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History of unitization-based cooperation in the development of offshore cross-border deposits

Part I

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This paper traces the history of how states came to cooperate in the development of offshore cross-border oil or gas deposits. First, it explains the shift in how a state's offshore has come to be viewed from "open to all" to sovereign rights over an exclusive economic zone and finally to cooperation in the interest of all parties concerned. Secondly, it discusses the types of agreements states signed and the problems these agreements solve. The types of agreements are exemplified in this second part, while international state practice of cooperation towards an efficient and fair exploitation of common deposits is explained in the third part. Cooperation in the development of offshore cross-border deposits became state practice in two different parts of the world, at the same time. The third part of this paper explains how the states in the Persian Gulf came to cooperate in the development of their cross-border deposits.

Ever since Winston Churchill decided that the Imperial Navy switch from coal to oil, before World War I, crude oil has become a vital resource of modern economies and its exploitation turned from a commercial issue into a strategic one for all parties involved.

Thus, the industry was defined by parties' willingness to cooperate or by the results of different types of conflict. The development of offshore, cross-border deposits follows these patterns and presents two main types of problems. On one hand, due to physical characteristics of oil/gas deposits, exploitation based on the rule of capture is destined to result in conflicts between neighboring producers. On the other hand, offshore drilling is difficult and entails using advanced, expensive technologies which in turn require specialized know how.

Thus, cross-border cooperation for the development of cross-border, offshore deposits is all the more important as it is difficult to undergo. The moment the first barrel of oil from a common oil project is sold is the last stage of a time consuming process that turned into state practice after a decade's long evolution of concepts and international norms.

I. The evolution of claims over sea boundaries and offshore resources

In order to understand the concept of unitization it is important to first analyze the evolution of prior concepts like sovereignty over maritime resources and cross-border cooperation for the development of cross-border, offshore deposits.

Historically, the concept of liberty of the seas governed the relations between states relating to world's oceans. The doctrine limited states' sovereignty to the immediate coastal area and was upheld until the 18th century when it was reconsidered because of seabed and maritime resource competition, the rising number of maritime powers and worries related to environmental damages done by fishing and transportation vessels.

Until 1945, territorial waters extended up to a three mile limit. In 1945, President Truman, pressured by oil companies, further extended American territorial waters. In the 1950s border delimitation continued to be a problem in territorial negotiations which did not take into account natural resources in the area discussed. In the Persian Gulf maritime boundaries and the resources' exploitation were being discussed but still without taking into account the concept of deposit unitization. When Bahrain and Saudi Arabia negotiated in order to establish a maritime boundary the two parties did not reach consensus on how to divide the Fasht Abu Sa'fah deposit which was to be developed by the Saudis.

In the 1960s it became clear that it was impossible to divide an oil or gas deposit with unique characteristics. Hence, the approach changed, moving from dividing a deposit to developing it in common, boosted both resource exploitation and boundary delimitation.

The first agreements containing a deposit unitization clause were signed almost at the same time in the North Sea and the Persian Gulf. Also, the International Court of Justice recognized the concept's validity in its deliberations on the North Sea Continental Shelf Cases (1967). The Court did not consider the deposit's unitization as a "special circumstance" in establishing the boundary but as a factor to be taken into consideration. On the other hand, based on existing bilateral treaties, the Court recognized that existing regulations on common exploitation of resources in yet-to-be-delimited areas was state practice.[1]

[1] David M. Ong, "Joint Development of Common Offshore Oil and Gas Deposits: 'Mere' State Practice or Customary International Law?," *The American Journal of International Law* 93, no. 4 (1999), p. 785.

In this regard, the Court noted that "To look no farther than the North Sea, the practice of States shows how this problem has been dealt with, and all that is needed is to refer to the undertakings entered into by the coastal States of that sea with a view to ensuring the most efficient exploitation or the apportionment of the products extracted."[2] On common exploitation, the Court argued that it is "particularly appropriate when it is a question of preserving the unity of a deposit."[3]

In a separate opinion, Judge Jessup referred to the situation of states having equally justifiable, overlapping claims over the continental shelf. He noted that the then-existing agreements "provide for joint exploitation or profit-sharing in areas of considerable extent where the national boundaries are undetermined or had been recently agreed upon subject to the provision for joint interests. Therefore, the principle of joint exploitation is particularly appropriate in cases involving the principle of the unity of a deposit, it may have a wider application in agreements reached by the Parties concerning the still yet to be delimited but potentially overlapping areas of the continental shelf which have been in dispute."[4]

The development of common resources was not the legal issue the Court was supposed to judge but still, by upholding this type of arrangement the Court showed a tendency to transform the unitization concept from state practice into a "general principle of law, recognized by civilized nations."[5]

Later, cooperation on developing common resources was upheld by the UN General Assembly Resolution 3129 of 1973 regarding the "Cooperation in the Field of the Environment Concerning Natural Resources Shared by Two or More States." The Assembly considered "that it is necessary to ensure effective cooperation between countries through the establishment of adequate international standards for the conservation and harmonious exploitation of natural resources common to two or more States in the context of the normal relations existing between them. Cooperation between countries sharing such natural resources and interested in their exploitation must be developed on the basis of a system of information and prior consultation within the framework of the normal relations existing between them."[6]

[2] International Court of Justice, "North Sea Continental Shelf Cases," no. February (1969), http://www.icj-cij.org/docket/files/52/5561.pdf, par. 97.
[3] Ibid, par. 99.
[4] International Court of Justice, *North Sea Continental Shelf Cases - Separate Opinion of Judge Jessup*, 1969, http://www.icj-cij.org/docket/files/52/5569.pdf, 82.
[5] United Nations, *Statute Of The International Court Of Justice*, 1945, http://www.icj-cij.org/documents/?p1=4&p2=2#CHAPTER_II, art. 38, 1c.
[6] United Nations, "Res. 3129 - Cooperation In The Field Of The Environment Concerning Natural Resources Shared By Two Or More States," n.d., http://daccess-dds-ny.un.org/doc/RESOLUTION/GEN/NR0/282/01/IMG/NR028201.pdf?OpenElement, art. 1-2.

Cooperation is also referred to in the Charter of Economic Rights and Duties of States (UN General Assembly Resolution 3281/1972): "In the exploitation of natural resources shared by two or more countries, each State must co-operate on the basis of a system of information and prior consultations in order to achieve optimum use of such resources without causing damage to the legitimate interest of others."[7]

A reference moment for all maritime issues was 1994, when the UN Convention on the Law of the Sea came into force, establishing how states were to define territorial waters, exclusive economic zones (EEZs), boundaries and states' rights in each maritime sector. According to the Convention, "Every State has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles" and "The exclusive economic zone shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured".[8] In the EEZ the state has "sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil."[9] Also, "the coastal State exercises over the continental shelf sovereign rights for the purpose of exploring it and exploiting its natural resources."[10]

The continental shelf comprises both the seabed and the subsoil of submarine areas that extend beyond the territorial sea as a natural prolongation of the state's land territory. From a technical perspective, establishing the outer limit of the continental shelf depends on a series of characteristics of the land.

The next chapter in the history of cross-border cooperation for the development of common, offshore resources began as these resources were discovered in significant quantities. A dilemma was created between the old system of territorial control and the new ideas of fair and sustainable exploitation.

As to the concept of ensuring a deposit's unity for a fair exploitation by all the entitled states, it is important to understand the difference between cross-border unitization and joint petroleum development. Both cross-border unitization and joint petroleum development are cooperative practices designed to preserve the unity of the deposit while respecting the inherent, sovereign rights of the interested states. However, cross-border unitization in the strict sense covers situations where a common reservoir is underlying the delimited boundary between two states, and it involves the treatment of an identified oil or gas deposit as a single deposit. By contrast, joint petroleum development agreements refer

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[7] "A/RES/29/3281 Charter of Economic Rights and Ruties of States" (United Nations, 1974), www.un-documents.net/a29r3281.htm, art. 3

[8] United Nations, "United Nations Convention on the Law of the Sea," 1982, www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf, art. 3, 57

[9] Ibid, art. 56

[10] Ibid, art. 77

to arrangements between two states to develop and share in agreed proportions the petroleum found within a geographic area whose sovereignty is disputed.[11]

The two concepts complement each other. Joint petroleum development agreements can refer to both deposits in disputed areas and those that make the object of clear sovereign rights. In the first case, this type of an agreement is based on maintaining the deposits' unity as otherwise a rule of capture[12] system would inflict indirect costs to the other party.

Firstly, states need to recognize the importance of preserving the deposit's unity, given the fact that cross-border resources could be partially or entirely exploited from either side of the boundary. As Northcutt Ely explains, "These deposits are characterized by a complicated "equilibrium of rock pressure, gas pressure and underlying water pressure," so that extracting natural gas or petroleum at one point unavoidably changes conditions in the whole deposit. One possible result is that other states cannot extract the minerals from their part of the deposit, even if the first state has extracted only that portion originally situated in its territory or continental shelf.[13]

Daniel Yergin explains in *The Prize* (1990) the problem of unregulated exploitation of regular deposits, not necessary offshore ones. The explanation is also relevant when discussing cross-border, offshore deposits as they present the same characteristics. Also, drilling without unitization raises the same issues for both onshore and offshore deposits.

In the United States, the rule of capture governed the industry since the first drillings in Pennsylvania in the 1850s and was often sanctioned by courts based on English common-law regarding wild, migrating animals. To those complaining that their neighbors drilled their oil, the courts would advice to do the same.

Because of the rule of capture, operators drilled and exploited deposits as fast as they could, before their neighbors could do the same. In doing so, production rose quickly and the price fluctuated greatly which in turn affected the deposit's integrity. Harry Doherty[14] believed that the rule of capture prematurely exhausted a field's underground pressure and so a considerable share of the oil would be left underground, unrecoverable. Recognizing how important oil had been in World War I, Doherty feared what it would mean for the United States in another war if what he called "extremely crude and ridiculous" production

[11] Thomas Wälde, Ana E. Bastida, Adaeze Ifesi-Okoye, Salim Mahmud, James Ross, "Cross-Border Unitization and Joint Development Agreements: An International Law Perspective," *Houston Journal of International Law* 29, no. 2 (2007): 355–423, http://cadair.aber.ac.uk/dspace/handle/2160/754, 358.

[12] " As applied to oil production, the rule of capture meant that the various surface owners atop a common pool could take all the oil they could get, even if they disproportionately drained the pool or reduced the output of nearby wells and neighboring producers." Yergin (1990), *The Prize: The Epic Quest for Oil, Money, and Power*, 32.

[13] Ana E. Bastida, Adaeze Ifesi-Okoye, Salim Mahmud, James Ross, "Cross-Border Unitization and Joint Development Agreements: An International Law Perspective, 778".

[14] Businessman and utilities expert who formed the holding company Cities Service Company in 1910.

practices were to prevent vast stores of oil from ever being recovered. Doherty's solution was to unitize the field, tapping them as single units, with the output apportioned to the various owners. In this way, oil could be recovered at a controlled rate, decided by engineers, thus maintaining the underground pressure. It was only at the end of the 1920s when the industry acknowledged the importance of unitization, a concept so long backed by Doherty.[15]

Secondly, in order to preserve the deposits' unity, states sign agreements to jointly develop those deposits straddling borders. The first agreement through which the parties agreed to jointly develop a cross-border deposit was signed by the United Kingdom and Norway in 1965. Thus, "If any single geological petroleum structure or petroleum field (...) extends across the dividing line and the part of such structure or field which is situated on one side of the dividing line is exploitable, wholly or in part, from the other side of the dividing line, the Contracting Parties shall (...) seek to reach agreement as to the manner in which the structure or field shall be most effectively exploited and the manner in which the proceeds deriving therefrom shall be apportioned."[16] The majority of subsequent international agreements had a unitization clause, although details were different.[17]

Lastly, after the parties sign the joint development agreement, they will decide on the conditions of common development. Under international law, a joint petroleum development agreement refers to an arrangement between two states to develop and share jointly in agreed proportions the petroleum found within a designated zone of seabed and subsoil of the continental shelf or EEZ, to which both states are entitled under international law.

There are a number of economic and practical reasons why states may choose joint petroleum development. The primary reasons are: (i) a strong desire to exploit any resources that may exist in the area as soon as possible; (ii) an understanding that alternative approaches, such as delimitation, are likely to lead to significant delays with potentially negative impact on bilateral relations; and (iii) a recognition that the approach has been demonstrated to work and that the body of existing agreements can serve as a useful basis for formulating any new agreement.[18]

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[15] Yergin, *The Prize: The Epic Quest for Oil, Money, and Power*, 200-221.

[16] "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" (United Nations, 1965), www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/GBR-NOR1965CS.PDF, art. 4.

[17] Ana E. Bastida, Adaeze Ifesi-Okoye, Salim Mahmud, James Ross, "Cross-Border Unitization and Joint Development Agreements: An International Law Perspective, 370-371"

[18] Ibid, 370-371.

II. Types of agreements

Once the importance of preserving the deposit's unity has been acknowledged, states make efforts in order to start the joint exploitation. The first step is to establish *joint development zones* (JDZs) by signing bilateral agreements based on unitization and cooperation. Next, states establish the terms of the exploitation and how to share obligations and rights. To some degree, these agreements reflect the internal political and economical systems and the possible existing conflicts between them. Generally, these agreements follow one of the models detailed below.

Joint development agreements must uphold parties' rights and obligations and are the cornerstone of the international practice, by being both precedent and model for subsequent agreements.

1. Single state model.

Under this model one state manages the development of the deposits on behalf of both states. The other state shares in the proceeds from the exploitation after the first state's costs are deducted. Many of the earliest joint development agreements followed this model but it has fallen into disuse, principally because of the apparently unacceptable loss of autonomy by the state whose sovereign rights are administered by the other state.[19]

An example of this arrangement is the Bahrain-Saudi Arabia agreement of 1958. As part of the delimitation agreement, the border was positioned to avoid crossing the Fasht Abu-Sa'fah field which, as a result, became wholly within the jurisdiction of Saudi Arabia. However, in return, Saudi Arabia was obliged to grant to Bahrain 50% of the net revenues from the field.[20]

2. Two states/joint venture model.

Each state nominates its own concessionaire, which enters into a joint venture with the concessionaire of the other state.[21]

In 1974 Japan and South Korea signed an agreement for the joint exploitation of a common zone. The JDZ was to be divided into subzones, each of which was to be explored and exploited by concessionaires of both Parties[22] in such a way as for each subzone to be

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[19] Ong, "Joint Development of Common Offshore Oil and Gas Deposits: 'Mere' State Practice or Customary International Law?", 788.

[20] Ana E. Bastida, Adaeze Ifesi-Okoye, Salim Mahmud, James Ross, "Cross-Border Unitization and Joint Development Agreements: An International Law Perspective, 416.

[21] Ibid, 416.

[22] "1974 Agreement Between Japan And The Republic Of Korea Concerning Joint Development Of The Southern Part Of The Continental Shelf Adjacent To The Two Countries," 1974, http://cil.nus.edu.sg/rp/il/pdf/1974 Agreement between Japan and Korea Concerning JD of the Southern

under the operational control of a single entity.[23] A joint Commission was established as a means for consultations on matters concerning the implementation of the Agreement[24] that did not take over states' sovereignty. A similar example of this type of joint development agreement is the 1974 Convention in the Bay of Biscay between France and Spain, which coincidentally was adopted just a day before the Japan-Korea Agreement. The delineated special zone is divided into French and Spanish sectors, and sovereign rights and jurisdiction are similarly divided.[25]

3. The common entity model.

This is the most complex and institutionalized model. A common authority is created which can have legal personality. This model can vary significantly with respect to the powers given to the Joint Authority: it can be strong, almost like a separate state, or a weaker, purely administrative entity.

Agreements based on this model were signed between Thailand and Malaysia in 1979 between the states of the Timor Gap: Australia-Indonesia in 1989, Nigeria-São Tomé e Príncipe in 2001 and Australia-East Timor Sea Treaty in 2002. This model may also contain more than one level of authority. For example, the Timor Gap Treaty of 1989 actually combines two of the above models. The area covered by the agreement is subdivided into three parts of which Area A is a JDZ based on the Joint Authority model and areas B and C, however, are consistent with the single-state model described above.[26]

The Sudan-Saudi Arabia Agreement of 1974 is an early example of this model. It established a joint Commission charged with broad powers and functions. The Commission had legal personality as a body corporate in both Saudi Arabia and Sudan, enjoying such legal capacity as may be necessary to exercise all the functions assigned to it. The commission was empowered to consider and decide on the applications for licenses and concessions.[27]

4. The trustee development model.

According to this model, all interested states will surrender their rights of resource exploration and exploitation to a third party. In exchange, they each will receive an

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Part of Continental Shelf-pdf.pdf, art. III(1).

[23] Ong, "Joint Development of Common Offshore Oil and Gas Deposits: 'Mere' State Practice or Customary International Law?", 789-790.

[24] "1974 Agreement Between Japan And The Republic Of Korea Concerning Joint Development Of The Southern Part Of The Continental Shelf Adjacent To The Two Countries," art. XXIV.

[25] Ong, "Joint Development of Common Offshore Oil and Gas Deposits: 'Mere' State Practice or Customary International Law?", 789-790.

[26] Ana E. Bastida, Adaeze Ifesi-Okoye, Salim Mahmud, James Ross, "Cross-Border Unitization and Joint Development Agreements: An International Law Perspective.", 416-417.

[27] Ong, "Joint Development of Common Offshore Oil and Gas Deposits: 'Mere' State Practice or Customary International Law?", 791.

allowance (in cash or by kind)—the amount of which depends on an agreement—from the third party. The advantage of this model is that, after implementation, which is based on a package of agreements signed between all the interested states and with an appropriate third party, it can resolve resource-related disputes definitively, thus making it easier to get businesses to invest in the follow-on development needed.[28]

5. The parallel development model.

It states that each state will conduct its own exploration and exploitation activities independently. It seems that in the South China Sea this model is followed, at least partly, as each of the coastal states (Brunei, Indonesia, Malaysia, Philippines, and Vietnam) has its own oil/gas operations in an area wholly or partially claimed by one or more of the other states. The model's primary advantage is that sometimes it does not need any institutional agreement and is therefore fairly user-friendly. However, the model may induce irrational competition which would affect the model's effectiveness or worse, intensify existing boundary and territorial conflicts.[29]

III. Cooperation agreements between Middle Eastern states

The Persian Gulf can be broadly understood by looking at both the dynamic and balance of power between Iran and Saudi Arabia and at the regional smaller states' alignment with one of this power centers. For this reason, regional joint development agreements will be analyzed in three parts: (1) Saudi Arabia's agreements, (2) Iran's agreements and (3) smaller states' agreements.

For the first time in the Persian Gulf, Saudi Arabia signed a border agreement with a clause referring the development of natural resources in disputed areas. In time, Saudi Arabia will transform this type of cross-border resource exploitation into state practice in its relations with its neighbors and at a regional level. Also, Saudi Arabia's precedent represented the cornerstone in adopting the state practice at a global level.

1. Saudi Arabia

Saudi Arabia-Bahrain, 1958

[28] Rongxing Guo, "Territorial Disputes and Seabed Petroleum Exploitation: Some Options for the East China Sea" (The Brookings Institution, 2010), http://www.brookings.edu/~/media/research/files/papers/2010/9/east china sea guo/09_east_china_sea_guo.pdf., 16.

[29] Ibid, 14.

In 1958 Bahrain and Saudi Arabia signed an agreement setting the boundary delimitation and devising a joint development area for equal revenue sharing. In 1941 the Bahrain Petroleum company, BAPCO, was granted exploration rights in the Fasht Abu-Sa'fah oil field. When Saudi Arabia objected to this, BAPCO suspended operations and the two governments entered into negotiations. Bahrain proposed a division of the oil field, but the two governments were unable to agree on how the oil field should be divided. They agreed instead to delimit the northern sector of their continental shelf boundary so that it might coincide with the limits of the oil field by placing the field entirely on Saudi Arabia's side of the boundary, and to equally share oil revenues from the field. As Bahrain proposed, one disputed island, Al Baina As Saghir, was left to Bahrain while the other disputed island, Al Baina As Kabir, was left to Saudi Arabia.[30] "In view of the desire of HH the Ruler of Bahrain and the consent of HM the King of Saudi Arabia, the oil resources in the area mentioned and delimited above in the part belonging to the Kingdom of Saudi Arabia shall be developed in the manner which his Majesty may choose, on condition that he give the Government of Bahrain half of that which pertains to the Saudi Arabian Government of the net income derived from this development. It is understood that this shall not impair the right of sovereignty and administration of the Saudi Arabian Government in the above-mentioned area."[31]

Saudi Arabia-Kuwait, 1965

Strictly speaking, this case is not a precedent for joint development as initially the two states did not agree on the joint development, choosing instead to let their concessionaires reach such an agreement. Both Kuwait and Saudi Arabia signed separate concession agreements with American oil companies according to their equal legal rights over the Neutral Zone, a 52km^2 desert area created by the British in 1922 when the border between Kuwait and Saudi Arabia was drawn. The two countries share sovereignty over the area created in order to accommodate the Bedouins, who wandered back and forth between Kuwait and Saudi Arabia and for whom nationality was a hazy concept. Kuwait signed with American Independent Oil Company (Aminoil) in 1948 and Saudi Arabia with Pacific Western Oil Corporation (later on Getty Oil Company) in 1949. It seems like from the beginning the two countries inclined towards a common development of the Neutral Zone and with the encouragement of the two governments, the companies conceived an acceptable system from both a commercial and a political viewpoint. Plus, all was

[30] Masahiro Miyoshi, "The Joint Development of Offshore Oil and Gas in Relation to Maritime Boundary Delimitation," *Maritime Briefing* 2, no. 5 (1999), 27-28.
[31] "Continental Shelf Boundary, Bahrain-Saudi Aarabia," *International Boundary Study, Limits in the Seas*, no. 12 (1970), http://www.state.gov/documents/organization/62003.pdf, art. 2.

accomplished without a prior border settlement.[32] Each state was entitled to 50% of the net revenues of the other state from its concession.

Saudi Arabia-Qatar, 1965

This agreement only settles the border, without referencing natural resource management.[33]

Saudi Arabia-Iran, 1968

Tehran and Riyadh opened negotiations in order to settle the maritime boundary but soon found themselves in disagreement over the third sector discussed, the northern one. In 1965 the two parties signed an agreement on the first and second sector but Iran never ratified it because meanwhile oil was discovered on the Arabian side of the proposed line. Iran did not accept neither the 1965 plan nor arbitration as the Saudis proposed. Efforts to settle the issues were renewed and in the end the idea to split the oil and not the land, prevailed. Thus, in 1969, a slightly zigzag line was agreed upon and Iran received less in land terms but more in estimated oil reserves.[34]

The 1968 agreement stated that "Each Party agrees that no oil drilling operations shall be conducted by or under its authority within a zone extending five hundred meters in width in the submarine areas on its side of the Boundary Line."[35]

The agreement settled the longest maritime boundary in the Gulf and promoted the development of regional resources. By far the most significant aspect of the agreement is that it established precedent and model for border settlement for all the other Gulf countries. Iran and Saudi Arabia showed that borders can be settled peacefully despite problems posed by islands and the search for the best way to share both suspected and confirmed resources.[36]

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[32] Miyoshi, "The Joint Development of Offshore Oil and Gas in Relation to Maritime Boundary Delimitation.", 6-7.

[33] "Agreement on the Delimitation of the Offshore and Land Boundaries between the Kingdom of Saudi Arabia and Qatar" (United Nations, 1965), http://www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/SAU-QAT1965OB.PDF.

[34] Richard Young, "Equitable Solutions for Offshore Boundaries: The 1968 Saudi Arabia-Iran Agreement," *The American Journal of International Law* 64, no. 1 (1970): 152–57, http://www.jstor.org/stable/2198622, 154-155.

[35] "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" (United Nations, 1968), http://www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/SAU-IRN1968SA.PDF, art. 4.

[36] Young, "Equitable Solutions for Offshore Boundaries: The 1968 Saudi Arabia-Iran Agreement.", 157.

2. Iran

The other power center in the Gulf, Iran, also adopted the common deposit development concept and even took it a step further by drafting a framework that it used in negotiating maritime borders. Generally, Iran's agreements do not establish an automated development mechanism; instead, they state that deposits will be unitized and that the best exploitation method will be negotiated after the common deposits' discovery.

It is the case of four agreements, signed by Iran with Qatar (1969), Bahrain (1971)[37], UAE (1974)[38] and Oman (1974).[39] Common to all four agreements is Article 2 , which stated that '"If any single geological petroleum structure or petroleum field, extends across the Boundary and the part of such structure or field which is situated on one side of that Boundary line could be exploited wholly or in part by directional drilling from the other side of the Boundary line, then Both Governments shall endeavor to reach agreement as to the manner in which the operations on both sides of the Boundary line could be coordinated or unitized."[40] Also, in all four agreements it is forbidden to drill at less than 125m from the boundary line.[41] It is worth noting Tehran's tendency to make sure that no drilling will be done in the boundary area.

Iran-Sharjah, 1971

This revenue sharing agreement provides for a single oil company to operate under a memorandum of understanding between Iran and the Emirate of Sharjah. The island of Abu Musa was the subject of a long-standing dispute between the two countries. On 29 November 1971 the Memorandum of Understanding between Iran and Sharjah was first announced by the Ruler of Sharjah in the context of a tense political situation between the two states. A day later the Iranian prime minister told the parliament that Iranian troops had landed to take up strategic positions on the island and hoisted the Iranian flag there

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[37] "Agreement Concerning Delimitation of the Continental Shelf between Iran and Bahrain" (United Nations, 1971), http://www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/IRN-BHR1971CS.PDF.

[38] "Continental Shelf Boundar, Iran-United Arab Emirates (Dubai)," *International Boundary Study, Limits in the Seas*, no. 63 (1975), http://www.state.gov/documents/organization/61493.pdf.

[39] "Agreement Concerning Delimitation of the Continental Shelf between Iran and Oman" (United Nations, 1974), http://www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/IRN-OMN1974CS.PDF. "Agreement Concerning Delimitation of the Continental Shelf between Iran and Oman" (United Nations, 1974).

[40] "Agreement Concerning the Boundary Line Dividing the Continental Shelf between Iran and Qatar" (United Nations, 1969), http://www.un.org/depts/los/LEGISLATIONANDTREATIES/PDFFILES/TREATIES/IRN-QAT1969CS.PDF.

[41] S. P. Jagota, *Maritime Boundary* (Dordrecht, Netherlands: Martinus Nijhoff Publishers, 1985), 77.

the day before.[42]

The Memorandum, stated that ”Neither Iran nor Sharjah will give up its claim to Abu Musa nor recognize the other's claim” and divided the island in areas where either Iran or Sharjah had ’”full jurisdiction.”[43] Also, the parties agreed on equal sharing of revenues from exploiting Abu Musa.[44]

3. Smaller states' agreements

Qatar-Abu Dhabi, 1969

The agreement states that both Abu Dhabi and Qatar have equal property rights over Hagl El Bundug oil field even though the boundary placed most of it under Qatar's sovereignty. Abu Dhabi's Ruler was to settle the terms of the concession towards Abu Dhabi Marine Zone Co., which was to exploit the field. All revenues, profits and benefits were to be equally shared by the governments.[45]

Conclusions

As states pushed their maritime boundaries further and further away from their shores, their rights brought them more and more riches, but soon they found themselves arguing over areas and the resources in the continental shelf. Meanwhile, the extractive industry matured and realized that cross-border deposits, be they onshore or offshore, cannot be efficiently and fairly exploited using the rule of capture principle. At the juncture of international relations and the extractive industry lays the concept of unitization based cross-border cooperation for the development of offshore cross-border deposits.

This idea materialized into unitization agreements, than into cooperation agreements and finally into state practice that was firstly but simultaneously put to good use in the Persian Gulf and in the extended Arctic Circle. In this context, unitization based cross-border cooperation as state practice eases exploitation, improves bilateral or multilateral relations and even helps settle disputed maritime borders.

[42] Miyoshi, "The Joint Development of Offshore Oil and Gas in Relation to Maritime Boundary Delimitation.", 10.
[43] "'Memorandum of Understanding' between Iran and Sharjah" (Pars Times, 1971), http://www.parstimes.com/history/iran_sharjah.html, alin. 1, 2 (a), (B).
[44] Ibid, par. 4.
[45] Ong, "Joint Development of Common Offshore Oil and Gas Deposits: 'Mere' State Practice or Customary International Law?", 789.

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