the CZ because of its general regulatory powers.[1111] However, the JC does not make publicly available detailed information about its work in general and, in particular, concerning the marine environment of the Red Sea. No regulations are publicly available. The absence of the regulatory framework may be explained by the fact that the Parties abandoned their projects due to the fall of metal prices in the 1980s.[1112] As a result of rising prices, Saudi Arabia and Sudan recently restarted their operations in the Red Sea. In 2010, the JC awarded a 30-year licence to a Saudi Arabian company that had entered into a joint venture agreement with a Canadian mining company in respect of the Atlantis II deep-sea deposit.[1113] These companies are currently in a contractual dispute.[1114] From the information available, it is not clear whether the dispute concerns non-compliance with environmental obligations.

Against the backdrop of (potential) growing activity in the Red Sea, many questions naturally now arise. The first question is how (future) benefits derived from mining activities in the CZ would be shared between Saudi Arabia and Sudan: on a 50:50 basis or whether Sudan, as a less developed State with limited access to the sea, would receive any preferential treatment when it comes to the allocation. Given the JC's composition discussed above and subsequent State

315-329. Information is also available at http://www.manafai.com/project-details.php (last accessed January 2019).

[1108] Saudi Arabia-Sudan Agreement, art. VII.

[1109] *Ibid.*, art. IX. I. Townsend-Gault has mentioned six representatives (three from each Party) in his chapter "Petroleum development offshore: legal and contractual issues", in: N. Beredjick and T. Wälde (eds), *Petroleum Investment Policies in Developing Countries*, Graham and Trotman Inc., 1988, p. 150.

[1110] *Ibid.*, arts. VII and VIII.

[1111] *Ibid.*, art. VII (g).

[1112] Bertram, Krätschel et al., *op. cit.*, p. 315.

[1113] These companies are Manafa International (http://www.manafai.com) with 49.9% and Diamond Fields International Ltd. (DFI) with 50.1%. See DFI's Press Release of 4 June 2010, available at http://www.diamondfields.com/corporate-news/diamond-fields-joint-venture-company-granted-mining-license-over-world-class-zinc-copper-silver-and-gold-project/ (last accessed January 2019).

[1114] See, for example, DFI's Press Release of 30 January 2014, available at http://www.diamondfields.com/corporate-news/diamond-fields-in-dispute-with-red-sea-joint-venture-partner/ and DFI's Press Release of 18 July 2016, available at http://www.diamondfields.com/corporate-news/diamond-fields-announces-update-on-projects/ (last accessed January 2019).

practice examined in this Chapter, the equal apportionment is a more likely scenario.[1115] Nevertheless, in accordance with article XII of the Saudi Arabia-Sudan Agreement, in either scenario Saudi Arabia is entitled to get back the costs spent on the operation of the Commission.

The second question relates to the protection of the marine environment. The existence of equal sovereign rights in the CZ (including equal representation in the JC) leads to the conclusion that the Parties have to protect and preserve the marine environment jointly. Saudi Arabia and Sudan have established their intent to do this through the JC. However, it is unknown whether the necessary regulatory framework exists or to what extent it incorporates the current status of international environmental law and takes into account the specific vulnerability of the Red Sea, or whether the Parties have created an ad hoc regime for protection of the environment in the CZ or merely apply their environmental standards and, if the latter, the environmental standards of which State are applicable. Although there is little information on the JC's work, the Commission appears to be a powerful entity with a monitoring function (similar to the Joint Authorities established pursuant to the Malaysia-Thailand Agreement and Nigeria-STP Treaty examined below in this Chapter).[1116]

The third question refers to a situation where pollution of the marine environment occurs in the CZ or spreads beyond this zone. It is unclear who must take action to mitigate and eliminate such pollution (i.e., the Parties and/or the JC). Even if the JC is empowered to deal with pollution, the Parties are not exempted from fulfilment of their environmental duties in case of the Commission's inactivity or omissions (e.g., if the JC fails to notify other States which may be affected by pollution). It is also unclear which regime of civil liability applies. One can assume that private companies are to be held liable for damage as a result of pollution in accordance with the law of either Party. However, given Saudi Arabia's dominant position, it could be argued that the law of Saudi Arabia prevails in the CZ, including its environmental standards and requirements when conducting mining activities.

Thus, there is considerable uncertainty concerning many aspects of the Saudi Arabia-Sudan Agreement. One of the certain aspects is that the Parties give the JC a significant role in the

[1115] See also Chapter 4.

[1116] See, for example, P. Park, "What might Red Sea mining bring to Saudi Arabia and Sudan?", SciDevNet, 14 September 2012, available at https://www.scidev.net/global/biodiversity/feature/what-might-red-sea-mining-bring-to-saudi-arabia-and-sudan-.html (last accessed January 2019): "Malouf (DFI's chairman and director) defends the [JC], saying that it has a clear monitoring role. For example, he says, the [JC] licensed the project and requires the partners to submit quarterly reports. The Sudanese government has also asked DFI to ensure the hiring of Sudanese scientists, Malouf adds".

management of the CZ. In 2012, Saudi Arabia and Sudan concluded an agreement on the exploration of mineral resources in their territorial waters.[1117] Insofar as this agreement is not publicly available, it remains hard to assess the JC's role beyond the CZ.

In the context of shared State responsibility, the JC's extensive powers give rise to the question of whether the Commission may be solely responsible for (significant environmental) damage caused by, for example, a regulatory failure. As follows from the discussions in this section, it is apparent that Saudi Arabia and Sudan have framed their due diligence obligations in the CZ as a joint duty. However, the exercise of joint due diligence appears to be entrusted to the JC. Hence, Chapter 6.13 is devoted to the question of whether the existence of the JC may pose difficulties in triggering shared State responsibility.

6.4 Malaysia and Thailand

The Malaysia-Thailand MoU established a Joint Authority (MTJA) "for the purpose of the exploration and exploitation of the non-living natural resources of the sea-bed and subsoil" in the area of overlapping CS claims (JDA) for a period of 50 years starting from October 1979 (Illustration No. 14).[1118] 11 years after the signing the Malaysia-Thailand MoU, the two countries concluded a supplementary agreement on the establishment and operation of the MTJA (Malaysia-Thailand Agreement).[1119] Both Malaysia and Thailand enacted Acts concerning the MTJA (MTJA and TMJA Acts respectively) in order to give effect to the Malaysia-Thailand Agreement.[1120]

The MTJA is governed by a Board consisting of two co-chairmen (one from each country) and twelve members appointed in equal number by the Governments of Malaysia and Thailand.[1121]

[1117] See "Sudan, Saudi Arabia expect to earn $ 20 billion from Atlantis II project", Sudan Tribune, 1 May 2016, available at http://www.sudantribune.com/spip.php?article58834 (last accessed January 2019).

[1118] Malaysia-Thailand MoU, art. III (1). Article VI states that if the Parties arrive at a boundary agreement before the expiry of the 50-year period, the MTJA shall be wound up. If no delimitation solution is found during the period of 50 years, the MoU will continue to apply after 2029.

[1119] See Chapter 1. On the reasons why it took 11 years between the MoU and the Agreement, read C. Schofield, "Unlocking the Seabed Resources of the Gulf of Thailand", *Contemporary Southeast Asia: A Journal of International and Strategic Affairs*, 2007, vol. 29 (2), pp. 292-293; C. Schofield and M. Tan-Mullins, "Maritime Claims, Conflicts and Cooperation in the Gulf of Thailand", *Ocean Yearbook Online*, 2008, vol. 22(1), pp. 108-111.

[1120] Malaysia-Thailand Agreement, art. 1. The (Malaysian) Malaysia-Thailand Joint Authority Act (MTJA Act), 1990, No. 440, EIF: 23 January 1991. The text with the amendments as of 1 December 2011 is available at https://www.mtja.org/assets/pdf/en/act440.pdf (last accessed January 2019). The (Thai) Thailand-Malaysia Joint Authority Act (TMJA Act), 1990, B.E. 2533, available at http://thailaws.com/law/t_laws/tlaw0428.pdf (translation is not official) (last accessed January 2019). Largely the provisions of the MTJA and TMJA Acts are identical.

[1121] Malaysia-Thailand MoU, art. III (3); Malaysia-Thailand Agreement, art. 3. The current organizational structure of the MTJA: https://www.mtja.org/organization.php (last accessed January 2019).

In addition, the MTJA has a management section that includes (Thai and Malaysian) staff covering technical, legal and financial aspects of petroleum operations in the JDA.[1122] The MTJA has legal personality,[1123] and the powers and functions, *inter alia*, to formulate policies for the JDA, to permit and control petroleum operations and to conclude transactions or contracts.[1124]

Article IV of the Malaysia-Thailand MoU provides that the rights (with the enforcement powers) exercised by the Parties over fishing, navigation, prevention and control of marine pollution and other similar matters shall extend to the JDA and shall be recognized and respected by the MTJA. Thus, it does not seem that the MTJA is vested with environmental protection powers in the JDA.[1125] In this respect, it is surprising that the principal regulatory framework (the MoU, Agreement and Acts) poorly addresses the environmental risks associated with petroleum operations. Only the Petroleum Regulations (MTJA PRs)[1126] contain provisions through which the obligation to protect and preserve the marine environment and the obligation to prevent pollution at all phases of petroleum operations are placed on contractors. For example, contractors are required to: (a) not to undertake their petroleum operations in "a manner that would interfere unjustifiably with navigation or fishing … or with the conservation of living resources of the sea;[1127] (b) install blowout-preventer equipment and maintain it in good working conditions at all times;[1128] (c) take all necessary precautions to prevent any pollution of the atmosphere or sea;[1129] and (d) notify the MTJA of "any accident or incident arising from or in relation to petroleum operations that has resulted in a serious injury or loss of human life, or damage to properties or to the environment".[1130] For its part, the

[1122] *Ibid.*
[1123] Malaysia-Thailand Agreement, art. 1 (1); MTJA Act, section 3 (2); TMJA Act, section 6.
[1124] Malaysia-Thailand Agreement, art. 7.
[1125] This observation can also be supported by article 7 of the Malaysia-Thailand Agreement, which has no reference to the responsibility of the MTJA to protect the marine environment. However, the list is not exhaustive and the MTJA may "do other thing incidental to or necessary for the performance of any of its functions" (art. 4 (2) (k)).
[1126] Malaysia-Thailand Joint Authority (Standards of Petroleum Operations) Regulations were made under section 15 of the MTJA Act in 1997 and amended in 2003, available at https://www.mtja.org/assets/pdf/en/standards.pdf and https://www.mtja.org/assets/pdf/en/standards(amendment).pdf (last accessed January 2019). See also Procedures for Drilling and Production Operations, 14 December 2009, available at https://www.mtja.org/assets/pdf/MTJA_procedures_for_drilling_operations_rev1_14dec09_bw.pdf (last accessed January 2019).
[1127] MTJA PRs, regulation 4.
[1128] *Ibid.*, regulation 6.
[1129] *Ibid.*, regulations 5 and 27.
[1130] *Ibid.*, regulation 14. It seems that the 'serious' threshold does not apply to damage to the environment. However, if it applies, the question is what damage is to be considered serious.

MTJA has the power to inspect structures, installations and equipment in the JDA.[1131] In other words, despite the fact that none of the mentioned regulatory instruments expressly make the MTJA responsible for protection of the marine environment within the JDA, the Authority in fact performs this function: it issues regulations and has the capacity to carry out inspections. At the same time, it is interesting to note that the MTJA has not adopted a complete code of environmental protection, but rather has incorporated environmental standards into technical regulations concerning petroleum operations. It is however unclear which Party's environmental standards are taken as a basis (of course, if they are different). Although a detailed plan of action against pollution is not available, it is obvious that the MTJA will play a leading role in responding to pollution in the JDA.

Thus, the MTJA is a powerful joint management body exercising the main elements of due diligence on behalf of Malaysia and Thailand in the JDA. The MTJA and TMJA Acts provide for the MTJA's liability.[1132] Further, the Acts stipulate that neither Malaysia nor Thailand incurs responsibility in respect of the MTJA's liability.[1133] Hereby, the Acts distinguish the responsibility of the States and the liability of the MTJA. The question is who bears responsibility/liability in the event of an incident causing harm to a third party where the cause is a failure of the MTJA to meet the requisite due diligence standard, which is delegated to it by the Parties. Chapter 6.13 examines whether the MTJA may indeed shield the Parties from incurring such a responsibility, in particular given that the members of the Authority's Board are official representatives from both Governments.

The MTJA runs a fund responsible for the incomes and expenses of the MTJA.[1134] Moreover, there is a requirement to establish and manage a reserve fund within the fund according to "such terms and conditions as the Governments may jointly decide".[1135] Insofar as no information is publicly available on the reserve fund, one can postulate whether this fund would be used, for example, in the event when contractors are not able to cover damage caused. Although the existing regulatory framework is silent as to the (joint or several) liability of contractors operating in the JDA, they are liable for any damage arising out of their petroleum operations.[1136]

[1131] *Ibid*., regulation 20.
[1132] MTJA Act, section 13; TMJA Act, section 16.
[1133] *Ibid*.
[1134] Malaysia-Thailand Agreement, arts. 9-10; MTJA Act, sections 9-10; TMJA Act, sections 12-13.
[1135] MTJA Act, section 11; TMJA Act, section 14.
[1136] See Chapter 5.

In the JDA, there is a line dividing civil and criminal jurisdiction of the Parties. Thailand exercises its jurisdiction on the northern side of this line and Malaysia on the southern side.[1137] It is worth noting that the dividing line is drawn for only civil and criminal jurisdictional purposes. Such jurisdictional division does not prejudice the sovereign rights of either Party in the JDA.[1138] Logically, a claim for damage resulting from petroleum operations may be brought under the jurisdiction of the Party on whose side of the jurisdictional dividing line such damage has had its origin. The MTJA Act addresses the situation of how to determine which Party has jurisdiction over a platform or an installation straddling the jurisdictional dividing line. The determination shall be in accordance with "the principle of most substantial location".[1139] In other words, a platform or an installation mainly located in Thailand's jurisdictional sector falls under the jurisdiction of Thailand.

Thus, the model created by Malaysia and Thailand is characterized by the presence of a powerful joint body to which they have delegated authority with respect to environmental management, including regulation and control. As considered in the subsequent sections of this Chapter, such a model is also implemented in other geographical regions because it enables States to establish a uniform regime of environmental protection in an undelimited maritime area despite the existence of widely dissimilar legal systems (as is the case between Thailand and Malaysia and between Nigeria and STP, for example, dissimilar to the Japan-S. Korea example discussed in an earlier section of this Chapter) and disparities in resources and/or technical capabilities (as between Australia and Timor-Leste).[1140] At the same time, States are not bound to follow one particular pattern in cooperation in respect of shared hydrocarbon resources.[1141] The following section shows that Malaysia and Vietnam, two countries located in the same geographical region (i.e., the Gulf of Thailand), have adopted a completely different form of cooperation.

In sum, one can conclude that Malaysia and Thailand exercise their due diligence obligations in the JDA jointly through the MTJA, with the exception of the exercise of civil and criminal

[1137] Malaysia-Thailand MoU, art. V (however, it does not provide for civil jurisdiction, only criminal); MTJA Act, section 18; TMJA Act, section 21. See also the map attached to the Acts.
[1138] *Ibid*.
[1139] MTJA Act, section 18 (6) (c)-(d).
[1140] Low 2012, *op. cit.*, p. 70, especially footnotes 141 and 142. See also Chapters 6.2, 6.7 and 6.8.
[1141] See Chapter 3. It is, however, important to emphasize that States are required to cooperate in undelimited maritime areas, but free to choose a form of their cooperation.

jurisdiction. Chapter 6.13 further discusses the extent to which the existence of the MTJA may affect the invocation of the shared State responsibility.

6.5 Malaysia and Vietnam

The Malaysia-Vietnam MoU regulates the exploration and exploitation of petroleum resources in an area of overlapping CS claims, named the 'Defined Area' (Illustration 15).[1142] The Defined Area is also known as Block PM3 Commercial Arrangement Area (CAA). In accordance with the exchange of Diplomatic Notes bringing the Malaysia-Vietnam MoU into force, the MoU applies for a period of 40 years (i.e., until 2033), subject to any extensions or reviews, as both Parties may agree.[1143] To date, the CAA remains highly productive.[1144]

Pursuant to article 3 of the Malaysia-Vietnam MoU, Malaysia and Vietnam agreed to nominate their national corporations, PETRONAS and PETROVIETNAM respectively, to carry out petroleum activities in the CAA and placed a requirement on these corporations to reach a commercial arrangement, the terms and conditions of which are subject to the approval of both Parties. The commercial arrangement was concluded on 25 August 1993.[1145] The arrangement established a Coordination Committee consisting of eight members (four members from each national corporation) to provide policy guidelines for the management of petroleum operations in the CAA.[1146] Thus, under the Malaysian-Vietnamese model, the national petroleum companies are the primary actors and the Parties' governments are not directly involved.

It is important to note that although the Parties agreed to undertake petroleum activities jointly, PETRONAS in fact carries out all joint petroleum operations and remits to PETROVIETNAM its equal share of net revenue free of any taxes, levies or duties.[1147] This has been explained by

[1142] Malaysia-Vietnam MoU, art. 1 and Annex.
[1143] *Ibid.*, arts. 5 and 7; D. M. Ong, "Implications of recent Southeast Asian State practice for the international law on offshore joint development", in: R. C. Beckman et al. (eds), *Beyond Territorial Disputes in the South China Sea: Legal Framework for the Joint Development of Hydrocarbon Resources*, Edward Elgar, 2013, p. 199.
[1144] "PETRONAS and PETROVIETNAM Extend PM3 CAA Production Sharing Contract", PETRONAS Press Release, 9 May 2016, available at http://www.petronas.com.my/media-relations/media-releases/Pages/article/PETRONAS-AND-PETROVIETNAM-EXTEND-PM3-CAA-PRODUCTION-SHARING-CONTRACT.aspx (last accessed January 2019).
[1145] N. H. Thao, "Vietnam and Joint Development in the Gulf of Thailand", in: B. S. Chimn et al. (eds), *Asian Yearbook of International Law*, vol. 8, 1998-1999, Martinus Nijhoff Publishers, p. 142. The text of the commercial arrangement is not available in English. The subsequent references to its provisions are based on the Thao's analysis.
[1146] *Ibid.*, p. 142. See also T. Grieder, "Bridge Over Troubled Waters: Energy Cooperation in the South China Sea and the Gulf of Thailand", in: S. Wu and K. Zou (eds), *Non-Traditional Security Issues and the South China Sea: Shaping a New Framework for Cooperation*, Ashgate Publishing Ltd., 2014, p. 228.
[1147] *Ibid.*, p. 143. Nevertheless, the current information shows that PETROVIETNAM is present in the CAA. See, for example, T. Dao, "PetroVietnam, Petronas extend joint upstream oil and gas project to 2027", VNExpress, 10

pointing to the fact that Vietnam did not want to interfere with the existing PSCs signed by Malaysia before the conclusion of the arrangement and did not have an adequate petroleum law at that time.[1148] The arrangement stipulates that the law applicable to petroleum operations in the CAA is the law of Malaysia.[1149] Therefore, it is logical to suggest that the law of Malaysia also determines the requirements for protecting the marine environment of the CAA (e.g., EIA)[1150] and the rules of civil liability. In other words, the Malaysian-Vietnamese model is a model where one State with oil and gas expertise governs all activities in the area of overlapping claims, while the other State's participation is confined to revenue sharing.[1151] Under this single State model, it is difficult to conclude that due diligence is of a shared character. Vietnam is not engaged in the management of the CAA and the presence of PETROVIETNAM in the CAA does not activate Vietnam's due diligence. As discussed in Chapter 5.6, PETROVIETNAM is, for the purposes of international responsibility, regarded as a non-State entity, even though this company is owned by Vietnam. Moreover, the Coordination Committee is composed of petroleum industry representatives, rather than government officials. Thus, as follows from the foregoing, a failure of Malaysia to discharge its due diligence obligation, regardless of whether this failure has resulted in significant harm to a third party, can hardly be simultaneously attributable to Vietnam.

6.6 Colombia and Jamaica

The Colombia-Jamaica Treaty established a Joint Regime Area (JRA) in which, pending the final delimitation, the Parties agreed to manage, control, explore and exploit living and non-living resources jointly.[1152] Apart from economic activities with respect to resources of the JRA, the Parties may, *inter alia*, establish and use artificial islands, installations and structures, conduct marine scientific research, protect and preserve the marine environment and conserve living resources.[1153] The use of the word 'may' makes the Parties' obligation to protect and

May 2016, available at https://e.vnexpress.net/news/business/petrovietnam-petronas-extend-joint-upstream-oil-and-gas-project-to-2027-3400121.html (last accessed January 2019).

[1148] *Ibid.*

[1149] *Ibid.*

[1150] See, for example, C. Briffett, J. Obbard and J. Mackee, "Environmental assessment in Malaysia: a means to an end or a new beginning?", *Impact Assessment and Project Appraisal*, 2004, vol. 22 (3), pp. 221-233.

[1151] See also Chapter 7.7.1 (Saudi Arabia and Bahrain use the same model. At the same time, unlike Malaysia and Vietnam, they have established a CS boundary between them).

[1152] Colombia-Jamaica Treaty, art. 3 (1). It is important to note that there are two maritime areas that are excluded from the JRA (Illustration No. 5).

[1153] *Ibid.*, art. 3 (2).

preserve the marine environment of the JRA very weak.[1154] However, as considered in Chapter 5, the current regime of marine environmental protection is stronger than "may" and applies even if a State is not a party to the UNCLOS (unlike Jamaica, Colombia is not a party). Further, the Treaty states that activities relating to exploration and exploitation of non-living resources, marine scientific research, protection and preservation of the marine environment are to be carried out *on a joint basis* agreed by Colombia and Jamaica.[1155] There is information that the Parties reached an agreement on joint exploration of the JRA and the exchange of geological information.[1156] However, the text of this agreement is not publicly available.

In the JRA, each Party has jurisdiction over its nationals and vessels flying its flag and over which it exercises management and control under international law.[1157] Moreover, the Parties have committed themselves to adopt measures in order to ensure that nationals and vessels of third States comply with the regulatory framework established in the JRA.[1158]

According to article 4 of the Colombia-Jamaica Treaty, the Parties agreed to establish a Joint Commission (JC) consisting of two representatives (one from each Party), who can seek assistance from advisers. The main tasks of the JC are to elaborate: the modalities for implementing and undertaking activities mentioned above, the measures for ensuring the compliance of third States with the JRA's regime, and to carry out any other functions that may be assigned to the Commission by the Parties.[1159] All conclusions of the JC shall be made by consensus and are recommendations to the Parties, which become binding only when the Parties adopt them.[1160]

Unfortunately, besides the Treaty, there is no publicly available information concerning the work of the JC, its products, additional regulatory instruments adopted by the Parties or the status of activities aimed at exploration and exploitation of petroleum resources of the JRA. It seems that Colombia and Jamaica are not particularly active in conducting petroleum activities in the JRA. This fact may be explained by a number of possible reasons: a low probability of

[1154] This can also be supported by the Spanish text of article 3 (2) of the Treaty: "En el Area de Régimen Común las Partes *pueden* llevar a cabo las siguientes actividades" (emphasis added).
[1155] *Ibid*., art. 3 (3). It is important to note that the requirement to undertake jointly does not apply, for example, to exploration and exploitation of living resources. In other words, it means that each Party may carry out activities with respect to living resources unilaterally. In this respect, paragraph 5 should be taken into account.
[1156] "Jamaica and Colombia Sign Maritime Agreement", *Jamaica Informational Service*, 5 November 2008, available at http://jis.gov.jm/jamaica-and-colombia-sign-maritime-agreement/ (last accessed January 2019).
[1157] Colombia-Jamaica Treaty, art. 3 (5).
[1158] *Ibid*., art. 3 (6).
[1159] *Ibid*., art. 4 (1).
[1160] *Ibid*., art. 4 (3).

finding petroleum resources in the area, the Parties not being able to undertake petroleum activities and attract investors (there are many maritime boundary disputes between coastal States in the Caribbean Sea), or that the main interest of the Parties is the utilization of living resources of the JRA.

Although the information concerning the JRA is very limited, a key feature of the Colombia-Jamaica Treaty is that it places emphasis on the joint exercise of sovereign rights to explore and exploit and of the Parties' obligations to protect and preserve the marine environment.[1161] There is however uncertainty as to how the joint regime works in practice: for example, whether the JC may grant permits or carry out inspections in the JRA, or whether these powers are within the competence of the Parties or one Party. According to the JC's functions set forth in article 4 of the Colombia-Jamaica Treaty, it appears that the Commission plays an important role only at the stage of the regime's emergence. Thus, the JC can be characterized as a weak-powered entity, similar to the Japanese-S. Korean JC. Against this background, it remains unclear which State's (environmental) laws and regulations are applicable in the JRA.

6.7 Nigeria and São Tomé and Príncipe

In an area of overlapping claims to the EEZs, Nigeria and STP agreed to set up a joint development zone (JDZ) for the joint exploration and exploitation of petroleum and non-petroleum resources (Illustration No. 18). This zone is managed by a Joint Development Authority (NSTPJDA)[1162] headed by a Board consisting of four executive directors (two from each country and appointed by the respective Heads of State for a renewable period of six years).[1163] Each member of the Board leads a specific department within the NSTPJDA. There are four departments: Finance and Administration Department, Commercial and Investment Department, Non-Hydrocarbon Resources Department and Monitoring and Inspection Department.[1164] The Board hires the personnel of the NSTPJDA under terms and conditions approved by a Joint Ministerial Council (MC).[1165] The Nigeria-STP Treaty states that the Authority shall have judicial personality and can contract, acquire and dispose of movable and

[1161] *Supra* note 1155.
[1162] Official website: http://nstpjda.org (last accessed January 2019). The NSTPJDA is based in Abuja (Nigeria) with a liaison office in STP.
[1163] Nigeria-STP Treaty, art. 10.1. See, for example, the composition of the seventh Board at http://nstpjda.org/seventh-board/ (last accessed January 2019).
[1164] *Ibid.*
[1165] *Ibid.*, art. 10.8.

immovable property and institute and be party to legal proceedings.[1166] The Authority is tasked with conducting bidding rounds, entering into contracts on behalf of the two States, issuing regulations regarding all matters and exercising oversight and control of activities in the JDZ.[1167]

Apart from the NSTPJDA, the institutional structure of the JDZ includes the MC.[1168] The MC is comprised of eight ministers (four from each country)[1169] and has authority to give directions to the NSTPJDA and approve contracts concluded between the Authority and contractors.[1170] The MC is also empowered to approve regulations prepared by the NSTPJDA.[1171]

Article 3.3 of the Nigeria-STP Treaty provides that the Parties exercise their rights to explore and exploit resources of the JDZ through the Authority and the MC. The Nigeria-STP Treaty makes the Authority responsible for preservation of the marine environment, prevention and remedying of pollution.[1172] The Authority is obligated to take all reasonable measures to ensure that economic activities in the JDZ do not pose "any appreciable risk of causing pollution or other harm to the marine environment".[1173] For example, the NSTPJDA is empowered to conduct inspections of petroleum operations in the JDZ.[1174] Inspectors may order to cease any or all petroleum operations immediately in order to avoid an accident involving a danger to, or loss of, life or to protect the coastline or the other maritime interests of either Party, including fishing interests, against actual or potential pollution.[1175] As noted above, the Monitoring and Inspection Department is one of the four departments of the NSTPJDA.[1176]

The Nigeria-STP Treaty also requires the Parties, on the recommendation of the NSTPJDA, to agree on measures and procedures to prevent and remedy pollution resulting from economic activities in the JDZ.[1177] In 2003, the Authority issued Petroleum Regulations (Nigeria-STP

[1166] *Ibid*., art. 9.2.
[1167] *Ibid*., art. 9.6.
[1168] *Ibid*., part two.
[1169] *Ibid*., art. 6. There are Ministers of Foreign Affairs, Ministers of Defense, Ministers responsible for oil sector and Ministers responsible for fisheries issues. See, for example, slide 6 at https://www.slideshare.net/EPetrilli/sao-tome-principe-presentation (last accessed January 2019).
[1170] *Ibid*., art. 8.2.
[1171] *Ibid*., art. 21.
[1172] *Ibid*., art. 9.6 (o) and (iii).
[1173] *Ibid*., art. 38.1.
[1174] *Ibid*., art. 30.1.
[1175] *Ibid*., art. 30.5. See, also, Nigeria-STP PRs, regulation 3.3, note 1178.
[1176] See more at http://nstpjda.org/wp-content/uploads/2017/08/Monitoring-and-Inspection.pdf (last accessed January 2019).
[1177] Nigeria-STP Treaty, art. 38.2.

PRs or Regulations) that contain environmental provisions.[1178] The Regulations enable the Authority to make further regulations dealing with various matters.[1179] The Nigeria-STP PRs provide that the Authority may grant exploration licenses, oil prospecting licenses, oil mining leases or production sharing contracts (PSCs) to companies incorporated or registered in Nigeria or STP.[1180] Regulation 33.1 requires licensees, lessees and contractors to protect the environment in and in the vicinity of the area of their licenses, leases and contracts. They are also obligated to "adopt all practicable precautions… to prevent the pollution of sea areas" and, in the case of pollution, to "take prompt steps to control, terminate and remediate" to address such pollution.[1181]

In the event that licensees, lessees or contractors do not take action necessary for the conservation and protection of the marine environment or do not remove pollution to the satisfaction of the Authority, the Authority may direct these entities to take such remedial action.[1182] If they do not comply with the Authority's direction, they are required to cover any costs incurred by the Authority in rectifying the matter.[1183] Among the interim arrangements examined in this Chapter, the clause that makes the Authority an active actor in the protection of the marine environment and elimination of pollution is unique.

The Nigeria-STP PRs impose liability on private entities operating in the JDZ. For example, regulation 26 states that if a licensee, lessee or contractor exercises its rights in a manner as to unreasonably interfere with any fishing rights granted by the Authority or either of the Parties, it shall pay compensation to any person injured by the exercise of such rights, the amount of which is to be determined by the Authority. Moreover, the Regulations require each holder of a licence, lease or PSC to have insurance on a strict liability basis and for an amount determined by the Authority in consultation with the relevant licensee, lessee or contractor.[1184]

[1178] Nigeria-São Tomé and Príncipe Joint Development Authority Petroleum Regulations of 2003, available at https://resourcegovernance.org/sites/default/files/Petroleum%20Regulations%20for%20Joint%20Development%20Authority.pdf (last accessed January 2019). As noted in Chapter 1, neither amendments to the Nigeria-STP PRs nor Environmental Regulations (both of 2015) are publicly available.
[1179] Nigeria-STP PRs, regulation 75.
[1180] *Ibid.*, regulations 3.1 and 5. The difference between an exploration licence, an oil prospecting licence, an oil mining lease and a PSC is explained in regulations 6-9.
[1181] *Ibid.*, regulation 33.3.
[1182] *Ibid.*, regulation 35.2.
[1183] *Ibid.*
[1184] *Ibid.*, regulation 73.1. Further, the regulation states that "the insurance shall cover expenses or liabilities or any other specified things arising in connection with the carrying out of petroleum operations and other activities associated with those operations in the area of the licence or lease, including expenses associated with the prevention and cleanup of the escape of petroleum".

Neither the Nigeria-STP Treaty nor the Nigeria-STP Regulations explicitly provide a person who suffered damage resulting from petroleum activities in the JDZ with the right to bring an action for compensation. Article 42.1 of the Nigeria-STP Treaty could be interpreted as providing such a right.[1185] However, the procedure is unclear. For example, can an action be brought against the Authority, taking into account its active role in the JDZ? The Nigeria-STP PRs, congruent with the Petroleum Mining Code between Australia and Timor-Leste,[1186] contain an indemnity provision. Regulation 28 stipulates that licensees, lessees or contractors shall "indemnify and keep harmless the Authority and its officers and employees (and their agents) against all actions, costs, charges, claims and demands whatsoever which may be made or brought by any third party in relation to any matter or thing done or purported to be done pursuant to these Regulations". Thereby, the Nigeria-STP Regulations give the Authority a certain kind of immunity from legal action against it.

The Nigeria-STP Treaty obligates the Parties to provide the Authority with information concerning levels of petroleum discharge and contamination they receive from contractors or inspectors.[1187] Moreover, the Parties are required to inform the NSTPJDA (it is interesting to note that there is not an obligation of the Authority to inform the Parties) of the occurrence of such events as a spill or discharge of petroleum, and a collision at sea, including any measures taken.[1188] Article 38.3 stipulates that these requirements are aimed at fulfilling the Parties' obligations to monitor.[1189] At the same time, as noted earlier, the Authority also has the monitoring function. Hence, it is unclear how this enforcement mechanism works in practice.

The Nigeria-STP Treaty enables each Party to act independently in order to take enforcement or other measures with respect to actual or potential environmental harm.[1190] Therefore, one may conclude that the Authority does not have effective means to combat pollution of the marine environment (unlike its ability to conduct inspections in the JDZ).

It is notable that the requirement to notify neighboring States of a real or potential environmental harm arising from petroleum activities in the JDZ is not included in either the

[1185] Low 2012, *op. cit.*, p. 71. Article 42.1 of the Nigeria-STP Treaty provides that "each of the States Parties may exercise civil or administrative jurisdiction in relation to development activities in the Zone, or persons present in the Zone for the purposes of those activities, to the same extent as they may do so in relation to activities and persons in their own exclusive economic zone".
[1186] See Chapter 6.9 in this regard and *supra* note 1213.
[1187] Nigeria-STP Treaty, art. 38.3.
[1188] *Ibid.*
[1189] *Ibid.*
[1190] *Ibid.*, art. 38.4 (similar to the Japan-S. Korea Agreement considered in Chapter 6.2).

Nigeria-STP Treaty or the Nigeria-STP PRs. While the obligation to notify does not need to be incorporated in a provisional arrangement and exists independently,[1191] it is nevertheless desirable to deal with "the issue of who will notify whom of what and when", particularly taking into account the model involving the establishment of a Joint Authority.[1192]

In sum, Nigeria and STP have created a comprehensive regime of marine environmental protection in the JDZ in which the NSTPJDA has a primary role. The core elements of due diligence (namely, regulation and enforcement) are exercised by the Authority. At the same time, whereas the Authority largely acts independently when monitoring, pursuant to its mandate to do so, such independence is limited when it makes (and amends) regulations, which become binding only after the MC's approval. Without commercial exploitation in the JDZ to date,[1193] the Authority is also financially dependent on the Parties. The information available indicates that the NSTPJDA experiences problems with financing, and this has led to a reduction in the Authority's staff.[1194] It is however unclear how this situation affects the discharge of its functions. It is also unclear whether the Parties' relevant authorities may step in in the event of the Authority's inability to carry out its mandate (e.g., to inspect hydrocarbon activities in the JDZ).

6.8 Thailand and Cambodia

In the Thailand-Cambodia MoU, the Parties acknowledged the existence of an Overlapping Claims Area (OCA) in the Gulf of Thailand (Illustration No. 16).[1195] They also agreed to delimit one part of the OCA and to negotiate a treaty for the joint development of hydrocarbons situated in the other part of the OCA (Joint Development Area or JDA).[1196] In 2006, the Parties adopted a revenue sharing model similar to that employed by Japan and S. Korea.[1197] The JDA was divided into a number of areas/blocks in which the Parties' shares were different.[1198] However,

[1191] See Chapter 5.
[1192] Low 2012, *op. cit.*, p. 69.
[1193] See Chapter 1.
[1194] See, for example, F. Mac-Leva, "Why Nigeria-Sao Tome JDA needs restructuring - Luis Prazeres", DailyTrust, 22 July 2017, available at https://www.dailytrust.com.ng/why-nigeria-sao-tome-jda-needs-restructuring-luis-prazeres.html; B. Gradebo, "Crisis Hits Nigeria-Sao Tome and Principe Devt Authority", Leadership, 24 December 2017, available at https://leadership.ng/2017/12/24/crisis-hits-nigeria-sao-tome-principe-devt-authority/ (last accessed January 2019).
[1195] Thailand-Cambodia MoU, Preamble.
[1196] *Ibid*., art. 2.
[1197] V. Var, "Cambodia–Thailand Sovereignty Disputes: Implications for Cambodia's Strategic Environment and Defence Organization", *Strategic Analysis*, 2017, vol. 41 (2), p. 163. See also Chapter 6.2.
[1198] *Ibid.* See in detail M. Doyle, "Oil, Gas and Improving Thai-Cambodian Relations", Bangkok Post, 18 November 2011, available at http://khmerization.blogspot.com/2011/11/oil-gas-and-improving-thai-cambodian.html (last accessed January 2019).

in 2009, Thailand unilaterally revoked the Thailand-Cambodia MoU for political reasons, a move was protested by Cambodia.[1199] Currently, Cambodia and Thailand have resumed negotiations concerning the OCA with no outcome to date.[1200] In the interim, both States have issued exploration and exploitation licenses to private companies in the OCA.

Thus, unlike the existing provisional arrangements in the Gulf of Thailand (between Thailand and Malaysia and between Malaysia and Vietnam),[1201] to date there is no common regime that governs the OCA. Nevertheless, as discussed in Chapter 5, Thailand and Cambodia are required to prevent significant environmental harm that might arise from their unilateral petroleum activities authorized in the OCA.[1202] It is also worth recalling that this requirement constitutes a rule of customary international law applicable regardless of whether a State is a party to the UNCLOS: Thailand and Cambodia signed the UNCLOS (in 1982 and 1983, respectively), but only the former State ratified the Convention (in 2011).[1203] In this respect, it is interesting to note that while the Thailand-Cambodia MoU includes a provision, which may be viewed as a reference to articles 74 (3) and 83 (3) of the UNCLOS,[1204] it does not deal with the issue of environmental protection at all. As noted in Chapter 5.6, environmental protection provisions do not need to be incorporated into the MoU (and any subsequent agreements between the Parties) to be binding on Thailand and Cambodia. At the same time, such provisions make it clear who is responsible for environmental protection. For example, if Thailand and Cambodia intend to repeat the model used by Japan and S. Korea, does it mean that coastal State jurisdiction will be determined based on which State has licensed the operator or which State has the larger revenue share in each area/block?[1205] While one can speculate on the possible forms of the OCA's cooperative management, no particular management regime has been established yet. Consequently, Thailand and Cambodia shall individually exercise their due

[1199] Var 2017, *op. cit.*, p. 164.
[1200] E. Madra, "OCA Negotiations Continuing "Silently" – Source", Khmer Times, 14 May 2015, available at https://www.khmertimeskh.com/news/11319/oca-negotiations-continuing----silently--------source/ (last accessed January 2019).
[1201] See Chapters 6.4 and 6.5.
[1202] See also Chapters 2.
[1203] Relevant information is available at https://treaties.un.org/pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXI-6&chapter=21&Temp=mtdsg3&lang=en#EndDec (last accessed January 2019).
[1204] Thailand-Cambodia MoU, art. 1 ("The Parties consider that it is desirable to enter into *provincial arrangement of a practical nature* in respect of the [OCA]" (emphasis added) and art. 5 ("… are without prejudice to the maritime claims of either Party").
[1205] See Chapter 6.2.

diligence obligations in this area, also taking into account the duty to exercise restraint considered in Chapter 3.

6.9 Australia and Timor-Leste: the current and former regimes[1206]

As indicated in Chapter 1, Australia and Timor-Leste reached a new maritime boundary treaty in the Timor Sea on 6 March 2018 (Timor Sea Boundary Treaty). This Boundary Treaty brings significant changes to the regime of cooperative hydrocarbon activities. The JPDA created under the TST will cease to exist once the Timor Sea Boundary Treaty enters into force and the former joint area will be attributed to Timor-Leste. The Timor Sea Boundary Treaty also deals with the management of the transboundary Greater Sunrise gas fields. The Greater Sunrise UA will terminate once the Boundary Treaty comes into effect.[1207] Instead, the Boundary Treaty alters the apportionment ratio established previously under the Greater Sunrise UA (80:20 or 70:30, dependent on which country any pipeline from the Greater Sunrise goes to)[1208] and creates a Special Regime Area (SRA), which will govern activities with respect to the Greater Sunrise until their commercial depletion.[1209] In the SRA, the Parties agreed to exercise their sovereign rights provided by article 77 of the UNCLOS jointly.[1210] The exercise of jurisdiction within the SRA is regulated by article 16 of Annex B of the Timor Sea Boundary Treaty that is discussed below in this section.

The changes also concern the institutional framework in the Timor Sea. The Timor Sea Boundary Treaty establishes a two-tiered structure, consisting of a Designated Authority (DA) and a Governance Board (GB).[1211] The composition and powers of the GB are similar to a Joint Commission (JC) established under article 6 of the TST. The GB is comprised of one representative from Australia and two representatives from Timor-Leste.[1212] The GB is empowered, *inter alia*, to provide strategic oversight over the SRA, approve a final Petroleum Mining Code (PMC) and any amendments to it, including amendments to the interim PMC, and approve a decision of the DA to enter into or terminate a PSC in respect of the Greater

[1206] See also Chapter 7.1.
[1207] Timor Sea Boundary Treaty, art. 9.
[1208] *Ibid.*, Annex B, art. 2. See also the Greater Sunrise UA and CMATS Treaty on the previous apportionment ratio. Moreover, see Commission Paper on the Comparative Benefits of Timor LNG and Darwin LNG & Condensed Comparative Analysis of Alternative Development Concepts, available at https://www.pcacases.com/web/sendAttach/2355 (last accessed January 2019). See also Chapter 4.4.
[1209] *Ibid*, art. 7, Annexes B (art. 23) and C.
[1210] *Ibid.*, art. 7 (2). Article 7 (5) provides that when the SRA ceases to be in force, the Parties shall *individually* exercise their rights pursuant to article 77 of the UNCLOS in accordance with the CS boundary.
[1211] *Ibid.*, Annex B, art. 5. See article 6 of the TST on the (former) institutional structure. See also Chapter 6.12.
[1212] *Ibid.*, Annex B, art. 7 (1).

Sunrise.[1213] An innovation of the Timor Sea Boundary Treaty is the creation of a Dispute Resolution Committee, with limited powers to resolve certain disputes relating to the SRA and the Greater Sunrise's development.[1214]

The DA established pursuant to the TST continues to operate.[1215] The National Petroleum and Minerals Authority of Timor-Leste (NPMA) acts as the DA on behalf of Australia and Timor-Leste.[1216] In other words, the DA is not a separate administrative body (as, for example, the DA in the context of the Nigeria-STP Treaty), but it is a public institute within the governmental structure of Timor-Leste.[1217] The DA is responsible for the day-to-day regulation and management of petroleum activities in the SRA.[1218] The DA has broad powers, especially in the field of environmental protection, including issuing regulations to protect the marine environment, monitoring compliance with these regulations, conducting inspections of facilities, ensuring that a contingency plan for responding to pollution is in place and investigating safety and environmental incidents in the SRA.[1219] Thus, it is clear that Australia and Timor-Leste delegate their due diligence obligations to the DA.[1220]

[1213] *Ibid.*, Annex B, art. 7 (2)-(4). The interim PMC is available at http://web01.anpm.tl/webs/anptlweb.nsf/vwAll/Resource-Petroleum%20Mining%20Code/$File/PMCtoCoM0602.pdf?openelement (last accessed January 2019). In this respect, it is important to note article 11 of Annex B of the Timor Sea Boundary Treaty: "[the interim PMC], including the interim regulations (available at http://web.anpm.tl/webs/anptlweb.nsf/vwAll/Resource-Interim%20Regulations%20issued%20under%20Article%2037%20of%20the%20Interim%20PMC/$File/JPDA%20Interim%20Regulations%20Rev%200%20June%202003.pdf?openelement (last accessed January 2019)), as in force at the date of entry into force of this Treaty [applies] *until* such a time as *a final [PMC]* is approved by the [GB]" (emphasis added). The GB shall "endeavour to approve and issue a final [PMC] within six months of the entry into force of this Treaty or, if such a date is not achieved, as soon as possible thereafter" (*ibid.*).

[1214] *Ibid.*, Annex B, art. 8. See also Bankes 2018 (b), *op. cit.*, pp. 1-23.

[1215] *Ibid.*, Annex B, art. 6.

[1216] *Ibid.*, Annex B, art. 6 (2). Autoridade Nacional do Petróleo e Minerais Timor-Leste (official website: http://www.anpm.tl/), functions on the basis of the Decree-Law No. 1/2016 of 9 February, available at http://web01.anpm.tl/webs/anptlweb.nsf/vwAll/Resource-ANPM%20Decree%20Law%20No.1-2016%20-%20English%20Translation/$File/ANPM%20Decree%20Law%20No.%201-2016%20English%20Translation.pdf?openelement (last accessed January 2019). This Decree-Law introduced some amendments into the Decree-Law No. 20/2008 of 19 June, available at http://web01.anpm.tl/webs/anptlweb.nsf/vwAll/Resource-ANP%20Decree%20Law%20No.20-2008%20/$File/Decree-Law-2008-20-ANP%20decree%20law.pdf?openelement (last accessed January 2019). These Decree-Laws are likely to be amended once the Timor Sea Boundary Treaty enters into force.

[1217] Timor Sea Boundary Treaty, Annex B, art. 6 (2) (a); Decree-Law No. 1/2016 of 9 February, *supra* note 1216, Preamble and art. 1.

[1218] Timor Sea Boundary Treaty, Annex B, art. 6 (1). It is worth noting that the NPMA is also responsible for regulating and managing petroleum and mining activities in Timor-Leste in general.

[1219] *Ibid.*, Annex B, art. 6 (3). See, for example, Section 15 of the interim PMC concerning inspections.

[1220] See also article 16 of Annex B of the Timor Sea Boundary Treaty, according to which "the Parties have agreed to delegate the exercise of certain jurisdictional and regulatory competencies to the [DA], as specified in this Treaty".

The delegation of due diligence to the DA raises the question of whether a failure to exercise this due diligence is attributable to the two States or only to Timor-Leste.[1221] As noted above, the DA is a body closely tied to the Government of Timor-Leste. Logically, this means that any failure on the part of the DA is attributable to Timor-Leste under either draft article 4 or draft article 5 of the ARSIWA,[1222] but does it also mean that such a failure is attributable to Australia?

Unlike the TST and Greater Sunrise UA, the role of Australia in environmental protection has been decreased pursuant to the Timor Sea Boundary Treaty.[1223] It is likely that the bulk of exploitation activities in respect of the Greater Sunrise will be on the Timor-Leste side of the CS boundary insofar as the larger portion of the resource lies on its side.[1224] At the same time, pursuant to article 16 (1) (c) of Annex B, Australia, as well as Timor-Leste, is required to exercise jurisdiction in accordance with the UNCLOS with respect to "environmental protection, management and regulation" within the SRA.[1225] However, while the Timor Sea Boundary Treaty explicitly states that the Parties must *jointly* exercise their rights to explore and exploit,[1226] it seems that the environmental jurisdiction is to be exercised by each Party *individually* on the basis of the CS boundary. Article 16 (2) of Annex B stipulates that "the cooperative exercise of the jurisdictional competencies set out in paragraph 1", including environmental competence, is allowed only in consultation between Australia and Timor-Leste. Nevertheless, as discussed above in this section, it is apparent that the Parties in fact exercise a number of jurisdictional competencies jointly through the DA.[1227] These jurisdictional competencies include protection of the (marine) environment and safety of navigation in the SRA. In other words, both Australia and Timor-Leste are responsible for environmental conduct of the DA.

The joint exercise of due diligence is already in place and will be transferred from the (former) JPDA to the SRA. As regards the JPDA, this area will principally fall within the CS of Timor-

[1221] See also Chapter 5.6.
[1222] See Chapter 5.6 in this regard.
[1223] See TST, art. 10; Greater Sunrise UA, art. 21.
[1224] Timor Sea Boundary Treaty, Annex C. The same situation is in respect of the Statfjord field straddling the delimitation line between Norway and the UK in the North Sea where its larger portion lies on the Norwegian CS (see Chapters 1 and 7). It is worth noting that a concept for the development of the Greater Sunrise has yet to be agreed by Australia and Timor-Leste. See Report and Recommendations of the Compulsory Conciliation Commission between Timor-Leste and Australia, 9 May 2018, *op. cit.*, paras. 297-299.
[1225] Article 16 (1) also provides that Australia and Timor-Leste shall exercise jurisdiction under the UNCLOS with respect to marine scientific research, security and establishment of safety zones around installations in the SRA, health and safety etc.
[1226] Timor Sea Boundary Treaty, art. 7 (2) and Annex B, art. 16 (1).
[1227] See also *ibid.*, Annex 16 (3).

Leste.[1228] According to Annex D of the Timor Sea Boundary Treaty, ongoing and planned petroleum activities continue under conditions or terms equivalent to those existed prior to entry into force of this Treaty.[1229] The main change is that from the date of entry into force of the Boundary Treaty, Timor-Leste solely obtains all upstream revenue derived from petroleum activities with respect to the Bayu-Undan and Kitan fields,[1230] which are almost depleted.[1231] The DA, as before, will exercise its authority over activities conducted in the former JPDA. Pursuant to article 2 (5) of Annex D of the Timor Sea Boundary Treaty, the DA is obligated to provide information to the GB on an annual basis regarding the petroleum operations, including decommissioning, and "any safety or environmental issues". This provision allows Australia to keep an eye on the DA's conduct.

Article 10 of the Timor Sea Boundary Treaty is an interesting provision. According to this article, neither Party is entitled to claim compensation with respect to petroleum activities carried out in the Timor Sea as a result of, *inter alia*, the cessation of the JPDA and the SRA. The question is whether this provision applies in the context of a claim for compensation for transboundary environmental harm arising from petroleum activities. If so, one of the implications of the applicability of article 10 is that Australia cannot raise a claim for transboundary pollution of its marine environment originating from ongoing hydrocarbon activities within the former JPDA.[1232] At the same time, it is worth noting that article 10 does not limit the possibility of nationals of either Party bringing an action for compensation and it does not affect potential claims of third States. The subsequent question is whether article 10 is also applicable to future activities with respect to undiscovered (or known, but currently undeveloped) petroleum deposits.[1233] An affirmative answer to the questions posed seems to be unlikely for two reasons. First, the Timor Sea Boundary Treaty aims to address the issues

[1228] Only a small strip of the JPDA will fall within the Australian CS (Illustration No. 11)
[1229] Timor Sea Boundary Treaty, Annex D, art. 1 (1) and (2). See also Exchange of Correspondence between Australia and Timor-Leste on Transitional Arrangements for Bayu-Undan and Kitan of 13 October 2017, available at https://www.pcacases.com/web/sendAttach/2351 (last accessed January 2019).
[1230] *Ibid.*, Annex D, art. 1 (3). Before Australia received 10 % in the JPDA under the TST.
[1231] See, for example, V. Menon, "Timor-Leste-Australia Maritime Boundary Treaty: Victory for Dili?", RSIS Commentary, 27 March 2018, available at https://www.rsis.edu.sg/wp-content/uploads/2018/03/CO18055.pdf (last accessed January 2019). Menon states that as the hydrocarbon resources in the Bayu-Undan and Kitan fields are drying up, "this may not amount to much revenue for Timor-Leste".
[1232] The same true applies in the context of the future cessation of the SRA upon the depletion of the Greater Sunrise fields.
[1233] See, for example, R. Silva, "Timor-Leste and Australia Sign Landmark Maritime Boundary Treaty", Linkedin, 7 March 2018, available at https://www.linkedin.com/pulse/timor-leste-australia-sign-landmark-maritime-boundary-ricardo-silva/?trackingId=N5%2FFv2MPcfzgOAKhmsbc4A%3D%3D (last accessed January 2019). Silva notes that the conclusion of the Timor Sea Boundary Treaty will allow Timor-Leste to open up new areas previously covered by the JPDA and Australian jurisdiction, some of which have proven oil & gas potential and/or significant potential.

concerning petroleum activities, which are underway in the JPDA, and not to deal with future petroleum activities of Timor-Leste. Second, as discussed in Chapter 5, under international law, each State may claim compensation for significant transboundary environmental harm caused by other States. The latter reason casts doubt on the reasonableness of the applicability of article 10 in the environmental context. Support for the non-applicability of article 10 in the environmental context may also be found in the text of the comprehensive package agreement of 30 August 2017, which refers to "(no) compensation for *past exploitation*".[1234] In other words, article 10 by no means limits claims for environmental harm.

Apart from the JPDA, some maritime areas outside the JPDA, which previously formed part of the Australian CS, now fall within the CS of Timor-Leste (Illustration No. 11). Thereby, existing petroleum activities in these maritime areas, including activities in respect of the Buffalo oil field, will be conducted under the jurisdiction of Timor-Leste. Article 4 of Annex D of the Timor Sea Boundary Treaty deals with this situation and states that the Buffalo will be subject to a new PSC to be entered into between Timor-Leste and the contractor on conditions equivalent to those in place under the jurisdiction of Australia. It is notable that the date of entry into force of such a PSC is decisive for the transfer of legal responsibility from Australia to Timor-Leste: prior to that date Australia bears responsibility, but after that date Timor-Leste bears responsibility.[1235]

Going back to the issue of the cross-border Greater Sunrise fields, it is worth restating that the Parties undertake to jointly protect the maritime environment of the SRA. Nevertheless, the presence of the maritime boundary has certain consequences. For example, each State exercises civil jurisdiction on its side of the maritime boundary. Thus, a civil claim for damage resulting from petroleum activities in the SRA is to be brought under the jurisdiction of the State of origin. Unlike the TST, the Timor Sea Boundary Treaty does not provide for the choice of civil jurisdiction.[1236]

Thus, despite the fact that the JPDA will cease to exist, the well-functioning cooperative management previously established in this area remains in place, but it will apply in the SRA. This means that the core preventative elements of due diligence (i.e., regulation and control) will still be exercised on a joint basis through the DA. The establishment of the maritime

[1234] Comprehensive Package Agreement of 30 August 2017, available at https://www.pcacases.com/web/sendAttach/2349 (last accessed January 2019), p. 2 (emphasis added).
[1235] Timor Sea Boundary Treaty, Annex D, art. 4 (5). See also art. 10 (b) and (c).
[1236] See TST, art. 10 (d).

boundary between the States will however affect the exercise of remedial elements of due diligence that are to be exercised separately. These peculiarities distinguish the regime governing the Greater Sunrise fields from other regimes created in relation to cross-border hydrocarbons and which are explored in Chapter 7. Moreover, the DA's status is different from the status of many other inter-State management bodies considered in this Chapter.[1237] This issue is further discussed in Chapter 6.13.

6.10 Barbados and Guyana

The Barbados-Guyana Treaty created a cooperation zone (CZ) in an area of overlap between the EEZs of the Parties and beyond the EEZ of any third State (i.e., T&T and Venezuela[1238]).[1239] In this zone, Barbados and Guyana have agreed to exercise "*joint* jurisdiction, control, management, development, and exploration and exploitation of living and non-living natural resources, as well as all other rights and duties established in the [UNCLOS]".[1240] This provision indicates the intention of the Parties to discharge the essential elements of due diligence on a joint basis.

Article 6 (2) of the Barbados-Guyana Treaty states that the Parties' exercise of joint jurisdiction over non-living resources shall be managed by a joint non-living resources commission and evidenced by an agreement in writing, including by way of an exchange of diplomatic notes. Article 6 (4) further underlines that if the Parties fail to reach such agreement in writing, neither of them can exercise its jurisdiction in the CZ. This clause is important because, to date, there has been no information made publicly available that the required agreement is concluded and that the Commission has been established.[1241] Therefore, it is difficult to conclude as to how the cooperative regime governing the CZ works in practice. At the same time, one should keep in mind the Treaty's strong emphasis on the joint character of due diligence that is likely to be delegated to the Commission.

[1237] This is also not typical in the context of transboundary hydrocarbons. See Chapter 7.5.
[1238] Fietta and Cleverly, *op. cit.*, p. 122.
[1239] Barbados-Guyana Treaty, Preamble, art. 2 and Annex I (Illustration No. 6).
[1240] *Ibid.*, art. 1 (1) (emphasis added). Article 3 provides for joint civil and administrative jurisdiction.
[1241] The only available information is that in 2013, Barbados and Guyana signed a Memorandum of Understanding dealing with the joint jurisdiction over fisheries resources in the CZ, available at http://www.inewsguyana.com/guyanabarbados-to-work-jointly-in-overlapping-boundaries/ and http://demerarawaves.com/2013/10/05/guyana-barbados-to-negotiate-granting-of-joint-fishing-licences/ (last accessed January 2019).

6.11 Angola and the Democratic Republic of the Congo

In accordance with the Angola-DRC Agreement, the Parties have created a Common Interest Zone (CIZ) in an undelimited maritime area (Illustration No. 22).[1242] The CIZ is a maritime corridor of 10 km where the Parties agreed to share revenue derived from activities regarding "existing or future leads, prospects and reservoirs", regardless of the phase, equally.[1243] The Angola-Congo Agreement includes a provision on the participation of the Parties' national companies: Sonangol (Angolan) and Cohydro (Congolese).[1244] In 2015, these companies reached a preliminary trade agreement, which is not available in the public domain.[1245] The Angola-DRC Agreement does not deal with a significant number of important issues such as the exercise of criminal and civil jurisdiction, the establishment of an institutional structure, or environmental matters.[1246] Moreover, there are also questions concerning the operation of the Agreement due to the circumstances mentioned below.

In 2009, the DRC enacted a law defining its claimed maritime zones, including the CS beyond 200 nm, in the Gulf of Guinea.[1247] The DRC claims coastal State jurisdiction in a corridor that extends in a southwesterly direction from the coast (Illustration No. 28).[1248] This corridor runs through an area where Angola has undertaken significant petroleum activities for many years.[1249] It is interesting to note that the corridor claimed by the DRC does not overlap with the CIZ, except for a very small part of the eastern end of the CIZ.[1250] In other words, the DRC does not claim sovereign rights and jurisdiction in the entire CIZ.[1251] In 2013, Angola made a submission to the CLCS ignoring the DRC's claims and recognizing only a small triangular

[1242] Angola-DRC Agreement, art. 1. 'CIZ' is referred to in the Agreement as 'ZIC' ("Zone d'Intérêt Commun" in French). Prior to the Angola-DRC Agreement, the Parties reached a MoU in 2003 (in the files of the author). There is no indication that Angola and the DRC formalized or implemented the MoU before the Agreement (*ibid.*)
[1243] *Ibid*., arts. 2 and 3.
[1244] *Ibid*., arts. 5 and 6.
[1245] "Angola and DRC prepare joint oil exploration", Macauhub, 29 January 2015, available at https://macauhub.com.mo/2015/01/29/angola-and-drc-prepare-joint-oil-exploration/ (last accessed January 2019).
[1246] See also D. Moudachirou, "Memorandum of Understanding between Angola and DRC as a Provisional Arrangement for their Maritime Boundaries Delimitation's Dispute- Reality or Myth?", *Global Journal of Politics and Law Research*, 2015, vol. 3 (4), pp. 101-102.
[1247] Law No. 09/2002 of 7 May 2009 delimiting the maritime areas of the DRC, available at http://www.marineregions.org/documents/cod_2009_law09.pdf (last accessed January 2019).
[1248] D. C. Smith, "Angola-Democratic Republic of the Congo", Report No. 4-15, in: D. A. Colson and R. W. Smith (eds), *IMB*, vol. VI, 2011, pp. 4271-4272. On 31 July 2009, Angola sent a protest note rejecting the claims of the DRC.
[1249] *Ibid.*
[1250] *Ibid.*
[1251] *Ibid.*

shaped maritime area off the coast of the DRC established before the adoption of the UNCLOS.[1252] The dispute between Angola and the DRC is still unresolved.

The circumstances mentioned above give rise to questions regarding the viability of the CIZ and implications of the DRC's recent claims for the management of this zone. The fact that the DRC does not claim sovereign rights and jurisdiction in the maritime area where the CIZ is located means that Angola solely exercises its sovereign rights and jurisdiction as coastal State in the CIZ under the UNCLOS. Pursuant to the Angola-DRC Agreement, Angola is only required to ensure the equal distribution of revenues and the participation of Cohydro in petroleum operations in the CIZ. Thus, the exercise of all components of due diligence discussed in Chapter 5 (to regulate, enforce, investigate and punish) falls on Angola. Therefore, it is hard to infer that the Parties share due diligence in the CIZ, and, accordingly, this leads to the conclusion that there is no situation of responsibility sharing in this instance.

6.12 Mauritius and the Seychelles

According to the Seychelles-Mauritius Treaty, these States have agreed on joint control, management, facilitation of the exploration of the CS in the JMA and the conservation, development and exploitation of its natural resources.[1253] As clearly follows from the structure of the Seychelles-Mauritius Treaty and the wordings of its provisions, the TST has been taken as a basis for the Seychelles-Mauritius Treaty.[1254]

The management regime created in the JMA mirrors the one established in the Timor Sea under the TST. It also consists of three administrative bodies: a Ministerial Council (MC), a Joint Commission (JC) and a Designated Authority (DA).[1255] The provisions on the functions of these bodies also echo the relevant provisions in the TST. The MC consists of political representatives and considers relevant matters at a higher policy level.[1256] The JC consists of an equal number

[1252] Executive Summary of Angola's Continental Shelf Submission, available at http://www.un.org/depts/los/clcs_new/submissions_files/ago69_2013/es_ago_en.pdf. See also notes of the DRC submitted to the CLCS of 11 April 2014 and 7 October 2015, available at http://www.un.org/depts/los/clcs_new/submissions_files/ago69_2013/1430662E.pdf and http://www.un.org/depts/los/clcs_new/submissions_files/ago69_2013/cod_re_ago_oct_2015e.pdf (last accessed January 2019). F. Misser, "DRC and Angola's Borders and barrels", The Africa Report, 4 July 2014, available at http://www.theafricareport.com/Central-Africa/drc-and-angolas-borders-and-barrels.html (last accessed January 2019).

[1253] Seychelles-Mauritius Treaty, art. 3 (b). The definition of the term 'natural resources' contains in article 1 of the Treaty. "JMA" means "joint management area" (see Chapter 1).

[1254] See Chapters 1 and 6.9 concerning the TST between Australia and Timor-Leste.

[1255] Seychelles-Mauritius Treaty, art. 4 (a).

[1256] *Ibid.*, art. 3 (b).

of commissioners appointed by Mauritius and the Seychelles in order to establish policies and regulations relating to natural resource activities in the JMA and oversee the work of the DA.[1257] The DA has legal personality and responsibility for day-to-day regulation and management of natural resource activities in the JMA.[1258]

Currently, the Parties are in the process of setting up joint regulatory and institutional frameworks in the JMA. For example, negotiations concerning the location of the DA and its mandate are still ongoing.[1259] At this stage, the JC, which is supported by a technical committee, is the main actor in creating regulations and standards dealing with various issues (e.g., marine scientific research, offshore safety, fiscal matters and the environment) and in authorizing seismic surveys in the JMA.[1260] It is known that some regulatory instruments are already in place (including the Joint Fiscal and Taxation Code, the Offshore Petroleum Safety Code, the Model Petroleum Agreement, and the Environmental Code of Practice) and that, for instance, the Environmental Code of Practice incorporates a requirement of EIA prior to conducting seismic mapping (and, logically, other phases of petroleum operations described in Chapter 2.3) in the JMA.[1261] However, none of the Codes applicable in the JMA are publicly available. While this circumstance significantly limits their analysis, it is apparent that such component of due diligence as regulation is a common competence of Mauritius and the Seychelles. It is also reasonable to expect that the cooperative exercise of other due diligence elements will be delegated to the DA, particularly taking into account the fact that the Seychelles-Mauritius model follows the (former) Timor Sea model.[1262] To date, there is no information as to whether

[1257] *Ibid*., art. 3 (c) and Annex C.
[1258] *Ibid*., art. 3 (d) and Annex D.
[1259] See, for example, Press release of the Joint Management Committee of the Mascarene Plateau, The Ministry of Finance, Trade & Economic Planning of the Republic of Seychelles, 28 October 2016, available at http://www.finance.gov.sc/press-releases/42/Press-release-of-the-Joint-Management-Committee-of-the-Mascarene-Plateau (last accessed January 2019).
[1260] "Sharing maritime territory of Mascarene Plateau- Seychelles and Mauritius create common rules", Seychelles News Agency, 22 May 2014, available at http://www.seychellesnewsagency.com/articles/545/Sharing+maritime+territory+of+Mascarene+Plateau-+Seychelles+and+Mauritius+create+common+rules (last accessed January 2019). In January 2018, the JC signed an agreement with Spectrum Geo in view of collecting geological data in the JMA. "Extended Continental Shelf: Signature of agreement for geotechnical study", Republic of Mauritius, 11 January 2018, available at http://www.govmu.org/English/News/Pages/Extended-Continental-Shelf-Signature-of-agreement-for-geotechnical-study-.aspx (last accessed January 2019). As of January 2019, seismic surveys have not started yet. See "Seychelles, Mauritius hold high level talks", National Information Services Agency, 10 January 2019, available at http://www.nation.sc/article.html?id=261893 (last accessed January 2019).
[1261] *Ibid*. See also "Seychelles, Mauritius reviewing joint management of Mascarene Plateau Region", Seychelles News Agency, 14 May 2018, available at http://www.seychellesnewsagency.com/articles/9133/Seychelles%2C+Mauritius+reviewing+joint+management+of+Mascarene+Plateau+Region (last accessed January 2019).
[1262] As discussed in Chapter 6.9, the model established in the Timor Sea will be changed once the Timor Sea Boundary Treaty enters into force.

the DA will be a separate inter-State entity or a body within the government of either Mauritius or the Seychelles (as discussed in Chapter 6.9, the latter example is established in the Timor Sea).

The Seychelles-Mauritius Treaty, like the TST, includes one main article addressing the issue of marine environmental protection in the JMA. A number of paragraphs of article 12 of the Seychelles-Mauritius Treaty are almost identical to those incorporated in article 10 of the TST.[1263] One notable aspect of the Seychelles-Mauritius Treaty is that it is aimed at protecting the environment and biodiversity of the seabed in the JMA,[1264] insofar as the water column above the JMA's seabed is the high seas. Nevertheless, the Treaty provides that the Parties may adopt measures concerning fishing activity in the waters above the JMA's seabed "where such activity is having a direct impact upon, or poses a significant risk to, the natural resources of the seabed and subsoil in the JMA".[1265] It is reasonable to assume that this provision applies to fishing vessels or nationals of the Parties.[1266] However, the text does not rule out a possibility of the Parties to take unilateral or cooperative action with respect to fishing by third States.[1267] Moreover, the Seychelles-Mauritius Treaty provides for the establishment of seabed marine protected areas,[1268] although without identifying the consequences these types of areas would have for natural resource activities in the JMA.

Similar to article 10 of the TST, article 12 of the Seychelles-Mauritius Treaty places an emphasis on cooperation in the prevention of pollution and other environmental harm that might arise from natural resource activities in the JMA.[1269] Where pollution of the marine environment occurring in the JMA spreads beyond the limits of this area, article 12 requires the Parties to cooperate in "taking prompt and effective action to prevent, mitigate and eliminate such pollution in accordance with international best practices, standards and procedures".[1270]

Article 12 (f) of the Seychelles-Mauritius Treaty imposes liability on contractors conducting natural resource activities in the JMA. The wording of article 12 (f) (ii) implies that claims related to pollution of the marine environment can be brought in the court of either State. Insofar

[1263] Paragraphs (a), (d), (e) and (f) of article 12 largely repeat paragraphs (a), (b), (c) and (d) of article 10 of the TST.
[1264] Seychelles-Mauritius Treaty, art. 12 (a) - (c).
[1265] *Ibid.*, art. 12 (b).
[1266] Mossop 2016, *op. cit.*, p. 229.
[1267] *Ibid.*
[1268] Seychelles-Mauritius Treaty, art. 12 (c).
[1269] *Ibid.*, art. 12 (a).
[1270] *Ibid.*, art. 12 (d).

as the Seychelles-Mauritius model is based on the one established in the Timor Sea, one can conclude that the regulatory framework adopted by the JC largely builds on the latter model, but it is adapted in accordance with the fact that the JMA covers the area of the CS beyond 200 nm (for example, the DA is likely to be vested with the power to make payments and contributions under article 82 of the UNCLOS on behalf of the two States).[1271] In other words, following the Timor Sea model, the civil liability of licensees would extend to any non-environmental damage resulting from activities in the JMA and the Parties would include a provision relating to the immunity of the DA and/or the JC from all legal claims.[1272]

The analysis in this section indicates that Mauritius and the Seychelles intend to exercise due diligence jointly in the JMA. At the same time, like many other regimes of cooperative management of disputed hydrocarbons examined in this Chapter, the Seychelles-Mauritius model is characterized by the delegation of due diligence to separate management bodies. The following section of this Chapter explores the impact these management bodies may have on the question of shared State responsibility.

6.13 Shared State responsibility in the context of disputed hydrocarbons

Based on the examination of the cooperative management regimes established to govern disputed hydrocarbons in different geographical regions, this section of Chapter 6 provides some key findings regarding the scenario of offshore oil and gas resource sharing and, in particular discusses whether shared State responsibility might arise in this scenario and what difficulties may be associated with triggering shared State responsibility.

6.13.1 Different disputed maritime areas – similar (environmental) concerns: one pattern?

The examples explored in this Chapter show that many neighboring coastal States have negotiated an interim solution allowing them to leave the maritime boundary dispute aside in order to commence petroleum operations in the disputed area. As noted in Chapter 3.3, States are not limited to one particular form of cooperation in the context of disputed hydrocarbons. At the same time, they face similar issues that have to be addressed when negotiating a

[1271] See Chapter 3.7. It is interesting to note that the requirement to make payments and contributions is not reflected in the Seychelles-Mauritius Treaty. Nevertheless, the Parties, as the States Parties to the UNCLOS, are obligated to observe this requirement in implementing their cooperative model.
[1272] See the interim PMC, *supra* note 1213.

provisional arrangement: for example, identification of the area covered by the provisional arrangement[1273] and its jurisdictional status; determining a suitable formula for revenue sharing;[1274] establishing the regulatory and institutional frameworks; the treatment of possible straddling hydrocarbon deposits;[1275] environmental protection; and the duration of the provisional arrangement. The existence of similar issues does not however mean that these issues are dealt with consistently. For instance, the equal sharing of resource revenues and costs[1276] or a multi-tiered institutional structure existing in one geographical area may be difficult to implement in another area. In any case, States negotiating a provisional arrangement will typically consider how other States have approached the issues at hand and whether their approaches can be applicable. Indeed, the examination of all available provisional arrangements in this Chapter has illustrated that a new arrangement usually incorporates some components of arrangements already concluded in other parts of the world. For example, several provisions of the Japan-S. Korea Agreement are repeated in the Nigeria-STP Treaty, the Nigeria-STP Treaty reproduces a number of elements of the Timor Gap Treaty (which was replaced by the TST), the Seychelles-Mauritius Treaty takes the TST as a basis and the Thailand-Cambodia MoU adopts a method of dividing the area of overlapping maritime claims similar to that used by Japan and S. Korea.

Environmental protection is an important matter because each provisional arrangement enables activities involving a risk of causing environmental harm within and beyond the maritime area being claimed by two (or more) coastal States. As noted in the introduction to Part III, any pollution or other harm to the marine environment is transboundary by definition in the context of disputed hydrocarbons. When agreeing to exercise sovereign rights to explore the CS of a disputed area and exploit hydrocarbon resources situated in this area jointly, States must take into account their environmental obligations under international law.[1277] Generally, they achieve that by incorporating a shared due diligence obligation to ensure that hydrocarbon activities in the disputed area are conducted so as not to cause harm to the (marine) environment into the provisional arrangement. It is worth noting that the model where only one coastal State must discharge due diligence (e.g., the Malaysian-Vietnamese and Angolan-Congolese models) is rare in disputed areas. Usually, due diligence is of a joint character which means that its core

[1273] As noted in Chapter 3, the provisional arrangement may cover the entire area in dispute or only some parts of the disputed area.
[1274] See Chapter 4.4 in this respect.
[1275] See Chapter 4.2 in this respect.
[1276] *Supra* note 1274.
[1277] See also Chapters 2 and 5.

components (namely, regulation and control) are to be exercised jointly by two States. Although it is logical to conclude that a failure to meet the standard of due diligence falls on both States and, hence, gives rise to shared State responsibility, the situation is complicated by the presence of joint management bodies (either a JC or a DA). The following section of this Chapter addresses the question raised in Chapter 5.8 of whether States can somehow avoid international responsibility by establishing a joint management body empowered to discharge the joint due diligence obligation.

The analysis of provisional arrangements also indicates that currently States pay more attention than historically has been the case to marine environmental protection. However, recent provisional arrangements nonetheless elaborate on protection of the marine environment to varying degrees. The most detailed provisions on environmental protection are typically incorporated in provisional arrangements concluded between States having significant differences in their legal systems (including different environmental standards and requirements) and/or in capabilities and capacities.

6.13.2 Is the joint management body model a shield against incurring shared State responsibility?

Whereas there are a number of examples of weak joint bodies which merely facilitate discussions on important issues (e.g., the Japanese-S. Korean and Colombian-Jamaican JCs), usually States establish strong joint management bodies having legal personality and extensive regulatory and enforcement powers (e.g., the Saudi Arabian-Sudanese JC, the Thai-Malaysian Joint Authority, the DAs between Nigeria and STP, Australia and Timor-Leste, and Mauritius and the Seychelles). The question is whether States can avoid responsibility by creating such powerful administrative bodies.

Chapter 5.8 raised the question of whether a joint management body may be regarded as an IO under the ARIO. If it is deemed so, States, which are members to an IO, do not normally bear international responsibility for failing through this organization to exercise due diligence.[1278] Such a failure is instead primarily attributable to the IO. Draft article 2 of the ARIO defines an IO as "an organization established by a treaty or other instrument governed by international law and possessing its own international legal personality". Many joint bodies created pursuant to

[1278] See, for example, C. Ryngaert and H. Buchanan, "Member State responsibility for the acts of international organizations", *Utrecht Law Review*, 2011, vol. 7 (1), pp. 131-146; A. S. Barros, C. Ryngaert and J. Wouters (eds), *International Organizations and Member State Responsibility: Critical Perspectives*, Brill, 2017.

provisional arrangements appear to fall under the ARIO's definition.[1279] However, even the status of an IO does not guard member States from being held responsible for acts of the IO. Part V of the ARIO lays down the criteria under which member States incur responsibility for the conduct of an IO. Arguably, the provisions of Part V are applicable insofar as every joint body has a close tie with both Parties and largely consists of their official representatives, usually including ministers for hydrocarbons. The Timorese-Australian DA is exceptional because it is not an external inter-State entity as is the case with other joint bodies, but it is an organ of the Government of Timor-Leste.[1280]

At the same time, none of the provisional arrangements examined in this Chapter characterize joint bodies as IOs.[1281] Moreover, their composition mentioned above elicits the question of whether these joint bodies are rather common organs of the States. In this case, a wrongful act of a common organ is simultaneously attributable to the States that created it.[1282] The Administering Authority in *Certain Phosphate Lands in Nauru*[1283] and the Intergovernmental Commission in *Eurotunnel*[1284] are usually referred to as examples of common organs.[1285] The main feature distinguishing a common organ from an IO is the absence of legal personality which means that the common organ has no capacity to bear international obligations.[1286] As noted earlier, many joint bodies existing in undelimited maritime areas have separate legal personality and, hence, are IOs rather than common organs. In this respect, it is interesting to note that commentary 2 to draft article 47 of the ARSIWA cites an example of "a joint authority responsible for the management of a boundary river" as a common organ. Such water resource management bodies (and even some rivers themselves) generally possess legal personality.[1287] Thus, the presence of legal personality may not prevent a joint body governing hydrocarbon

[1279] Commentary 1 to draft article 2 of the ARIO states that the definition "outlines certain common characteristics of [an IO]" and "is not intended as a definition for all purposes".
[1280] See Chapter 6.9.
[1281] There is only the GB-Senegal Agreement (see Chapter 7.7) that characterizes the joint body between the Parties as an IO.
[1282] ARSIWA, draft art. 6, commentary 3 and draft art. 47, commentary 2.
[1283] *Certain Phosphate Lands in Nauru (Nauru v. Australia)*, Preliminary Objections, Judgment, 26 June 1992, ICJ Reports 1992, para. 47.
[1284] *Eurotunnel Arbitration (The Channel Tunnel Group Ltd & France-Manche SA v. United Kingdom & France)*, Partial Award, 30 January 2007, para. 179.
[1285] See Crawford 2013, *op. cit.*, pp. 339-341; F. Messineo, "Attribution of Conduct", in: A. Nollkaemper and L. Plakokefalos (eds), *Principles of Shared Responsibility in International Law: An Appraisal of the State of the Art*, Cambridge University Press, 2014, pp. 71-73; Nedeski 2017, *op. cit.*, p. 23.
[1286] *Ibid*.
[1287] See, for example, River Basin Commissions and Other Institutions for Transboundary Water Cooperation: Capacity for Water Cooperation in Eastern Europe, Caucasus and Central Asia, United Nations, 2009, p. 29; Leb 2013, *op. cit.*, pp. 184-187; E. L. O'Donnell and J. Talbot-Jones, "Creating legal rights for rivers: lessons from Australia, New Zealand, and India", *Ecology and Society*, 2018, vol. 23 (1).

activities from being considered as a common organ. In fact, joint bodies can be seen as a middle-ground between IOs and common organs: they have legal personality, but this personality is quasi-independent. The Parties to a provisional arrangement finance and form these joint bodies, which are subject to their decisions and are vulnerable in the event of a change in political relationships between the States. Therefore, one can conclude that States are not immune to the applicability of the rules on State responsibility by creating a separate inter-State entity and delegating due diligence (or some decisive elements of due diligence) to that entity. In other words, a regulatory or enforcement failure on the part of a joint management body established under a provisional arrangement, which may result or has resulted in (environmental or other) harm to a third party, may give rise to shared State responsibility.

As noted in the preceding section of this Chapter, there are 'single State model' examples (where only one State is responsible for exercising due diligence), though these examples are rare. Logically, the probability of shared State responsibility is excluded in the context of single State models because due diligence is neither framed nor exercised as a joint obligation. At the same time, the other State on whom the due diligence obligation is not incumbent (State B) usually obtains revenue derived from petroleum activities. Moreover, State B, like State A, claims sovereign rights and jurisdiction over the maritime area where those petroleum activities take place.[1288] Accordingly, it is reasonable to expect from State B that it will observe State A's exercise of due diligence, even though State B is not obligated to discharge due diligence obligations under the provisional arrangement.

6.14 Conclusions and observations

The key finding of this Chapter is that shared responsibility of States co-managing disputed hydrocarbons may arise. The basis for shared State responsibility is that the standard of due diligence is generally designed and exercised as a joint obligation arising from the cooperative exercise of the sovereign rights and jurisdiction over the same maritime area. This Chapter has also concluded that the establishment of a powerful joint inter-State body is unlikely to constitute a hurdle for incurring shared State responsibility. The outsourcing by States of due diligence does not exhaust their due diligence obligations. At the same time, the cooperation in respect of disputed hydrocarbons does not automatically trigger shared State responsibility. Each form of cooperation should be carefully analyzed in order to identify the specific form of

[1288] See Chapter 3.

cooperation implemented in each instance. As shown in this Chapter, there are a number of examples where one single State manages hydrocarbon activities, which may be considered to rule out the situation of shared State responsibility. Nevertheless, the fact that State B receives revenue derived from those hydrocarbon activities will arguably affect the responsibility owed by State A to State B, although it is not clear to what extent.

The conclusion concerning the likelihood of shared State responsibility in the context of disputed hydrocarbons is important, particularly in light of the fact that many neighboring States having competing claims to the same maritime area consider the possibility of creating some form of cooperative management of disputed petroleum resources. For reasons individual to each instance, not all States are able to find a suitable solution in each such instance and, hence, the discussions in Chapter 3 are of particular significance.

It is interesting to note that in some JDZs covered by provisional arrangements that also deal with living marine resources (in addition to non-living resources) (e.g., the Jamaica-Colombia and Barbados-Guyana Treaties),[1289] activities related to offshore oil and gas resources are much slower than in zones created primarily for the purpose of developing petroleum and/or other mineral resources. Nevertheless, this does not mean that these two heterogeneous goals in the context of resource exploitation cannot be simultaneously achieved, as was demonstrated to be possible, for example, under the Nigeria-STP regime.

Finally, it is worth emphasizing that none of the provisional arrangements examined in this Chapter address the issue of environmental harm that might be discovered after the termination of these arrangements. While Australia and Timor-Leste have agreed on the maritime boundaries in the Timor Sea for the term to which the TST applies, other States may be unable to establish a maritime boundary before the provisional arrangement between them ceases to be in force. Logically, the rules existed under the provisional arrangement, including the regime of shared State responsibility, continue to apply in case of environmental harm discovered after its term has ended. When establishing a maritime boundary, it becomes clear which coastal State exercises sovereign rights and jurisdiction on each side of that boundary. However, it may not be entirely clear to what extent State A may be held responsible for significant environmental harm arising out of past cooperative petroleum operations with State B carried

[1289] There is another category of provisional arrangement that only address living marine resources (e.g., fisheries resources) in undelimited maritime areas. This category is not considered in this thesis (see Chapter 3.3.3).

out in a former JDZ, which now forms part of State B's CS (as in the context of Australia-Timor-Leste).[1290]

[1290] See Chapter 6.9.

CHAPTER 7. TRANSBOUNDARY HYDROCARBONS AND SHARED STATE RESPONSIBILITY

7.1 Introduction

Chapter 6 concluded that shared State responsibility may arise in a situation where two States cooperate on the management of disputed hydrocarbons.[1291] This Chapter explores whether the same conclusion applies in the context of cross-border hydrocarbons.[1292] Consequently, this Chapter looks at agreements concluded by neighboring States with respect to accumulations of hydrocarbons that (may) straddle an already established maritime boundary. These agreements are conceptually different from those considered in Chapter 6. While in those examples discussed in Chapter 6 where the States decided to put the delimitation dispute aside and instead agree to exercise their sovereign rights and jurisdiction over the disputed maritime area on a joint basis, in a situation with straddling hydrocarbons the limits of each State's sovereign rights and jurisdiction are clearly defined. Each coastal State has sovereign rights and jurisdiction over the maritime areas appertaining to it under international law.[1293] This aspect is reflected in all agreements dealing with transboundary hydrocarbons.[1294] There is only the regime governing the management of the transboundary gas fields in the Timor Sea that creates a distinct model for the exercise of sovereign rights and jurisdiction. While Australia and Timor-Leste have declared the joint exercise of their sovereign rights to explore and exploit in the SRA, the exercise of jurisdiction is to be carried out individually, except for certain jurisdictional competencies (including jurisdiction with respect to environmental protection).[1295] These features of the Timor Sea model caused by the presence of an already functioning (regulatory and institutional) framework were examined in Chapter 6.9, not in this Chapter.

Generally, there is no particular need to establish a common regulatory and institutional framework for cross-border petroleum resources, as it exists in relation to hydrocarbons situated in disputed maritime areas. Each State adopts its own laws and regulations, and applies them to those hydrocarbon activities in respect of a transboundary reservoir that take place on its side

[1291] As noted in Chapter 6, there are no examples of trilateral cooperation.
[1292] The words 'cross-border', 'transboundary' and 'straddling' are used interchangeably in this thesis. See Chapter 2.2.
[1293] See also Chapter 2.3 in this respect.
[1294] See, for example, Markham UA, art. 24; UK-Norway Framework Agreement, art. 1.3; Cyprus-Egypt Framework Agreement, art. 7(1); Venezuela-T&T Framework Treaty, art. 18; the US-Mexico Agreement, art. 3.
[1295] Timor Sea Boundary Treaty, Annex B, art. 7 and art. 16. See Chapter 6.9 in detail.

of the maritime boundary. States engage their national bodies and organs[1296] to control the compliance of licensees with the applicable laws and regulations, and to combat pollution of the marine environment arising from hydrocarbon activities. This also means that each State shall apply its rules to hold licensees liable for any damage caused by hydrocarbon activities, including environmental damage. It is worth emphasizing that (in line with the standard of due diligence considered in Chapter 5) the legal systems of all States discussed below provide for civil liability, usually of operators, enforceable by civil remedy or other type of punishment.[1297]

Despite the foregoing comments, this Chapter examines the issue of whether two States authorizing cooperative hydrocarbon activities with respect to a transboundary deposit may share the international responsibility in the course of those activities. As pointed out in Chapter 5, there is the relationship between the design of due diligence in the context of shared hydrocarbons and the likelihood of shared State responsibility. Accordingly, all available agreements dealing with transboundary hydrocarbons are analyzed to answer the question of how they frame due diligence to prevent environmental harm: as a joint duty or as an individual duty of each State. Such agreements were introduced in Chapters 1 and 4 of this thesis and include agreements adopting a 'framework' approach to the issue of straddling petroleum deposits and agreements applicable to already discovered straddling fields, known as unitization agreements (UAs).[1298] The due diligence components identified in Chapter 5.5 (where regulation and enforcement, including oversight, are crucial) will guide in determining the character of due diligence in the context of cross-border hydrocarbons.

Additional arrangements between licensees are not considered in this Chapter.[1299] The focus is on States. However, for a complete understanding, it is important to outline the process put in place following the identification of a hydrocarbon field as transboundary.[1300] Usually, a bilateral (framework or unitization) agreement requires the licensees working on both sides of

[1296] See also Chapter 5.6.
[1297] Another question, outside the scope of this thesis, is whether each State's civil liability regime is adequate to cover possible damages.
[1298] See also Chapters 4.2.6 and 4.2.7. At this point, it is important to emphasize that a number of the agreements on transboundary hydrocarbons examined in Chapter 7 have special features. Unlike the majority of the agreements in which the Parties apply their respective laws to hydrocarbon activities in respect of a cross-border field, the Nigeria-Equatorial Guinea Unitization Protocol provides for the applicability of a single State's legal regime. In accordance with the Nigeria-Equatorial Guinea Unitization Protocol (arts. 4, 5 and 9), the law of Equatorial Guinea applies to hydrocarbon activities (even to those activities that are carried out on the Nigerian side of the delimitation line). The Angola-Congo Unitization Protocol deals with the unitization of transboundary hydrocarbon fields, without actually establishing maritime boundaries.
[1299] See Chapter 1.4.
[1300] Chapter 4.3 discusses the identification procedure.

the maritime boundary to enter into an (unit) operating agreement between them (similar to a joint operating agreement regulating the relationship between several licensees operating in the same block within one State's jurisdiction).[1301] In accordance with such an operating agreement, which shall be submitted to the Parties for their approval, one of the licensees is designated as a unit operator.[1302] The unit operator acts as an agent for all licensees involved in the exploration and exploitation of a transboundary petroleum field. The unit operator is bound by particular obligations, including the obligations to submit documentation (e.g., a development and decommissioning plan), inform of the exact position of facilities used for hydrocarbon activities and notify of pollution. The unit operator (together with other license holders) carries out hydrocarbon activities in a so-called 'unit area' that is always larger than the geographical and geological extension of a transboundary reservoir because the unit area is formed by the limits of the license blocks awarded by the States on both sides of the maritime boundary within which this reservoir lies.[1303]

Agreements on transboundary hydrocarbons are typically silent on many other important issues aside from transboundary hydrocarbons, which are generally dealt with in other agreements between States. For example, cooperative measures to combat pollution originating from hydrocarbon activities undertaken under the jurisdiction of one of the States, regardless of whether these activities are in respect of a transboundary deposit or not, may be included in a separate agreement. This Chapter will look at some supplementary legal instruments existing outside the agreements on transboundary hydrocarbons because they may have implications for shared State responsibility in eliminating environmental harm.[1304]

This Chapter also considers agreements creating joint development zones (JDZs) in addition to maritime boundaries.[1305] Although these agreements are usually referred to as "joint development agreements" along with provisional arrangements concluded in undelimited maritime areas (Chapters 3.3 and 6),[1306] they constitute a separate category whereby the limits of each coastal State's sovereign rights and jurisdiction are determined. This circumstance has

[1301] As noted in Glossary of Key Terms, some agreements define an agreement between the licensees as a 'unitization agreement'. It is also worth noting that there may be the same licensee(s) operating on both sides of the delimitation line, although this situation is uncommon.
[1302] Any change of the unit operator is also subject to prior approval by the States involved.
[1303] See, for example, the illustration given in Annex C of the Timor Sea Boundary Treaty.
[1304] See Chapter 7.6.
[1305] See Chapter 4 and Appendix I.
[1306] See, for example, Bastida et al., *op. cit.*, Part III (B) (3); C. Schofield, "Blurring the Lines? Maritime Joint Development and the Cooperative Management of Ocean Resources", *Issues in Legal Scholarship*, 2009, vol. 7 (1); Hongdao and Mukhtar, *op. cit.*

an impact on how agreements establishing JDZs in conjunction with a maritime boundary are designed. Therefore, those agreements are discussed in this Chapter, separately from provisional arrangements existing in undelimited maritime areas. Joint zone agreements also differ from agreements on transboundary hydrocarbons. They apply to all hydrocarbon resources located within such zones on both sides of the boundary, not only to cross-border hydrocarbons. Insofar as the regimes created by joint zone agreements are different, these agreements are examined on an agreement-by-agreement basis in chronological order, focusing particularly on the character of due diligence (and, consequently, on the issue of shared State responsibility). In other words, the approach to examining joint zone agreements is similar to that employed in Chapter 6 of this thesis. When analyzing agreements concerning transboundary hydrocarbons, this Chapter applies an approach different from that used in relation to agreements and provisional arrangements that establish JDZs both in addition to and in the absence of maritime boundaries. It is easier to identify common patterns that exist in agreements dealing with transboundary hydrocarbons than in the case of the latter agreements and arrangements.

Chapters 7.2-7.6 consider how the basic due diligence components are shaped and operationalized in the context of transboundary hydrocarbons. Chapter 7.7 focuses on the design of due diligence under joint zone agreements. Chapter 7.8 provides conclusions regarding the probability of shared State responsibility in the respective contexts.

7.2 Is there a recognition of the joint due diligence obligation?

Many agreements on transboundary hydrocarbons acknowledge that the Parties are required to protect and preserve the (marine) environment, and to prevent (environmental) damage that might result from hydrocarbon (mainly, exploitation) activities in respect of a transboundary field.[1307] At this point, it is important to recall that these requirements do not need to be explicitly incorporated into an agreement to be binding on the Parties. As discussed in Chapter 5, each coastal State is obligated to ensure that hydrocarbon activities on its CS, including hydrocarbon activities with respect to a transboundary deposit, are conducted so as not to cause significant environmental damage. It is worth noting that while each agreement primarily focuses on damage to the (marine) environment, including damage incurred from pollution,[1308]

[1307] See, for example, Canada-France Agreement, art. 13; Venezuela-T&T Framework Treaty, art. 9; and other agreements discussed in this Chapter.
[1308] See, for example, Cyprus-Egypt Framework Agreement, art. 5 (1).

several agreements address other types of damage. For example, the UK-Norway Framework Agreement and the Canada-France Agreement refer to damage to "vessels or fishing gear".[1309] This reflects a general understanding that the main risk associated with hydrocarbon activities is the risk of causing pollution or other harm to the marine environment.[1310]

The key issue considered in this Chapter is whether the due diligence obligation to prevent environmental harm is shaped as a joint duty of two States exploring and exploiting a straddling hydrocarbon deposit. The emphasis in every agreement is on each Party's individual due diligence obligation. However, some agreements contain indicators pointing to the joint character of due diligence in the context of transboundary hydrocarbons. For example, the UK-Norway Framework Agreement, as well as the Frigg, Statfjord and Murchison UAs, require Norway and the UK, "jointly and severally", to ensure that their hydrocarbon activities in respect of a cross-border reservoir do not cause "pollution of the marine environment or damage by pollution to the coastline, shore facilities or amenities, or damage to sensitive habitats or vessels or fishing gear of any country".[1311] The Venezuela-T&T Framework Treaty also stipulates that the Parties shall exercise their due diligence obligations "jointly and severally".[1312] Although other agreements on transboundary hydrocarbons place an emphasis on the individual character of due diligence (which means that each Party has to exercise its due diligence obligation separately), they include a number of tools (in particular enforcement tools) aimed at expanding the scope of this individual due diligence obligation to the other side of the maritime boundary.[1313] The following sections of this Chapter discuss whether these factors evidence that due diligence in the context of transboundary hydrocarbons is of a shared nature.

It is worth noting the Canada-France Agreement in particular. A notable feature of this Agreement is that it includes an additional commitment by each Party to ensure that its licensees are able to address any damage caused by hydrocarbon activities originating in its territorial sea or EEZ.[1314] In other words, the Canada-France Agreement deals with damage in general and not only with damage arising out of hydrocarbon activities with respect to transboundary fields.

[1309] UK-Norway Framework Agreement, art. 1.5 (4); Canada-France Agreement, art. 13 (1). See also Venezuela-T&T Framework Treaty, art. 9.1, and Nigeria-Equatorial Guinea Protocol, art. 9.
[1310] See Chapter 5.
[1311] UK-Norway Framework Agreement, art. 1.5 (4); Frigg UA, art. 23; Statfjord and Murchison UAs, arts. 14. See *supra* note 1309. It is worth noting that the UAs do not include "damage to sensitive habitats".
[1312] Venezuela-T&T Framework Treaty, art. 9.1.
[1313] See Chapters 7.3 and 7.4.
[1314] Canada-France Agreement, art. 13 (4). Article 16 (2) also obligates each Party to require its licensees to provide security to cover the costs of abandonment of facilities.

At the same time, non-inclusion of such a commitment in an agreement regarding transboundary hydrocarbons does not mean that the Parties are exempt from this commitment. As discussed in Chapter 5, the standard of due diligence requires States to introduce a civil liability regime that allows addressing environmental damage.[1315] Nonetheless, dissimilar to other similar agreements examined in this Chapter, the Canada-France Agreement explicitly reaffirms that commitment.

7.3 Applicable laws and regulations

The main rule of every agreement is that each Party applies its laws and regulations to govern hydrocarbon activities taking place on its side of the maritime boundary. In other words, each Party applies its own health, safety, environmental, labor, fiscal and other relevant standards. However, it may occur that the standards of State A differ from those established by State B. For example, the UK-Norway Report highlighted that Norway and the UK have developed different environmental standards under the framework of the OSPAR Convention[1316] and that regulatory bodies issuing health and safety standards are distinct.[1317] The situation may become more difficult where one State is a party to a regional or global convention, while the other State is not. For instance, the US is a party to the Espoo Convention, whereas Mexico is not.[1318]

Therefore, many agreements on transboundary hydrocarbons address the possibility of the existence of dissimilar standards on both sides of the boundary. They require the Parties to encourage, where appropriate, the adoption of common health, safety and environmental (HSE) standards applicable to hydrocarbon activities with respect to a transboundary field or, at least, seek to ensure that their respective standards are compatible.[1319] It is worth noting that none of the agreements considered in this Chapter provide for an absolute obligation on the Parties to

[1315] As noted in Chapter 7.1, States have established such regimes.
[1316] Convention for the Protection of the Marine Environment of the North-East Atlantic, Paris, 22 September 1992, EIF: 25 March 1998, 2354 UNTS 67.
[1317] UK-Norway Report, *op. cit.*, pp. 15 and 18.
[1318] Convention on Environmental Impact Assessment in a Transboundary Context, Espoo, 25 February 1991, EIF: 10 September 1997, 1989 UNTS 309. The list of the Parties is available at https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XXVII-4-a&chapter=27&lang=en (last accessed January 2019). It is however important to note that the US and Mexico may be Parties to other global/regional arrangements. For example, they are the Parties to the Cartagena Convention (Convention for the Protection and Development of the Marine Environment of the Wider Caribbean Region, Cartagena, 24 March 1983, EIF: 11 October 1986, 1506 UNTS 157). The list of the Parties is available at http://www.cep.unep.org/cartagena-convention (last accessed January 2019). See Chapter 7.6 in this respect.
[1319] Frigg UA, arts. 8 and 17; Statfjord and Murchison UAs, arts. 5 and 15; UK-Norway Framework Agreement, art. 1.5 (2) (for example, in October 2012, the UK and Norway reached a MoU on health and safety interventions related to pipelines and offshore installations covered by Agreements between the UK and Norway, available at http://www.hse.gov.uk/aboutus/howwework/framework/mou/psamou.pdf (last accessed January 2019)); Canada-France Agreement, art. 11; Cyprus-Egypt Framework Agreement, art. 5 (2); US-Mexico Agreement, art. 19 (1).

put in place uniform standards. The Parties are obligated to strive to achieve such uniformity. The inclusion of that obligation is important, even though it does not completely exclude the presence of incompatible (environmental) standards. The Canada-France Agreement is more specific when dealing with the matter of EIA. It includes a commitment of the Parties to reach an additional administrative arrangement to assist them to perform their obligations under the Espoo Convention,[1320] which has yet to be concluded.

It is notable that a few agreements (e.g., Venezuela-T&T Framework Treaty) do not deal with the issue of dissimilar standards at all. One possible explanation might be that the States Parties to these agreements have developed similar HSE and other standards. The Nigeria-Equatorial Guinea Unitization Protocol is exceptional since it provides that hydrocarbon activities, even if they take place on the Nigerian side of the boundary, are subject to the laws and regulations of Equatorial Guinea.[1321] This pragmatic approach is due to the fact that a relatively small portion of the cross-border Ekanga-Zafiro field is situated on the Nigerian side and, as of 2002, Equatorial Guinea had already established extensive production facilities in respect of its Zafiro portion.[1322]

Thus, when considering the regulatory component of due diligence in the context of transboundary hydrocarbons, it is clear that the individual exercise of jurisdiction with respect to environmental regulation is a fundamental principle. This casts doubt on the joint character of due diligence and, hence, distinguishes the context of transboundary hydrocarbons from the context of disputed hydrocarbons in which the regulatory competence is principally exercised cooperatively.[1323] At the same time, the analysis in this section shows that the States sharing a transboundary petroleum deposit share the burden of establishing an effective regulatory framework applicable to activities with regard to this deposit.

7.4 Mutual enforcement mechanisms

As discussed in Chapter 5.5, one of the pillars of the due diligence standard is that each State shall ensure that hydrocarbon activities within its jurisdictional limits are carried out in compliance with applicable HSE and other relevant standards. For this purpose, States shall

[1320] Canada-France Agreement, art. 13 (3).
[1321] Nigeria-Equatorial Guinea Unitization Protocol, *supra* note 1298, art. 4. See also "Equatorial Guinea-Nigeria", Report No. 4-9 (2), *op. cit.*, p. 3626.
[1322] "Equatorial Guinea-Nigeria", Report No. 4-9 (2), *op. cit.*, p. 3626.
[1323] See Chapter 6.

establish enforcement mechanisms.[1324] This section examines how enforcement mechanisms are set up in the context of transboundary hydrocarbons, which can serve as an indication of the (shared or individual) character of due diligence.

Many agreements on transboundary hydrocarbons appear to reflect the shared nature of enforcement jurisdiction insofar as they provide one Party with the right to oversee exploitation activities conducted by the other Party with respect to a transboundary petroleum field.[1325] In this regard, each Party is entitled to appoint inspectors.[1326] In all agreements discussed in this Chapter, the mandate of those inspectors is elaborated on to varying degrees. While some agreements merely stipulate that the inspectors have to ensure that exploitation activities on both sides of the boundary are conducted in compliance with the HSE and other applicable standards,[1327] other agreements develop this mandate further. The latter category of agreements includes, *inter alia*, the UK-Norway Framework Agreement and the US-Mexico Agreement.[1328] These Agreements, however, formulate the powers of inspectors differently.

In accordance with article 1.6 (3) of the UK-Norway Framework Agreement, an inspector of one Party may request an inspector of the other Party to exercise their mandate with respect to any installation located on the CS of the latter Party when circumstances require it.[1329] For example, this provision might be triggered when a platform is not properly equipped with markings to prevent collisions at sea. Furthermore, article 1.6 (3) provides that in the event of disagreement between the inspectors or refusal of the inspector of one Party to take action at the request of the inspector of the other Party, the matter shall be referred to the competent authorities of the two Parties.

Pursuant to article 1.6 (4) of the UK-Norway Framework Agreement, an inspector of either Party may order the immediate cessation of any or all hydrocarbon activities. It is notable that this provision does not address the situation where such a course is necessary or expedient to protect the marine environment against actual or potential pollution. It only provides that immediate cessation may be ordered to avoid "an incident involving risk to life or serious personal injury, whether the danger is immediate or not, or minimising the consequences of

[1324] See Chapter 5.5.
[1325] See, for example, Markham UA, art. 11; UK-Norway Framework Agreement, art. 1.6; Norway-Iceland Agreement of 2008, art. 3 (11); Norway-Russia Treaty, Annex II, art. 1 (11); US-Mexico Agreement, art. 18.
[1326] *Ibid.*
[1327] For example, Cyprus-Egypt Framework Agreement, art. 6 (1).
[1328] This section also considers the Frigg, Statfjord, Murchison and Markham UAs.
[1329] It is worth noting that while the term 'installation' excludes pipelines, article 1.2 nevertheless provides that an inspector may carry out inspection activities with regard to "any infrastructure", which includes pipelines.

such an incident", and when "time and circumstances do not permit consultation between the [i]nspectors of the two Governments".[1330] Thereafter, the inspectors must report the order with an indication of the reasons to the competent authorities of both Parties who shall consult to consider the actions for resumption of petroleum activities.[1331]

One can note that the provisions of the UK-Norway Framework Agreement on inspections are similar to those included in the Frigg UA.[1332] At the same time, the provisions of the Statfjord and Murchison UAs addressing inspections are framed differently. While these provisions refer to "an imminent danger … of an accident involving serious pollution", they do not empower inspectors to suspend activities.[1333] The inspectors are only required to inform the persons in charge of an installation and the other Party of such a danger.[1334]

Unlike the UK-Norway Framework Agreement, the US-Mexico Agreement provides that a risk of "significant damage to the environment" is one of the conditions under which a hydrocarbon activity posing such risk may be ceased.[1335] Nevertheless, while in the UK-Norway Framework Agreement an inspector of either Party may issue a cessation order, the US-Mexico Agreement states that only an inspector who has jurisdiction over the activity can do so (upon the request of an inspector of the other Party).[1336] A notable provision of article 18 (5) of the US-Mexico Agreement is that nothing prevents the right of each Party to authorize the resumption of the ceased activity.[1337] In other words, it means that even if after consultations Party A considers an operation of Party B as being subject to suspension for the reasons set forth in article 18 (5), Party B may nevertheless restart this operation. Although it seems that Party B may resume the operation without taking action to deal with the environmental risk identified by Party A, such a resumption may be inconsistent with Party B's primary duty to ensure that its operations do not entail significant harm to the (marine) environment.[1338]

There are also agreements that do not contain provisions on inspections. Such agreements include the Canada-France Agreement and the Venezuela-T&T Framework Treaty. Whilst it is reasonable to expect that a subsequent (unitization) agreement is likely to incorporate the joint

[1330] UK-Norway Framework Agreement, art. 1.6 (4).
[1331] *Ibid.*
[1332] Frigg UA, arts. 8 (3)-(4) (concerning installations) and 18 (concerning pipelines).
[1333] Statfjord and Murchison UAs, arts. 7 (2). The Markham UA includes the similar provision (Markham UA, art. 11 (3)).
[1334] *Ibid.*
[1335] US-Mexico Agreement, art.18 (5).
[1336] *Ibid.*
[1337] *Ibid.*
[1338] See Chapter 5 in this regard.

inspection regime, the Loran-Manatee UA (between Venezuela and T&T), for instance, is silent on this issue.[1339] At the same time, it is interesting to note that while the Canada-France Agreement places a strong emphasis on the individual exercise of due diligence, the Venezuela-T&T Framework Treaty states that the Parties must, "jointly and severally", discharge their due diligence obligations.[1340] It is however unclear how Venezuela and T&T intend to put this joint component into practice. In any case, the absence of inspection provisions in an agreement means that State A would not be able to monitor State B's hydrocarbon operations since such powers are not given to State A. It is nevertheless important to bear in mind that each State is required to oversee oil and gas activities authorized on its side of the maritime boundary to meet its due diligence obligation.[1341]

The agreements on transboundary hydrocarbons explain that a joint inspection regime is introduced to enable each Party to safeguard the interests related to environmental and other relevant matters.[1342] In other words, the Parties share the interest in ensuring that hydrocarbon activities in the unit area do not entail significant harm, including harm to the marine environment. Such a common interest is understandable because activities take place close to (as well as along) the boundary and any (marine) environmental harm may transform into transboundary faster than in case of similar activities carried out at a considerable distance from this boundary.

Apart from inspections, many agreements obligate each Party to provide the other Party with all relevant information concerning hydrocarbon operations in respect of a cross-border deposit.[1343] The scope of information to be exchanged between the Parties is rarely determined. However, one can conclude that unlike inspections that are to be carried out mainly at the exploitation stage (the stage involving the construction and operation of installations and other facilities), information sharing is a constant process covering, *inter alia*, the exchange of geological data (subject to certain restrictions) and other information obtained from inspectors and/or licensees (e.g., information relating to contamination of the marine environment). As discussed in the next section of this Chapter, bodies created under the agreements on

[1339] As noted above in this thesis, other UAs between Venezuela and T&T regarding the Kapok-Dorado and Manakin-Cocuina fields are not publicly available.
[1340] *Supra* note 1312.
[1341] This constitutes an important element of due diligence considered in Chapter 5.
[1342] See, for instance, Markham UA, art. 11 (2); UK-Norway Framework Agreement, art. 1.6 (1); Norway-Russia Treaty, Annex II, art. 1 (11); US-Mexico Agreement, art. 18 (2).
[1343] See, for example, UK-Norway Framework Agreement, art. 1.10; Venezuela-T&T Framework Treaty, art. 13; Norway-Russia Treaty, Annex II, art. 1 (11); Canada-France, art. 4 (2).

transboundary hydrocarbons are aimed at facilitating the exchange of information.[1344] It is also important to note that whereas the exchange of information is generally compulsory, inspections constitute the right of either Party. The latter means that if State A resorts to its right to inspect, State B is required to provide access to facilities for the purpose of inspecting.

Although mutual enforcement mechanisms, including the regime for joint inspections, are available in the context of transboundary hydrocarbons, their presence can hardly qualify the standard of due diligence as a joint obligation. In addition to the fact that the scope of the enforcement component on each side of the boundary differs, depending on the scale and type of petroleum operations (in particular, where all or most of exploitation activities are carried out on one side of the boundary), it implies a certain degree of flexibility (e.g., State A may have limited financial and/or human resources to conduct inspections on State B's side). Nevertheless, the presence of such mutual enforcement tools is important because they are intended to ensure, *inter alia*, that the marine environment is adequately protected in the course of petroleum activities with respect to a straddling deposit.

7.5 Institutional arrangements

As noted in the introduction to this Chapter, the institutional framework applicable to transboundary hydrocarbons is not as complex as in the context of disputed hydrocarbons. While agreements dealing with transboundary accumulations of hydrocarbons create inter-State bodies, their primary function is to provide a means for ensuring consultation and exchange of information between the Parties on different issues (e.g., the issue of coordinated marine environmental protection) and a means for resolving disagreements without invoking other dispute settlement procedures.[1345] These inter-State bodies are not empowered to issue laws and regulations, grant licenses or carry out inspections and they do not have legal personality.[1346] Such powers are to be exercised by each Party's respective national organs.

The agreements label the inter-State bodies differently. For example, the Frigg, Statfjord and Murchison UAs refer to a "Consultative Commission" consisting of six representatives (three from each Party).[1347] The UK-Norway Framework Agreement sets up a "Framework

[1344] See Chapter 7.5.
[1345] See, for example, UK-Norway Framework Agreement, art. 1.15; Norway-Russia Treaty, Annex II, art. 1 (13); US-Mexico Agreement, art. 14.
[1346] In the context of disputed hydrocarbons, such powers are usually given to inter-State bodies having separate legal personality. See Chapter 6.
[1347] Frigg UA, art. 27; Statfjord and Murchison UAs, arts. 20.

Forum".[1348] The Norway-Russia Treaty and US-Mexico Agreement mention a "Joint Commission".[1349] However, the bodies' different titles have no impact on their functions as they are described above.

Generally, an inter-State body is established with respect to a particular discovered cross-border deposit (and subsequently ceases to function upon the commercial depletion of that deposit and decommission of the facilities relating to it). Some agreements create an entity managing several detected and possible transboundary hydrocarbons. For instance, the Venezuela-T&T Framework Treaty establishes a joint Ministerial Commission (MC) consisting of the Ministers in the energy and hydrocarbon sector of each Party and which can include two other members of equivalent rank appointed by the Parties' Governments.[1350] The MC has overall responsibility for all issues relating to the exploration and exploitation of transboundary hydrocarbon fields.[1351] The MC's administrative body is a Steering Committee consisting of at least sex members (each Minister designates three members) and empowered to consider matters referred to it by the MC.[1352] The Steering Committee may establish working groups for a cross-border hydrocarbon deposit and involve experts to advise on matters to be considered in the process of the implementation of the Framework Treaty.[1353] The Framework Forum established under the UK-Norway Framework Agreement also operates on a permanent basis for a number of petroleum reservoirs.[1354]

Many agreements do not specify the characteristics of the representatives to be appointed by the Parties to the inter-State bodies: whether they are to be technically qualified specialists or/and persons with a political mandate. Only a few agreements specify characteristics. For example, the Canada-France Agreement establishes a technical working group.[1355] The Angola-Congo Unitization Protocol sets up an Inter-State Unitization Management Body, which integrates a decision-making structure and a technical structure consisting of specialists from the two States.[1356] It is important to underline that unlike other inter-State bodies created for the

[1348] UK-Norway Framework Agreement, art. 1.15.
[1349] Norway-Russia Treaty, Annex II, art. 1 (13); US-Mexico Agreement, art. 14.
[1350] Venezuela-T&T Framework Treaty, art. 5.1. There are T&T's Ministry of Energy and Energy Industries (http://www.energy.gov.tt/) and Venezuela's Ministry for Petroleum (http://www.minpet.gob.ve/index.php/es-es/).
[1351] *Ibid.*, art. 5.3.
[1352] *Ibid.*, art. 5.4.
[1353] *Ibid.*, art. 5.6. For example, there is a working group for the transboundary Kapok-Dorado hydrocarbon reservoir (see Chapter 1).
[1354] UK-Norway Framework Agreement, art. 1.15.
[1355] Canada-France Agreement, art. 17.
[1356] Angola-Congo Unitization Protocol, art. 4.

cooperative management of transboundary hydrocarbons, the Angola-Congo Body has broad powers, similar to those of the institutions established in undelimited maritime areas.[1357] Hence, the issues considered in Chapter 6.13 are also relevant in the Angola-Congo context.

Thus, the status of the inter-State bodies in the context of transboundary hydrocarbons is different from the status of the bodies created in disputed maritime areas. This fact has an impact on the issue of (shared) State responsibility. Insofar as there is no delegation of due diligence (or some due diligence components) to a separate legal entity, the question of whether a breach of due diligence by this entity is attributable to the States that established it (Chapter 6 addressed this question) is not the main one in the context of transboundary hydrocarbons. Instead, in the event of an incident causing significant environmental harm to a third party,[1358] one must look at the extent to which States that share an accumulation of hydrocarbons have exercised their due diligence obligations to prevent such harm.[1359]

7.6 Occurrence of environmental harm

As discussed in Chapter 5, the standard of due diligence continues to apply after the occurrence of environmental harm. This section considers the regime established by States to address environmental harm arising out of exploration and exploitation operations (and other activities associated with those operations) with regard to a cross-border hydrocarbon reservoir because it may provide with indications as to whether remedial measures can lead to shared State responsibility.

The issue of environmental damage is not merely hypothetical. One can cite an example of a pollution incident resulted from hydrocarbon operations with respect to the cross-border Statfjord field. In December 2007, a rupture of the loading hose on a loading system on the Statfjord field resulted in "the second largest oil spill (around 4,400 m^3 of crude oil) from the petroleum activities on the Norwegian [CS]".[1360] In line with the requisite standard of due diligence, Norway investigated this oil spill incident and, in 2009, fined the operator of the

[1357] *Ibid.* See also Chapter 6. Unfortunately, the text of the agreement establishing the Inter-State Unitization Management Body (dated 27 November 2002) is not publicly available. Some information is included in "Angola-Republic of Congo", Report No. 4-16, *op. cit*. This complex institutional framework may be explained by the fact that Angola and Congo have no boundary delimiting the CS between them (Angola-Congo Unitization Protocol, Preamble).
[1358] See Introduction to Part III.
[1359] See also Chapter 7.8.
[1360] PSA's Investigation Report, March 2008, available at http://www.ptil.no/getfile.php/136470/Tilsyn%20på%20nettet/Granskinger/engelsk_granskingsrapport%20oljeutslipp%20statfjord.pdf (last accessed January 2019). The first large oil spill was the blowout of the Bravo platform (related to the Ekofisk petroleum field located solely on the CS of Norway) in 1977.

Statfjord field, Equinor (previously Statoil).[1361] The oil spill did not reach the waters of other neighboring States, including the UK.[1362]

The agreements on transboundary hydrocarbons examined in this thesis generally do not devote much attention to a scenario in which (marine) environmental damage has occurred. The possible premise for this is the acknowledgment of the Parties that the Party on whose side of the maritime boundary environmental damage has occurred shall deal with such damage and prevent its spreading beyond the limits of its jurisdiction.[1363] The Statfjord example mentioned above supports that premise. Moreover, as noted in Chapter 7.1, there may be other applicable agreements providing for cooperative measures in case of environmental harm in general, including harm originating from petroleum activities in respect of a transboundary deposit. This section considers the role of these other applicable agreements in the context of transboundary hydrocarbons, particularly in triggering shared State responsibility.

7.6.1 Other applicable agreements and their relevance

Many agreements on transboundary hydrocarbons include cross-references to other applicable agreements. The Venezuela-T&T Framework Treaty provides that the Parties must require their licensees to implement "the relevant measures and procedures to prevent or remediate pollution of the marine environment, […], taking into account the respective applicable laws and the relevant international and regional standards, procedures, agreements and recommended practices and guidelines, in particular those promulgated by the Caribbean Environmental Programme of the [UNEP] and the [IMO]",[1364] including the Cartagena Convention and the International Convention on Oil Pollution Preparedness, Response and Cooperation (OPRC).[1365] Apart from Venezuela and T&T, Mexico and the US are also Parties to the regional Cartagena Convention. According to this Convention, the Parties have committed themselves to carry out an EIA, notify other States that may be affected by pollution (as well as competent IOs), and cooperate in order to respond to pollution and develop rules in the field of liability and compensation for damage resulting from pollution.[1366] The Cartagena Convention is

[1361] *Ibid*. See also I. Eftestøl, "40.000 liter olje sluppet ut på Statfjord-feltet", NRK, 8 October 2015, available at https://www.nrk.no/rogaland/oljeutslipp-pa-statfjord-feltet-1.12593245 (last accessed January 2019). Statoil was fined 25 mil. NOK.
[1362] *Ibid.*
[1363] See Chapter 7.1.
[1364] Venezuela-T&T Framework Treaty, art. 9.2. The official website of the Caribbean Environmental Programme of the UNEP: http://cep.unep.org/ (last accessed January 2019).
[1365] International Convention on Oil Pollution Preparedness, Response and Cooperation, London, 30 November 1990, EIF: 13 May 1995, 1891 UNTS 78. Venezuela and T&T are Parties to the OPRC.
[1366] Cartagena Convention, arts. 11-14.

supplemented by three protocols, one of which deals with oil spill incidents (Oil Spills Protocol).[1367]

The US-Mexico Agreement refers to the OPRC. In article 19 (3) of the US-Mexico Agreement, the Parties recognize the importance of their obligations with respect to oil pollution preparedness, response and cooperation, and agree to review the implementation of these obligations in light of activities in respect of transboundary hydrocarbon deposits. In addition, the US and Mexico have a bilateral agreement on cooperation regarding pollution of the marine environment by discharges of hydrocarbons and other hazardous substances,[1368] according to which the Parties adopted a joint marine pollution contingency plan, known as the MEXUS Plan.[1369] These documents provide for cooperative measures that each State shall take in dealing with a pollution incident that may affect the marine environment of the other State. While they do not apply to the gaps of the extended CS in the Gulf of Mexico,[1370] nothing prevents the Parties to extend their application to these gaps through the MEXUSGULF Annex that supplements the MEXUS Plan by providing additional regional procedures in the Gulf of Mexico.[1371]

The absence of explicit references to other relevant agreements does not mean that they are not to be observed. Many States Parties to agreements on transboundary hydrocarbons are also bound by other agreements dealing with their cooperation in responding to pollution incidents. For example, the UK and Norway, as well as other States bordering the North Sea, are Parties to the Bonn Agreement according to which they agree to cooperate in detecting and combating pollution of the North Sea by oil and other harmful substances.[1372] Under the framework of the

[1367] T&T, Venezuela, Mexico and the US have ratified the Oil Spills Protocol, available at http://www.cep.unep.org/cartagena-convention (last accessed January 2019).
[1368] Agreement of Cooperation between the United Mexican States and the United States of America Regarding Pollution of the Marine Environment by Discharge of Hydrocarbons and Other Hazardous Substances (US-Mexico Agreement of Marine Cooperation), Mexico City, 24 July 1980, EIF: 30 March 1981, 1241 UNTS 235.
[1369] *Ibid.*, art 1. Joint Contingency Plan between the Secretariat of the Navy of the United Mexican States and the United States Coast Guard Regarding Pollution of the Maritime Environment by Discharges of Hydrocarbons and Other Hazardous Substances, Mexico City, 11 July 2017, available at http://www.glo.texas.gov/ost/spill-response-resources/additionaldocs/mexusplan.pdf (last accessed January 2019). An earlier version of the MEXUS Plan (of 2000) is available at http://www.slc.ca.gov/About/Prevention_First/2002/Environmental-MEXUSPLAN.pdf (last accessed January 2019).
[1370] US-Mexico Agreement of Marine Cooperation, *supra* note 1368, art. VII; MEXUS Plan, section 103. See also Chapter 1 regarding the western and eastern gaps of the extended CS in the Gulf of Mexico.
[1371] MEXUSGULF Annex was signed in 2012. Apart from the MEXUSGULF Annex, there is also the MEXUSPAC Annex adopted in 2003 and applicable to the Pacific Ocean. See in detail A. Ascencio-Herrera, "The Evolution of Mexico's Marine National Contingency Plan", in: A. Telesetsky et al. (eds), *Marine Pollution Contingency Planning: State Practice in Asia-Pacific States*, Brill, 2017, pp. 147-153.
[1372] Agreement between the Governments of the Kingdom of Belgium, the Kingdom of Denmark, the European Union, the federal Republic of Germany, the French Republic, the Kingdom of the Netherlands, the Kingdom of Norway, the Kingdom of Sweden and the United Kingdom of Great Britain and Northern Ireland for cooperation

Bonn Agreement, Norway and the UK have developed a joint plan for counter pollution operations (NORBRIT Plan) in the maritime area extending to a distance of 50 nm on either side of the delimitation line.[1373] In other words, the "co-operation corridor" established under the UK-Norway Framework Agreement falls within the geographical scope of the NORBRIT Plan.[1374] The Canada-France Agreement also emphasizes the need to adopt a joint marine pollution contingency plan,[1375] similar to the NORBRIT Plan or the MEXUS Plan mentioned above.

There is only one example dealing with pollution incidents from activities in respect of transboundary hydrocarbons. The UK-Norway Guidelines outline a procedure in the event of a pollution incident on a transboundary hydrocarbon field. The Guidelines provide that the unit operator shall notify the competent authority of the Party that issued the license operation, regardless of on which side of the delimitation line the incident has occurred.[1376] In other words, any pollution incident on the transboundary Flyndre field shall be reported to the UK, while on the Statfjord field it shall be reported to Norway.[1377] It is interesting that the regulatory framework does not include the duty of the Party that received the notification of an incident to inform the other Party of such an incident. However, under international law, each State shall inform other States (regardless of whether they are flag, neighboring or distant coastal States) if the former has grounds to believe that pollution originating within its jurisdiction or control may affect the latter States.[1378]

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in dealing with pollution of the North Sea by oil and other harmful substances, Bonn, 13 September 1983, EIF: 1 September 1989, 1605 UNTS, registration number 28022, Preamble and art. 1. In 2001, the Bonn Agreement was amended by the Decision to enable the Accession of the Republic of Ireland to the Bonn Agreement. The amended text is available at https://www.bonnagreement.org/site/assets/files/1080/chapter29_text_of_the_bonn_agreement.pdf (last accessed January 2019).

[1373] The Norwegian Coastal Administration, International cooperation on oil spill preparedness, available at http://www.kystverket.no/en/EN_Preparedness-against-acute-pollution/Protection-against-acute-pollution/International-cooperation/ (last accessed January 2019).

[1374] See Chapter 1 about the "co-operation corridor".

[1375] Canada-France Agreement, art. 14 (1).

[1376] UK-Norway Guidelines, *op. cit.*, section 4.4, p. 8. Chapter 7.1 explains the concept of unit operator.

[1377] As of November 2018, the unit operator of the Flyndre field is Maersk Oil UK Limited (the UK) and the unit operator of the Statfjord field is Equinor (Norway). See the map of these fields, *op. cit.* (Chapter 1). The competent authorities are the Norwegian Coastal Administration in Norway and the Maritime & Coastguard Agency in the UK (UK-Norway Guidelines, *op. cit.*, section 4.4, p. 8). For example, in October 2015, Statoil notified the Norwegian Coastal Administration of oil pollution that occurred during loading from platform Statfjord A via OLS B loading buoy to shuttle tanker *Hilda Knutsen* (PSA's Investigation Report, September 2016, available at http://www.ptil.no/investigations/investigation-of-oil-spill-from-statfjord-ols-b-article12339-893.html (last accessed January 2019)). According to that Report, the oil spill was broken down by wind and waves and naturally dispersed in the water column.

[1378] See Chapter 5.

Thus, the study in this section shows that there is no particular need to incorporate specific cooperative measures aimed at minimizing and eliminating actual environmental harm into agreements on transboundary hydrocarbons because these measures exist outside those agreements.[1379] At the same time, the measures are not adapted to the issue of transboundary hydrocarbons. While it is desirable to develop a clear action plan in case of pollution and other environmental harm from a cross-border field (similar to that adopted between Norway and the UK), one could state that the existing measures are sufficient to address any harm.

The study also shows that cooperative remedial measures are not automatically triggered in the context of transboundary hydrocarbons. The existence of the maritime boundary has an impact in that regard. Each State exercises jurisdiction with respect to actions or omissions occurred on its side of the boundary. However, it could be argued that shared State responsibility might arise in a situation where State B that, upon the request of State A, is engaged in (clean-up) operations addressing environmental harm occurred on State A's side contributes to the commission of a wrongful act. In this situation, the key question will be whether the conduct of private contractors involved in those operations is attributable to State B (as well as to State A) under the provisions of the ARSIWA.[1380]

7.7 Joint zone agreements

This section considers whether shared State responsibility may arise in the context of joint zone agreements. The introduction to this Chapter explained why these agreements are examined on an agreement-by-agreement basis.[1381]

7.7.1 Saudi Arabia and Bahrain

The Saudi Arabia-Bahrain Agreement (1958) delimited the CS between the two States and established a maritime area called "Fasht bu Saafa Hexagon" (Hexagon), where the Parties agreed to share the revenues received from the exploitation of petroleum resources equally.[1382]

[1379] Another example is Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic, Kiruna, 15 May 2003, EIF: pending, reproduced in K. Schönfeldt (ed), *The Arctic in International Law and Policy*, 2017, document No. 254, pp. 1251-1258. This Agreement covers the Barents Sea, including the maritime area where hydrocarbon deposit(s) straddling the delimitation line between Norway and Russia may be found.

[1380] See Chapter 5.6 in this respect.

[1381] Agreement between Libya and Tunisia, 8 August 1988 can also be listed among joint zone agreements. However, this Agreement is not publicly available and, consequently, its comprehensive consideration is not possible in this thesis. For some limited information concerning this Agreement, see Miyoshi 1999, *op. cit.*, pp. 34-35, and Bastida et al., *op. cit.*, pp. 404-405.

[1382] Saudi Arabia-Bahrain Agreement, arts. 1-2.

The Hexagon encompasses the giant Abu Sa'fah oil field (still producing), which had previously been contested by the two countries.[1383]

The Saudi Arabia-Bahrain Agreement differs from other joint zone agreements examined in this Chapter because the Hexagon entirely lies on the Saudi Arabian side of the CS boundary (Illustration No. 25).[1384] Saudi Arabia exercises its jurisdiction over the Hexagon on the condition that it pays Bahrain half of the net income.[1385] In other words, Saudi Arabia applies its laws and regulations in the Hexagon, monitors hydrocarbon activities within this zone and responses to any pollution incident. Except for receiving its share, Bahrain is involved in neither making amendments to the regulatory framework nor the control over hydrocarbon activities conducted in the Hexagon.

The question is whether Bahrain may also incur international responsibility for significant environmental harm caused to a third State (e.g., to Iran) through a failure of Saudi Arabia to exercise its due diligence obligation in respect of hydrocarbon activities in the Hexagon since Bahrain receives benefits from these activities. At this point, one could recall the single State models discussed in Chapter 6 and argue that Bahrain should develop certain tools to monitor the (non-)fulfillment of due diligence by Saudi Arabia, even if such tools are not explicitly provided.[1386] If the fact that Bahrain obtains benefits from the Abu Sa'fah field can indeed be regarded as having an impact on the responsibility owed by Saudi Arabia to a third State, there is however uncertainty concerning the extent of this impact and the consequences attached to the non-establishment of necessary tools by Bahrain.

7.7.2 Saudi Arabia and Kuwait

The Saudi Arabia-Kuwait Agreement of 1965 divided the neutral zone established long before that (in 1922) into two equal parts.[1387] This Agreement provides that the area north of the dividing line is annexed to Kuwait as part of its territory, while the area south of that line is similarly annexed to Saudi Arabia as part of its territory.[1388] Even though each Party exercises

[1383] Schofield 2009, *op. cit.*, pp. 5-6.
[1384] Saudi Arabia-Bahrain Agreement, art. 2. Initially, the Parties desired to delimit the Hexagon, but abandoned that. See A. A. El-Hakim, *The Middle Eastern States and the Law of the Sea*, Manchester University Press, 1979, p. 88.
[1385] *Ibid.* For example, in 2015, Bahrain obtained 150,942 bbl/d (of approximately 300,000 bbl/d) from the Abu Sa'fah field, available at https://fanack.com/fanack-energy/bahrain/ (last accessed January 2019).
[1386] See Chapter 6.13.2.
[1387] Saudi Arabia-Kuwait Agreement of 1965, art. 1. The challenges in the management of the neutral zone before 1965 are explained by M. T. EL Ghoneimy, "The Legal Status of the Saudi-Kuwaiti Neutral Zone", *International and Comparative Law Quarterly*, 1966, volume 15 (3), pp. 690-717.
[1388] *Ibid.*, art. 2.

"rights of administration, legislation and defense" over the area annexed to it, both Parties have "equal rights" with respect to natural resources of the entire Partitioned Neutral Zone (PNZ).[1389]

Apart from the onshore PNZ mentioned above, there is also the offshore PNZ – a maritime area adjacent to the onshore PNZ (Illustration No. 26). While the Saudi Arabia-Kuwait Agreement of 1965 contains some provisions relating to the offshore PNZ,[1390] an additional agreement concluded between Saudi Arabia and Kuwait in 2000 (Saudi Arabia-Kuwait Agreement of 2000) supplements them.[1391] The Saudi Arabia-Kuwait Agreement of 2000 establishes the limits of the offshore PNZ.[1392] Similar to the onshore PNZ, the offshore PNZ is divided into two parts where the dividing line represents the maritime boundary between Saudi Arabia and Kuwait.[1393] In other words, it means that each Party exercises its coastal State jurisdiction on its own side of the dividing line.[1394] Despite the existence of the dividing line within the offshore PNZ, the Parties agreed to exploit natural resources situated in this zone jointly.[1395]

Under the Saudi Arabia-Kuwait Agreement of 1965, the Parties agreed to establish a "standing joint commission" (JC).[1396] This Commission is to be composed of an equal number of representatives from each Party.[1397] The JC's mandate is quite limited. The JC is responsible, *inter alia*, for undertaking studies on projects for the exploitation of the PNZ's natural resources; examining new permits, contracts and concessions in the PNZ and making appropriate recommendations in this respect to the Parties; concluding contracts and considering other matters referred to it by the Parties.[1398] The JC is not empowered to monitor joint petroleum activities undertaken by the Parties in the (onshore and offshore) PNZ or

[1389] *Ibid.*, arts. 3 and 5.
[1390] *Ibid.*, arts. 7 and 8.
[1391] Agreement between the Kingdom of Saudi Arabia and the State of Kuwait concerning the submerged area adjacent to the divided zone, Kuwait, 2 July 2000, EIF: 31 January 2001, 2141 UNTS 251.
[1392] *Ibid.*, arts. 2-4.
[1393] *Ibid.*, art. 1.
[1394] The Saudi Arabia-Kuwait Agreement of 2000 expanded the jurisdiction of each Party initially established by the Saudi Arabia-Kuwait Agreement of 1965. The latter Agreement deals only with the rights of the Parties over the *territorial waters* adjacent to the onshore PNZ (Saudi Arabia-Kuwait Agreement of 1965, art. 7).
[1395] Saudi Arabia-Kuwait Agreement of 1965, art. 8 (2); Saudi Arabia-Kuwait Agreement of 2000, Annex I.
[1396] Saudi Arabia-Kuwait Agreement of 1965, art. 17. It is notable that article 19 of the Saudi Arabia-Kuwait Agreement of 1965 includes the word 'committee'. A number of legal scholars also refer to the Saudi Arabia-Sudan Committee. See, for example, Townsend-Gault 1988, *op. cit.*, p. 150; B. Kwiatkowska, "Ocean Affairs and the Law of the Sea in Africa: Towards the 21st Century", *Marine Policy*, 1993, vol. 17 (1), p. 29. This chapter uses the terms 'commission' and 'committee' as synonyms.
[1397] *Ibid.*, art. 18. The number of representatives is to be agreed by the Ministers for Natural Resources in both countries, as well as the rules of procedure of the JC and the manner of securing the necessary appropriations for it.
[1398] *Ibid.*, art. 19.

suspend them if necessary. Logically, these powers lie with national organs of Saudi Arabia and Kuwait. The Saudi Arabia-Kuwait Agreement of 2000 is silent on the status of the JC.

To date, the regime of joint exploitation has faced different challenges. For example, in October 2014, Saudi Arabia halted operations with respect to the Al-Khafji oil field located in its part of the offshore PNZ for environmental reasons. In May 2015, production from the onshore Al-Wafra oil field was shut down due to operating difficulties. Since 2016, the two Parties have discussed resumption of production from the mentioned fields.[1399] To date, Saudi Arabia and Kuwait reached a preliminary agreement to restart production only from the Al-Khafji field.[1400] In August 2017, a series of oil spills was detected in the waters of the Kuwaiti part of the offshore PNZ (that are the territorial sea of Kuwait).[1401] It remains unclear as to what caused the spills. The investigation's results are not publicly available. The possible sources that could have led to the spills include the building of an oil refinery by Kuwait, an old 50-kilometre pipeline running from the shared Al-Khafji oil field to the shore and an oil tanker navigating in the Persian Gulf.[1402] The spills did not reach the waters of Saudi Arabia or Iran.[1403] As a coastal State having jurisdiction over the maritime zone where the spills occurred, Kuwait undertook clean-up operations with the help of private entities. The available information does not allow conclusions as to whether Kuwait (or Saudi Arabia) has failed to exercise due diligence in the offshore PNZ. It has been only observed that Kuwait failed to inform public of the oil spills.[1404]

It is notable that the Saudi Arabia-Kuwait Agreements of 1965 and 2000 are silent on the issue of marine environmental protection. However, the existence of the maritime border within the offshore PNZ means that each Party is required to take all necessary steps towards protection of the marine environment (see Chapter 5) in its part of this zone in order to meet the due

[1399] See, for example, R. Boslego, "'Neutral Zone' Output is not Neutral for Crude Prices", Seeking Alpha, 31 March 2016, available at https://seekingalpha.com/article/3962412-neutral-zone-output-neutral-crude-prices (last accessed January 2019).
[1400] A. Henni, "New Terms to Govern Al-Khafji Joint Saudi-Kuwait Oil Field", E&P, 16 August 2018, available at https://www.epmag.com/new-terms-govern-al-khafji-joint-saudi-kuwait-oil-field-1712821#p=1 (last accessed January 2019).
[1401] See, for example, J. Amos, "Satellite Imagery Reveals Scope of Last Week's Oil Spill in Kuwait", SkyTruth, 15 August 2017, available at https://www.skytruth.org/2017/08/satellite-imagery-reveals-scope-of-last-weeks-massive-oil-spill-in-kuwait/; G. Butt, "Kuwait: oil on troubled waters", Petroleum Economist, 14 August 2017, available at http://www.petroleum-economist.com/articles/upstream/exploration-production/2017/kuwait-oil-on-troubled-waters (last accessed January 2019).
[1402] *Ibid*. "Kuwait Cleans Up Oil Spill in Persian Gulf", The Maritime Executive, 14 August 2017, available at https://www.maritime-executive.com/article/kuwait-battles-oil-spill-near-saudi-border (last accessed January 2019). It is worth mentioning that Khafji Joint Operations (KJO) stated that that no oil leak had been observed in its operation area.
[1403] Saudi Arabia issued an emergency action plan to deal with potential effects of the spills.
[1404] "Environmentalists censure Kuwait media blackout on oil spill", 13 August 2017, PressTV, http://www.presstv.com/Detail/2017/08/13/531641/Kuwait-oil-spill-coverup (last accessed January 2019).

diligence standard. Kuwait and Saudi Arabia have established effective environmental protection regimes covering their parts of the offshore PNZ and the maritime zones beyond.[1405] It is hard to infer that due diligence in the offshore PNZ is of a joint character. Kuwait and Saudi Arabia have to exercise their due diligence obligations individually in this zone. In other words, in case of environmental damage to a third State (e.g., to Iran) originating in the offshore PNZ, one must look at the extent to which the Party of origin has exercised its due diligence obligation in relation to hydrocarbon activities conducted in the part of the offshore PNZ appertaining to it. Nevertheless, this does not mean that one Party has no recourse when the other Party does not adequately exercise its due diligence with respect to joint hydrocarbon activities. For example, under the Kuwait Regional Convention for Co-operation on the Protection of the Marine Environment from Pollution (which is also applicable to the offshore PNZ),[1406] if Kuwait or Saudi Arabia fails to meet its due diligence obligations set forth in this Convention, the other State(s), including Iran, Bahrain and other sovereign States bordering the Persian Gulf, might have recourse to a judicial commission.[1407] The Saudi Arabia-Kuwait Agreements do not provide Kuwait with the authority to monitor activities conducted in the Saudi Arabian part of the offshore PNZ and vice versa.

Thus, it is difficult to conclude that due diligence in the offshore PNZ constitutes a joint obligation of Saudi Arabia and Kuwait. The main components of due diligence are to be exercised individually on the basis of the maritime boundary established by the Saudi Arabia-Kuwait Agreement of 2000.

7.7.3 France and Spain

The France-Spain Convention created a joint zone (JDZ) straddling the CS boundary in the Bay of Biscay (Illustration No. 29).[1408] Annex II of the France-Spain Convention establishes the specific procedure for granting licenses for the exploration and exploitation of natural resources

[1405] See, for example, Low 2012, *op. cit.*, pp. 60-62. She states that "the basic model for environmental regulation of petroleum exploration and production activities under the Kuwait-Saudi Arabia [Agreement of 1965] is effectively the same as that for the North Sea" (p. 62). It is important to note that since 2012, Kuwait enacted a new legislation on environmental protection (Law No. 42 of 2014), which has been amended by the Law No. 99 of 2015. See A. Alharoun, "Kuwait: The case for protection", International Counsel Bureau, June 2015, available at http://www.icbkuwait.com.kw/wp-content/uploads/2015/08/OT42_12-13_Kuwait-ICB.pdf (last accessed January 2019).
[1406] Kuwait Regional Convention for Co-operation on the Protection of the Marine Environment from Pollution, 24 April 1978, EIF: 1 July 1979, 1140 UNTS 155.
[1407] *Ibid.*, art. XXV. See also Low 2012, *op. cit.*, pp. 61-62.
[1408] France-Spain Convention, art. 3.

in the JDZ.[1409] There is no information publicly available on the status of current petroleum operations in the JDZ.

Article 7 of the France-Spain Convention provides that the Parties "shall endeavour to ensure that the exploration of the [CS] of the Bay of Biscay and the exploitation of its natural resources do not adversely affect the ecological balance and the legitimate uses of the maritime environment, and they shall hold consultations to that end". The key question here concerns the meaning of article 7.

At first glance, it appears that article 7 enshrines the due diligence obligation that must be exercised separately by each Party on its side of the CS boundary, including its part of the JDZ. This also means that the standard of due diligence incorporated in article 7 is applicable not only to petroleum and mining activities conducted in the JDZ, but also to similar activities carried out outside that zone. The France-Spain Convention contains little information on the regime of management of the JDZ. This Convention primarily aims at establishing the maritime boundary between the Parties, rather than elaborating on the JDZ's management regime. Other subsequent agreements relating to the JDZ, if any, are not publicly available.[1410]

On the other hand, article 7 may be regarded as pointing to the joint nature of due diligence in the JDZ, which means that the States shall exercise their due diligence obligations not only individually, but also jointly, in this zone. However, as noted above in this section, the details of the management regime are unknown: for example, whether each State is vested with the power to supervise the other State's resource activities within the JDZ or whether this power is delegated to an inter-State entity, if it exists. Therefore, it is not possible to analyze the design and operation of due diligence adequately.

7.7.4 Norway and Iceland

Norway and Iceland established a JDZ straddling the delimitation line between them (Illustration No. 2).[1411] They also concluded a framework agreement dealing with possible transboundary hydrocarbon deposits extending across the delimitation line and/or the JDZ's boundaries.[1412]

[1409] *Ibid*., art. 3 and Annex II.
[1410] One cannot exclude that there is low commercial hydrocarbon potential in the JDZ.
[1411] See Chapter 1.
[1412] The categories of transboundary hydrocarbon deposits within the meaning of the Norway-Iceland Agreement of 2008 are considered in Chapter 1.

The Norway-Iceland Agreement of 1981 makes it clear that each Party applies its laws and regulations relating to safety measures, protection of the environment and control of petroleum activities in its part of the JDZ.[1413] Further, the Agreement states that the Parties shall consult if one Party is of the view that the laws and regulations of the other Party do not provide adequate protection (including environmental protection) when hydrocarbon activities are conducted in the JDZ.[1414] If those consultations between the Parties prove to be fruitless, the issue shall be referred to a Conciliation Commission consisting of three members.[1415] This provision largely relies on the former conciliation experience of Norway and Iceland.[1416] However, while the recommendations issued by the Conciliation Commission on the delimitation issue were promptly implemented by means of the Norway-Iceland Agreement of 1981,[1417] there is no guarantee that the same implementation will be successful in the case of recommendations addressing the inadequacy of the laws and regulations of one of the Parties (if there will be such a need at all). The recommendations are not binding on the Parties.[1418] The Parties shall "pay reasonable regard" to them during their further negotiations.[1419] An important feature of the Norway-Iceland Agreement of 1981 is that it forbids the commencement or continuation of a petroleum operation in question until the Conciliation Commission delivers its recommendations.[1420]

Article 9 of the Norway-Iceland Agreement of 1981 may be considered an indication that due diligence to protect the (marine) environment and prevent harm to it is of a joint character. The obligation to ensure adequate environmental regulation in the JDZ is framed as a cooperative duty of the Parties. This explicit emphasis on the cooperative regulatory competence distinguishes the Norwegian-Icelandic model from other models created pursuant to joint zone agreements examined in this Chapter.

Petoro Iceland AS (Petoro), the company, which is established for the purpose of Norway's participation in petroleum activities on the Icelandic CS and is owned by the Norwegian State,[1421] and to whom all three licenses were issued by Iceland in the JDZ, acts on behalf of

[1413] Norway-Iceland Agreement of 1981, arts. 5 (3) and 6 (2).
[1414] *Ibid*., art. 9 (1) (with a reference to article 10 of the Norway-Iceland Agreement of 1980, see Chapter 1).
[1415] *Ibid*.
[1416] See Chapter 1 in this respect.
[1417] Norway-Iceland Agreement of 1981, Preamble, para. 4.
[1418] *Ibid*., art. 9 (3).
[1419] *Ibid*.
[1420] *Ibid*., art. 9 (1). Article 9 provides that there must be "weighty grounds" to start or continue the operation in question.
[1421] See information available at the Brønnøysund Register Centre: https://w2.brreg.no/enhet/sok/detalj.jsp?orgnr=999265804 (last accessed January 2019).

Norway in the Icelandic part of the JDZ.[1422] This is the case because pursuant to the Norway-Iceland Agreement of 1981, each Party is entitled to participate with a share of 25-% in petroleum activities on the other side of the delimitation line.[1423] According to the issued licenses, Petoro assumes all encumbrances and obligations of Norway under the license and the Norway-Iceland Agreement of 1981.[1424] In other words, if Petoro, for example, considers that the due diligence measures taken by Iceland in its part of the JDZ are not sufficient to protect the marine environment, the procedure described above in this section is to be triggered.

However, neither Party is obligated to participate in hydrocarbon operations on the other side of the delimitation line. Norway and Iceland shall express their desire to exercise the right of participation (either directly or through a legal person appointed by the Party wishing to participate (e.g., Petoro)).[1425] Therefore, it is unclear how the Party that is not present in its neighbor's part of the JDZ can monitor the hydrocarbon operations of the latter. As discussed above in this section, the obligation of Party A to ensure that Party B's petroleum activities are conducted in a manner that provides protection to the environment (stemming from article 9 of the Norway-Iceland Agreement of 1981) is not linked to the presence of Party A in Party B's part of the JDZ. The Norway-Iceland Agreement of 1981 does not incorporate provisions on inspections which Party A can carry out in the event where it does not exercise its participation right. Such provisions are included in the Norway-Iceland Agreement of 2008. However, these inspection provisions are only applicable to transboundary hydrocarbons, and not to other hydrocarbon resources situated within the JDZ.[1426] Although the inspection provisions of the Norway-Iceland Agreement of 2008 are less detailed than those included in the UK-Norway Framework Agreement,[1427] one may expect that they will be developed in a subsequent UA once a transboundary hydrocarbon deposit will be discovered.

The Norway-Iceland Agreement of 1981 is silent on the topic of (marine) environmental harm in the JDZ. As noted in the introduction to this Chapter, the existence of the delimitation line means that each Party has to address environmental harm that has occurred in its part of the JDZ. Similar to other States (see Chapter 7.6), Norway, Iceland and a number of neighboring

[1422] Licenses issued by Iceland in its part of JDZ, see Chapter 1.
[1423] Norway-Iceland Agreement of 1981, art. 5 (1) and 6 (1).
[1424] See, for example, License No. 2014/01, p. 1, available at https://nea.is/media/utgefin%20leyfi/licence-2014-01-cnooc-eykon-petoro.pdf (last accessed January 2019). See also Chapter 5.6.2.
[1425] Agreed Minutes to the Norway-Iceland Agreement of 1981, see Chapter 1, paras. 5-8. Moreover, paragraph 7 states that each Party may transfer its 25-% share, subject to prior consultation and in accordance with the national legislation of the Party that issued the license.
[1426] Norway-Iceland Agreement of 2008, art. 3 (11). See also *supra* note 1412.
[1427] See Chapter 7.4.

States concluded an agreement concerning their cooperation in dealing with pollution of the sea by oil or other harmful substances, which also covers the JDZ.[1428] According to this agreement, each Party is required to notify other Parties of an incident involving substantial pollution and may request assistance in responding to such pollution.[1429] Moreover, as discussed in Chapter 5, each Party (Norway and Iceland) shall ensure that licensees operating on its CS (within and outside the JDZ) are able to cover any damage, including environmental damage, arising out of hydrocarbon activities. The licenses granted by Iceland in its part of the JDZ directly refer to the civil liability regime established by Iceland.[1430]

The Norwegian-Icelandic model includes a strong cooperative regulatory component pointing to the shared character of due diligence in the JDZ. On the other hand, the enforcement component is poorly developed, in particular where one of the Parties does not exercise its right to take part in petroleum operations on the other side of the delimitation line. Consequently, the shared character of due diligence may be questioned. Nevertheless, the management regime established by Norway and Iceland in the JDZ is more joint-oriented than the regimes of other JDZs already discussed in this Chapter.

7.7.5 Guinea-Bissau and Senegal

The GB-Senegal Agreement established a maritime area (Area in this section) in which the Parties agreed to undertake joint fisheries, petroleum and mining activities (Illustration No. 30).[1431] Subsequently, the Parties signed a protocol to the GB-Senegal Agreement (Protocol),[1432] which brought into operation the Management and Cooperation Agency (AGC).[1433]

The GB-Senegal Agreement and Protocol are the result of many years of negotiations and arbitration between these States.[1434] The joint regime established by the GB-Senegal Agreement

[1428] Agreement between Denmark, Finland, Iceland, Norway and Sweden concerning Cooperation in Measures to Deal with Pollution of the Sea by Oil or Other Harmful Substances, Copenhagen, 29 March 1993, EIF: 16 January 1998, 2084 UNTS 324.
[1429] *Ibid*., arts. 5 and 8.
[1430] See, for example, License No. 2014/01, *supra* note 1424, sections 18-20.
[1431] GB-Senegal Agreement, arts. 1 and 2. It is important to note that the territorial seas of both Parties are excluded from the Area.
[1432] Protocol to the Agreement between the Republic of Guinea-Bissau and the Republic of Senegal Concerning the Organization and Operation of the Management and Cooperation Agency Established by the Agreement of 14 October 1993, Dakar, 12 June 1995, EIF: 21 December 1995, 1903 UNTS 66.
[1433] Official website of the AGC: http://agc-sngb.org/en/ (last accessed January 2019). The AGC is placed in Senegal, Dakar.
[1434] The negotiations between Senegal and Guinea-Bissau started in 1977. After 8 years of negotiations, the two States agreed, by an Arbitration Agreement dated 12 March 1985, to submit their dispute concerning the maritime delimitation to an Arbitration Tribunal composed of three members. On 31 July 1989, the Arbitration Tribunal

has a mixed character. Within the Area, there is the line delimiting the CS between the Parties, while no such a line for the EEZ is in place.[1435] This aspect appears to be reflected in the proportion in which living and non-living resources of the Area are allocated between the Parties.[1436] It is interesting to note that the outer limit of the Area is not specified in the GB-Senegal Agreement.[1437] Therefore, whereas the Parties are limited by the distance of 200 nm measured from their baselines with respect to joint fisheries activities, nothing prevents the Parties from exploring and exploiting non-living resources of the Area's CS beyond 200 nm jointly in the future.[1438]

In accordance with article 8 of the GB-Senegal Agreement, the Agreement would be in force for a period of 20 years (until December 2015) and would be automatically renewable. However, in December 2015, GB refused to renew the Agreement (and the Protocol).[1439] As of the end of 2018, the Agreement remains unrenewed. GB is not satisfied with the management regime of the Area (there is no information as to which aspects of the management the

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delivered its Arbitral Award where the Tribunal declared that the Agreement concluded by an exchange of letters [between France and Portugal] on 26 April 1960 has the force of law with respect to the territorial sea, the contiguous zone and the CS, but does not have the force of law with respect to the EEZ. On 23 August 1989, Guinea-Bissau instituted proceedings against Senegal in respect of a dispute concerning the existence and the validity of the Arbitral Award of 31 July 1989. The ICJ delivered its judgment on 12 November 1991 upholding the existence and the validity of the Arbitral Award of 31 July 1989. Pending the ICJ's decision, on 12 March 1991, Guinea-Bissau filed an additional application requesting the ICJ to delimit "all the maritime territories appertaining respectively to Guinea-Bissau and Senegal". In the ICJ's Judgment of 12 November 1991 (ICJ Reports 1991, p. 53), the Court considered it "highly desirable that the elements of the dispute that were not settled by the Arbitral Award of 31 July 1989 be resolved as soon as possible, as both Parties desire" (paras. 67-68 of the ICJ's Judgment of 12 November 1991). In the meantime, negotiations between Senegal and Guinea-Bissau continued, resulting in the GB-Senegal Agreement. In 1995, Guinea-Bissau withdrew its application and the case was removed from the ICJ's list. See for the history of the dispute between Senegal and Guinea-Bissau, for example, I. Okafor-Yarwood, "The Guinea-Bissau–Senegal maritime boundary dispute", *Marine Policy*, November 2015, vol. 61, pp. 284-290. See also the overview of the case at https://www.icj-cij.org/en/case/82 (last accessed January 2019).

[1435] *Ibid.* At the same time, in other sources the CS boundary and the EEZ boundary between Senegal and GB coincide. See, for example, J. F. Intchama, D. Belhabib and R. J. Tomás Jumpe, "Assessing Guinea Bissau's Legal and Illegal Unreported and Unregulated Fisheries and the Surveillance Efforts to Tackle Them", *Frontiers in Marine Science*, April 2018, figure 1, available at https://www.frontiersin.org/articles/10.3389/fmars.2018.00079/full#h6 (last accessed January 2019). See also the map of the EEZ of GB at http://www.marineregions.org/eezdetails.php?mrgid=8471 (last accessed January 2019). One should not exclude the possibility that GB may contest the existence of the maritime boundaries in the Area.

[1436] GB-Senegal Agreement, art. 2.

[1437] *Ibid.*, art. 1. At the same time, the outer boundary of the Area is included in the figures on the AGC's website, *supra* note 1433. See also Illustration No. 30.

[1438] In September 2014, Senegal, Guinea-Bissau, Cabo Verde, The Cambia, Guinea, Mauritania and Sierra Leona made a joint submission to the CLCS. No recommendation is adopted at the time of writing. See, more, at http://www.un.org/depts/los/clcs_new/submissions_files/submission_wa7_75_2014.htm (last accessed January 2019). To date, the Area's boundaries represent a triangle (Illustration No. 30) with several blocks.

[1439] See, for example, "Pétrole-Pêche: La Guinée-Bissau suspend sa coopération en zone maritime frontalière avec le Sénégal", Leral, 19 December 2015, available at https://www.leral.net/Petrole-Peche-La-Guinee-Bissau-suspend-sa-cooperation-en-zone-maritime-frontaliere-avec-le-Senegal_a161034.html (last accessed January 2019).

dissatisfaction of GB relates to) and desires to renegotiate its 15-% share derived from activities with respect to mineral and petroleum resources in the Area.[1440] The GB-Senegal Agreement and Protocol contain no provision applicable in a scenario in which joint activities, including petroleum activities, continue to take place while these instruments are not renewed. As explained further in this section, this scenario is the current situation in the Area. As follows from the available information, Senegal and GB negotiate a new protocol.[1441] Insofar as such a new protocol is not yet adopted, the regime established by the GB-Senegal Protocol to govern petroleum activities in the Area is subject to consideration in this section.

The GB-Senegal Protocol sets up a complex institutional structure. The AGC is composed of the High Authority and the Secretariat.[1442] The High Authority consists of the heads of the Parties or their Governments, or of persons delegated by them.[1443] The main task of the High Authority is to formulate the general management and cooperation policies of the AGC.[1444] The High Authority develops the regulatory framework for resource activities in the Area and must ensure that "prospecting, exploration and exploitation in the Area are carried out optimally, in accordance with good mining or petroleum practice, *with care for the marine environment* and for the preservation of fisheries resources".[1445] The Secretariat consists of the Secretary-General and their Deputy (they are natural persons), and both are appointed by the High Authority.[1446] The Secretary-General has the general executive and appropriate management power.[1447] For example, the Secretary-General is responsible for organizing meetings of the High Authority,[1448] providing additional rules and guidelines under the existing regulatory framework, establishing safe and restricted-access zones and requesting the assistance to prevent or combat pollution.[1449] The Secretary-General represents the AGC in any judicial proceedings.[1450]

[1440] G. E. Ndiaye, «A cause d'un malentendu qui dure depuis 3 ans Le pétrole brûle entre le Sénégal et la Guinée-Bissau", Rewmi, 8 March 2018, available at http://www.rewmi.com/a-cause-dun-malentendu-qui-dure-depuis-3-ans-le-petrole-brule-entre-le-senegal-et-la-guinee-bissau.html; P. Melly, "Senegal and Guinea-Bissau deal faces domestic pressures", Petroleum Economist, 17 October 2018, available at http://www.petroleum-economist.com/articles/politics-economics/africa/2018/senegal-and-guinea-bissau-deal-faces-domestic-pressures (last accessed January 2019).
[1441] *Ibid.*
[1442] Protocol to the GB-Senegal Agreement, art. 7.
[1443] *Ibid.*, art. 9.
[1444] *Ibid.*, art. 10.2.
[1445] *Ibid.*, art. 10.4-10.5 (emphasis added).
[1446] *Ibid.*, arts. 10.3 and 11.1.
[1447] *Ibid.*, art. 11.1.
[1448] *Ibid.*, art. 9, para. 8.
[1449] *Ibid.*, art. 11.4.
[1450] *Ibid.*, art. 11.2.

The Protocol establishes the Enterprise that is a body through which the AGC carries out its functions.[1451] The Enterprise is administered by a board consisting of from three to eleven members and a Directorate-General appointed by the board on the High Authority's proposal.[1452] The Directorate-General is vested with the administrative, organizational and management functions of the Enterprise.[1453] The Enterprise is a public limited liability company owned by Senegal and GB.[1454]

In accordance with article 16 of the Protocol, the Parties are required to cooperate with the AGC in order to protect the marine environment in the Area.[1455] Article 23 elaborates this requirement and states that the Parties and the AGC shall "prevent or minimize pollution or any other type of degradation in the marine environment resulting from resource prospecting, exploration and exploitation activities in the Area". In this respect, the AGC is obligated to lay down a regulatory framework for protection of the marine environment and adopt an emergency or management plan to combat pollution and any degradation.[1456] Although there is no information as to whether the AGC has established the necessary guidelines and plans (these guidelines and plans shall be proposed by the Secretary-General and approved by the High Authority), it is likely that they are in place. Otherwise, as discussed in Chapter 5, it could be argued that the lack of adequate regulations constitutes a violation of the standard of due diligence.

When looking at the design of the due diligence standard in the Area, one can note that some basic elements of this standard are to be exercised by the AGC, including the Enterprise, on behalf of the Parties. In addition to the regulatory powers (that complement the primary regulatory powers of the Parties examined further below in this section), the Agency is authorized to control resource activities in the Area.[1457] Apart from prevention, the AGC is also responsible for combating "pollution or any disaster affecting the environment or [mineral, petroleum and fisheries] resources".[1458] The Parties, in turn, have a passive role in the case of pollution within the Area: they must assist the AGC when the Secretariat requests them to do

[1451] *Ibid.*, arts. 1.7 and 4, Title VI.
[1452] *Ibid.*, art. 12.
[1453] *Ibid.*
[1454] *Ibid.*, Summary, para. 6.
[1455] Article 16 of the Protocol also requires the Parties to cooperate with the AGC in other areas such as search and rescue, marine scientific research and surveillance. See also art. 5 (c) and arts. 17-22 of the Protocol.
[1456] *Ibid.*, art. 23.2. The scope of the additional regulatory framework is regulated by article 11.4 (j) and (k).
[1457] *Ibid.*, art. 11.4. See also arts. 5 and 10.5.
[1458] *Ibid.*, arts. 11.4 (n) and 23.

so.[1459] According to the Protocol, the Secretariat may directly involve other relevant actors.[1460] Thus, the AGC is a powerful body which is characterized as an IO in the Protocol.[1461] This characteristic is uncommon. None of the provisional arrangements considered in Chapter 6 and none of the agreements examined in this Chapter use this type of characteristic in relation to the inter-State bodies they create. At the same time, there are doubts that the AGC by its own, without the involvement of the Enterprise (a company owned by Senegal and GB),[1462] is able to fully perform its functions. It appears that the Agency has limited capacity, *inter alia*, to control petroleum operations in the Area in the absence of the Enterprise. The situation is further complicated by the refusal of GB to renew the Agreement and Protocol. This refusal could impact the AGC's operation: for example, it could lead to a lack of funds to run the Agency.[1463] The implications of the refusal for the Enterprise are unclear. It is also not clear who exercises enforcement jurisdiction in the Area now: the AGC or national organs of one of the countries.

Currently, exploration (not commercial exploitation) activities take place in the Area with the Enterprise's participation.[1464] This elicits the question of whether a shortcoming in monitoring of hydrocarbon activities on the part of the AGC, including the Enterprise, that caused significant environmental harm (for example, to a maritime area beyond the Area) gives rise to shared international responsibility of Senegal and GB or it is only attributable to the Agency or/and the Enterprise. When answering that question, it is necessary to refer to the discussions in Chapters 5.6.2 and 6.13.2 of this thesis. In other words, the existence of the Agency and the Enterprise does not rule out the emergence of shared State responsibility. At the same time, in light of the current situation in the Area, one cannot exclude that national organs of one of the Parties (presumably, organs of Senegal as explained further in this section) are involved in exercising the enforcement element of due diligence.

It is interesting to note that the Parties have a more active role where pollution of the marine environment occurring in the Area spreads, or is likely to spread, beyond it. In this event, the Parties must cooperate (with each other, as well as with the AGC) to prevent, mitigate or

[1459] *Ibid*.
[1460] *Ibid*., arts. 5 (c) and 11.4 (n).
[1461] *Ibid*., arts. 4 and 8.
[1462] *Supra* note 1454.
[1463] See Protocol to the GB-Senegal Agreement, art. 26.
[1464] See, for example, "CNOOC takes operatorship of West African block», 29 March 2017, available at https://www.offshoreenergytoday.com/cnooc-takes-operatorship-of-west-african-block/ (last accessed January 2019). See also the information available under the "Permit & Blocks" heading on the AGC's website, *supra* note 1433.

eliminate such pollution.[1465] Further, the Protocol provides that private companies working in the Area are liable for damage incurred by pollution and any form of degradation of the marine environment arising out of their operations.[1466] It is not entirely clear to which Party's civil liability regime article 23.3 of the Protocol refers. However, given the fact that the law of Senegal governs petroleum and mining activities in the Area,[1467] one may conclude that the liability of companies is regulated by the legislation of Senegal.[1468] Logically, in that case, an action for compensation for damage is to be brought in the court of Senegal.[1469]

Thus, despite the fact that there is a line delimiting the CS between GB and Senegal in the Area,[1470] the law of Senegal applies to non-living resource activities in the entire Area.[1471] It is perhaps for this reason that the Protocol incorporates a mechanism under which GB might have an impact on the rules and regulations of Senegal.[1472] Pursuant to article 24.3 of the Protocol, the High Authority may propose modifications or amendments to the Parties' regulatory framework.[1473] So, for example, if GB considers that the civil liability rules or standards for conducting an EIA established by Senegal are not adequate to address environmental risks associated with hydrocarbon activities, it may, through the High Authority, propose changes in that regard. Given the composition of the High Authority and its powers discussed above, any proposal is likely to be reflected in the legislation.

The GB-Senegal example establishes a multi-layered model for discharging due diligence in the Area. While Senegal primarily exercises regulatory competencies in respect of hydrocarbon activities, the Agency's regulatory powers are additional. Other due diligence measures are to be taken cooperatively through the Agency.

7.8 Conclusions and observations

This Chapter has examined the design of due diligence in the context of transboundary hydrocarbons in order to determine whether shared State responsibility might arise for a breach of the due diligence obligation. A number of features existing in the context of transboundary

[1465] Protocol to the GB-Senegal Agreement, art. 23.1 (b).
[1466] *Ibid*., art. 23.3. Article 1.15 of the Protocol defines the term 'company' or 'companies'.
[1467] *Ibid*., art. 24.1. Article 24.2 provides that the law of GB governs fisheries activities in the Area.
[1468] See also Model PSC, art. 4, available at http://agc-sngb.org/en/wp-content/uploads/2014/10/ResearchContract.pdf (last accessed January 2019).
[1469] At the same time, the Protocol does not rule out the possibility of injured persons to seek redress in the court of GB.
[1470] See *supra* notes 1434 and 1435.
[1471] *Ibid*., art. 24.1.
[1472] Consequently, Senegal may also affect the legislation of GB in the sphere of fisheries.
[1473] Protocol to the GB-Senegal Agreement, arts. 10.4 (b) and 11.4 (l).

hydrocarbons point to the joint nature of due diligence. These key features include the States' commitments towards the establishment of uniform or compatible environmental (and other relevant) standards, the availability of reciprocal enforcement mechanisms, the creation of common bodies and the mutual approval of subsequent agreements between licensees operating on both sides of the maritime boundary. Moreover, the existence of cooperative due diligence is rational because a transboundary field lies in the CS of two States that share revenue derived from coordinated petroleum operations in respect of this field.

On the other hand, there are some important aspects questioning that this joint nature of due diligence can be interpreted in a way that the standard of due diligence constitutes a joint obligation. First, the limited and diverse State treaty practice makes it difficult to arrive at any general conclusion that there is a specific legal rule requiring States to exercise their due diligence obligations jointly. Moreover, the available State practice in applying due diligence in the context of transboundary hydrocarbons does not appear to go beyond the individual exercise of this obligation. Second, the content and scope of each State's standard of due diligence are different. In other words, while one State's due diligence (namely, regulation and oversight) is primary, the other State plays a subsidiary role, mainly in the domain of monitoring. This second aspect contradicts one of the essential elements of a shared obligation which implies that several States are bound to an obligation having similar normative content.[1474]

Furthermore, unlike many interim arrangements concluded in disputed maritime areas according to which a person who suffered damage arising from petroleum activities carried out in the JDZ may seek redress in either Party,[1475] none of the agreements on transboundary hydrocarbons provide an injured person with an option to choose the jurisdiction in which his claim for compensation may be brought. This also does not support the notion of shared due diligence. That issue is particularly important when State A imposes certain restrictions (e.g., procedural or substantive hurdles) on the possibility of (natural or legal) persons of State B (or other States) to bring a claim for damage originating under State A's jurisdiction and affecting these persons and/or their property.

[1474] See Chapter 5.9.
[1475] See Chapter 6.

Thus, there are considerable doubts that due diligence in the context of transboundary hydrocarbons can be characterized as a joint legal obligation. The presence of the jurisdictional limits of each coastal State causes the main difficulty in drawing this conclusion.

Thereby, the design and operation of due diligence in the context of cross-border hydrocarbons differs from that existing in undelimited maritime areas.[1476] In other words, a failure of State A to exercise its due diligence obligation does not automatically trigger the responsibility of State B in the context of transboundary hydrocarbons. Nevertheless, there is the question concerning the implications in a situation where State B had exercised its rights to carry out inspections of petroleum operations conducted on State A's side, but did that inadequately, which prevented State B from identifying State A's lack of due diligence, in particular when this lack resulted in significant environmental harm to a third party. Although a State B's omission may matter when dealing with the issue of shared State responsibility, such omission will affect State A's responsibility minimally because State A's exercise of due diligence, including its enforcement powers, is pivotal and is to be examined foremost.

Similar to the context of transboundary hydrocarbons, one could hardly observe the existence of shared due diligence in the context of JDZs. It is notable that there are only a few examples of the practice creating joint zones in addition to maritime boundaries. This practice is not currently used and is unlikely to be a common form of cooperation with respect to hydrocarbons in the future (unlike unitization agreements). Whereas many joint zone agreements (mainly those that were concluded before the adoption of the UNCLOS) are not informative as to how the standard of due diligence is framed and implemented, the Norway-Iceland Agreement of 1981 places particular emphasis on the cooperative exercise of regulatory competencies, but fails to establish mutual enforcement tools in the JDZ.[1477] The GB-Senegal Protocol creates a sophisticated model for the exercise of due diligence. While the regulation-making powers are granted to one State (where Senegal has the primary regulatory powers in the petroleum sphere and the Agency has the additional regulatory powers), the monitoring powers are given to the Agency, including the Enterprise.[1478]

In sum, there is little evidence indicating that due diligence can be qualified as a joint obligation. States shall individually exercise their due diligence obligations on the basis of the maritime

[1476] See Chapter 6.
[1477] See Chapter 7.7.4.
[1478] See Chapter 7.7.5. The discussions in Chapter 6.13.2 remain applicable.

boundary between them. This calls into question the possibility of shared State responsibility in the contexts considered in this Chapter.

PART IV – CONCLUSION

CHAPTER 8. MAIN FINDINGS OF THE THESIS

8.1 Introduction

This thesis has examined two research questions.[1479] The first question concerned the rights and obligations of neighboring States with respect to shared offshore hydrocarbons under international law. The second question dealt with the issue of shared State responsibility: namely, whether States which have adopted a model of cooperation for shared offshore hydrocarbons can bear international shared responsibility for (marine) environmental harm that is caused, or is likely to be caused, to a third party by resource activities carried out (or not carried out) pursuant to this model. This Chapter summarizes the conclusions concerning those research questions.

In addition to the findings directly related to the research questions, this thesis made supplementary contributions to other aspects relating to the law of shared hydrocarbons and the law of State responsibility in the context of (shared) hydrocarbons. For example, key legal terms and relevant concepts have been systematized and defined for a better understanding of the law of shared hydrocarbons.[1480] Moreover, the thesis has set forth the core elements of the due diligence standard required from States in exercising their sovereign rights to explore the continental shelf and exploit hydrocarbon resources, including shared hydrocarbons.[1481]

The findings of this research may be applicable to activities in respect of non-living resources other than hydrocarbons. However, the application of these findings in the context of seabed mining activities may have its own peculiarities for the reason that the physical characteristics of hydrocarbon and mineral resources differ (e.g., unlike hydrocarbons, solid minerals cannot migrate).

8.2 The law of shared hydrocarbons

This section provides conclusions as to which rules of international law govern the rights and obligations of neighboring coastal States in a shared hydrocarbon deposit.

[1479] Chapter 1.2.
[1480] See, for example, Glossary of Key Terms.
[1481] See Chapter 8.3.

8.2.1 The two types of shared hydrocarbons

This thesis identified two categories of shared offshore hydrocarbons. The first category is hydrocarbons situated in areas of overlapping CS or/and EEZ claims.[1482] The second category is hydrocarbons lying across the maritime boundaries of two or more coastal States and which are exploitable from either side. These hydrocarbon resources are shared in sense that two or more States (in most instances this concerns only two States) share sovereign rights over them. However, the aspects of sovereign rights' sharing differ in each category. In the first category, the rights claimed by one State may more often lead to disagreement with the other State(s). In the second category, the rights to explore for and exploit a cross-border hydrocarbon field are generally undisputed.

Arrangements and agreements concerning disputed and transboundary hydrocarbons usually reflect the shared nature of exploration and exploitation rights with respect to those resources. At the same time, the difficulty associated with the first category of shared hydrocarbons is that States may refuse to exercise their sovereign rights over (potential) disputed hydrocarbons jointly (e.g., State A considers State B's claim as having no legal basis under international law). This difficulty does not commonly arise in the context of transboundary hydrocarbons.

The fact that two coastal States share sovereign rights to explore for and exploit shared petroleum resources does not automatically imply that jurisdiction (both prescriptive and enforcement) over these resources is also exercised on a joint basis. While the cooperative exercise of jurisdiction is generally established in the context of disputed hydrocarbons,[1483] jurisdiction with respect to transboundary hydrocarbons is primarily exercised individually on the basis of the maritime boundary.[1484] The effect of these forms of the exercise of jurisdiction on the determination of shared State responsibility is summarized further below.

This thesis dealt not only with hydrocarbon deposits shared by two opposite or adjacent States within 200 nm, but also with shared hydrocarbons located in the extended CS (i.e., beyond 200 nm). In the case of the extended CS, aside from the obligations described below in this Chapter, States are also required to make payments or contributions in kind in relation to exploitation of hydrocarbon (and other non-living) resources situated in the extended CS, pursuant to article 82 of the UNCLOS. The procedure for making payments or contributions in the context of joint

[1482] Maritime areas of overlapping territorial sea claims were not subject to consideration in this thesis, as noted earlier.
[1483] See Chapter 6.
[1484] See Chapter 7.

exploitation activities is currently undeveloped and may trigger many issues (e.g., when one of the cooperating States is exempt from making payments or contributions under article 82 (3) of the UNCLOS). To date, there are a number of examples of the cooperative management of both disputed and transboundary hydrocarbons on the extended CS.[1485] However, the implementation of article 82 in these cooperative management regimes remains to be developed and was not subject to detailed examination in this thesis.

This thesis also identified another (possible) type of shared hydrocarbons: hydrocarbon deposits straddling the boundary between the outer limit of a coastal State's CS and the Area. Chapter 4 considered this type, and looked at whether the rules codified in article 142 of the UNCLOS are applicable through referencing the analogy of a hydrocarbon field straddling the maritime boundary between two coastal States.[1486] It is worth noting that the finding of hydrocarbon deposits of this type is unlikely owing to geomorphological characteristics; the detection of other straddling minerals is more likely.

One of the key conclusions made in this thesis is that the scope of the rules applicable to shared hydrocarbons depends on what type of shared hydrocarbon resource is subject to consideration. The following sections elaborate on this conclusion.

8.2.2 Cooperation

Chapter 2 showed that the characterization of shared hydrocarbons as shared natural resources gives rise to the duty of States to cooperate in respect of these resources. At the same time, Chapter 2 also highlighted that each resource type falling under the concept of shared natural resources has its own features, which might affect, *inter alia,* the scope of cooperation between States sharing those natural resources. As emphasized in this thesis, the characteristics of each category under the framework of shared hydrocarbons have a certain impact on the scope of cooperation. Cooperation with respect to disputed hydrocarbons has been considered separately from cooperation with respect to transboundary hydrocarbons, in Chapter 3 and Chapter 4, respectively.

While the UNCLOS establishes no specific rule requiring coastal States to cooperate in respect of transboundary hydrocarbons, the requirement to cooperate with respect to disputed hydrocarbons is included in paragraph 3 of articles 74 and 83. Although a number of coastal

[1485] For example, the regimes established by the Seychelles-Mauritius Treaty (see Chapter 6.12) and US-Mexico Agreement (see Chapter 7). See also Chapter 1.
[1486] As follows from the discussions on this topic in Chapter 4.4, article 142 of the UNCLOS may apply to transboundary hydrocarbons.

States have fulfilled the requirement to cooperate by entering into provisional arrangements in undelimited maritime areas,[1487] this requirement does not in itself imply (neither has it evolved into) an obligation to reach an arrangement. States are required to negotiate in good faith with a view to concluding such an arrangement, if there is practical necessity for that.[1488] For different reasons, many States have not been able to reach interim arrangements covering disputed areas.

Even though the requirement to cooperate with respect to transboundary hydrocarbons is not explicitly enshrined in the UNCLOS, this requirement is extensively reflected in State practice.[1489] The content of the requirement to cooperate in respect of transboundary hydrocarbons is similar to that existing in respect of disputed hydrocarbons: States shall strive to reach an agreement governing the cooperative management of a transboundary hydrocarbon reservoir. Nevertheless, the requirement to cooperate on transboundary hydrocarbons appears to be stronger than on disputed hydrocarbons. State practice (in particular, more recent practice) shows that there are no examples where States that agree in determining that a petroleum field extends across the maritime boundary between them[1490] refuse to cooperate further and instead commence unilateral exploitation of this field. Of course, this determination does not then rule out subsequent challenges relating to the presence of a cross-border petroleum field in those instances. For example, States may disagree on the form of cooperation or on the initial apportionment of the field.

The strength of the requirement to cooperate in the context of transboundary hydrocarbons can be explained by the fact that States share the understanding that each of them is entitled to a certain portion of a transboundary petroleum deposit.[1491] There are also other reasons (e.g., efficiency of hydrocarbon production) which drive cooperation. Whereas the requirement to cooperate in the context of disputed hydrocarbons appears to be weaker than in the context of transboundary hydrocarbons, the implementation of this requirement in the former context is a more difficult process than in the latter context. Most of the cooperative management regimes

[1487] See Chapter 6 and Appendix I.
[1488] See Chapter 3.
[1489] See Chapter 4.
[1490] It is worth noting that the process of reaching this determination is typically complex and requires cooperation, including procedural duties. See Chapter 4.3.
[1491] See Chapter 4.4.

established in disputed maritime areas are complex, in particular those that involve States with different legal systems.[1492]

The analysis of State practice does not allow the inference that the rule requiring cooperation with regard to shared hydrocarbons is a customary rule. In addition to the fact that the relevant State practice is far from being consistent, it is difficult to establish *opinio juris* (the belief of States that they are required to cooperate under international law) in this matter. While some provisional arrangements clearly stipulate that the requirement to cooperate (particularly, the one incorporated into articles 74 (3) and 83 (3) of the UNCLOS) is one of the reasons for their conclusion, many other arrangements and agreements on shared hydrocarbons, including delimitation treaties,[1493] usually specify no legal motivation behind the inclusion of a clause requiring cooperation. It is also difficult to answer the question of whether the requirement to cooperate constitutes a regional customary rule. Nevertheless, one can observe that the practice of neighboring States located in a number of maritime areas (e.g., the North Sea, the Gulf of Guinea, the Gulf of Thailand and the Caribbean Sea) has developed towards cooperation to a larger degree than regional practice evidenced in other areas (e.g., the South China Sea and many parts of the Mediterranean Sea).

One of the observations concerns JDZs created in addition to maritime boundaries.[1494] The creation of these zones is not primarily linked to the issue of transboundary hydrocarbons. This form of cooperation has been driven by other factors than dealing with transboundary hydrocarbons, including the historical circumstances. Currently, the practice of establishing such JDZs is abandoned and is unlikely to be common in the future.

8.2.3 Unilateralism

As noted above, the requirement to cooperate with respect to disputed hydrocarbons is weaker than with respect to cross-border hydrocarbons. This is likely to be a reason why unilateral hydrocarbon activities in respect of the latter category are less common than unilateralism in disputed maritime areas.

This thesis concludes that coastal States are required to exercise mutual restraint in disputed maritime areas. The requirement of restraint is derived from such general principles of international law as the principle of good neighborliness and the no-harm principle, as well as

[1492] See Chapter 6.
[1493] See Appendix I.
[1494] See Chapter 7.7.

the obligation not to jeopardize or hamper and the obligation not to aggravate or extend a (maritime boundary) dispute.[1495] The key question is to what extent States shall exercise restraint in the context of hydrocarbon exploration and exploitation. As discussed in Chapter 3, the test of permanent physical change to the marine environment developed by the Tribunal in *Guyana v. Suriname* is questionable and a State engaging in less invasive unilateral petroleum operations (for instance, seismic surveys) may also fall short of the requirement to exercise restraint. A State claiming that a unilateral petroleum operation undertaken by its neighbor is inconsistent with the requirement of restraint encapsulated in the obligation not to jeopardize or hamper under articles 74 (3) and 83 (3) of the UNCLOS needs to substantiate the negative effect of such operation on the reaching of a maritime boundary agreement. In fact, in this author's view, the preferable scenario in an area of overlapping maritime claims is the establishment of a (formal or informal) moratorium on the conduct of hydrocarbon activities in this area pending final delimitation or pending a provisional arrangement aimed at regulating such activities. Nevertheless, as discussed in Chapter 3, neither the UNCLOS nor the relevant case law support the moratorium concept. Indeed, there are many examples where States dismiss the idea of a moratorium in an area in dispute and instead commence unilateral hydrocarbon activities. It clearly follows from the discussions in Chapter 3 that unilateral exploitation (which is aimed at appropriating petroleum resources and involves establishing facilities for this purpose) is not permissible in a disputed area under international law.

As regards transboundary hydrocarbons, the requirement of restraint has been examined within the framework of the rule of capture. Chapter 4 concluded that the CS regime precludes the applicability of the rule of capture to transboundary hydrocarbons.[1496] Neither does State practice support the rule of capture. Most of the existing agreements on transboundary hydrocarbons do not allow the Parties to proceed with unilateral exploitation of transboundary fields in the absence of an approved UA between them. These agreements generally require the Parties to submit a dispute to some form of third party dispute settlement mechanism for final decision. Only the US-Mexico example deviates from the general State practice by permitting unilateral exploitation when a UA cannot be reached.[1497]

Chapter 4 questioned whether one State may prevent development of a transboundary field by refusing to cooperate (e.g., for environmental reasons or due to limited capacity). Nevertheless,

[1495] See Chapters 2 and 3.
[1496] See also *supra* note 1486.
[1497] Sanchez and McLaughlin explain reasons for that, *op. cit.*, pp. 791-792.

even in a scenario whereby State A proceeds with unilateral development of a cross-border deposit, State A shall be required to take into account that State B is also entitled to receive revenue derived from development of this deposit.[1498] However, as noted above, there are no examples where States reject cooperation when an accumulation of hydrocarbons is transboundary in nature. Usually, hurdles are related to the question of apportionment and other issues (e.g., where installations and facilities are to be deployed).

8.2.4 The principle of equitable apportionment

The application of the principle of equitable apportionment is difficult in respect of both disputed and transboundary hydrocarbons. Despite the fact that State A and State B share sovereign rights to explore for and exploit disputed hydrocarbons, one State may be unwilling to cooperate with the other State because it considers the CS where these resources are located as appertaining solely to it. At the same time, once State A and State B agree to cooperate with respect to disputed hydrocarbons, the process of resource apportionment is not as nuanced as in the context of transboundary hydrocarbons. Disputed hydrocarbons are usually apportioned equally,[1499] which reflects the principle of equality of their claimed rights to the same maritime area.[1500]

Apportionment of transboundary hydrocarbons is a technical matter determined by reports made by experts appointed by States (or/and licensees) to accomplish this task.[1501] The hydrocarbon volumes of a transboundary field are generally distributed in accordance with the proportions in which that field lies in each State's jurisdiction.[1502] There is only one exception to this apportionment rule: Norway gave preferable treatment to the interests and needs of Iceland in the JDZ, particularly when dealing with transboundary hydrocarbons extending beyond that zone.[1503] Any disagreement regarding each State's share in a transboundary reservoir may delay a development project. As discussed earlier, development is not possible until States reach an agreement on the terms of apportionment, which usually provides for the possibility of reapportionment. Thus, stemming from the legal principle in this regard, the

[1498] See Chapters 2.5 and 4.4.
[1499] With some exceptions. For example, in the context of cooperation between Nigeria and STP (60:40 basis). See Chapters 4.4 and 8.3.3.
[1500] See Chapter 2.5.
[1501] See Chapter 4.4.
[1502] *Ibid.*
[1503] *Ibid.* and Chapter 7.7.

procedure of equitable apportionment of transboundary hydrocarbons is to be developed through relevant technical rules.

8.2.5 Marine environmental protection and preservation

International law requires States to protect and preserve the marine environment while exploring the CS and exploiting its hydrocarbon resources.[1504] This requirement is applicable to all States carrying out hydrocarbon activities, even if those activities take place in maritime areas where States do not have legally established sovereign rights (through the procedure provided for in articles 15, 74 and 83 of the UNCLOS) and regardless of whether hydrocarbon activities are unilateral or joint.[1505]

In the context of shared hydrocarbons, one of the important norms of international environmental law is a due diligence obligation of States to ensure that no significant harm (incurred by pollution) to the (marine) environment of other States and of maritime areas beyond national control results from their unilateral and joint hydrocarbon activities. This thesis mainly addressed the design of that due diligence obligation in situations where States have agreed to cooperate in conducting hydrocarbon activities with respect to disputed and cross-border deposits. The following section summarizes the findings concerning this issue.

The review of those provisional arrangements and agreements dealing with shared hydrocarbons indicates that States now pay more attention than historically had been the case to environmental concerns. As noted by Ong, this trend needs to be viewed against the background of increasing international and domestic environmental regulation of the petroleum industry.[1506] It is however notable that provisional arrangements (in respect of disputed hydrocarbons) usually elaborate on the issue of marine environmental protection in more detail than framework and unitization agreements (in respect of cross-border hydrocarbons). This fact can be explained by the special legal status of an area in dispute.[1507]

8.3 Shared hydrocarbons, shared State responsibility?

This section details the conclusions on the question of whether cooperative management of shared hydrocarbons is one of the scenarios in which shared State responsibility might arise.

[1504] See Chapters 2 and 5.
[1505] *Ibid.*
[1506] Ong 2003 (a), *op. cit.*, p. 120.
[1507] See Chapter 3.

8.3.1 The circumstances under which any State bears international legal responsibility

The examination of the issue of shared State responsibility started with consideration of the general conditions under which any coastal State bears responsibility in the context of hydrocarbon activities carried out on its CS. The fact that hydrocarbon activities take place on a State's CS and have the potential to cause (significant) adverse effects on the marine environment does not automatically trigger State responsibility. State responsibility arises when a State has not met its primary obligations, one of which is the due diligence obligation to ensure that no significant harm to the (marine) environment results from hydrocarbon activities.[1508] In other words, in order to invoke the responsibility of a State, it must be demonstrated that this State has failed to take all necessary and appropriate measures to prevent the occurrence of significant (marine) environmental harm. The measures according to which one can determine whether a State has exercised its due diligence obligation in the management of hydrocarbon activities include:

- adoption of a regulatory framework incorporating the State's international and regional obligations and reflecting "good oilfield practice" which does not only refer to technical and economic aspects of petroleum operations, but also to environmental protection in order to minimize adverse effects of these operations on the environment (including EIA procedures and financial guarantees in the event of damage). The adopted laws and regulations are subject to review to ensure that they are in line with current environmental standards;
- enforcement of the regulatory framework through different mechanisms. It is not sufficient to merely include environmental provisions in licenses or contracts. States shall play an active role in monitoring compliance of licensees with environmental standards: for example, to require licensees/operators to submit information concerning the status of hydrocarbon activities; to carry out inspections; to give instructions; to cease an activity if necessary or provide for other sanctions in case of non-compliance; to inform licensees of new technical and environmental standards; and to ensure their implementation;
- availability of procedure to report and respond to incidents involving damage to the environment. Although licensees are the main actors to deal with environmental damage

[1508] See Chapter 8.2.5.

and bear the costs of clean-up operations, States shall carefully control and assist in mitigating and eliminating such damage. States have to investigate incidents;

- availability of legal recourse for compensation for damage; and
- establishment of institutional framework to take the due diligence steps.[1509]

Within the standard of due diligence, the focus is primarily on two pivotal components: (a) the regime of civil liability (usually of operators) as a guarantee that environmental damage arising out of petroleum activities will be addressed; and (b) the availability of remedies for natural and legal persons who have suffered damage. However, States have considerable discretion concerning the content and operation of these components (as well as other components of due diligence), taking into account their capabilities and circumstances. This fact may make it difficult to determine State responsibility. Moreover, as observed in Chapter 5, it may occur that even if a civil remedy against an operator is available, this operator is not liable or is unable to meet its liability. That situation becomes more complicated when a State has managed hydrocarbon activities on its CS with necessary due care, but environmental damage has nevertheless occurred. Under current international environmental law, the State bears no residual liability in such a situation.[1510] Of course, the availability of additional financial security is desirable (as, for example, the OPOL in the UK), but this is far from a common trend among States.

Damage is not necessary for triggering State responsibility. At the same time, the remedies available in instances where damage is and is not evidenced differ. Restitution (restoration of the environment) and compensation are available where damage caused by the State's failure to exercise due diligence is incurred. Despite this apparent simplicity, the invocation of State responsibility is a complex process. There are many practical difficulties encountered in applying State responsibility rules in the environmental context: environmental damage is to be "significant"; the absence of a single method for the valuation of environmental damage; and difficulties in establishing causation and finding an appropriate body to address the issue of State responsibility for environmental damage. The limited international practice of triggering State responsibility, especially in the absence of actual environmental damage, does not provide a better clarification. All these challenges will inevitably arise in dealing with the question of shared State responsibility.

[1509] See Chapter 5.
[1510] See Chapter 5.7.

8.3.2 Invocation of shared State responsibility

The likelihood of shared State responsibility is linked to the design of primary obligations in the context of cooperative management of shared hydrocarbons. If a primary obligation is framed as a joint obligation of two States, these States share the responsibility for a breach of that obligation. This thesis considered two contrasting scenarios of offshore oil and gas resource sharing in order to determine how the obligation to prevent harm to the marine environment is framed in each of those scenarios with reference to the core components of due diligence identified in Chapter 5.5.

In the scenario of the sharing of disputed hydrocarbons, it has been shown that due diligence is generally formulated as a joint obligation. However, a difficulty in triggering shared State responsibility is that the fulfillment of this joint obligation usually lies on an inter-State body being an independent legal actor. Nevertheless, it does not mean that States cannot be held responsible for a failure of such a body to exercise due diligence. As discussed in Chapter 6, a typical inter-State body established under a provisional arrangement is organizationally/institutionally and financially tied with both States and this tie is even closer than the relationship between an IO and its member States. Therefore, the States cannot easily avoid their legal responsibility by delegating due diligence to a separate entity and an injured party may invoke shared State responsibility.

The scenario of the sharing of cross-border hydrocarbons is a conceptually different scenario in which jurisdictional issues are settled. In this scenario, there is little evidence indicating that due diligence can be characterized as a joint obligation. Each State shall individually exercise its jurisdiction concerning marine environmental protection (regulation and enforcement) on the basis of the maritime boundary. In other words, each State must take all necessary measures to protect and preserve the marine environment, and to prevent pollution or other harm to the marine environment when authorizing petroleum operations on its side of the maritime boundary. Consequently, one State (State A) is the principal duty-bearer. The other State (State B) carries only a ‘subsidiary burden’ in discharging due diligence. As shown in Chapter 7, many agreements on transboundary hydrocarbons provide State B with limited authority (the scope of this authority varies) to monitor how State A governs petroleum operations on State A’s CS. However, this does not allow characterization of due diligence as a shared obligation. The same observation can be made concerning JDZs created in addition to maritime boundaries.

Thus, the scenario of offshore hydrocarbon resource sharing does not automatically give rise to shared State responsibility. While shared State responsibility may arise in the context of disputed hydrocarbons, the probability of such a situation is unlikely in the context of transboundary hydrocarbons.

8.3.3 If there is shared State responsibility, then how should it be distributed?

In the situation of shared State responsibility, one of the subsequent issues will concern the distribution of such responsibility among the responsible States. This elicits the question of whether each State's responsibility share is to be linked to the ratio in which shared hydrocarbons are apportioned between those States.[1511]

The reasonableness of the application of the apportionment ratio can be questioned, in particular where disputed hydrocarbons are not allocated equally.[1512] For example, article 3.1 of the Nigeria-STP Treaty provides that the Parties share, in the proportion 60:40 in favor of Nigeria, "all benefits and *obligations* arising from development activities carried out in the [JDZ]" (emphasis added). At first glance, this provision can be viewed as applicable to the Parties' (primary as well as secondary) obligations. Nevertheless, as discussed in Chapter 6, the standard of due diligence in the context of disputed hydrocarbons is generally of a joint character, including the Nigeria-STP example. This implies that STP shall undertake all possible and reasonable due diligence measures to the same extent as Nigeria, without limiting itself to only 40% of its capacity. Moreover, one can envisage a situation where State A having a smaller hydrocarbon volume than State B has made a major contribution to a wrongful act. While the 60:40 proportion is relevant for sharing the costs associated with marine environmental protection (e.g., the Authority's operational costs for this purpose), it seems inappropriate to apply this proportion in determining each State's share in shared State responsibility. In other words, a failure to exercise due diligence may be equally attributable to the States, even though the resources are not equally allocated between them. At the same time, as noted in Chapter 5.5.2.3, one State may be required to exercise a higher level of due diligence than its neighbor and, arguably, the unequal apportionment of hydrocarbon resources reflects their inequality in that regard.[1513]

This thesis arrived at the conclusion that shared State responsibility is unlikely to arise in the context of transboundary hydrocarbons. However, if shared State responsibility might

[1511] See Chapters 4.4 and 8.2.4.
[1512] *Supra* note 1499.
[1513] See Chapter 5.5.2.3.

nevertheless arise in that context, a similar question regarding the allocation of responsibility therefore emerges. It is worth noting that the bulk of exploitation operations on a transboundary hydrocarbon deposit usually take place on the CS of the State in whose jurisdiction the larger portion of that deposit lies, although this practice is quite limited to date. Consequently, the apportionment ratio serves as an essential indicator of which State is the leading actor in meeting the standard of due diligence and which State has a supplementary role in that regard.

8.4 Some remaining issues

As emphasized in the introduction to Part III, this thesis focused only on the question of shared international responsibility of two cooperating States towards a third party (e.g., a directly injured neighboring State or a State acting on behalf of the international community). At the same time, it is also interesting to consider the issue of one cooperating State's responsibility owed to the other cooperating State, particularly in the event of significant harm to the (marine) environment.

Arguably, the concept of shared State responsibility in the context of disputed hydrocarbons considerably limits the possibility of State A to bring a State responsibility claim against State B. One should also bear in mind the existence of single State models according to which only one State (State A) is required to exercise due diligence in the disputed area.[1514] At the same time, it is likely that the fact of cooperation/involvement of State B will affect the extent of State A's responsibility towards State B.

In the context of cross-border hydrocarbons, it seems possible for State A to invoke State B's responsibility for significant transboundary environmental harm caused by State B's lack of due diligence. However, it could be argued that State A's competencies (e.g., a State is usually entitled to monitor activities taking place on the other State's CS) and the receipt of upstream revenue derived from petroleum activities in respect of a transboundary deposit will affect the determination of State B's responsibility owed to State A.

There are many procedural and jurisdictional hurdles surrounding the invocation of shared State responsibility before international judicial bodies: for example, (a) whether an injured State may bring a responsibility claim against two States; or (b) if an injured State has opted for invoking the responsibility of one of the States, how the latter State can also held the other

[1514] See Chapter 6.13.

State(s) responsible (e.g., whether there is a need to institute additional proceedings or the issue may be addressed in the course of ongoing proceedings).

In the academic literature, there is a view that States and private actors (the category also includes private petroleum companies) may share responsibility for a wrongful act.[1515] The application of this type of shared responsibility remains to be examined in practice.

8.5 Final remarks

The central idea of this thesis is that there is a need to treat disputed hydrocarbons and transboundary hydrocarbons separately. The features specific to each category of shared hydrocarbons significantly affect the legal regime governing the rights and obligations of States, and the rules of (shared) State responsibility within this category.

The issues discussed in this thesis are important and timely. It is not unfeasible to imagine an increase in the number of instances in which neighboring States are faced with situations in which one or more of the categories of shared hydrocarbons are identified.

[1515] See, for example, Peel 2015, *op. cit.*, pp. 61-62; Redgwell 2016 and 2017, *op. cit.*

APPENDIX I – LIST OF ARRANGEMENTS AND AGREEMENTS RELATING TO SHARED HYDROCARBON RESOURCES

I.a Note to arrangements and agreements

This Appendix includes a list of relevant and available arrangements and agreements concerning shared hydrocarbons: (a) provisional arrangements concluded in undelimited maritime areas for the purpose of exploring for and exploiting hydrocarbon resources located in these areas;[1516] (b) agreements establishing joint development zones in addition to delimitation;[1517] (c) framework agreements;[1518] and (d) unitization agreements.[1519] The arrangements and agreements within each category are systematized in chronological order. Each arrangement/agreement's short title is indicated at the beginning of this thesis.[1520]

As noted in Chapter 1, this thesis refers to delimitation agreements listed in the BIICL's Report on Undelimited Maritime Areas.

[1516] See Chapter 3 and in particular Chapter 6.
[1517] See Chapter 7.
[1518] See Chapters 4 and 7.
[1519] See Chapters 4 and 7.
[1520] See Table of Treaties.

I.b Provisional arrangements in undelimited maritime areas[1521]

Full treaty title, place of conclusion, date of conclusion, date of entry into force (EIF), source, *note where available*
Agreement between Japan and the Republic of Korea concerning Joint Development of the Southern Part of the Continental Shelf Adjacent to the Two Countries, Seoul, 30 January 1974, EIF: 22 June 1978, 1225 UNTS 113
Agreement between the Government of the Democratic Republic of the Sudan and the Government of the Kingdom of Saudi Arabia relating to the joint exploitation of the natural resources of the sea-bed and subsoil of the Red Sea in the Common Zone, Khartoum, 16 May 1974; EIF: 26 August 1974, 952 UNTS 198
Memorandum of Understanding between Malaysia and the Kingdom of Thailand on the Establishment of The Joint Authority for the Exploitation of the Resources of the Sea Bed in a Defined Area of the Continental Shelf of the Two Countries in the Gulf of Thailand, Chang Mai, 21 February 1979, EIF: 24 October 1979 & Agreement between the Government of Malaysia and the Government of the Kingdom of Thailand on the Constitution and Other Matters relating to the Establishment of the Malaysia-Thailand Joint Authority, Kuala Lumpur, 30 May 1990, EIF: N/A, both reproduced in J. I. Charney and L. M. Alexander (eds), *IMB*, vol. 1, 1993, pp. 1107-1111 and 1111-1123
Memorandum of Understanding between Malaysia and The Socialist Republic of Vietnam for the Exploration and Exploitation of Petroleum in a Defined Area of the Continental Shelf Involving the Two Countries, Kuala Lumpur, 5 June 1992, EIF: 4 June 1993, reproduced in J. I. Charney and L. M. Alexander (eds), *IMB*, vol. 3, 2004, pp. 2341-2344
Maritime Delimitation Treaty between Jamaica and the Republic of Colombia, Kingston, 12 November 1993, EIF: 14 March 1994, 1776 UNTS 17
Joint Declaration between Argentina and the United Kingdom on Cooperation over Offshore Activities in the South West Atlantic, 27 September 1995, 35 ILM 301 (1996), *in 2007 Argentina submitted a note terminating the Joint Declaration*[1522]
Treaty between the Federal Republic of Nigeria and the Democratic Republic of São Tomé and Príncipe on the Joint Development of Petroleum and other Resources, in respect of Areas of the Exclusive Economic Zone of the Two States, Abuja, 21 February 2001, EIF: 16 January 2003, reproduced in J. I. Charney, D. A. Colson and L. M. Alexander (eds), *IMB*, vol. 5, 2005, pp. 3649-3682
Memorandum of Understanding between the Royal Government of Cambodia and the Royal Thai Government regarding the Area of their Overlapping Claims to the Continental Shelf, Phnom Penh, 18 June 2001, EIF: N/A, reproduced in D. A. Colson and R. W. Smith (eds), *IMB*, vol. 5, 2005, pp. 3743-3744, *revoked by Thailand in 2009*
Timor Sea Treaty between the Government of East Timor and the Government of Australia, Dili, 20 May 2002, EIF: 2 April 2003, 2258 UNTS 3, *termination expected*
Exclusive Economic Zone Co-operation Treaty between the State of Barbados and the Republic of Guyana concerning the exercise of jurisdiction in their exclusive economic zones in the area of bilateral overlap within each of their outer limits and beyond the outer limits of the exclusive economic zones of other States, London, 2 December 2003, EIF: 5 May 2004, 2277 UNTS 201

[1521] Additional regulatory framework is not included in this section. See Bibliography in this regard.
[1522] This Joint Declaration is not considered in the thesis. See Chapter 6 in this regard.

Treaty between Australia and East Timor on certain maritime arrangements in the Timor Sea, Sydney, 12 January 2006, EIF: 27 June 2006, 2483 UNTS 359, *terminated on 10 April 2017*
Agreement on the Exploration and Production of Hydrocarbons in the Common Interest Zone between the Democratic Republic of the Congo and the Government of the Republic of Angola, Luanda, 30 July 2007, EIF: 23 July 2008, reproduced in D. A. Colson and R. W. Smith (eds), *IMB*, vol. 6, 2011, pp. 4277-4280
Treaty concerning the Joint Exercise of Sovereign Rights over the Continental Shelf in the Mascarene Plateau Region between the Government of the Republic of Mauritius and the Government of the Republic of Seychelles, Vacoas, 13 March 2012, EIF: 18 June 2012, Law of the Sea Bulletin No. 79, 2013, pp. 26-40 & Treaty Concerning the Joint Management of the Continental Shelf in the Mascarene Plateau Region between the Government of the Republic of Mauritius and the Government of the Republic of Seychelles, Vacoas, 13 March 2012, EIF: 18 June 2012, Law of the Sea Bulletin No. 79, 2013, pp. 41-52

I.c Joint zone agreements in addition to maritime boundaries

Full treaty title, place of conclusion, date of conclusion, date of entry into force (EIF), source, *note where available*
Agreement between the Kingdom of Saudi Arabia and the Government of Bahrain, Riyadh, 22 February 1958, EIF: 26 February 1958, 1733 UNTS 8
Agreement between the Kingdom of Saudi Arabia and the State of Kuwait on the Partition of the Neutral Zone, Al-Hadda, 7 July 1965, EIF: 25 July 1966, 1750 UNTS 48 & Agreement between the Kingdom of Saudi Arabia and the State of Kuwait concerning the submerged area adjacent to the divided zone, Kuwait, 2 July 2000, EIF: 31 January 2001, 2141 UNTS 251
Convention between the Government of the French Republic and the Government of the Spanish State on the delimitation of the continental shelves of the two States in the Bay of Biscay (Golfe de Gascogne/Golfo de Vizcaya), Paris, 29 January 1974, EIF: 5 April 1975, 996 UNTS 344
Agreement between Norway and Iceland on the continental shelf between Iceland and Jan Mayen, Oslo, 22 October 1981, EIF: 2 June 1982, 2124 UNTS 262
Agreement between Libya and Tunisia, 8 August 1988, *publicly unavailable*
Management and Cooperation Agreement between the Government of the Republic of Senegal and the Government of the Republic of Guinea-Bissau, Dakar, 14 October 1993, EIF: 21 December 1995, 1903 UNTS 64 & Protocol to the Agreement between the Republic of Guinea-Bissau and the Republic of Senegal Concerning the Organization and Operation of the Management and Cooperation Agency Established by the Agreement of 14 October 1993, Dakar, 12 June 1995, EIF: 21 December 1995, 1903 UNTS 66

I.d Framework agreements

Full treaty title, place of conclusion, date of conclusion, date of entry into force (EIF), source, *note where available*
Framework Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Norway concerning Cross-Boundary Petroleum Co-operation, Oslo, 4 April 2005, EIF: 10 July 2007, 2491 UNTS 3
Agreement between the Government of Canada and the Government of the French Republic relating to the Exploration and Exploitation of Transboundary Hydrocarbon Fields, Paris, 17 May 2005, EIF: not in force, reproduced in N. Bankes, "Canada-France", Report Number 1-2 (2), in: C. G. Lathrop (ed), *IMB*, 2017, pp. 16-44
Framework Agreement between the Republic of Cyprus and the Arab Republic of Egypt Concerning the Development of Cross-median Line Hydrocarbon Resources, May 2006, EIF: N/A (ratified by Egypt in 2013), available at http://extwprlegs1.fao.org/docs/pdf/bi-110369.pdf (last accessed January 2019)
Framework Treaty relating to the unitisation of hydrocarbon reservoirs that extend across the delimitation line between the Republic of Trinidad and Tobago and the Bolivarian Republic of Venezuela, Caracas, 20 March 2007, EIF: 16 August 2010, 2876 UNTS, registration number 50196
Agreement between Norway and Iceland concerning transboundary hydrocarbon deposits, Reykjavik, 03 November 2008, EIF: 03 October 2011, 2888 UNTS 1
Agreement between Nigeria and Cameroon, March 2010, *publicly unavailable*
Treaty between the Russian Federation and the Kingdom of Norway concerning maritime delimitation and cooperation in the Barents Sea and the Arctic Ocean, Murmansk, 15 September 2010, EIF: 7 July 2011, 2791 UNTS 36
Agreement between the United Mexican States and the United States of America concerning transboundary hydrocarbon reservoirs in the Gulf of Mexico, Los Cabos, 20 February 2012, EIF: 18 July 2014, N/A UNTS, registration number 52496

I.e Unitization agreements

Full treaty title, place of conclusion, date of conclusion, date of entry into force (EIF), source, *note where available*
Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Norway relating to the exploitation of the Frigg Field Reservoir and the transmission of gas therefrom to the United Kingdom, London, 10 May 1976, EIF: 22 July 1977, 1098 UNTS 3
Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Norway relating to the exploitation of the Statfjord Field Reservoirs and the offtake of petroleum therefrom, Oslo, 16 October 1979, EIF: 30 January 1981, 1254 UNTS 379
Agreement between the Government of the United Kingdom of Great Britain and Northern Ireland and the Government of the Kingdom of Norway relating to the exploitation of the Murchison Field Reservoir and the offtake of petroleum therefrom, Oslo, 16 October 1979, EIF: 30 January 1981, 1249 UNTS 173
Agreement between the Kingdom of the Netherlands and the United Kingdom of Great Britain and Northern Ireland relating to the exploitation of the Markham Field reservoirs and the offtake of petroleum therefrom, The Hague, 26 May 1992, EIF: 3 March 1993, 1731 UNTS 155
Treaty between Equatorial Guinea and Nigeria in Joint Exploitation of Crude Oil, Especially at the Zafiro-Ekanga Oil Field Located at Maritime Boundary of Both Countries, April 2002, (this Treaty is based on the Protocol on Implementation of Article 6.2 of the Treaty between the Federal Republic of Nigeria and the Republic of Equatorial Guinea Concerning their Maritime Boundary, Abuja, 2 April 2002, EIF: 29 June 2002, 2220 UNTS 410), *publicly unavailable*
Agreement between the Government of Australia and the Government of the Democratic Republic of Timor-Leste relating to the Unitisation of the Sunrise Troubadour Fields, Dili, 6 March 2003, EIF: 23 February 2007, 2483 UNTS 317, *termination expected*
Unitisation Agreement for the exploitation and development of hydrocarbon reservoirs of the Loran-Manatee field that extends across the delimitation line between the Republic of Trinidad and Tobago and the Bolivarian Republic of Venezuela, Caracas, 16 August 2010, EIF: 16 August 2010, 2876 UNTS, registration number 50197
Protocol between the Republic of Angola and the Republic of the Congo on the Unitization of Prospects 14K and A-IMI, Luanda, 10 September 2001, EIF: N/A (Angola ratified on 21 May 2002, no record of the Republic of Congo's ratification), reproduced in D. C. Smith and C. Dolan, "Angola-Republic of Congo", Report No. 4-16, in: D. A. Colson and R. W. Smith (eds), *IMB*, vol. 6, 2011, pp. 4289-4295
Treaty between Australia and the Democratic Republic of Timor-Leste Establishing Their Maritime Boundaries in the Timor Sea, New York, 6 March 2018, EIF: not in force, available at http://dfat.gov.au/geo/timor-leste/Documents/treaty-maritime-arrangements-australia-timor-leste.pdf (last accessed January 2019)

APPENDIX II – ILLUSTRATIONS

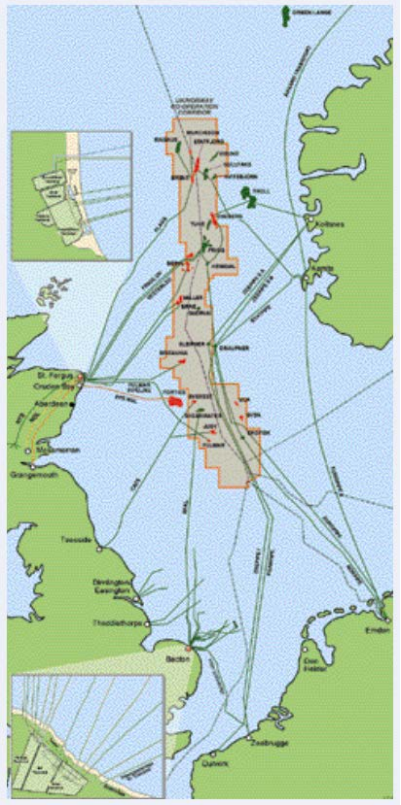
II.a List of illustrations

II.b Note to illustrations

All illustrations below are used to demonstrate the location of joint maritime areas in which neighboring States have agreed to cooperate in conducting petroleum activities, as well as the location of some maritime boundaries and cross-border hydrocarbon deposits found in different parts of the world. These illustrations should not be used as geographical references. The original copyright holder of each illustration is mentioned in the text box under that illustration.

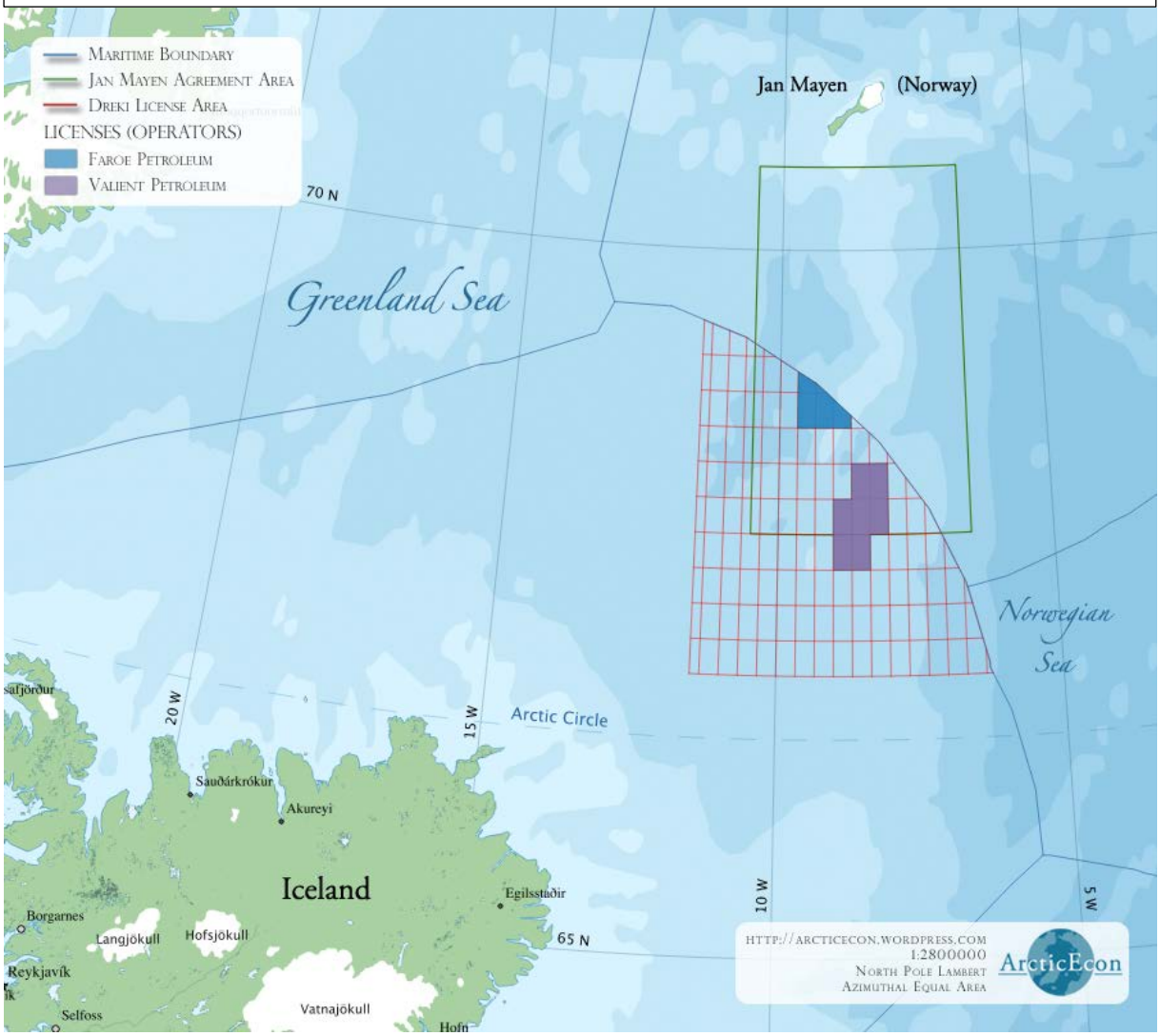
II.c Illustrations

Illustration No. 1. "Co-operation corridor" between Norway and the UK in the North Sea



Source: Report "Unlocking Value through Closer Relationships", prepared by Pilot and Kon-Kraft groups, August 2002, p. 10, available at https://www.regjeringen.no/globalassets/upload/kilde/oed/rap/2002/0005/ddd/pdfv/159318-report_uk-norway_workgroup_-final.pdf (last accessed January 2019)

Illustration No. 2. Joint Development Zone between Norway and Iceland (green lines).

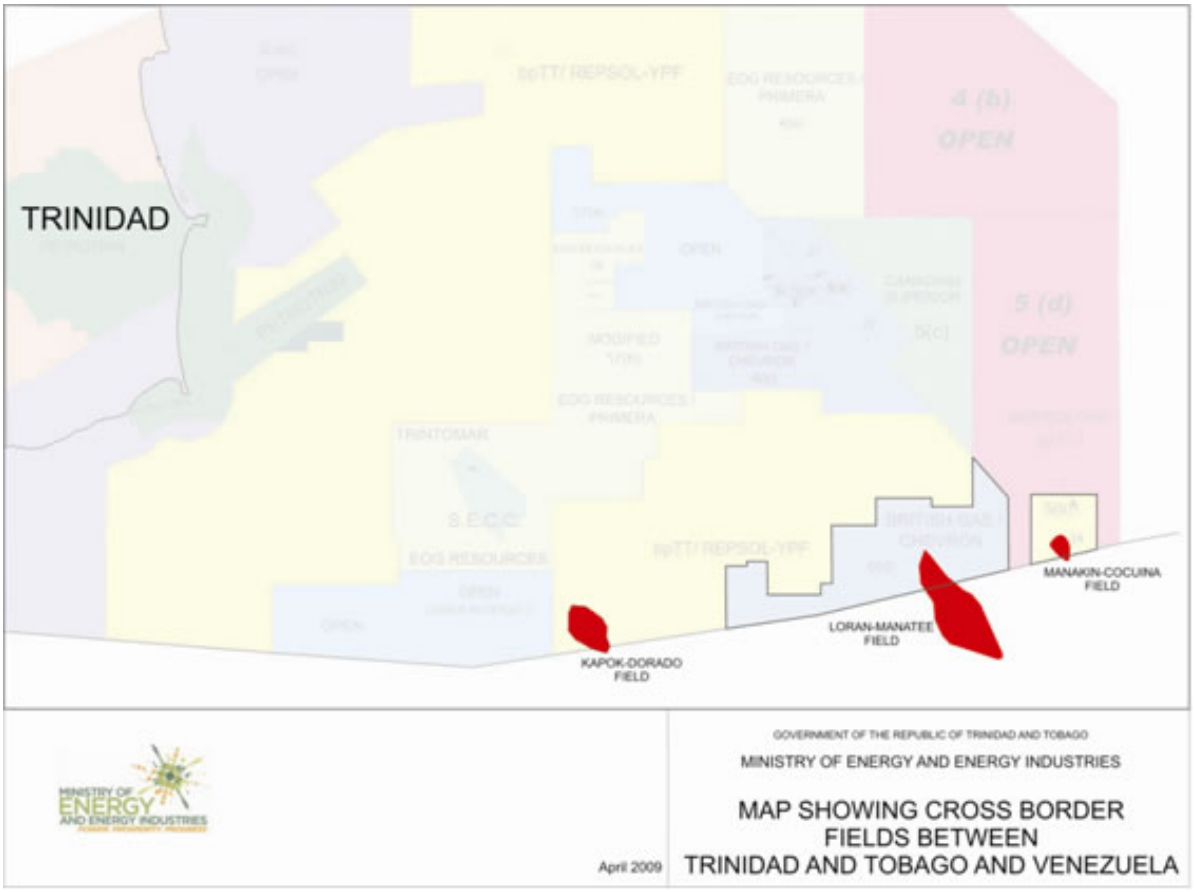


Source: "Iceland's New Era of Offshore Exploration", ArcticEcon, 14 January 2013, available at https://arcticecon.wordpress.com/2013/01/14/icelands-new-era-of-offshore-exploration/ (last accessed January 2019)

Illustration No. 3. Maritime boundary between Norway and Russia in the Barents Sea

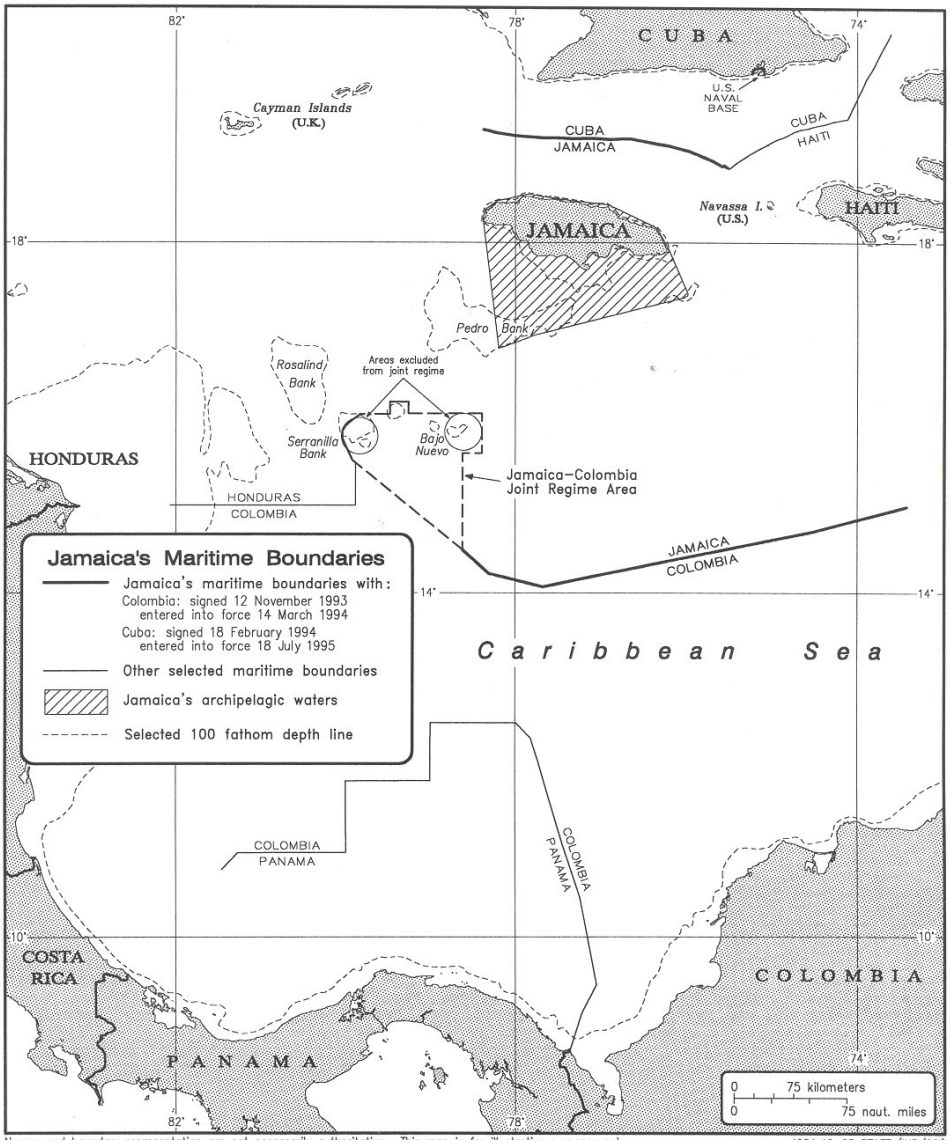
Source: R. Mattingsdal et al., "An updated map of structural elements in the southern Barents Sea," Norwegian Petroleum Directorate, 2015, available at http://www.npd.no/Global/Norsk/2-Tema/Geologi/Strukturelementer/Poster-Nye_strukturelementer_BHSØ.pdf (last accessed January 2019)

Illustration No. 4. Hydrocarbon fields straddling the maritime boundary between Venezuela and Trinidad & Tobago



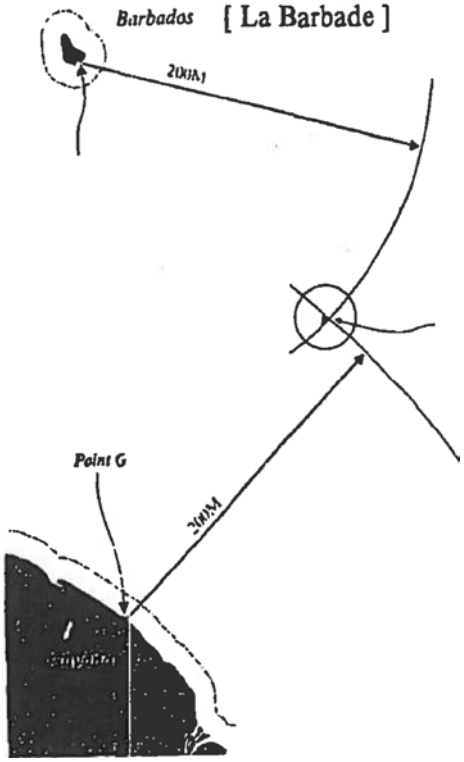
Source: website of the Ministry of Energy and Energy Industries of the Government of the Republic of Trinidad and Tobago, available at http://www.energy.gov.tt/about-us/the-organisation/divisions/resource-management/ (last accessed January 2019)

Illustration No. 5. Joint Regime Area between Jamaica and Colombia



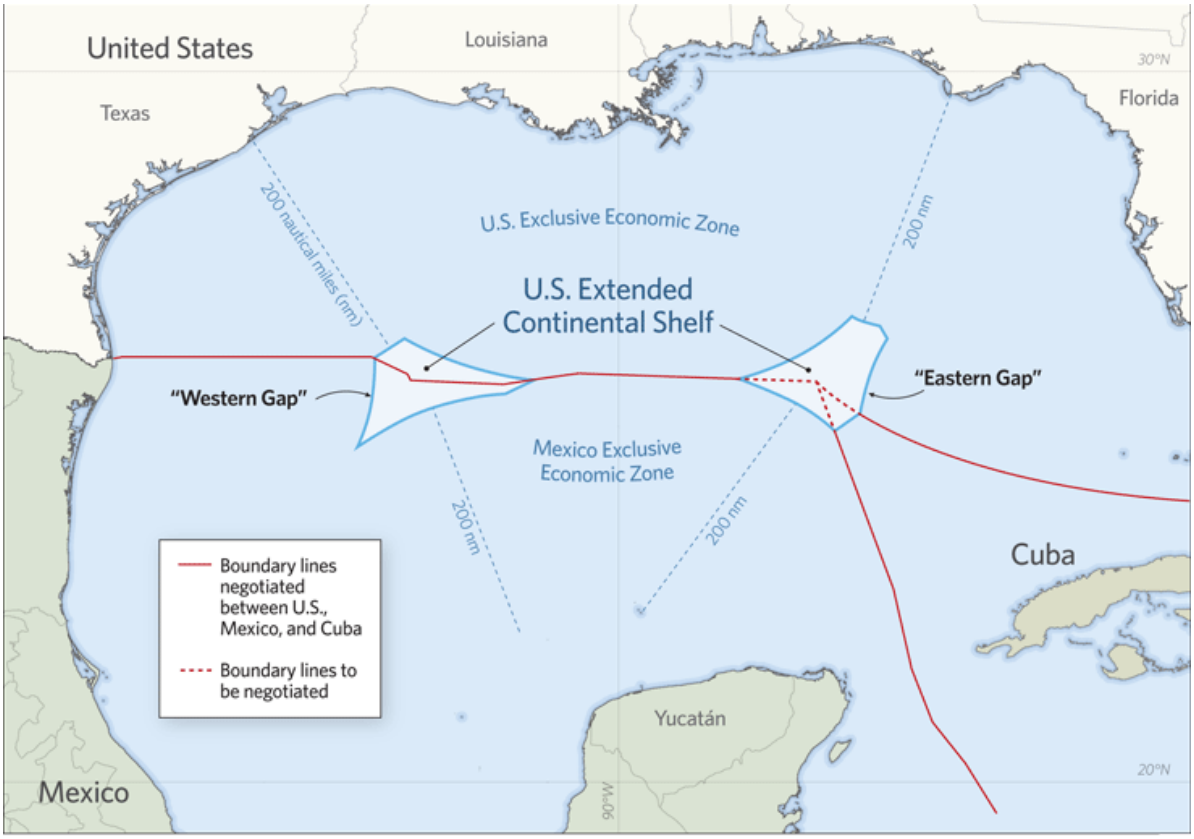
Source: Limits in the Seas, No- 125: Jamaica's Maritime Claims and Boundaries, United States Department of State, Bureau of Oceans and International Environmental and Scientific Affairs, 5 February 2005, p. 5, available at https://www.state.gov/documents/organization/57677.pdf (last accessed January 2019)

Illustration No. 6. Cooperation Zone established between Barbados and Guyana



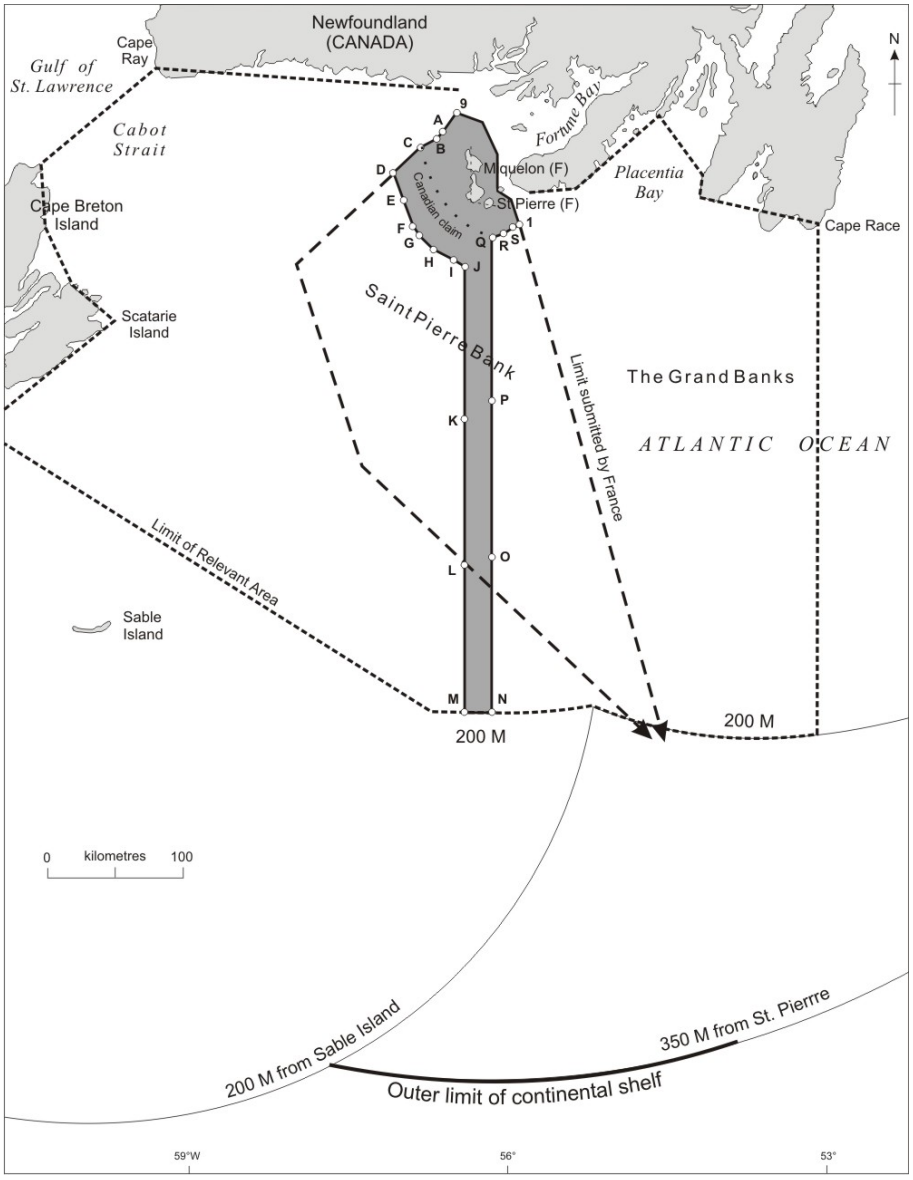
Source: Exclusive Economic Zone Co-operation Treaty between the State of Barbados and the Republic of Guyana concerning the exercise of jurisdiction in their exclusive economic zones in the area of bilateral overlap within each of their outer limits and beyond the outer limits of the exclusive economic zones of other States, London, 2 December 2003, EIF: 5 May 2004, 2277 UNTS 209, available at http://www.marineregions.org/documents/v2277.pdf (last accessed January 2019)

Illustration No. 7. Maritime boundaries between Mexico and the US in the Gulf of Mexico



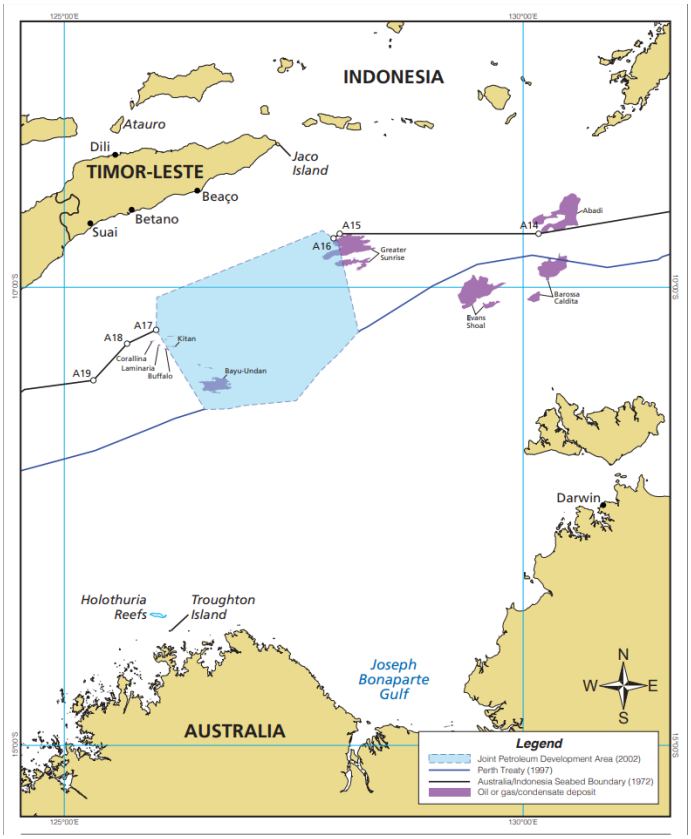
Source: Steven Groves, "U.S. Accession to U.N. Convention on the Law of the Sea Unnecessary to Develop Oil and Gas Resources", *Backgrounder*, No. 2688, 14 May 2012, available at https://www.heritage.org/report/us-accession-un-convention-the-law-the-sea-unnecessary-develop-oil-and-gas-resources (last accessed January 2019)

Illustration No. 8. Maritime boundary between Canada and France



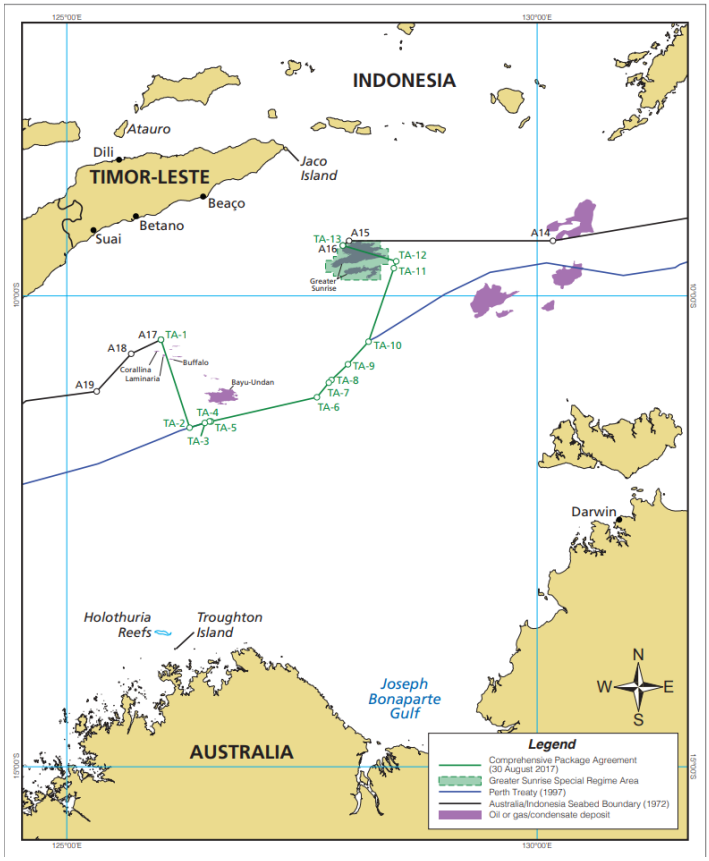
Source: C. Schofield and I. Townsend-Gault, "Extending the "Baguette": France plays Leap-Frog on behalf of St. Pierre et Miquelon", *International Zeitschrift*, July 2009, vol. 5 (2)

Illustration No. 9. (Former) Joint Petroleum Development Area between Australia and Timor-Leste and known petroleum fields in the Timor Sea



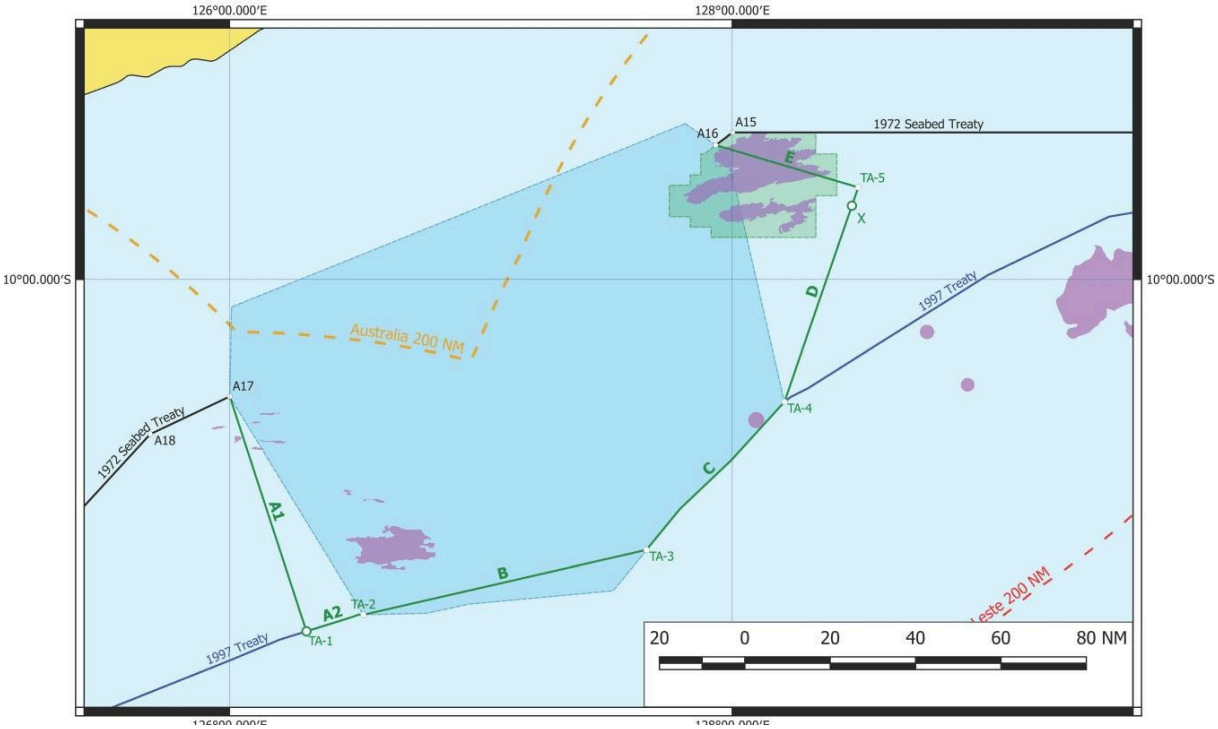
Source: Report and Recommendations of the Compulsory Conciliation Commission between Timor-Leste and Australia on the Timor Sea, PCA Case No. 2016-10, 9 May 2018, p. 15, available at https://pcacases.com/web/sendAttach/2327 (last accessed January 2019)

Illustration No. 10. Maritime boundaries in the Timor Sea and the Greater Sunrise Special Regime Area (SRA)



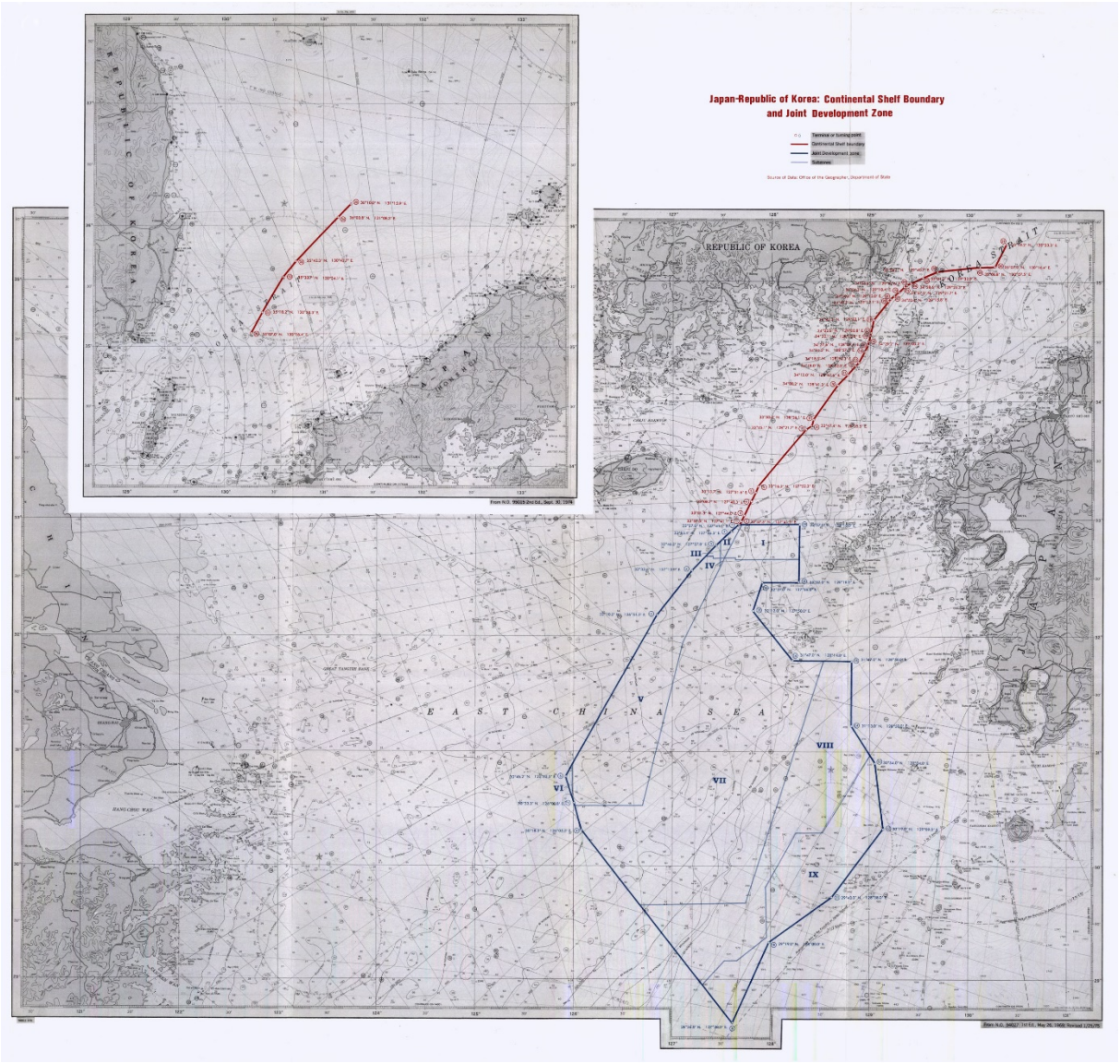
Source: Report and Recommendations of the Compulsory Conciliation Commission between Timor-Leste and Australia on the Timor Sea, PCA Case No. 2016-10, 9 May 2018, p. 79, available at https://pcacases.com/web/sendAttach/2327 (last accessed January 2019)

Illustration No. 11. The difference in the location of the JPDA and the new maritime boundaries in the Timor Sea



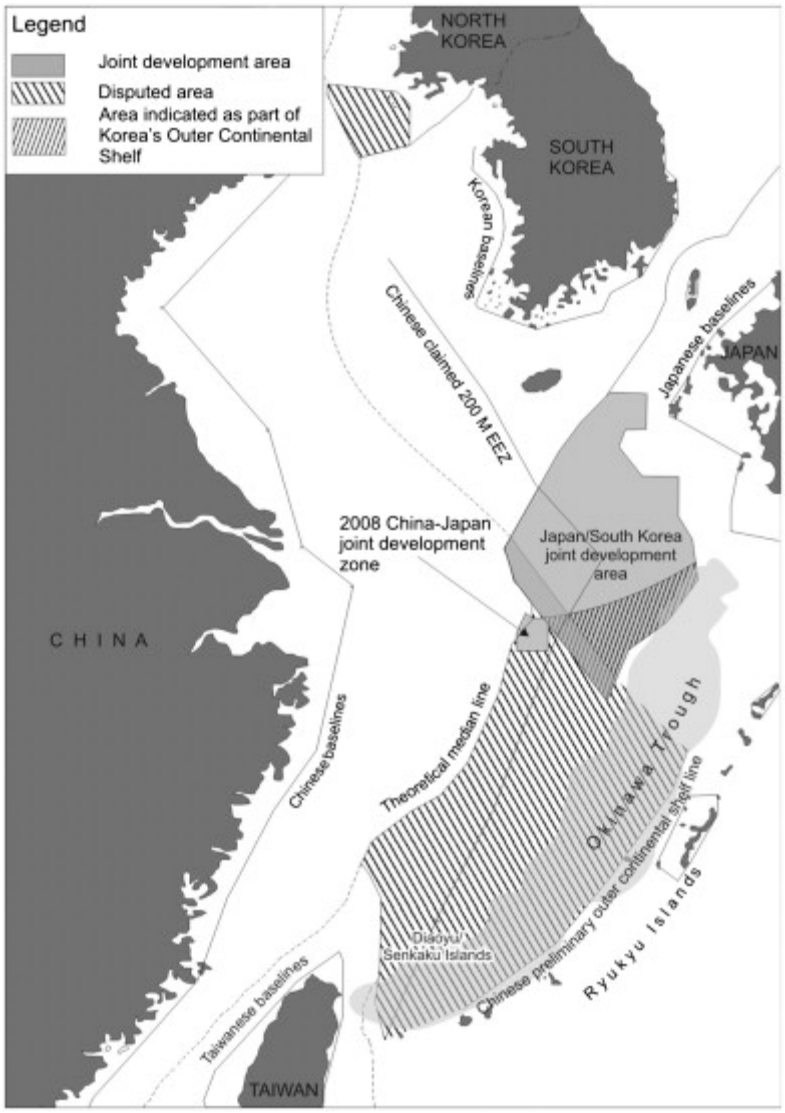
Source: PCA's Press Release, 6 March 2018, available at https://www.pcacases.com/web/sendAttach/2303 (last accessed January 2019)

Illustration No. 12. Joint Development Zone (with IX subzones) between Japan and South Korea



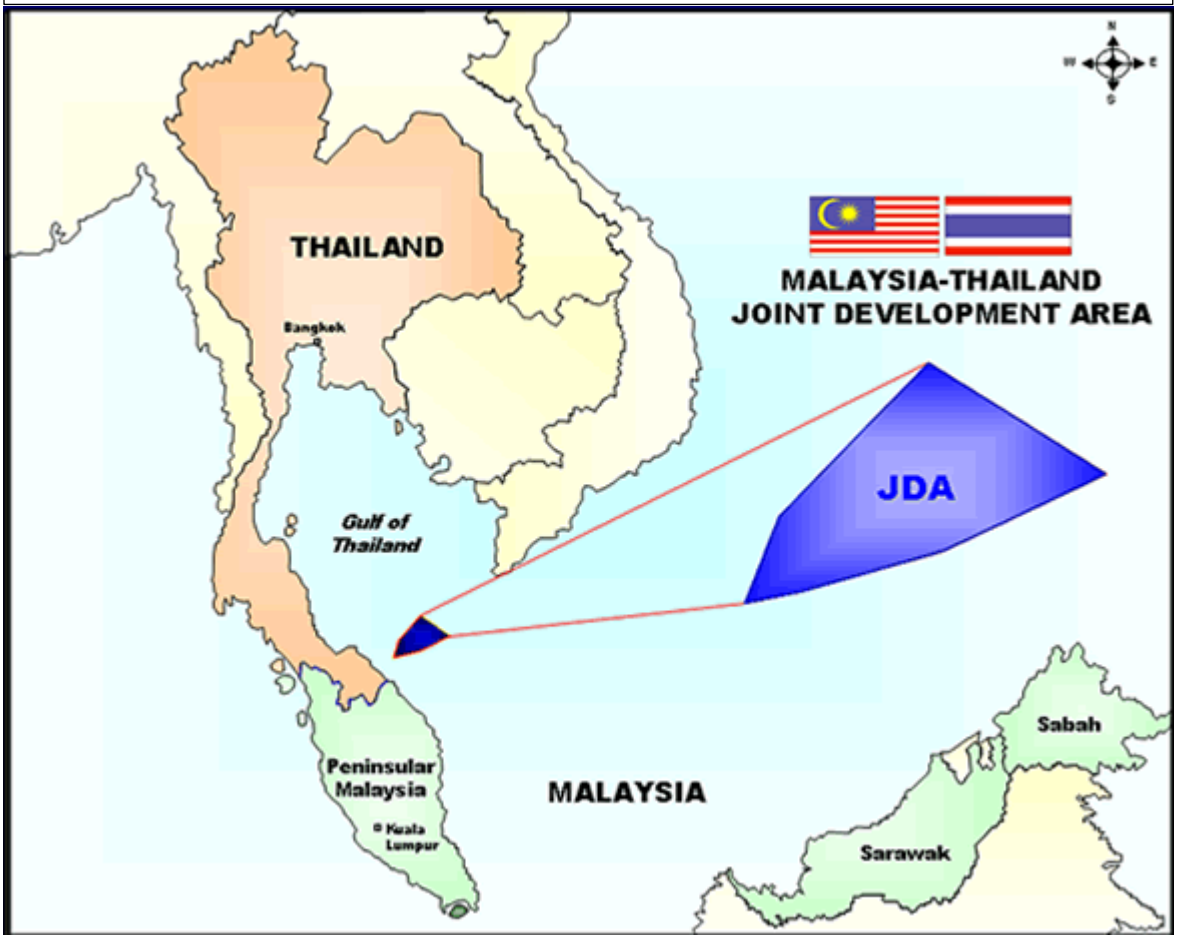
Source: Agreement between Japan and the Republic of Korea concerning Joint Development of the Southern Part of the Continental Shelf Adjacent to the Two Countries, Seoul, 30 January 1974, EIF: 22 June 1978, 1225 UNTS 113, available at http://www.marineregions.org/documents/ls75dc.jpg (last accessed January 2019)

Illustration No. 13. Joint Development Zone between Japan and China



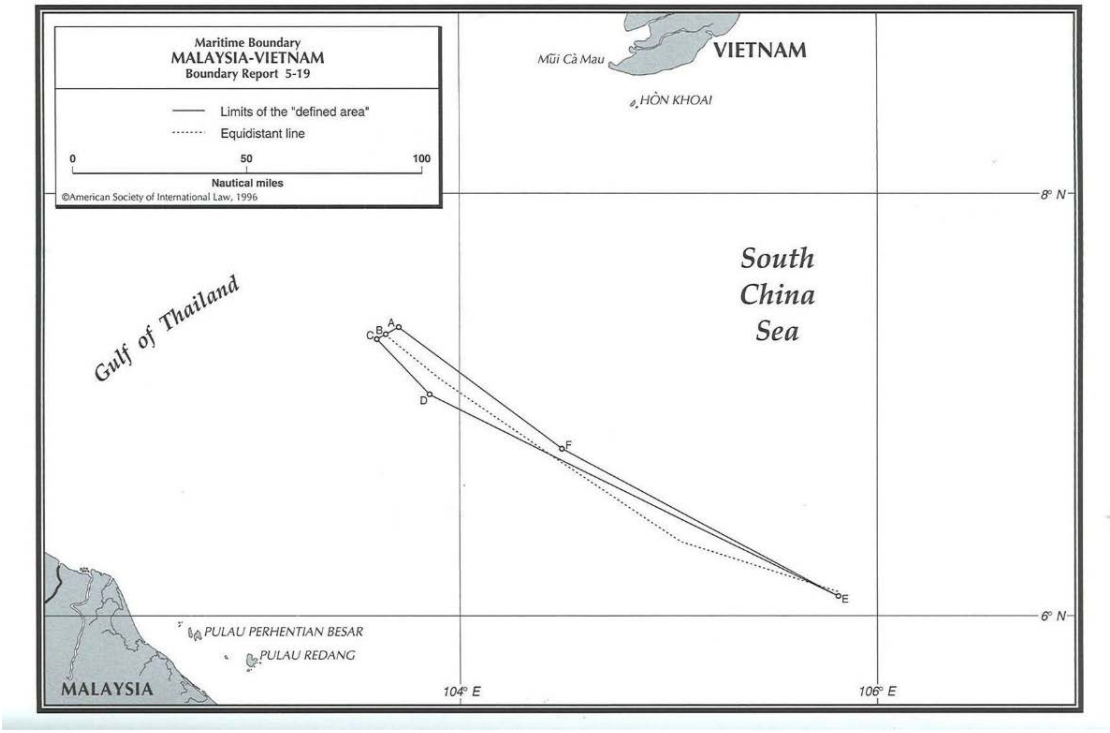
Source: C. H. Schofield and I. Townsend-Gault, "Choppy waters ahead in "a sea of peace cooperation and friendship"?: Slow progress towards the application of maritime joint development to the East China Sea", *Marine Policy*, 2011, vol. 35 (1), p. 27

Illustration No. 14. Joint Development Area between Malaysia and Thailand



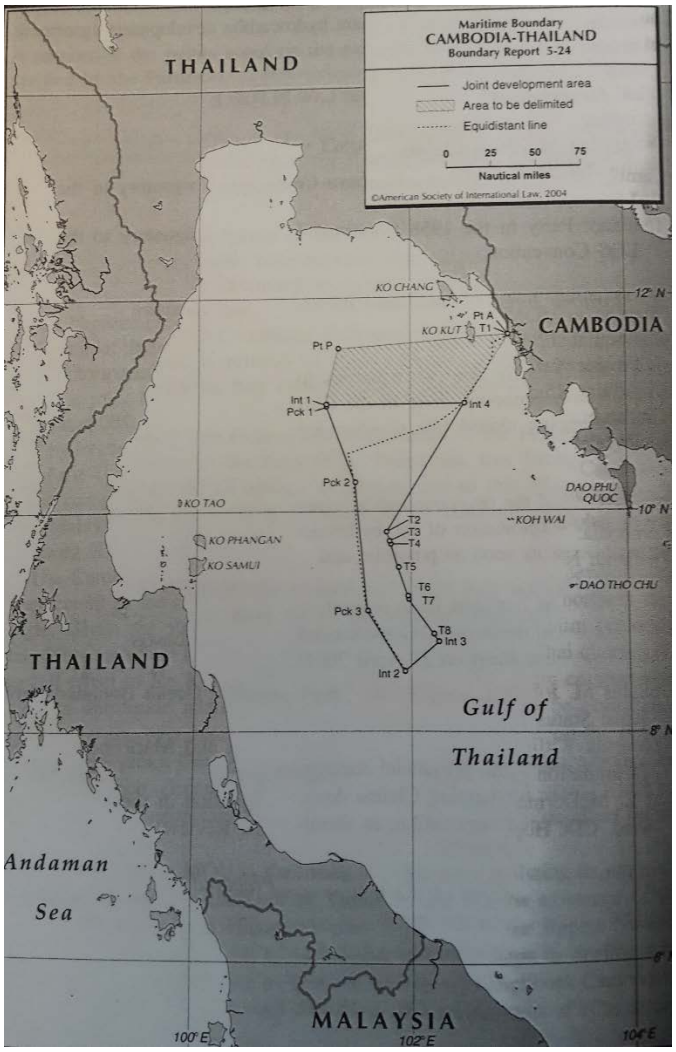
Source: Malaysia-Thailand Joint Authority's website, https://www.mtja.org/about_jda.php (last accessed January 2019)

Illustration No. 15. Joint Development Zone between Malaysia and Vietnam



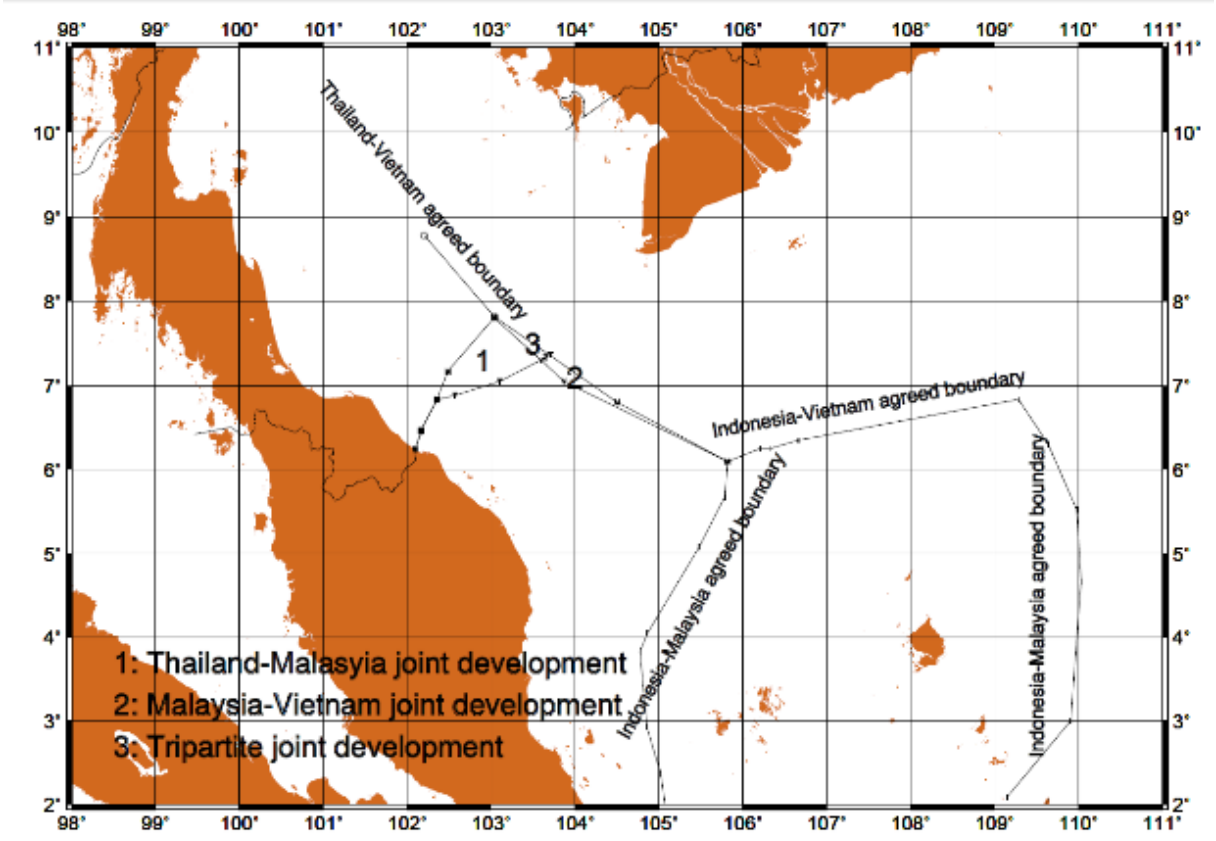
Source: T. L. McDorman, Report No. 5-19, "Malaysia-Vietnam", in: J. I. Charney and L. M., Alexander (eds), *International Maritime Boundaries*, vol. III, 1998

Illustration No. 16. Overlapping claims area between Thailand and Cambodia



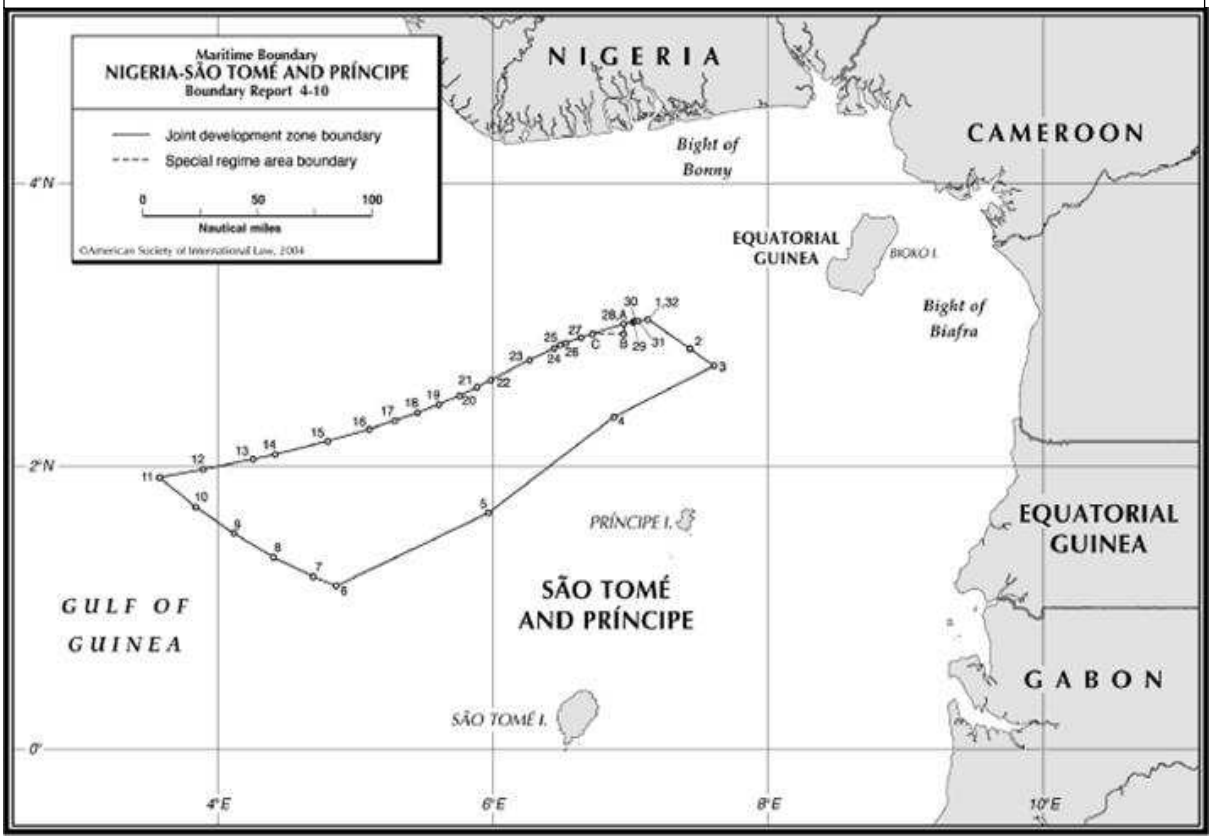
Source: Report No. 5-24, "Cambodia-Thailand", in: D. A. Colson and R. W. Smith (eds), *International Maritime Boundaries*, vol. V, 2005, p. 3742

Illustration No. 17. The overlap between the Malaysia-Thailand and Malaysia-Vietnam joint zones



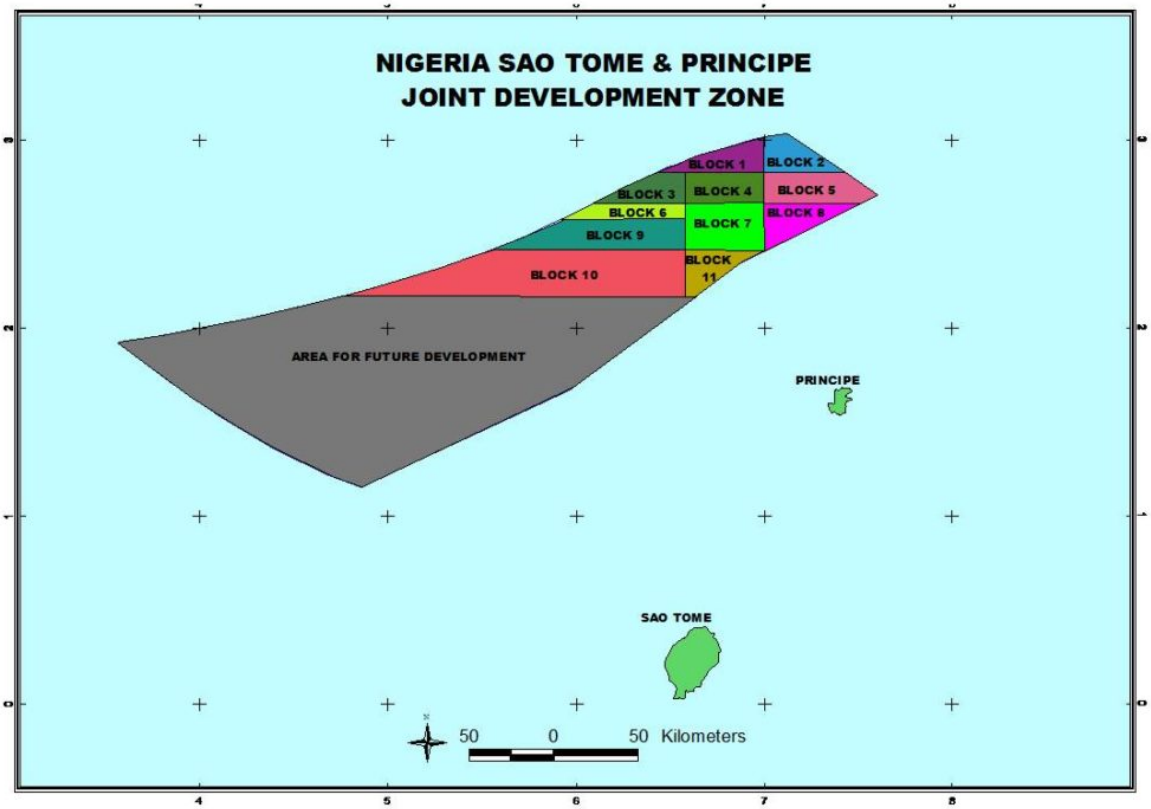
Source: H. Duong, Joint Development in the South China Sea, CogitASIA, 12 July 2013, available at https://www.cogitasia.com/joint-development-in-the-south-china-sea/ (last accessed January 2019)

Illustration No. 18. Joint Development Zone between Nigeria and São Tomé and Príncipe



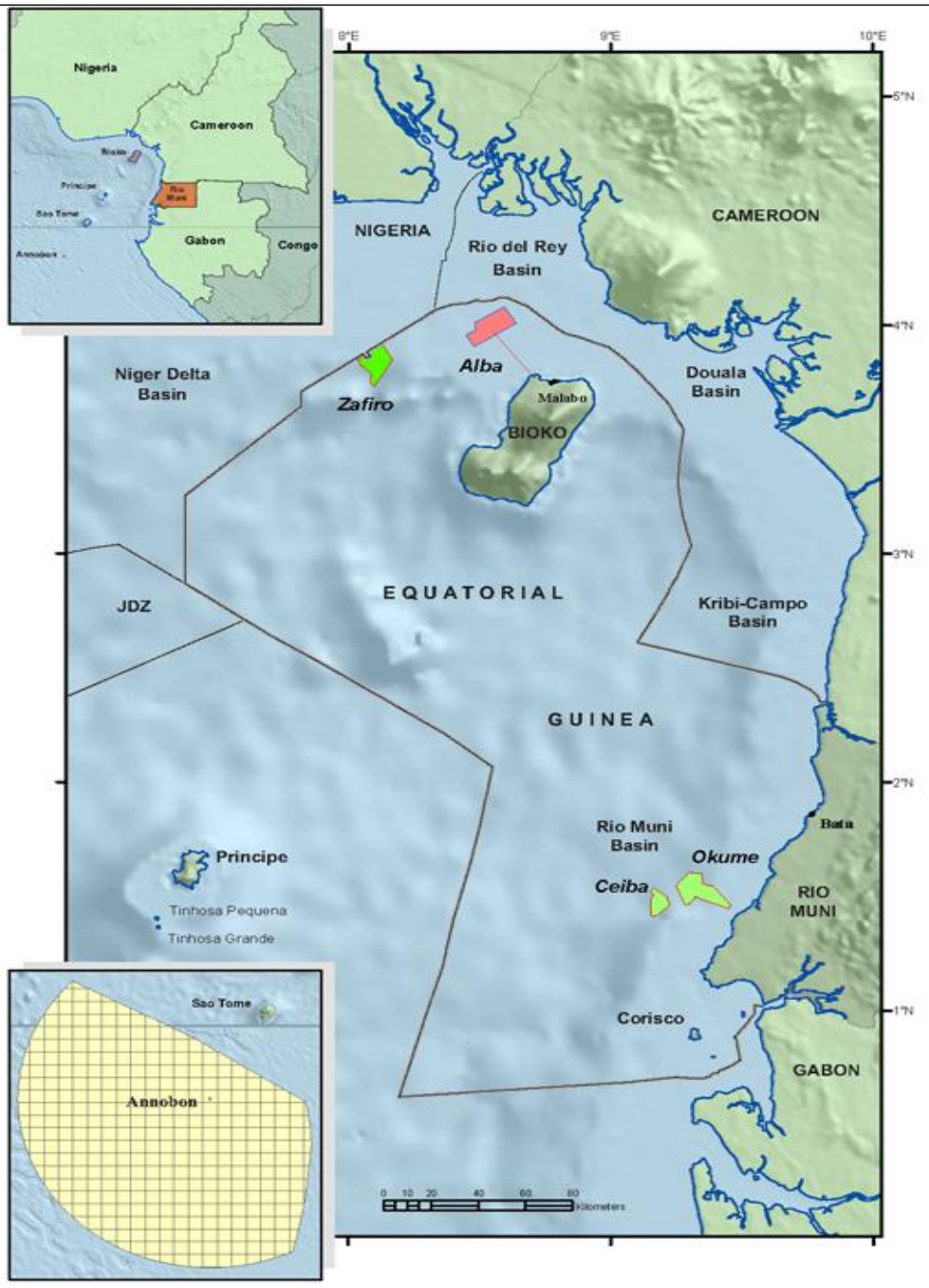
Source: Report No. 4-10, "Nigeria and São Tomé & Príncipe", in: D. A. Colson and R. W. Smith (eds), *International Maritime Boundaries*, vol. V, 2005, p. 3648

Illustration No. 19. Current division of the Joint Development Zone between Nigeria and São Tomé and Príncipe into blocks



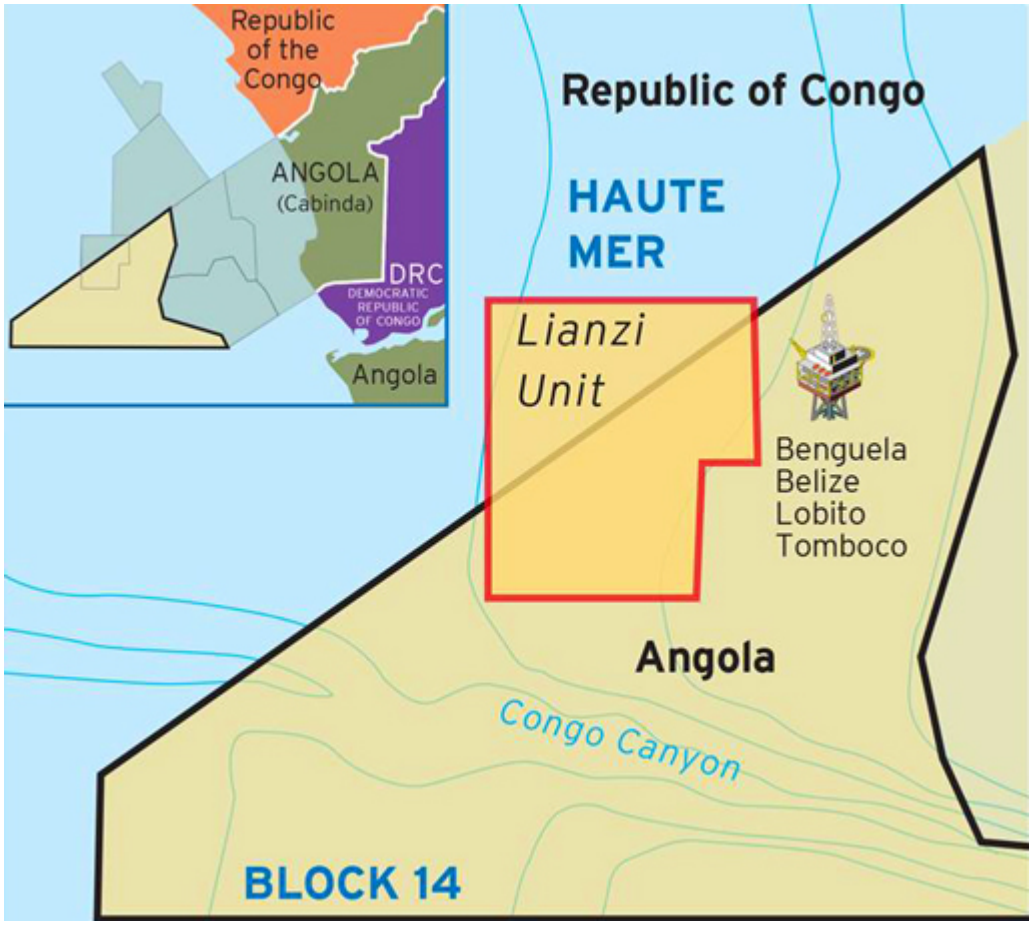
Source: Joint Development Authority's website, available at http://nstpjda.org/monitoring/ (last accessed January 2019)

Illustration No. 20. Maritime boundary between Nigeria and Equatorial Guinea



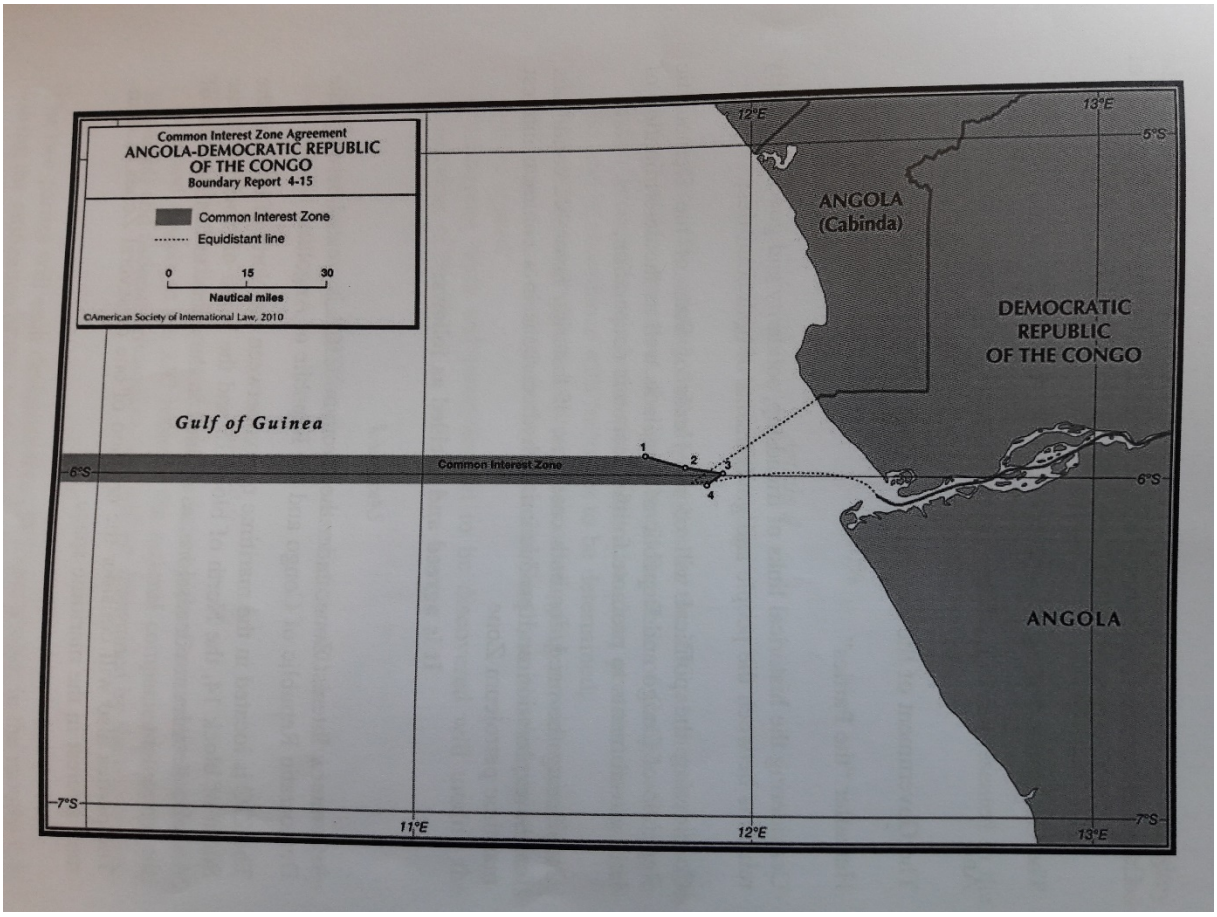
Source: website of the Ministry of Mines and Hydrocarbons of the Republic of Equatorial Guinea, available at http://mmie.gob.gq/en/?page_id=2796 (last accessed January 2019)

Illustration No. 21. The Lianzi Unit Area between Angola and the Republic of the Congo



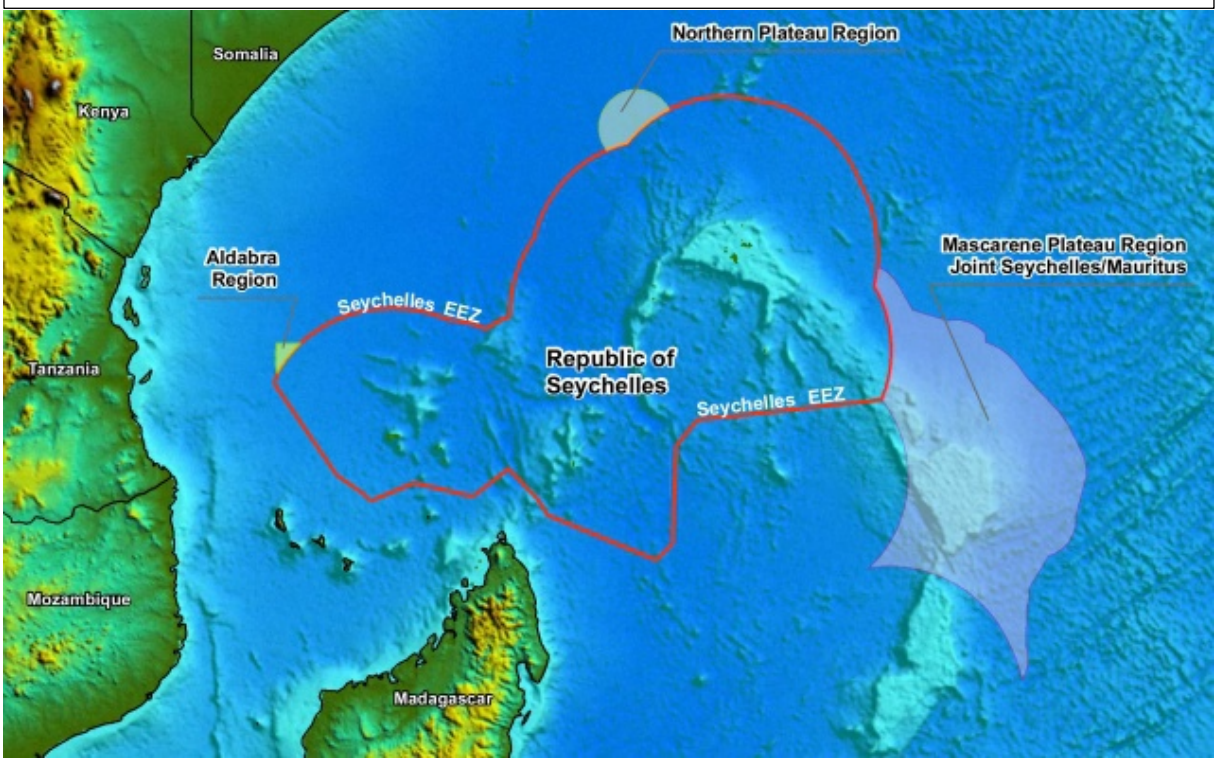
Source: Chevron's Press Release, "Chevron Announces First Production from the Lianzi Development Offshore the Republic of Congo and Angola", 2 November 2015, available at https://www.chevron.com/stories/chevron-announces-first-production-from-the-lianzi-development-offshore-the-republic-of-congo-and-angola (last accessed January 2019)

Illustration No. 22. Common Interest Zone between Angola and the Democratic Republic of the Congo



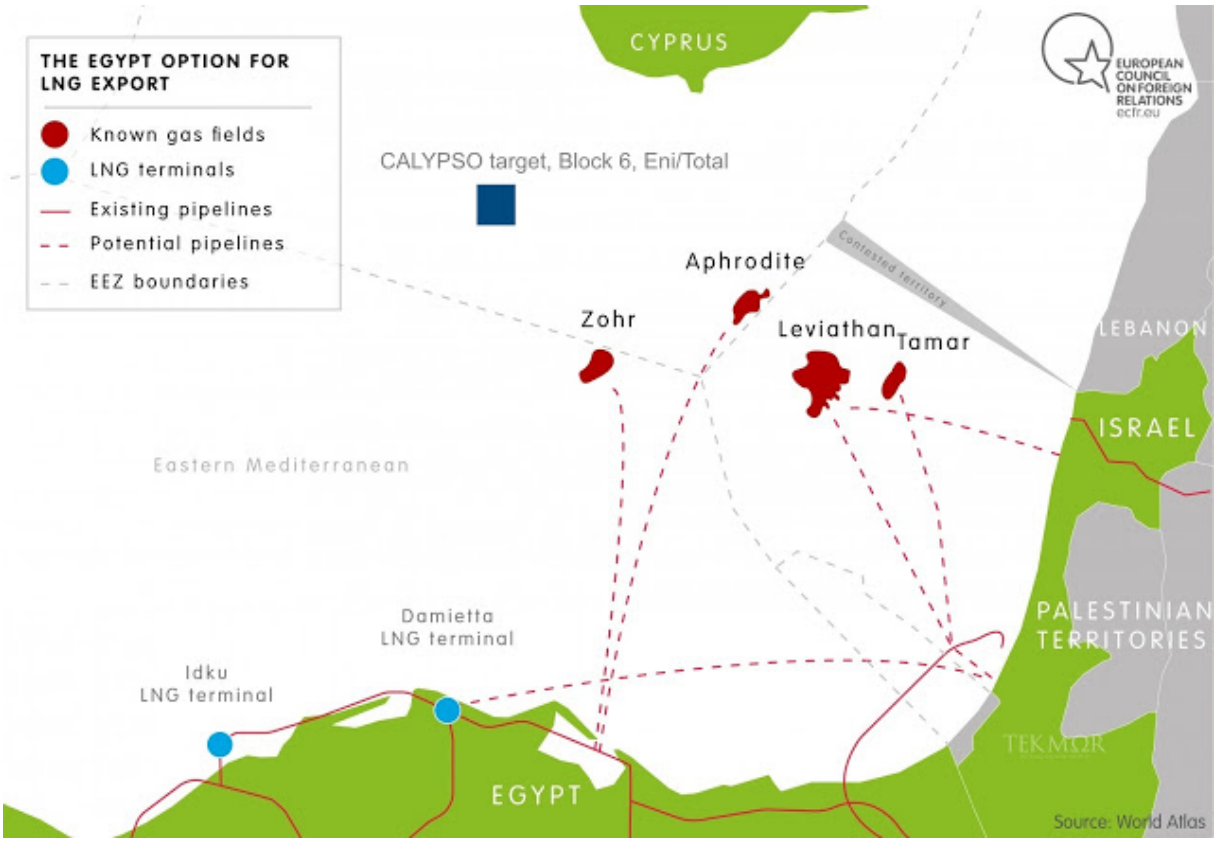
Source: D. C. Smith, "Angola-Democratic Republic of the Congo", Report No. 4-15, in: D. A. Colson and R. W. Smith (eds), *International Maritime Boundaries*, vol. VI, 2011, p. 4276

Illustration No. 23. Joint Management Zone between Mauritius and the Seychelles (right, purple) and the potential maritime area for joint management between the Seychelles and Tanzania (left, yellow)



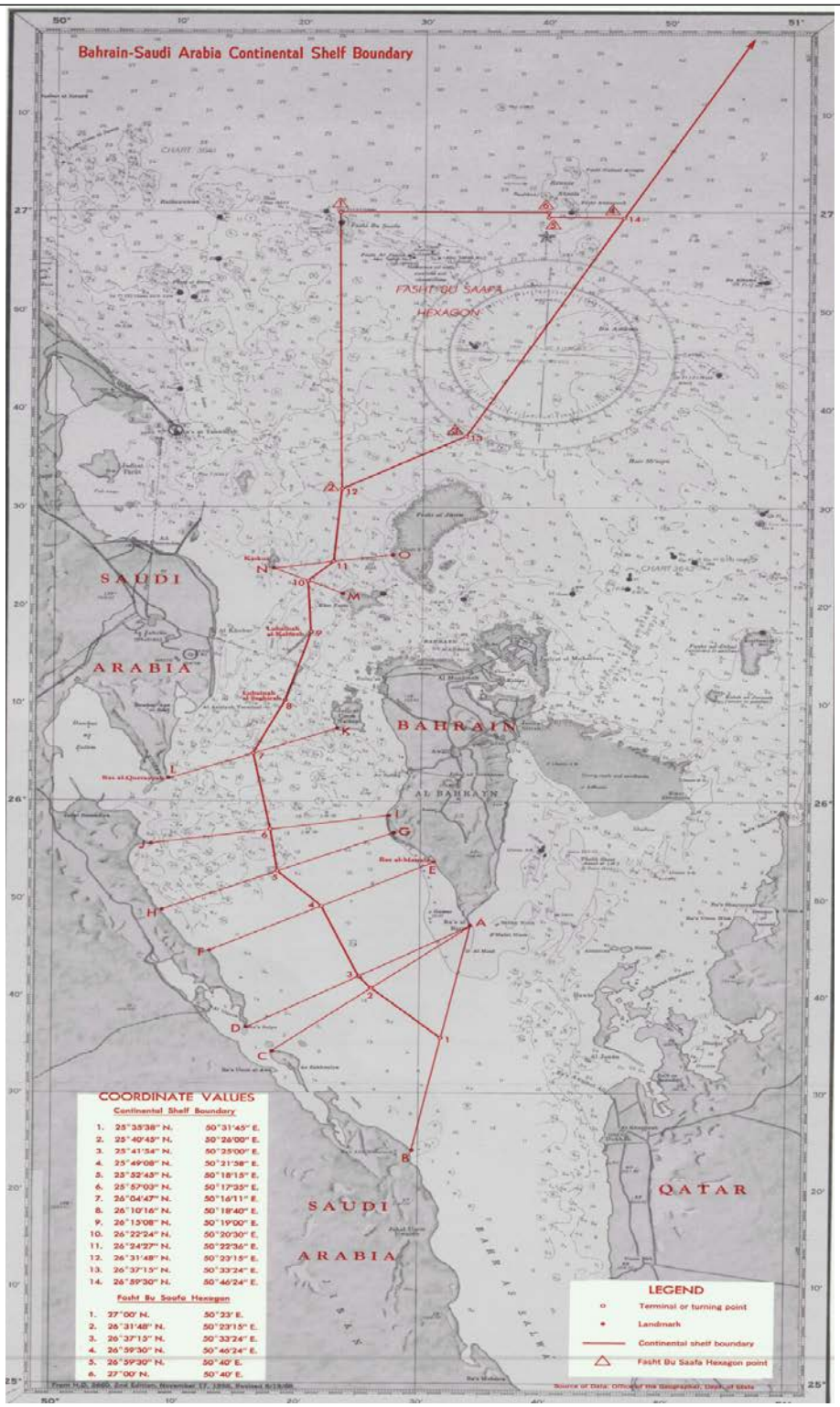
Source: J. Mabrook and B. Bonnelame, "Seychelles, Mauritius to set up Mascarene Plateau headquarters", Seychelles News Agency, 15 February 2016, available at http://www.seychellesnewsagency.com/articles/4600/Seychelles%2C+Mauritius+to+set+up+Mascarene+Plateau+headquarters (last accessed January 2019)

Illustration No. 24. Maritime boundaries between Cyprus, Egypt, Israel and Lebanon



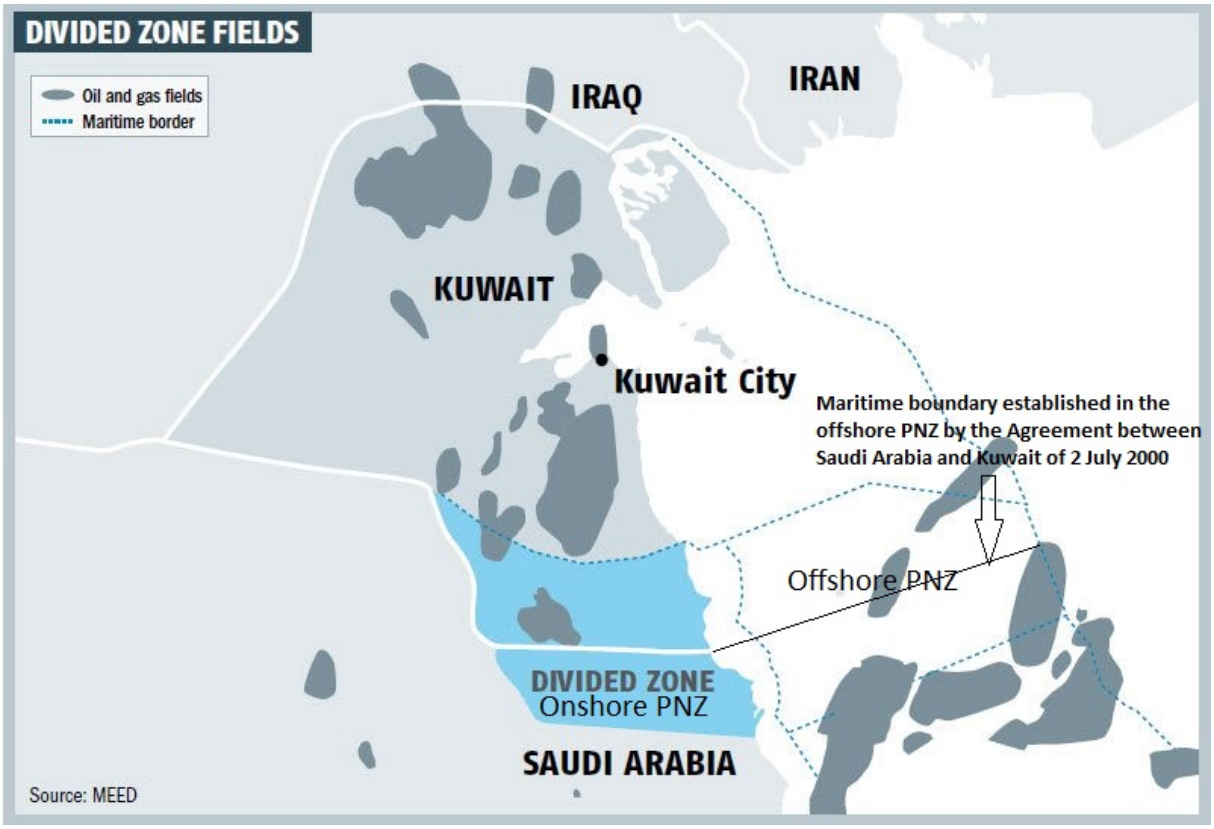
Source: E. Hazou, "Cyprus in talks with ENI-Total on Calypso timetable", Tekmor Monitor, 2 April 2018, available at https://tekmormonitor.blogspot.com/2018/04/cyprus-in-talks-with-eni-total-on.html (last accessed January 2019)

Illustration No. 25. "Fasht bu Saafa Hexagon" area between Saudi Arabia and Bahrain



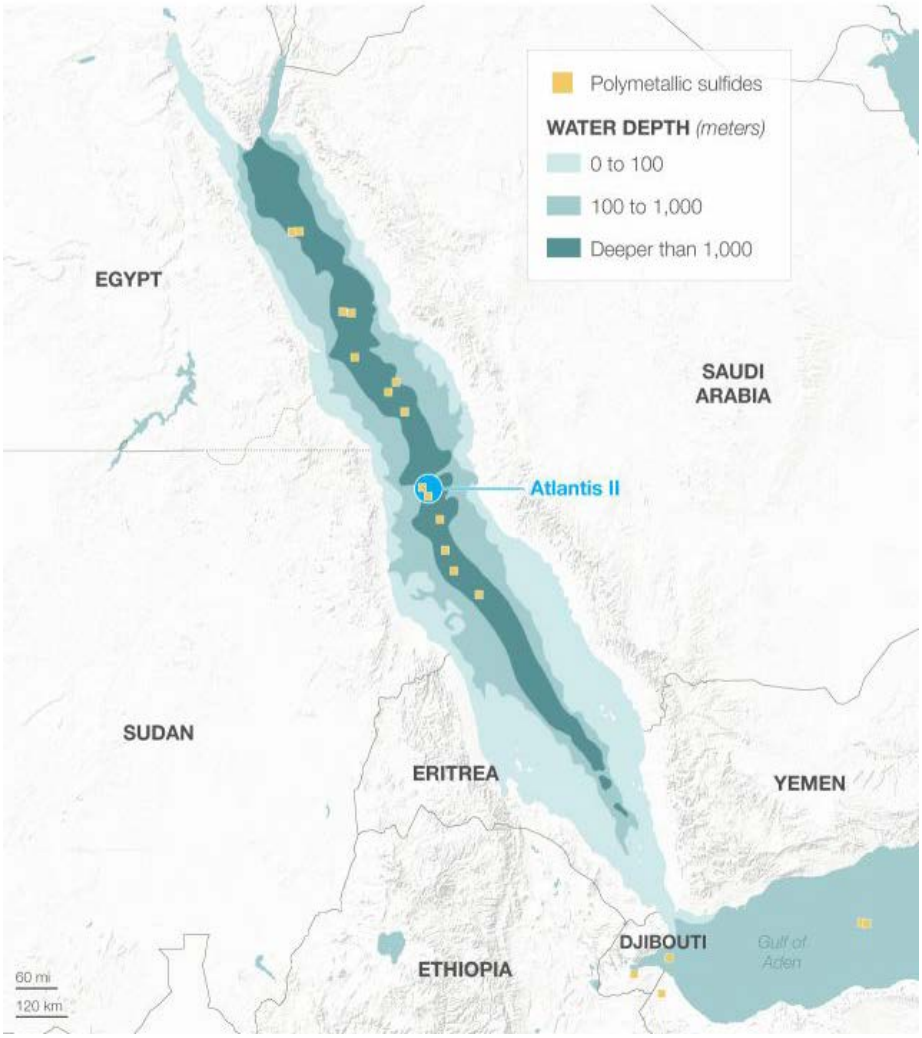
Source: Agreement between the Kingdom of Saudi Arabia and the Government of Bahrain, Riyadh, 22 February 1958, EIF: 26 February 1958, 1733 UNTS 8

Illustration No. 26. Partitioned Neutral Zone (PNZ) between Saudi Arabia and Kuwait



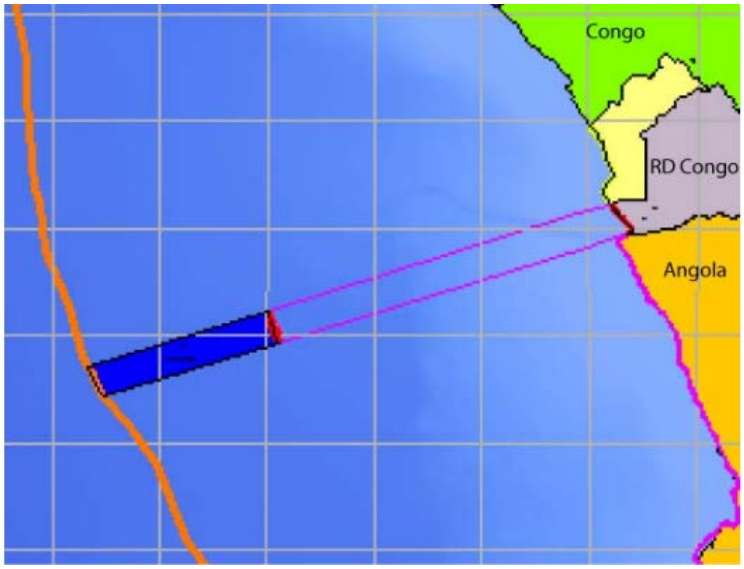
Source: J. Ghana, "Kuwait in discussions with Saudi Arabia on reviving shared field", MEED, 18 October 2017, available at https://www.meed.com/kuwait-discussions-saudi-arabia-reviving-shared-field/ (last accessed January 2019). The author edited the map in line with the subsequent developments considered in this thesis

Illustration No. 27. Common Zone between Saudi Arabia and Sudan



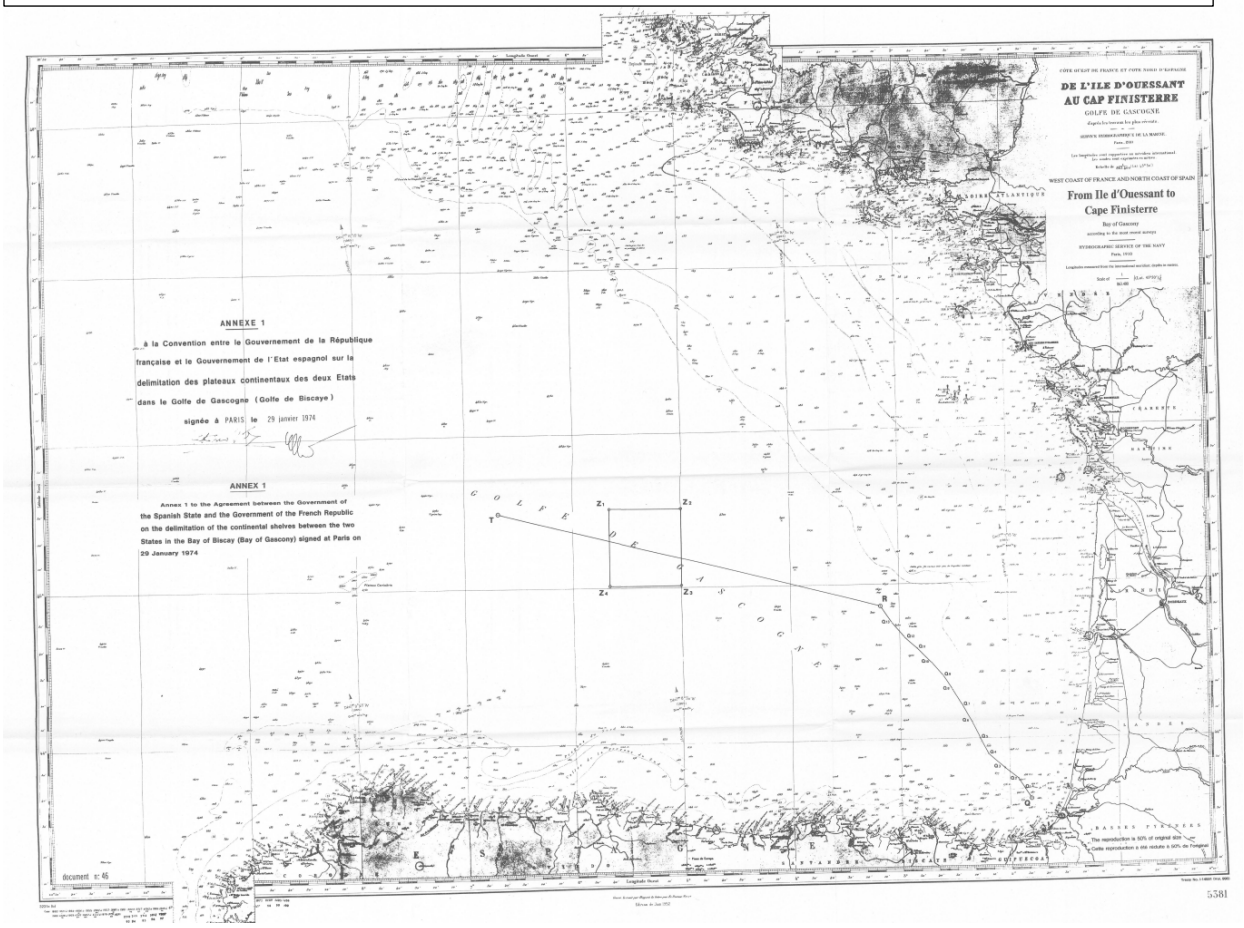
Source: "Deep-Sea Mining Remains out of Reach, for Now", Stratfor Wordview, 13 May 2016, available at https://worldview.stratfor.com/article/deep-sea-mining-remains-out-reach-now (last accessed January 2019)

Illustration No. 28. Maritime corridor claimed by the Democratic Republic of the Congo



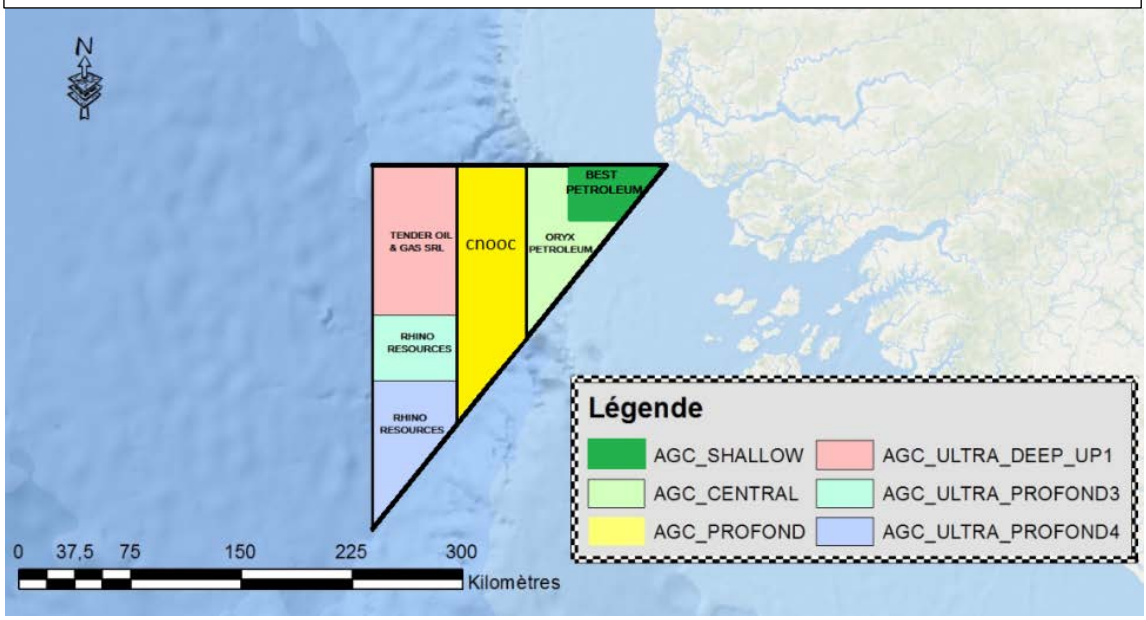
Source: Information préliminaire à la Commission des Limites de Plateau Continental Conformement à l'article 76, paragraphe 8 de la Convention de Nationas Unies sur le Droit de la Mer, 1982, concernant la région du Golfe de Guinée, 7 May 2009, frontpage, available at http://www.un.org/depts/los/clcs_new/submissions_files/preliminary/cod2009informationpreliminaire1.pdf (last accessed January 2019)

Illustration No. 29. Joint zone between France and Spain in the Bay of Biscay



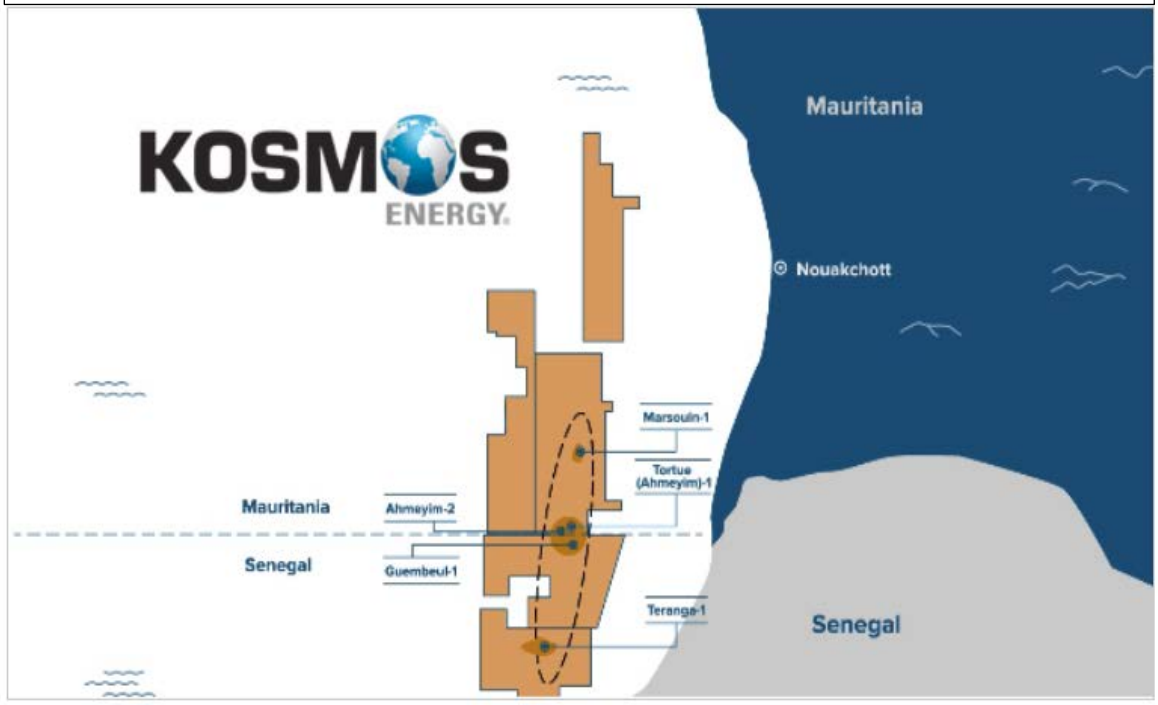
Source: Convention between the Government of the French Republic and the Government of the Spanish States on the delimitation of the continental shelves of the two States in the Bay of Biscay, Paris, 29 January 1974, EIF: 5 April 1975, 996 UNTS 345, Annex I

Illustration No. 30. Joint Area between Senegal and Guinea-Bissau (which is currently divided into six blocks)



Source: Senegal-Guinea-Bissau Management and Cooperation Agency's website, http://agc-sngb.org/en/, under "Permits & Blocks" heading (last accessed January 2019)

Illustration No. 31. Cross-border hydrocarbon deposit between Mauritania and Senegal



Source: Kosmos Energy, http://www.kosmosenergy.com/exploration-success-video.php (last accessed January 2019)

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