Solomon's Judgement: The international law of exploration and exploitation of shared hydrocarbon resources or how to split the baby[1]

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Abstract

Two States have both in the same time a valid title under international law to explore and exploit a hydrocarbon deposit. This situation occurs when the hydrocarbon deposit is located in an area where there are overlapping claims by two or more coastal states or when the hydrocarbon deposit straddles upon the maritime boundary between the two countries. The aim of this paper is to enquire the content of international law governing exploration and exploitation of common or transboundary hydrocarbon resources. It will carry out a survey of State practice in the field of joint development of hydrocarbon resources. The recurrent and extensive practice of entering into joint development agreements will raise the question whether it has crystallized in a customary international rule. If the answer to this question is negative, as argued by this paper, the focus will be to ascertain the content of the obligation to cooperate between States. This paper will come to an end with some concluding remarks on the legality under international law of unilateral exploration of transboundary resources and by suggesting a potential mitigation strategy that can be adopted by a State willing to go ahead in a unilateral manner.

Keyword: *Transboundary hydrocarbon resources, Offshore oil and gas, International law, Joint development, Rule of cooperation, Rule of capture (interdiction)*

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1. Introduction

The World Energy Investment Outlook 2014 Special Report, published by the International Energy Agency, forecasted that the world economy will need around $23 trillion of investments in the oil and gas sector over the period to 2035 (WEIO, 2014, 11). More than 80% of this amount will be dedicated to the upstream part of the product chain, which includes exploration and exploitation activities (WEIO, 2014, 23). One of the major features that will characterize the petroleum sector is the end of 'easy' oil. As the existing fields are depleted, the industry will increasingly focus on remote locations, such as offshore hydrocarbon deposits (WEIO, 2014, 64).

This shift will understandably pose a number of challenges, from the technical to the economical. One of the most important challenges faced by States and industry actors will be related to the legal framework governing development of offshore oil and gas. It suffices to glimpse at recent articles in magazines or newspapers to grasp the sensitivity of the issue. (See, for example, The Economist, 'Vietnam and China: Hot oil on troubled waters', May 17th 2014 issue).

Schematically, the problem can defined in the following terms: Two States have both in the same time a valid title under international law to explore and exploit a hydrocarbon deposit. However, if one of them proceeded to undertake these activities, the result could be the violation of the sovereign rights of the other State. Obviously, this situation creates considerable legal uncertainty. Which company would take the risk to invest huge amounts of money in a venture marred by the risk that the petroleum license or concession is void?

This situation is the result of, principally, two factors. In the first place, technological progress has enabled oil and gas companies to develop increasingly further offshore hydrocarbon deposits. The second factor, which interests us the most, is of a legal nature. The aftermath of World War II saw a growing interest of States in the resources of the continental shelf.

Following, the Truman proclamation,

> "the Government of the United States regards the natural resources of the subsoil and seabed of the continental shelf beneath the high seas but contiguous to the coasts of the United States as appertaining to the United States, subject to its jurisdiction and control" (US Presidential Proclamation No. 2667/1945).

A State practice of extended jurisdiction on the continental shelf developed and, soon, became customary international law. It was incorporated first in the

Geneva Convention on the Continental Shelf and, at present, is comprised in the United Nations Convention on the Law of the Sea (UNCLOS).

The continental shelf is frequently very rich in natural resources, especially in oil and gas reserves. It is estimated that more than 87% submarine oil deposits are found in the continental shelf (Churchill & Lowe, 1999, 162) and around 70% of the world's undiscovered reserves lay offshore (Churchill et al., 1999, 141).

When the States decide to explore and exploit offshore resources, they are frequently confronted with two kinds of problems. The first occurs when the hydrocarbon deposit is located in or in the vicinity of an area where there are overlapping claims by two or more coastal states. This is not at all theoretical. It is quite frequent that two States have either adjacent coasts or opposite coasts of less than 400 nm of distance between each other. Thus, both States have valid legal claim to the maritime zone in question. The problem is compounded by the fact that more than half of maritime boarders are not delimited (Blake & Swarbrick, 1998, 3).

The second hypothesis relates to the case when there is well an international maritime boundary between the states but it happens that the hydrocarbon deposit straddles upon this maritime boundary.

In both cases, the situation is aggravated by the physical characteristics of hydrocarbon deposits. In simple terms, hydrocarbon deposits are an accumulation of organic residues composed of carbon and hydrogen atoms located in a porous rock, called the reservoir rock. However, only if the reservoir rock is capped by an impermeable layer of rock it will give rise to a hydrocarbon deposit. In case of drilling, the pressure found in the reservoir rock is released so forcing the content to rise to the surface (Becker-Weinberg, 2014, 9; Robson, 1995, 3).

Due to the highly migratory nature of these substances, the exploitation from whatever side of the deposit is likely to cause the flow of oil or gas from one side of the deposit to the extraction point. This eventuality may prejudice the interests of the other State and the peaceful relations between the two countries (UN Doc A/CN4/580, 2007, 3-4).

In addition, the concurrent drilling in the same reservoir may negatively impact the amount of oil or gas that can be extracted from the deposit. This gave rise to the famous adage of M.W. Mouton "never two straws in one glass" (Mouton, 1954, 421).

The legal problem arising from this situation was clearly defined by the International Court of Justice (ICJ) in the North Sea Continental Shelf case:

> "it frequently occurs that the same deposit lies on both sides of the line dividing a continental shelf between States, and since it is possible to exploit such deposit from either side, a problem immediately arises on account of the risk of prejudicial or wasteful exploitation by one or the other of the States concerned" (I.C.J. Reports 1969, para. 97).

Despite some differences, the legal question is the same regarding the hydrocarbon deposits located in areas of overlapping claims (Ong, 1999, 775).

Thus, this Essay will enquire the content of international law governing exploration and exploitation of common or transboundary hydrocarbon resources. Our investigation shall be undertaken with a very clear and fundamental knowledge of the background upon which the legal discussion is unfolded. On the one hand, States enjoy a permanent sovereignty on their natural resources and they possess exclusive sovereign rights to explore and exploit the subsea non-living resources. On the other hand, States are bound to observe the territorial integrity and sovereign rights of the other States and they must refrain from causing transboundary harm.

With this background in mind, we shall begin our examination by making some introductory remarks on the law of transboundary resources in general (I). This will help us to understand the legal and practical reasons that pushed States to enter into cooperative agreements with each other, thus limiting their sovereign rights, with the view of developing common hydrocarbon reservoirs. The second section will also delineate the main features of the joint development agreements (II). The survey of State practice in the matter of joint development of hydrocarbon resources will bring us to the heart of this Essay. The recurrent and extensive practice of entering into joint development agreements has, for some authors, crystallized in a customary international rule (Onorato, 1985, 539). This Essay takes the opposite view. State practice is neither uniform nor consistent and it lacks opinio juris (Lagoni, 1979, 221; Miyoshi, 1988, 10). (III)

If a special rule of cooperation in the form of joint development has not yet crystallized in custom (Becker-Weinberg, 2014, 202-204), there exists, nonetheless, a general rule of cooperation between States in their dealings with common natural resources (Lagoni, 1984, 355). It will be the focus of the fourth and last section to ascertain the content of the obligation to cooperate between States. As negotiations can succeed or fail, this Essay will attempt to assess whether international law, in any particular circumstances, permits unilateral exploration of transboundary resources. International law in the matter is highly uncertain (Churchill & Ulfstein, 1992, 85-89). Therefore, rather than providing risk-proof legal advice, this Essay will come to an end with some concluding remarks on a potential mitigation strategy that can be adopted by a State willing to go ahead in a unilateral manner rather than leaving dormant the hydrocarbon resources lying on the continental shelf (Cameron, 2006, 583) (IV). As in the judgement of Solomon fable, if the claimants are unable reach an agreement by themselves, the baby should not nonetheless remain without a caretaker.

2. The international law of transboundary resources in general

This first section shall introduce the basic concept of transboundary resources in the international law of the sea. A satisfactory understanding of this notion requires a minimal knowledge, first, of the sovereignty, sovereign rights and jurisdiction exercised by coastal states in different maritime areas and, second, of the exploration and exploitation activities on the continental shelf. Having dealt with these preliminary notions, the focus will be directed towards the concept of shared or transboundary resources.

A. Sovereignty, sovereign rights and jurisdiction of coastal states

The international law of the sea is principally contained in the UNCLOS, which has received almost universal acceptance (Churchill et al., 1999, 22). For the purpose of this Essay, it is sufficient to take from the law of the sea the following. The seas and oceans of the planet can be divided into two geographic areas on a legal point of view: on the one hand, the maritime areas where coastal states exercise jurisdiction and, on the other hand, the maritime zones beyond national jurisdiction (Becker-Weinberg, 2014, 23-24).

The focus of this Essay is in the maritime areas where the coastal state exercises jurisdiction and can conduct oil and gas exploration and exploitation activities. These zones include, principally, the territorial sea, internal waters, the continental shelf and the Exclusive Economic Zone (EEZ). A further distinction exists between the areas where the coastal state exercises full territorial sovereignty, i.e. the territorial sea and internal waters, and those areas where the coastal state exercises functionally limited sovereign rights, i.e. the EEZ and the continental shelf. Both the EEZ and the continental shelf legal regimes provide the coastal state with the right of exploring and exploiting the natural resources (Articles 56(1) and 77(1) of UNCLOS, respectively).

The rights conferred to the coastal state by the EEZ regime are not exclusive but should rather be regarded as preferential for the purpose of developing the natural resources. By contrast, the rights of the coastal state over the continental shelf are exclusive (Article 77(2) of UNCLOS). UNCLOS ensures the compatibility of the two regimes by providing that the coastal state shall exercise its rights in the seabed and subsoil in accordance with the continental shelf regime (Article 56(3) of UNCLOS) Had it not been for the ambition of several coastal states to include within the continental shelf regime parts of the continental margin extending beyond 200 miles, the legal regime of the continental shelf would have

been incorporated within the EEZ (Churchill et al., 1999, 166). Regarding the exploitation of non-living resources in this outer portion of the continental shelf, the Coastal state has to pay to the International Sea Bed Authority a proportion of the value or volume of the production (Churchill et al., 1999, 156).

Henceforth, apart from this exception, this Essay shall not make any difference between the EEZ and the continental shelf regime. It goes without saying that the coastal state enjoys the sovereign rights to explore and exploit its natural resources in its territorial sea and internal waters in which areas the state is provided with full sovereignty (I.C.J. Reports 1982, para. 104.).

Exploration and exploitation are comprised in the upstream segment of the product chain of petroleum, which includes acts related to the discovery and development of hydrocarbon reservoirs. UNCLOS provides the coastal State with exclusive rights to this effect. This includes the right to use artificial islands, installations and to authorize drillings (Articles 60, 80, 81 of UNCLOS). The continental shelf is rich with hydrocarbon resources and coastal States are willing to exploit these opportunities. In 2005, there were around 4100 offshore oil and gas fields operating in the seas and oceans of the planet (Churchill et al., 1999, 141).

B. The concept of shared or transboundary natural resources

Henceforth, the hydrocarbon resources lying across maritime boundaries have attracted greater attention since the early sixties. These resources have been qualified as "shared" or "common".

To deal first with this terminological issue, the concept of "shared natural resources" was used for the first time in General Assembly Resolution 3129 of 1973. The same terminology was later used by the International Law Commission (ILC) (Res. (UNGA) 57/21, 19 November 2002). The qualifier "shared" is somewhat unfortunate because it implies a joint ownership of resources which is not the case at all. Although physical characteristics may have given place to a naturally shared resource, such as a hydrocarbon deposit, on the legal plane, it is not shared. The coastal state's sovereign rights on the part of resources lying within its borders are exclusive. Henceforth, the more neutral term of transboundary resource is preferable (Székely, 1986, 735). In this Essay, both terms are used in their neutral meaning.

The legal regime of transboundary resources has firstly been addressed on the level of the United Nations, through the 1972 Stockholm United Nations Conference on the Human Environment. It is also worth mentioning the Resolution 34/99 of the General Assembly which stated that the economic cooperation between States in the borderline should be underpinned by the principles of equity, equality and mutual advantage from the development of common resources (Res. (UNGA) 34/99, 14 December 1979).

The notion of shared natural resources was later taken into consideration by the ILC. The Commission, firstly, focused only on shared watercourses before deciding to include into its scope of work the case of the shared natural resources. Subsequently, the ILC examined the relationship existing between transboundary watercourses and shared oil and gas. It considered that existed many differences between the two regimes: first, the continental shelf regime provides for exclusive rights to the coastal state; and, second, the hydrocarbon resources are non-renewable. Therefore, their exploitation is governed by different economic considerations. It would have also taken a very long time for the ILC to gather and examine the whole range of State practice in the field of offshore oil and gas development (Becker-Weinberg, 2014, 42). Therefore, the ILC decided to take a resource-specific approach (Juha, 2006, 329).

More surprisingly, the UNCLOS does not contain any regulation at all regarding transboundary hydrocarbon deposits. Articles 64 and following deal only with living resources. Article 82, the only one addressing the issue of non-living resources, regulates the exploitation of natural resources in the continental shelf beyond the 200 nm. It regulates the payment and contributions due by the coastal state to the International Seabed Authority.

However, this absence should not be interpreted as if states where unaware or uninterested in the potential transboundary resources. As the ICJ expressed it in the Libya-Malta Continental Shelf case, "…resources are the essential objective envisaged by States when they put forward claims to sea-bed areas containing them" (ICJ, Libyan Arab Jamahiriya/Malta case, 1985, para. 50).

In fact, States chose to follow another path. Their focus was on the delimitation rules regarding the continental shelf and EEZ, which delimitation would in turn resolve the problem of the sovereignty on the natural resources (Székely, 1986, 742). It is not within the scope of this Essay to dwell on the delimitation rules and principles comprised in international law. It is sufficient to state here that the compromise reached by the States is comprised in Articles 74 (concerning EEZ) and 83 (concerning the continental shelf) of UNCLOS, which are almost identical. Article 83(1) provides that

> "[t]he delimitation of the continental shelf between States with opposite or adjacent coasts shall be effected by agreement on the basis of international law, as referred to in Article 38 of the Statute of the International Court of Justice, in order to achieve an equitable solution" (Article 83(1) of UNCLOS).

The vagueness of these provisions has been a source of interpretation by international courts and tribunals. These articles do not adopt a method of delimitation but rather state that the outcome of the delimitation proceedings

should be equitable. This formula has been criticized by leading legal commentators (Churchill et al., 1999, 191).

The best summary on the state of international was provided by the International Tribunal on the Law of the Sea (ITLOS) in the Delimitation case between Bangladesh and Myanmar:

> "The Tribunal observes that the issue of which method should be followed in drawing the maritime delimitation line should be considered in light of the circumstances of each case. The goal of achieving an equitable result must be the paramount consideration guiding the action of the Tribunal in this connection. Therefore the method to be followed should be one that, under the prevailing geographic realities and the particular circumstances of each case, can lead to an equitable result."

International jurisprudence has used the concept of 'special', 'particular' or 'relevant' circumstances in order to achieve an equitable outcome in the specific cases submitted to international courts or tribunals. A number of circumstances have been considered relevant, such as the length of the coastlines, coast configuration, and presence of islands (Becker-Weinberg, 2014, 176). The question that interests us here is whether the presence or potential existence of transboundary hydrocarbon deposits could qualify as a special circumstance to be taken into account during negotiations or judicial proceedings concerning delimitation.

In the first case dealing with transboundary resources, the ICJ listed among the number of factors to be taken into consideration in case of delimitation negotiations "the natural resources of the continental shelf areas involved" (ICJ, North Sea Continental Shelf cases, para. 101). The Court held that, in case of an overlapping area, the States have to proceed with its division by agreement or equally, or they may choose to enter into "agreements for joint exploitation, the latter solution appearing particularly appropriate when it is a question of preserving the unity of a deposit" (ICJ, North Sea Continental Shelf cases, para. 99).

Much ink has been spilled on this obiter dictum of the Court. It seemed as the adoption of the position advanced by Mouton who considered the unity of the hydrocarbon deposit as a special circumstance justifying the non-application of the median line between States with opposing coasts (Becker-Weinberg, 2014, 178). Nonetheless, despite the stark expression of the Court regarding the preservation of the unity of a deposit, no particular legal consequence was attached to it. In the same judgement, the ICJ held that it considered the unity of a deposit nothing more than a fact to be considered in the delimitation negotiations (ICJ, North Sea Continental Shelf cases, para. 97).

The conclusion to be drawn is that transboundary resources do not necessarily constitute a special circumstance capable of changing the boundary to be delimited.

As a consequence, it may frequently occur that a hydrocarbon deposit be found straddling a delimited maritime boundary.

Similarly to the ILC later in the 2000s, the jurisprudence adopted the approach that the matter of transboundary resources was better left to the States to address in the course of their negotiations with each other. In a sense, the issue of transboundary resources was sacrificed in the name of reaching a boundary agreement. The consequence is that afterwards the States would find themselves again in the negotiating table to decide about the management of straddling resources (Székely, 1986, 755).

3. State practice and transboundary resources: the pursuit of cooperation

Clearly, case law and treaty law have reinforced each other. The willingness of the ICJ and other courts and tribunals to leave the matter of transboundary resources in the hands of the States may be interpreted as a simple reflection of State practice on this issue. This jurisprudence, in turn, has strengthened the trend of bespoke bilateral agreements between States with adjacent or opposite coasts. One can perceive without much difficulty that, regarding transboundary resources, State practice in the form of treaties is much richer than international jurisprudence (Székely, 1986, 758).

The purpose of this Section is, precisely, to explore, State practice in different scenarios. In the second part, this Section will draw an outline of the main characteristics of joint development agreements and unitization agreements.

A. State practice in three different scenarios

The cooperative efforts of States in the field of transboundary resources has developped in three factual and legal situations: first, in the course of negotiations for the delimitation of the EEZ and continental shelf; second, in the circumstances where hydrocarbon resources straddled a delimited maritime boundary; and, third, in the case of natural resources located in the subsoil of maritime areas subject to overlapping claims.

In the first place, it is remarkable to notice how uniform State practice has been in the matter of delimitation in the presence of potential transboundary resources. The States have not considered that the hydrocarbon deposit, which might be discovered in the future, should necessarily be included within the maritime boundary of one single coastal State.

In the majority of cases, these delimitation treaties have included a so-called "natural resources clause" which can be summarized as a treaty provision requiring the

cooperation of the treaty parties if hydrocarbon resources are discovered that straddle the delimitated maritime boundary. The first and most well-known treaty establishing this rule is the Anglo-Norwegian treaty of 1965. In order to acknowledge its influence on subsequent treaty practice, the natural resources clause is cited below in extenso:

> "If any single geological petroleum structure or petroleum field, or any single geological structure or field of any other mineral deposit, including sand or gravel, 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, in consultation with the licensees, if any, 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 there from shall be apportioned" (Emphasis added) (Article 4 UK-Norway Delimitation agreement, 1965).

The triggering factor for this provision to come into play is "exploitability" and not the mere fact that oil and gas might exist on the other part of the boundary (Cameron, 2006, 580). Although natural resources clauses are quite frequent, they do not provide more than an obligation to cooperate between the parties. They have a programmatic character and usually provide for an obligation to inform on the presence of a straddling hydrocarbon reservoir and, sometimes, a duty of restraint (Becker-Weinberg, 2014, 58). In a few cases, mineral resources clauses might provide for a mandatory unitization or joint development of the hydrocarbon deposit (Article 4 of the Denmark-Norway Delimitation Agreement).

However, the bulk of State practice concerns two kinds of situations. The first concerns the hypothesis when the hydrocarbon deposit is located in a disputed maritime area. Shelving aside the matter of delimitation, the States engage into a cooperation agreement whereby they jointly exploit the common reservoir and allocate the proceeds. The second situation occurs when a hydrocarbon deposit is found astride a maritime boundary. In this instance, States in order to preserve their mutual sovereign right to a share of the reservoir and in the name of efficiency, agree to jointly explore the transboundary deposit. The different legal and factual situation has led to two main different forms of joint development.

B. The forms of cooperation: Joint development agreements and unitization agreements

More than half a century ago the Netherlands and Germany entered into the first joint development agreement concerning the exploitation of "all solid, liquid or gaseous underground substances" (Ems Estuary Treaty, 1960). As it was positively supported by the ICJ in the North Sea Continental Shelf cases (para. 97), the idea

underpinning the joint development in the Ems estuary inspired the application of similar regimes on the continental shelves (Miyoshi, 1988, 2). A key moment in the history of joint development agreements is the conclusion of the South Korea-Japan treaty whereby the parties decided to develop the offshore oil reservoir while shelving the delimitation issue (Miyoshi, 1999, 1).

In this context, joint development received an increased attention in the circle of lawyers and policy-makers. The British Institute of International and Comparative Law drafted a model agreement (Fox et al., 1989 Vol. I). It was followed by a second volume dedicated to its discussion (Fox, 1989 Vol. II).

The drive behind the growing number of joint development agreements comprises motives that are technical (progress in the development of subsoil resources), economic (cheaper access to energy resources), security-related (energy independency), environmental (improved marine pollution prevention), conservationist (greater hydrocarbon efficiency), political (avoid political confrontation) and legal (willingness not to cause an illegal harm to the sovereign rights of the other party) (Cameron, 2006, 560; Bastida, Ifesi-Okoye, Mahmud, Ross & Wälde, 2006-2007, 357).

The successful negotiation and agreement to jointly develop transboundary resources depends on many factors, which include knowledge about the hydrocarbon deposit, the validity of claims under international law, the quality of political relations, the presence of disputed islands etc. (Valencia & Miyoshi, 1986, 217-223).

It is not within the scope of this Essay to enter into the details of each joint development agreement. For this, we refer to the abundant literature existing on the subject (See, for example, Becker-Weinberg, 2014).

First of all, there is disagreement on what the concept of joint development precisely covers. For a group of authors, JDAs comprise only inter-state agreements for the development of hydrocarbons in disputed maritime area, at the exclusion of unitization agreements entered into when a petroleum reservoir is straddling a fixed boundary (Bastida et al., 2006-2007, 358-359). There is no reason to make such exclusion and this approach is contradicted by State practice. Miyoshi enumerates at least six JDAs concluded where boundaries are delimitated (Miyoshi, 1999, 27-35).

This disagreement on the scope of joint development causes, in turn, a conceptual confusion regarding its proper definition. Gao, an author, has reviewed and enumerated at least five different definitions of joint development (Gao, 1998, 110-11). For the purposes of this Essay, we will retain the following definition of joint development proposed by Miyoshi:

> "An inter-governmental arrangement of a provisional nature, designed for functional purposes of joint exploration and/or exploitation of hydrocarbon resources of the seabed beyond the territorial sea" (Miyoshi, 1999, 3).

According to Gao, the most prominent distinction between joint development and unitization is the existence of a territorial dispute as it concerns the former. Furthermore, unitization applies only to an identified hydrocarbon deposit whereas joint development may be concluded even regarding potential reserves. Unitization is an agreement of a rather commercial nature aimed at resolving the question of the natural unity of the deposit. It is similar to a "pooling" contract that we may find in a municipal law (Gao, 1998, 112). The only difference is that in an international unitization, States are also parties, beside licensees or oil companies, to the agreement. By contrast, joint development agreements have a political nature, are broader in scope and can regulate matters outside hydrocarbon development, such as the protection of the marine environment or safety of navigation (Becker-Weinberg, 2014, 20). Unitization has turned out to be the most adopted and successful form of cooperative agreement (Robson, 1995, 3-6).

There is a significant difference between joint development agreements entered into as part of, or immediately after, a delimitation treaty and cooperative agreements concluded in connection with the exploitation of transboundary hydrocarbon deposits. The purpose of the latter is the efficient development of the oil or gas reservoir and the respect for the sovereign rights of the other coastal State. By contrast, the aim of the first is to "unblock" the delimitation negotiations that might have resulted in an impasse because of the parties' will to have a share in the hydrocarbon deposit located in the submarine area subject of delimitation. Finally, both of the above differ from joint development agreements established by parties in the absence of a maritime boundary and usually take the form of provisional arrangements pending delimitation (Churchill et al., 1999, 198-200).

The conclusion of so many joint development agreements in all regions of the world is a sign of their evident advantages. However, the entering into such agreements requires a high level of cooperation between the interested parties. According to Onorato, writing in 1977, there had not been a single "case of deviation from the principle" of cooperation by States dealing with a common transboundary deposit (Onorato, 1977, 329).

At this stage, the authors have divided in two different schools concerning the question whether the conclusion of joint development agreements has crystallized into a customary international rule (Gao, 1998, 121).

4. Normative status of state practice

The extensive and recurrent State practice has prompted the legal community to wonder whether States are perhaps adopting this conduct because they are compelled by an international norm. Due to the almost unanimous consensus on

the interdiction of the rule of capture, this approach seemed to be the only viable solution to the development of common hydrocarbon deposits (Onorato, 1977, 329).

A. The interdiction of the rule of capture

The rule of capture has appeared concomitantly with the first commercial exploitation of oil and gas in the United States in the middle of the 19th century. One of the most straightforward definitions was given by Robert E. Hardwicke who expressed the rule in the following terms: "The owner of a tract of land acquires title to the oil and gas which he produces from wells drilled thereon, though it may be proved that part of such oil or gas migrated from adjoining lands" (Hardwicke, 1935, 393).

The acknowledgement of the right of the owner to reduce into possession the oil and gas deposits found beneath the surface of his land, even though the hydrocarbon extracted might have been found originally in the subsoil of an adjacent plot of land, necessarily affects in a negative manner the latter owner's rights. This legal framework caused the commencement of a drilling competition among owners, who either wanted to have a first mover's advantage or were afraid of losing the amount of extractable resources if their neighbour started drilling.

In the absence of conservatory measures, the rule of capture, not only affected the private interests of another owner, but resulted also in higher costs and lower production of oil and gas, so negatively affecting the overall market. In these circumstances, several authors suggested the mandatory unitization of the oil and gas deposit in order to reduce waste and to promote its efficient development. Many different oil producing countries have introduced in their legislation, in a way or another, some form of unitization (Becker-Weinberg, 2014, 17).

On the international plane, the rule of capture may have a role to play when a State proceeds unilaterally to exploit either a deposit located on both parts of a maritime boundary or a reservoir found in an area claimed by multiple States. For some authors, the question whether international law allows for the rule of capture depends on the type of legal title that coastal States possess upon seabed natural resources. For Higgins, the State can exercise on the continental shelf only its laws relating to exploration and exploitation activities. As the State does not have full territorial sovereignty on the continental shelf, it cannot apply its property law. By contrast, Redgwell underlines the absence in UNCLOS of any qualification regarding the title on natural resources in the continental shelf from which she concludes that, in practice, States have assimilated the continental shelf to their land territory for jurisdictional purposes (For a summary of the discussion, see Loja, 2014, 483). The same idea is taken by Onorato who considers coastal State as joint owners of the hydrocarbon deposit (Onorato, 1977, 328).

On the contrary, this Essay takes the view supported by Lagoni that the sovereign rights enjoyed by States don't live well with the idea of shared or joint ownership (Lagoni, 1979, 221). On the one hand, a firm assertion of the principle of permanent sovereignty over natural resources could be seen as supporting the rule of capture (Ong, 1999, 777). Nevertheless, the principle of exclusive sovereign rights on the continental shelf excludes the rule of capture in international law as the effect of the rule would constitute a prejudice to the other State's sovereign rights (Becker-Weinberg, 2014, 17).

The other argument advanced to sustain the interdiction of capture is the principle of efficiency: unitization would maximize the amount of hydrocarbon exploited in a specific field. However desirable this outcome might seem, it has not found a legal basis in international law (Swarbrick, 1995, 49-50).

State practice of entering into cooperative agreements suggests that the rule of capture is not countenanced in international law. However, one might argue the contrary: that States are concluding joint developments in order to avoid the potential exercise of the rule of capture by one of them, henceforth damaging their mutual interests (Ong, 1999, 778).

B. Mandatory nature of joint development

Before addressing the status of joint development agreements stricto sensu, a preliminary issue arises regarding the State practice of including mineral clauses in delimitation treaties.

We mentioned earlier that most of the world's maritime boundaries have not been delimitated. The States' interest in the development of the maritime natural resources can play in both senses regarding delimitation. On the one hand, it can entice the coastal States towards negotiating or judicially settling their maritime boundaries. On the other hand, the willingness to appropriate most of the maritime area (together with its natural resources) claimed by both parties may lead negotiations to a deadlock. Furthermore, as we are reminded by the tribunal in RSM Production vs Grenada, States are not required by international law to settle their maritime territorial disputes (ICSID, no. arb/05/14, para. 339).

Even less are States required to include natural resources clauses in their delimitation agreements. In the same time, at least since the Anglo-Norwegian treaty, it is quite common for States to include such clauses. Nevertheless, the State practice is neither consistent nor uniform as it concerns the content and scope of the clause. Therefore, there is definitely no obligation for States to include cooperation clauses in delimitation treaties (Becker-Weinberg, 2014, 58-59). In this regard, even in the absence of mineral resources clause in the delimitation treaty, general international law provides for a duty of cooperation between the interested parties.

We shall turn at present to the issue of joint development in the proper sense. The general consensus on the interdiction of capture immediately raises the question whether joint development agreements are required under international law. This happens because, if unilateral action is forbidden, then it is difficult to perceive another viable route, beside joint development, for the exploitation of common hydrocarbon resources. As we have proceeded all along this Essay, we shall make a distinction between the case when the hydrocarbon deposit lies across a maritime boundary agreed by the parties and the situation when the reservoir is found in an area of overlapping claims. This second hypothesis is encapsulated in the notion of provisional arrangements.

Joint development as an obligation to enter into provisional arrangements

The tremendous extension of maritime areas where States can exercise jurisdiction has increased the eventuality of greater or lesser overlapping between the areas claimed by States with adjacent or opposite coasts. International law makes direct negotiations between States the privileged mean of delimitating maritime zones (Articles 74(1) and 83(1) of UNCLOS). Maritime delimitation of the continental shelf and the EEZ differs from territorial boundaries. The territory is an essential element of the sovereignty of the State. By contrast, the coastal State exercises only functional jurisdiction, i.e. for the purpose of exploitation of natural resources, in the continental shelf and the EEZ. Despite this difference, delimitation of maritime boundaries has proven to be as delicate as territorial borders. Maritime delimitation negotiations have frequently been charged with nationalistic feeling (Ong, 1999, 776). In addition, the actual or perceived riches of the sea raise the stakes for the interested States. Unsurprisingly, then, delimitation negotiations take a very long time and there is some evidence that the time needed to reach an agreement is growing (Lagoni, 1984, 346).

While negotiations have become more prolonged, the hunger for cheap and secure energy resources to fuel economic development has increased. The intensification of offshore activities in maritime areas of overlapping claims makes of interim measures an indispensable tool to defuse tensions. Acknowledging the relationship between delimitation and interim measures, UNCLOS has included both concepts in the same provisions (Articles 74 and 83, regarding the EEZ and the continental shelf, respectively). What is the nature and scope of these interim measures or provisional arrangements?

The scope of the rule can be defined on three different levels. First, the area of application of provisional arrangements is limited to the maritime zone which is subject to overlapping claims. The State claims have to be founded on international law and States are entitled to refuse abusive claims made by another State (Lagoni,

1984, 356). Second, the temporal scope of the interim measures referred to in article 83(3) begins with the identification of an overlapping area and ends with the delimitation treaty entered into by the parties (Lagoni, 1984, 357). Third, ratione materiae, the scope of the obligation is limited to those uses of the sea which the parties have agreed upon. For example, the coastal States can agree on joint development of hydrocarbon resources without making any specification about the management of living resources (Lagoni, 1984, 358).

As it concerns the nature of this obligation, according to article 83(3), "the States concerned, in a spirit of understanding and cooperation, shall make every effort to enter into provisional arrangements of a practical nature". (Emphasis added). There are two important elements in this phrase. The words "in a spirit of understanding and cooperation" have to be interpreted as meaning that the coastal States, in their relationship to each other, have to deal in good faith. Turning to the other group of underlined words, "shall make every effort" has to be analysed in two steps. Firstly, the use of the verb "shall" implies that the conduct required by the States is mandatory under international law. Secondly, the use of the term "effort" means that the normativity of the provision applies only to the process rather than to the outcome of the negotiations.

Therefore, pursuant to article 83(3), States are bound to negotiate in good faith with the view of reaching an agreement regarding one or more uses of the maritime area subject to overlapping claims. Provisionally leaving aside the issue of delimitation and focusing rather in the exploitation of their common hydrocarbon resources, joint development has been one of the preferred interim measures adopted by States. However, an obligation to negotiate does not imply an obligation to enter into a joint development agreement. Joint development may be one of the outcomes of the negotiations (Lagoni, 1984, 360). States can also decide to adopt a provisional moratorium. Besides, negotiations may always end without reaching an agreement.

Joint development as an obligation under general international law

The obligation to cooperate regarding shared natural resources is not straightforwardly provided by international conventional or customary law. Nevertheless, the principle of cooperation in this field finds indirectly expression in different sources of law as we mentioned in the first section of this Essay (Ong, 1999, 784).

UNCLOS lacks any provision governing the issue of transboundary hydrocarbon deposits, except the specific case when the reservoir would be found straddling between the Area and the maritime zone under national jurisdiction. In such circumstances, activities in the Area have to be carried out "with due regard

to the rights and legitimate interests" (Article 142(1) of UNCLOS) of the coastal State. The second paragraph of the Article provides:

> "Consultations, including a system of prior notification, shall be maintained with the State concerned, with a view to avoiding infringement of such rights and interests. In cases where activities in the Area may result in the exploitation of resources lying within national jurisdiction, the prior consent of the coastal State concerned shall be required. (Emphasis added).

According to Ong, the requirement of prior consent should be applied, by analogy, to the situation occurring between two neighbouring coastal States (Ong, 1999, 784).

Another provision of UNCLOS requiring cooperation between States is Article 123 which provides that "States bordering an enclosed or semi-enclosed sea should co-operate with each other in the exercise of their rights and in the performance of their duties." (Emphasis added). However, the obligation to make efforts to coordinate is only limited to the exploration and exploitation of the living resources of the sea. Nothing is specified regarding non-living resources. In addition, the used terminology – "should", "shall endeavour" – undoubtedly make of this provision an exhortatory obligation.

On the level of international case law, the North Sea Continental Shelf cases are particularly important. The ICJ pointed out to the practice of States in the North Sea as an encouraging conduct in order to ensure the most efficient exploitation of the common deposit. Judge Jessup, in his separate opinion, was even more supportive of joint development considering this form of cooperation as being able to have a broad application in areas subject to overlapping claims. Expressed in the form of obiter dicta, the pronouncements of the Court and Judge Jessup clearly do not amount to an expression of established law. Nevertheless, they identify some favourite State behaviour which could crystallise, in the future, in an international norm (Ong, 1999, 785). Onorato suggests that joint development has already developed into a fully-fledged customary international rule (See Onorato, 1968; Onorato, 1977, and Onorato 1985). This view is bitterly disputed by other segments of the doctrine.

Crystallization of a new rule of customary international law

One of the sources of international law is "international custom, as evidence of a general practice accepted as law" (Article 38(1) of the Statute of the ICJ). Traditionally, custom has been conceived as composed of two elements: general practice and practice accepted as law. The first component refers to the question of

uniformity and consistency of behaviour, such as an extensive pattern of treaties in the same terms. Absolute uniformity is not necessary but substantial uniformity of practice is required. Complete consistency in not required either. It is sufficient to show an extensive and substantial uniformity, especially among specifically affected States (Crawford, 2012, 23-25). The second element necessary to establish the existence of custom is the belief that States are adopting a specific conduct as required by law. This psychological or subjective element is usually formulated through the Latin expression opinio juris sive necessitatis. The frequency of the usage, though necessary, is not enough because the behaviour may be dictated by political expediency or out of comity (Crawford, 2012, 25-27).

Against this theoretical background, it is useful to analyse consecutively the two elements compounding a customary international norm concerning joint development agreements. First, is State practice in the field of joint development agreements sufficiently uniform and consistent? On the one hand, joint development has been largely used by States to cooperate in the exploration and exploitation of common hydrocarbon resources. The number and geographical distribution of State practice is significant. On the other hand, contrary to the view of some authors (Ong, 1999, 788), there has not been any noteworthy increase in the number of joint development agreements since the first such agreement was signed in 1958 (Bahrain - Saudi Arabia Agreement, 1958).

Furthermore, joint development in State practice has adopted different structures and a varied content regarding the terms and conditions. The cooperative arrangements put into place by the coastal States have involved agreements of a wide-ranging spectrum: from agreements providing for consultation to compulsory unitization through joint development frameworks divided in autonomously managed and exploited parts (Becker-Weinberg, 2014, 46). To quote the British Institute of International and Comparative Law: "Each of these models has a number of possible variations yet none seems capable of commanding universal acceptance due to differing political and economic systems, traditions of conflict and degrees of national sensitivity" (Fox et al. 1989(I), 115). The dissimilarities existing between the various joint development agreements are dictated by the difference in circumstances – political, legal, economical, technical etc. – under which each agreement has been negotiated.

The inconsistency of State practice is an important factor militating against the finding of a customary international rule requiring joint development. Nevertheless, the absence of opinio juris, the second necessary element in the creation of custom, is an even more powerful argument (Ong, 1999, 788). Henceforth, we can conclude that the choice of States to engage into joint development has been dictated by a willingness to develop the natural resources, through a method that ensures maximum efficiency, and not by any belief that this conduct is required by a customary rule.

In spite of some authors holding an opposite view, the majority and the most recent doctrine is of the view that cooperation between the States in the form of joint development is not mandatory under customary international law.

In his well-known paper of 1968, Onorato, while recognizing that unitization had not yet accessed the status of an international norm, considered that it was applicable by analogy to municipal law and judicial awards. He was even bolder in his second paper of 1977 where he professed that only a coordinated and agreed development of a common deposit could fulfil the requirement for the apportionment of the reserve to be fair and equitable (Onorato, 1977, 337). At the second East-West Centre workshop in 1983, Onorato emphatically declared that "whatever the circumstance that gives rise to the claim of a common interest between States in a single petroleum reserve, the legal rule for its apportionment remains consistent. Joint development is mandated." (Onorato, 1985, 337).

The other school of thought is represented, especially, by Lagoni and Miyoshi. Lagoni asserts that States are not under the obligation to preserve the unity of the deposit and, as we have seen, their delimitation treaty can leave the petroleum reservoir straddle the maritime boundary (Lagoni, 1979, 221). Miyoshi, for his part, concurs with Onorato on the desirability of joint development agreements, but boldly denies that this practice is mandatory under customary international law. If it was so, then the refusal by one State to conclude a joint development would constitute an illicit act engaging the responsibility of the State (Miyoshi, 1988, 10).

A special rule of joint development has not yet arisen in international law. There is no uniform and consistent State practice, nor can one distinguish opinio juris in the behaviour of the States. Furthermore, a rule of joint development would disrupt international law as expressed in Articles 74(3) and 83(3) of UNCLOS that clearly do not make provisional arrangements mandatory. It would also have as a consequence to narrow down the scope of the sovereign rights enjoyed by States to explore and exploit their natural resources (Becker-Weinberg, 2014, 202-204).

5. Shared transboundary resources: can we split the baby?

The conclusion that States are not required by international law to conclude joint development agreements does not exclude the applicability of a general principle of cooperation, of an increasing importance in international law (Lagoni, 1984, 355).

A. The obligation to cooperate

There is sufficient evidence in case law, general assembly resolutions, state practice and publicists' opinions that States are required to cooperate with the view of developing their transboundary natural resources (Miyoshi, 1988, 12).

The obligation to cooperate with the concerned State or States may find its expression in a natural resources clause found in a delimitation treaty. In the case of the exploration and exploitation of hydrocarbon deposits located in areas subject of overlapping claims, art. 74(3) and 83(3) of UNCLOS require States to cooperate in the effort to conclude a provisional arrangement. However, these procedural obligations to cooperate are merely expression of a general international obligation requiring States to cooperate with respect to transboundary natural resources (Ong, 1999, 798).

It follows that the concerned States have to comply with the rule of cooperation even in the hypothesis when a hydrocarbon deposit is found straddling an already delimitated maritime boundary and the relevant delimitation treaty did not contain any natural resources clause. According to this interpretation, a natural resources clause in a delimitation treaty is interpreted as only a reinforced, and sometimes more specific, obligation to cooperate (Becker-Weinberg, 2014, 58).

What is the substantive content of the requirement to cooperate? The obligation to cooperate can be divided in three distinct sub-rules: the duty to inform and consult; the obligation to negotiate in good faith; and the obligation of mutual restraint.

In the absence of further obligations in a treaty, international law seems to require only a duty to inform and consult in the case of transboundary hydrocarbon deposits (Fox et al. 1989(I), 35). This principle was eloquently put forward in the Eritrea-Yemen arbitration, where the Tribunal held that

> "having regard to the maritime boundary established by this Award, the Parties are bound to inform one another and to consult one another on any oil and gas and other mineral resources that may be discovered that straddle the single maritime boundary between them or that lie in its immediate vicinity" (1999, para. 86).

The obligation of information and prior consultation applies not only to straddling natural resources, but also to hydrocarbon deposits located in areas of overlapping claims (Lagoni, 1979, 237).

Regarding the scope of the information to be provided, it should be sufficient for the other State to protect its own sovereign rights (Lagoni, 1979, 238). The informing State should notify the other party of the existence of any resource that may be of interest to the other party. Moreover, the informing State should share information regarding any intention to develop said resources (Becker-Weinberg, 2014, 66).

The duty of information originates also from the principle of good faith (Lagoni, 1979, 237), which is a general principle of international law (Cameron, 2006, 567). The obligation to negotiate in bona fide means that States must take part in effective

negotiations with the view of reaching an agreement. This duty does not require States to necessarily conclude an agreement. It is an obligation to negotiate with the aim of reaching an agreement (pactum de negotiando) and not a duty to conclude an agreement (pactum de contrahendo). The obligation to negotiate in good faith entails a duty not to unjustifiably delay or break away from negotiations or not to take into account reasonable proposals (Becker-Weinberg, 2014, 63).

In non-delimitated maritime areas, the obligation to negotiate in good faith in order to reach a provisional arrangement is included in articles 74(3) and 83(3) of UNCLOS. In such a hypothesis, States may agree not only to joint development of natural resources, but also to a provisional moratorium on the exploitation of hydrocarbon deposits (Lagoni, 1984, 360).

The third aspect of the rule of cooperation is the duty of mutual restraint, which is arguably the single most complicated issue in the matter of the exploitation of transboundary hydrocarbon resources. On the one side, the obligation of self-restraint has gathered much doctrinal backing (Ong, 1999, 798). It is found in article 74(3) of UNCLOS which provides that "the States concerned […] shall make every effort […] not to jeopardize or hamper the reaching of the final agreement."

Concerning hydrocarbon deposits, the meaning of this provision is that a State cannot carry out activities in a disputed maritime area which might impair the other State's ability to exploit its natural resources. There has been a discussion concerning the scope of the rule of mutual restraint. Article 74(3) seems to forbid only acts that would jeopardize or hamper the reaching of the final agreement.

At this moment, it is useful to ask the question whether there is any difference in international law between activities undertaken in a hydrocarbon deposit straddling a delimitated maritime boundary, on the one hand, and activities carried out in a maritime area subject of overlapping claims, on the other one. As previously mentioned, activities conducted in the latter case and that undermine the reaching of an agreement are forbidden by a specific provision in UNCLOS, i.e. Article 74(3).

According to Onorato, the state of international law is straightforward: one State cannot exploit, unilaterally and without prior consent, a transboundary hydrocarbon deposit (Onorato, 977, 328). This position is supported by Ong, who deems that Article 142 of UNCLOS is applicable to any common deposit (Ong, 1999, 800).

As a matter of fact, it is impossible to give a definite and straightforward answer to this question. However, there are a number of principles which shed some light on this complex issue.

First, under UNCLOS, States are bound to negotiate in good faith for the delimitation of their continental shelf. Arguably, drilling or any other form of

exploratory activity violates good faith because it can be interpreted as an attempt to affect the outcome of the negotiations. The reason behind this is easy to perceive. Through the conduct of exploratory activities in the continental shelf, one State behaves as if the disputed area was under its jurisdiction. As a matter of international law, there is no doubt that as long as negotiations between the two States are on-going, each of the States in under an interdiction to undertake unilateral activities in the disputed maritime area (Churchill et al., 1992, 85-86).

A second connected argument is related to the exclusivity of the sovereign right to explore and exploit. Let us take the following example: one State proceeds with the unilateral exploration of a hydrocarbon deposit located in an area claimed by both States. Subsequently, through negotiations or judicial settlement, this area is finally decided that pertains to the other State. This latter State's rights to this area of the continental shelf exist ab initio. This implies that, on the legal plane, delimitation is nothing else than a confirmation of the pre-existing sovereign rights of the State. Therefore, the other State's unauthorized activities would be in clear breach of the exclusive sovereign rights of this latter State (Churchill et al., 1992, 86).

In the Aegean Sea Continental Shelf Case, the ICJ made a distinction between acts of a transitory character and activities of a permanent nature (I.C.J. Reports 1978). Thus, the Court considered that seismic exploration activities do not mandate the adoption of an interim protective measure. This issue was further elaborated in an arbitral award rendered in the Case of Continental Shelf Delimitation between Guyana and Surinam (2007, para. 467). The Tribunal duly recognized two types of activities that can be conducted in disputed maritime areas. The first includes activities carried out in conformity with joint development agreements. The second comprises unilateral acts which do not "cause a physical change to the marine environment" (Guyana-Surinam Delimitation, 2007, para. 467). Consequently, exploitation of hydrocarbon deposits, as it leads to a permanent physical change, would be forbidden, whereas seismic exploration would be permissible.

The Tribunal was completely aware that a very stringent interdiction of activities in a disputed maritime area would be prejudicial to the economic development of the interested party. However, according to the Tribunal, the criterion of the physical impact on the marine environment – permanent or not – strikes a fair balance between the two interests involved, i.e. resource exploitation by one State and preservation of sovereign rights of the other State (Guyana-Surinam Delimitation, 2007, para. 470).

Churchill and Ulfstein enumerate further five examples of State practice which seem to support the proposition that unilateral exploration in disputed maritime areas is forbidden (Churchill et al., 1992, 87-88). Thus, it is reasonable to conclude that there exists a rule of international law prohibiting unilateral activities in

maritime areas subject to overlapping claims. Nonetheless, the scope of the rule is subject to debate. The coastal State enjoys exclusive rights concerning exploration and exploitation of its continental shelf. Why then, as the ICJ and the Tribunal in the Guyana vs Suriname arbitration suggest, should there be a distinction between the two? According to Lagoni, the reason lies with the fact that States are under the obligation not to aggravate disputes, which, unless in exceptional circumstances, is likely to be caused by exploitation and permanent exploratory activities and not by transient exploratory efforts (Churchill et al., 1992, 87).

Nevertheless, it can still be asked whether the sovereign rights of a recalcitrant state are such that it can virtually veto any proposed arrangement to which it does not consent. Or should its refusal to negotiate deprive it of its equitable share of the common deposit? (Miyoshi, 1988, 14). This issue is particularly relevant to disputed areas because, even if a state decides to explore and exploit its share of the deposit unilaterally, it cannot determine exactly where its right to exploit ends in the absence of an agreed boundary.

B. Breakdown of negotiations: multilateral when possible, unilateral when necessary?

When the continental shelf between two States is delimitated, the obligation of mutual restraint originating from Article 74(3) is not applicable. Nonetheless, as we have seen, there is a general principle of cooperation regarding transboundary resources and the obligation not to cause transboundary harm or violate the sovereign rights of another State.

If we pursue this principle of mutual restraint to its logical end, one question immediately arises. What happens if negotiations fail? If we accept that one State has to exercise self-restraint in the development of a common deposit until it has reached an agreement with the other coastal State, then this latter State has, in practice, a right of veto towards any exploratory effort of the oil and gas reserve (Ong, 1999, 800). The consequence is that the deposit would have to remain unexploited, maybe, for decades due to the fact that negotiations in this matter take a very long time (Cameron, 2006, 568).

Hydrocarbon deposits may constitute a considerable source of wealth. They may also contribute to the energy independence and security of a country, which are particularly important goals in the current geopolitical context. Taking into consideration these factors and the fact that the international legal framework is so unsatisfactory, one might well conceive one State deciding to proceed with the unilateral exploration of a common deposit (Cameron, 2006, 569).

It is obvious that the interdiction of the rule of capture, which we saw earlier, is closely interconnected to the obligation of self-restraint in the development of

common hydrocarbon resources. The question, then, arises whether the interdiction of unilateral exploration or the obligation of self-restraint are so absolute that, in no circumstances, one State can legally exploit a common reservoir without the agreement of the other State.

According to us, there is an important conceptual distinction between the interdiction of the rule of capture and the obligation of mutual restraint, although their practical implications are frequently the same. Interdiction of capture implies that there does not exist in international law an absolute, positive, substantive right of the coastal State to unilaterally exploit a common hydrocarbon deposit. By contrast, the obligation of restraint is a relative, negative, procedural obligation requiring the concerned State not to proceed unilaterally without first complying with the international legal framework governing cooperation in the matter of transboundary natural resources (Contra Onorato, 1977, 332).

There are a number of differences between the hypothesis when the deposit is found in a non-delimited maritime area and the circumstance where a maritime boundary has been agreed.

Let us assume that one State decides to unilaterally explore a common deposit while the other coastal State remains inactive. What are the legal consequences of this inactivity? For Onorato, it is necessary for this latter State to raise a timely protest if it is to preserve its title to the resources (Onorato, 1977, 329). We find more convincing Lagoni's viewpoint which states that the inactivity of one State does not give the right to the other State to exploit the totality of the common deposit. An argument of estoppel or acquiescence may, however, arise (Lagoni, 1979, 238). Due to the fluidity of the hydrocarbon deposit, any exploratory activity is likely to be prejudicial to the exclusive sovereign rights of the other State. Therefore, it is prohibited according to Ong (Ong, 1999, 800). We disagree with this view. The consent of the other State is not mandated anywhere in international law.

If the hydrocarbon reserves are found in a disputed maritime area, States are found under a double obligation. They have to negotiate in order to agree on maritime delimitation and, in the meantime, they have to endeavour to conclude a provisional arrangement. As long as negotiations concerning delimitation and/or provisional arrangement are on-going, there is a general consensus that the duty of restraint, except transitory exploratory activities, is absolute.

What happens to the natural resources if there is a final breakdown of the negotiations or they are rendered evidently useless and meaningless? Are there more than practical reasons for the States to cooperate as suggested by Ong? (Ong, 1999, 799).

We consider that such a hypothesis would rarely happen in practice. Due to the complexity of the negotiations, it would take years for one party to prove that negotiations are fatally failed due to the intractability of the other party.

Furthermore, the uncertainty connected with the status of international law plays in both ways. If one State demonstrates that negotiations failed because of the other party, then this latter State could be estopped to demand compensation.

In any event, it is excluded that the development of natural resources be stopped indefinitely.

The way ahead

One way to the development of transboundary resources in the absence of agreement is advanced by Cameron taking inspiration by the enhanced cooperation framework adopted by the Norway and the UK (Cameron, 2006). We already know that the pioneering UK-Norway agreement of 1965 provided that, if a hydrocarbon reservoir is found straddling the delimited boundary, the Parties would cooperate as to the manner of its developments in conformity with the principle of unity of the deposit.

In the Frigg agreement of 1976, the parties included Article 2(3) which, basically, provides that if the two States do not agree on the apportionment of the deposit, production will proceed on a provisional basis according to the apportionment proposed by the licensees, or in its absence, on an equal basis. This modus vivendi would be replaced by the final agreed apportionment (UK-Norway Frigg Field Reservoir, 1976).

Taking into consideration the uncertainties of international law on this matter, the best alternative is the adoption of a "mitigation strategy" as suggested by Cameron, who enumerates three main measures: First, the acting State should conduct an assessment of the part of the reservoir that lies across the border and it should transfer a percentage of the revenues to an escrow account for the benefit of the other State; second, it should keep an open and on-going dialogue with the view of reaching an agreement; third, this State should provide access and full transparency to the financial data of the petroleum operations (Cameron, 2006, 583).

There are strong arguments supporting the viewpoint that this way of proceeding is respectful of international law. In front of a deadlock in negotiations and having to choose between resource development and inactivity, this solution is arguably the safest to adopt in the current state of international law, at least in the case of a common deposit straddling an already delimited boundary.

6. Conclusion

Offshore oil and gas are arguably the most important resources of the sea. Because of this, States have been unwilling to consider hydrocarbon deposits as a special

circumstance justifying the allocation of the entire reservoir to only one or the other of the coastal States having a valid claim under international law. As a consequence, more than one State has the sovereign right to explore and exploit the same petroleum reservoir. This plurality of legal rights stands in blunt contradiction with the inherent physical unity of the deposit. Exploitation from one side of the maritime boundary may lead to the dwindling of the share of resources pertaining to the State on the other side of the boundary. Concurrent drilling makes both parties worse-off, increasing costs and diminishing production rate.

A preferred alternative has arisen for the exploration and exploitation of transboundary hydrocarbon resources in the form of joint development, replicated in State practice and encouraged by international jurisprudence. As lege ferenda, joint development has a number of significant advantages: it promotes efficiency and respect of mutual sovereign rights of States. It helps also to defuse tensions by shelving delimitation disagreements.

Nevertheless, joint development is not mandated by international law. It has not crystallized yet in a customary international rule. It lacks the uniformity and consistency required by international law to give rise to a custom (Becker-Weinberg, 2014, 202). Furthermore, it cannot be substantiated that States are entering into cooperative agreements as an expression of a requirement by international law. The determinant psychological element of opinio juris is absent. As intelligently underlined by Ong, the threshold for finding a new custom is higher when the purported customary rule requires positive behaviour rather than abstention by States (Ong, 199, 794). Moreover, State practice in one region cannot give rise to a custom in another part of the world where States exhibit diametrically different behaviour (Miyoshi, 1999, 4).

However, as the rule of capture is interdicted, States have to engage in meaningful negotiations with each other with the view of reaching an agreement as to the manner of developing common resources. The conclusion of an agreement, though desirable, is not obligatory. If the parties do not agree how to split the baby, should the baby remain nevertheless not catered? We do not think so. Through the adoption of a mitigation strategy, one State can proceed with the unilateral development of the hydrocarbon deposit while, in the same time, reducing the maximum the risk of infringing the other party's rights. At the end, shouldn't the baby be catered by the "mother" who loved her the most?

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